

Tide Tables 2019 – West Coast of North and South America including the Hawaiian Islands

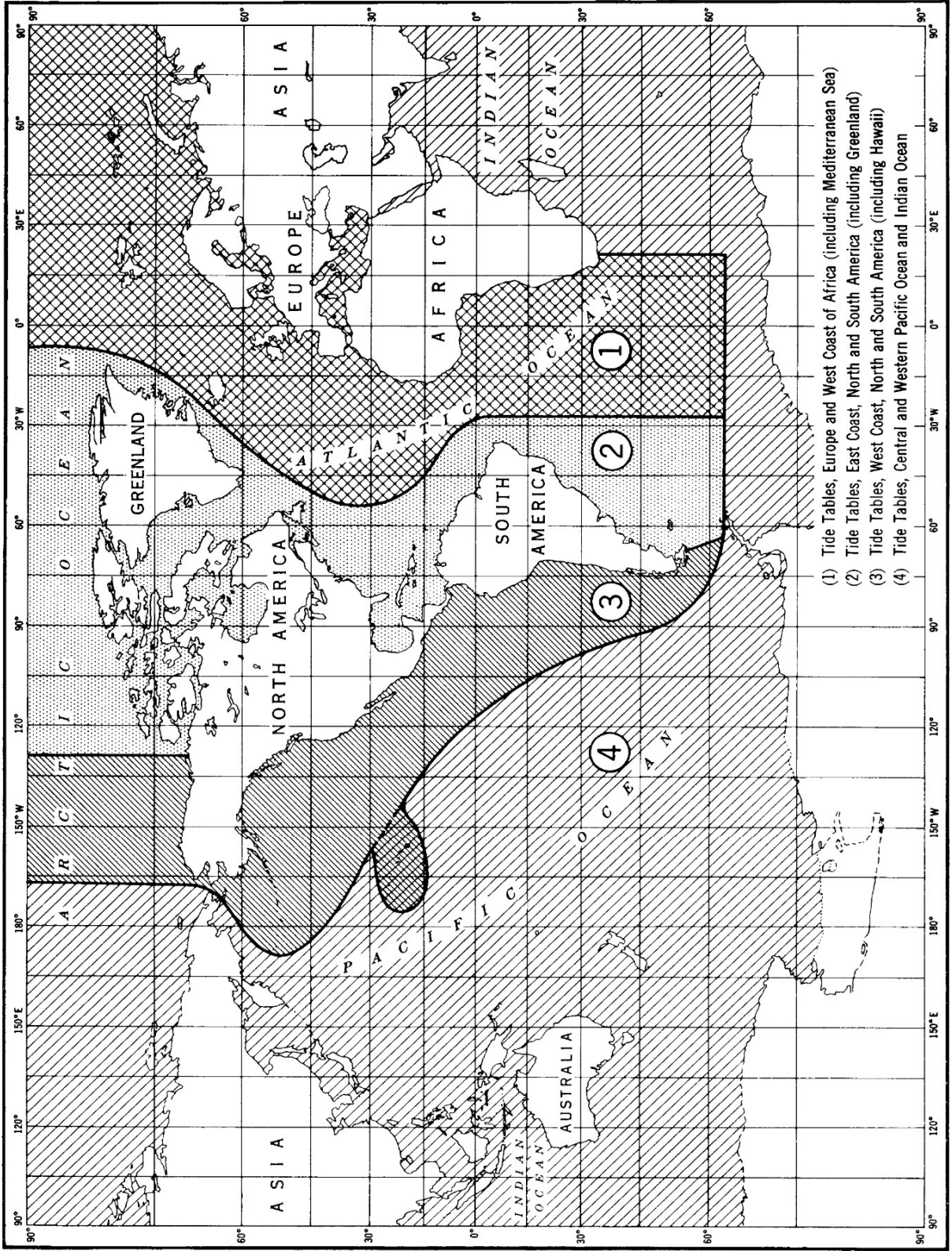
Tide Tables 2019 HIGH AND LOW WATER PREDICTIONS

West Coast of North and South America

Including the Hawaiian Islands



INDEX OF TIDE TABLE COVERAGE



- (1) Tide Tables, Europe and West Coast of Africa (including Mediterranean Sea)
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Tide Tables 2019 HIGH AND LOW WATER PREDICTIONS

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Including the Hawaiian Islands

Issued 2018

SOURCES OF ADDITIONAL INFORMATION

THE NATIONAL OCEAN SERVICE IS NO LONGER PRINTING AND DISTRIBUTING THE TIDE AND TIDAL CURRENT TABLES

Tide and Tidal current data continue to be updated, generated and published by the NOAA/ National Ocean Service; however, the printing and distribution in book-form is now done by several private companies working from information provided by NOS.

NOS now offers two vehicles for obtaining predictions. First, the complete set of Tables as camera-ready page-images will be available on CD-ROM. The CD-ROM vehicle is primarily intended for use by federal or private printers who wish to print in book-form the full set of Tables for distribution to resellers and the general public. Second, for domestic tide stations, predictions are available on the NOS, Center for Operational Oceanographic Products and Services (CO-OPS), website, (<http://tidesandcurrents.noaa.gov/>).

In addition to predictions, the website provides updated information on the status of the Tables as they are finalized each year. Notices concerning the most recent Table updates and publication cut-off dates are included.

For the names of companies printing and distributing the Tables, please call or write to:

National Ocean Service
Oceanographic Division, N/OPS3
1305 East-West Highway
Silver Spring, MD 20910
(301) 713-2815, fax (301) 713-4500

A list of authorized sales agents is published in the Nautical Chart Catalogs or may be obtained on request from the National Ocean Service.

TECHNICAL ASSISTANCE:

*Technical questions relating to **tide and current predictions**, as well as requests for **special predictions**, should be addressed to:*

National Ocean Service
Oceanographic Division, N/OPS3
1305 East-West Highway
Silver Spring, MD 20910
(301) 713-2815

*Technical questions relating to **actual tide observations, tidal datums, and other information necessary for engineering projects** should be addressed to:*

National Ocean Service
Oceanographic Division, N/OPS3
1305 East-West Highway
Silver Spring, MD 20910
(301) 713-2815

*Technical questions relating to **other publications and nautical charts** should be addressed to:*

National Ocean Service
Navigation Services Division
1315 East-West Highway
Silver Spring, MD 20910
(888) 990-NOAA (6622)

SOURCES OF ADDITIONAL INFORMATION

WEBSITES

Center for Operational Oceanographic Products and Services
(PORTS® * Predictions * Observations * Bench Marks * Tides Online * Great Lakes Online)
<http://tidesandcurrents.noaa.gov>

Marine Chart Division - <http://www.nauticalcharts.noaa.gov>

Office for Coastal Management - <http://www.coast.noaa.gov>

Ocean Predictions Center - <http://www.opc.ncep.noaa.gov>

National Center for Environmental Information - <https://www.ncei.noaa.gov>

National Centers for Environmental Predictions - <http://www.ncep.noaa.gov>

National Climatic Data Center - <http://www.ncdc.noaa.gov>

National Data Buoy Center - <http://www.ndbc.noaa.gov>

National Geodetic Survey - <http://www.ngs.noaa.gov>

National Geophysical Data Center - <http://www.ngdc.noaa.gov>

National Ocean Service - <http://www.oceanservice.noaa.gov>

National Oceanic and Atmospheric Administration - <http://www.noaa.gov>

National Oceanographic Data Center - <http://www.nodc.noaa.gov>

National Weather Service - <http://www.weather.gov>

U.S. Coast Guard - <http://www.uscg.mil>

U.S. Geological Survey - <http://www.usgs.gov>

U.S. Naval Observatory - <http://www.usno.navy.mil>

U.S. Naval Oceanographic Office - <http://www.usno.navy.mil/NAVO>

CORRECTIONS:

Corrections to this publication, after the date of printing, may appear in the Notice to Mariners. They may also appear in the Local Notice to Mariners, published weekly, by the various United States Coast Guard Districts.

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IMPORTANT NOTICES

For the most part, tide predictions for U.S. reference stations are based upon analyses of tide observations for periods of at least one year. Since the extremes of meteorological conditions have been excluded from the analyses and predictions, the predicted tidal heights should be considered as those expected under average weather conditions. During times when weather conditions differ from what is considered average for the area, the mariner must take note of the corresponding differences between predicted levels and those actually observed. Generally, prolonged onshore winds or a low barometric pressure can produce higher levels than predicted, while the opposite can result in lower levels than those predicted.

Exclusive of weather conditions, the astronomical tide is subject to range variations which should be noted. Decreased ranges may be expected near the times when the Moon is in apogee (apogean tides) or in quadrature (neap tides), and increased ranges may be expected when the Moon is in perigee (perigean tides) or in a new or full position (spring tides). A larger diurnal range may also result when the Moon is in its maximum declination (tropic tides). The actual range will depend upon the extent to which combinations of these positions reinforce or detract one from the other. The effect of these astronomical lineups is included in the predictions and may be apparent upon inspection.

The mariner may be kept aware of the times of these astronomical events by referring to the astronomical data listed in this book. He should realize, however, that there is generally a time lag from a few hours to several days from the time of the astronomical event to the time of the resultant tide. During times of storm surges or when extreme weather conditions are imminent, the mariner should closely follow local weather forecasts as they relate to the effects upon the tide levels.

DAYLIGHT-SAVING TIME IS NOT USED IN THIS PUBLICATION. All daily tide predictions and predictions compiled by the use of Table 2 data are based on the standard time meridian indicated for each location. Predicted times may be converted to daylight-saving times, where necessary, by adding 1 hour to these data. In converting times from the Astronomical Data on the inside back cover, it should be remembered that daylight saving time is based on a meridian 15° east of the normal standard meridian for a particular place.

NOS, in partnership with other agencies and institutions, has established a series of Physical Oceanographic Real Time Systems (PORTS[®]) in selected areas. These PORTS[®] sites provide constantly updated information on tide and tidal current conditions, water temperature, and weather conditions. This information is updated every six minutes. PORTS[®] sites are currently in operation at several major harbors with future sites to be added. The information is accessible through a computer data connection or by a voice response system at the following numbers:

PORTS [®] SITES	VOICE ACCESS	INTERNET ACCESS
CAPE COD	888-714-2776	www.tidesandcurrents.noaa.gov
CHARLESTON HARBOR	855-216-2137	"
CHERRY POINT	888-817-7794	"
CHESAPEAKE BAY	866-CH-PORTS (866-247-6787)	"
CORPUS CHRISTI	866-728-1897	"
CUYAHOGA	800-376-1192	"
DELAWARE RIVER & BAY	866-30-PORTS (866-307-6787)	"
HOUSTON / GALVESTON	866-HG-PORTS (866-447-6787)	"
HUMBOLDT BAY	855-876-5015	"
JACKSONVILLE	855-901-1549	"
LAKE CHARLES	888-817-7692	"
LOS ANGELES / LONG BEACH	Not Available	"
LOWER COLUMBIA RIVER	888-53-PORTS (888-537-6787)	"
LOWER MISSISSIPPI RIVER	888-817-7767	"
MATAGORDA BAY	888-524-9765	"
MIAMI	888-270-6145	"

IMPORTANT NOTICES

PORTS® SITES	VOICE ACCESS	INTERNET ACCESS
MOBILE BAY	877-84-PORTS (877-847-6787)	www.tidesandcurrents.noaa.gov
MORGAN CITY	888-312-4113	“
NARRAGANSETT BAY	866-75-PORTS (866-757-6787)	“
NEW HAVEN	888-80-PORTS (888-807-6787)	“
NEW LONDON	855-626-0509	“
NEW YORK/NEW JERSEY	866-21-PORTS (866-217-6787)	“
PASCAGOULA	888-257-1857	“
PORT EVERGLADES	866-213-5269	“
PORT FOURCHON	855-687-2084	“
PORT OF ANCHORAGE	866-AK-PORTS (866-257-6787)	“
SABINE NECHES	888-257-1859	“
SAN FRANCISCO BAY	866-SB-PORTS (866-727-6787)	“
SAVANNAH	855-907-3136	“
SOO LOCKS	301-713-9596	“
TACOMA	888-60-PORTS (888-607-6787)	“
TAMPA BAY	866-TB-PORTS (866-827-6787)	“
TOLEDO	888-547-9131	“



PUBLISHED CAUTIONARY NOTICES

Published in Local Notice to Mariners and United States Coast Pilot Notices

QUARTERLY UPDATES TO THE NOAA TIDE PREDICTIONS SERVICE

The NOAA, National Ocean Service's, Center for Operational Oceanographic Products and Services (CO-OPS) provides electronic tide predictions for more than 3000 locations around the US, Caribbean, and Pacific Islands as part of the NOAA Tide Predictions service of the CO-OPS Tides & Currents website. <http://tidesandcurrents.noaa.gov>

The NOAA Tide Predictions service uses the most up-to-date information available in order to provide accurate tide predictions. Updates to the predictions provided by the NOAA Tide Predictions service, based on newly obtained or analyzed data, are released quarterly.

The third quarterly update for 2013 to NOAA Tide Predictions service was released the week of July 8th, 2013. Changes this quarter include more than 50 updated stations in Alaska. Five new harmonic stations have been added for the coast of Alaska resulting in subordinate stations being recalculated to use these new harmonic stations as reference for providing tide predictions. These updates will be reflected in the 2014 Tide Table publication for the West Coast of North and South America including the Hawaiian Islands. A listing of the stations effected by this quarterly update, as well as previous quarterly updates, are available through the NOAA Tide Predictions service of the CO-OPS Tides & Currents website. http://tidesandcurrents.noaa.gov/tide_predictions.shtml

For additional information, please contact CO-OPS via e-mail at Tide.Predictions@noaa.gov or (301) 713-2815.

(Issued: July 10, 2013)

IMPORTANT NOTICES

UPDATE TO THE 2012 EDITION OF THE NOS TIDE TABLES

The NOAA National Ocean Service's Center for Operational Oceanographic Products and Services (CO-OPS) is updating the tide predictions published for the Bristol Bay region of Alaska within the 2012 Tide Tables – West Coast of North and South America. Two new reference stations have been added to this region:

Bethel, Kuskokwim River, AK
Platinum, AK

Secondary stations in this area have been updated to use these new reference stations.

(Issued: October 1, 2011)

THE NARROWS, PUGET SOUND, WASHINGTON

Tidal current speeds at The Narrows, Puget Sound, Washington have been reported by the U.S. Coast Guard and other reliable sources as being significantly higher than predicted. Until such time as new tidal current data can be collected to update predictions at this location, extreme caution should be used while navigating the area.

(Issued October 1, 2008)

CHANGES TO 2004 AND FUTURE EDITIONS OF THE NOS TIDE TABLES

The National Ocean Service's, Center for Operational Oceanographic Products and Services (CO-OPS) is continuing to work on updating tidal data for the 1983-2001 Tidal Epoch. The updated information will begin to appear in the 2004 edition of the published Tide Tables and is expected to be completed for the 2005 Tide Tables. In conjunction with the 1983-2001 Tidal Epoch update, CO-OPS has started a comprehensive review of the secondary stations listed in the published Tide Tables. As a result of this review, there will be numerous changes to the stations listed in the "Table 2 - Tidal Differences and Other Constants" pages of the published Tide Tables and in the CO-OPS web products. These changes will include the addition of new stations, removal of obsolete stations, and updating information for other existing stations. These changes will begin to appear in the 2004 edition of the published Tide Tables and are expected to continue for several years.

Tables in which U.S. stations will be affected by the 1983-2001 Epoch and Table 2 station review include:

- Tide Tables - East Coast of North and South America, Including Greenland
- Tide Tables - West Coast of North and South America, Including the Hawaii Islands
- Tide Tables - Central and Western Pacific Ocean and Indian Ocean

(Issued October 1, 2003)

TIDAL CURRENT PREDICTIONS INSIDE U.S. ESTUARIES

At present there are several U.S. estuaries with operational Physical Oceanographic Real Time Systems (PORTS) installed. PORTS systems are presently being installed in several additional estuaries. Over the next ten years there are projected to be twenty or more additional systems installed. In the past, the tidal current reference station has always been located at the entrance to each estuary. All tidal current secondary stations both inside and outside (along the coast) have been referred to the reference station at the entrance to the estuary. This will no longer be the case in estuaries with an operational PORTS system.

Estuaries with an operational PORTS system will have at least two reference stations. One will be the historic station at the entrance to the estuary. All secondary stations along the coast will continue to be referred to this station. The second tidal current reference station will be the primary PORTS station within the estuary. All secondary locations within the estuary itself will be referred to this location. Depending on the circulation dynamics of the estuary, daily tidal current predictions may be provided for one or more additional stations within the estuary.

(Issued October 1, 1999)

IMPORTANT NOTICES

CHIGNIK, ALASKA

The US Army Corps of Engineers (USACOE) is planning the construction of a Small Boat Harbor in Chignik, AK. The construction will include dredging and the construction of a breakwater. Official published Tide and Tidal Current predictions will be degraded once the project begins. Tidal Currents will be effected the most. From the beginning of the project until a resurvey of the area can be completed, Tide and Tidal Current predictions should be used with caution. Tidal Current predictions should be used only with extreme caution. Therefore, until such time as a resurvey of the area is conducted, the National Oceanic and Atmospheric Administration, National Ocean Service will be unable to provide the accurate Tide and Tidal Current predictions necessary for marine safety and navigation in this area.

(Issued May 30, 1997)

NEPTUNE BEACH, WASHINGTON

Puget Sound Pilots report that observed tidal currents in the vicinity of Neptune Beach, WA deviate significantly from official published predictions. Reliable sources report that the observed velocities are close to double the predicted values and that the times are up to 1 hour earlier than predicted. Extreme caution should be exercised in this vicinity by all vessels especially tankers passing through the area approaching oil refineries. Funding for a resurvey of the area and/or the installation of a real-time monitoring system is not presently available. Therefore, until such time as real-time system is installed or a resurvey of the area conducted, the National Oceanic and Atmospheric Administration, National Ocean Service will be unable to provide the accurate Tidal Current predictions necessary for marine safety and navigation in this area.

(Issued May 30, 1997)

GRAYS HARBOR, WASHINGTON

Tidal Currents in Grays Harbor have been significantly altered by dredging and construction activities. Tidal predictions for the Tidal Reference Station at Aberdeen have been updated to reflect these changes. Tidal Current predictions for this area should be considered questionable and potentially dangerous to rely upon. Funding for a real-time system to monitor the Tidal Currents or a resurvey of this area is not available at this time. Therefore, until such time as a real-time system is installed or a resurvey of the area conducted, the National Oceanic and Atmospheric Administration, National Ocean Service will be unable to provide accurate Tidal Current predictions necessary for marine safety and navigation in this area.

(Issued June 5, 1996)

SAN DIEGO, CALIFORNIA

The US Army Corps of Engineers (COE) is planning a dredging project for the US Navy in the area of the North Island Naval Base in San Diego Harbor. This project calls for both deepening and widening the channel to accommodate larger naval vessels. Such actions in the past in other areas have resulted in dramatic changes in the observed Tidal Currents of those areas. Once dredging operations commence, the Tidal Current predictions for this region should be considered questionable and potentially dangerous to rely upon. Tidal predictions will also be affected but to a lesser degree. Funding for a real-time system to monitor the Tidal Currents during the project and a resurvey of the area after COE operations are complete are presently not available. Therefore, once COE operations begin and until such time as a real-time system is installed or a resurvey of the area conducted, the National Oceanic and Atmospheric Administration, National Ocean Service will be unable to provide accurate Tidal Current predictions necessary for marine safety and navigation in this area.

(Issued June 5, 1996)

INTRODUCTION

Tide tables for the use of mariners have been published by the National Ocean Service (formerly the Coast and Geodetic Survey) since 1853. For a number of years these tables appeared as appendixes to the annual reports of the Superintendent of the Survey, and consisted of detailed instructions for enabling the mariner to make his own prediction of tides as the occasion arose.

The first tables to give predictions for each day were those for the year 1867. They gave the times and heights of high waters only and were published in two separate parts, one for the Atlantic coast and the other for the Pacific coast of the United States. Together they contained daily predictions for 19 stations and tidal differences for 124 stations. A few years later predictions for the low waters were also included, and for the year 1896 the tables were extended to include the entire maritime world, with full predictions for 70 ports and tidal differences for about 3,000 stations.

The tidal tables are now issued in four volumes, as follows: *Europe and West Coast of Africa (Including the Mediterranean Sea)*; *East Coast of North and South America (Including Greenland)*; *West Coast of North and South America (Including the Hawaiian Islands)*; *Central and Western Pacific Ocean and Indian Ocean*. Together, they contain daily predictions for more than 250 reference ports and differences and other constants for about 6,500 stations.

This edition of the Tide Tables, *West Coast of North and South America*, contains full daily predictions for more than 60 reference ports and differences and other constants for more than 1,200 stations in North America, South America, and the Hawaiian Islands. It also contains a table for obtaining the approximate height of the tide at any time, a table of local mean time of sunrise and sunset for every 5th day of the year for different latitudes, a table for the reduction of local mean time to standard time, a table of moonrise and moonset for 6 places, a table of the Greenwich mean time of the Moon's phases, apogee, perigee, greatest north and south and zero declination, and the time of the solar equinoxes and solstices, and a glossary of terms.

Up to and including the tide tables for the year 1884, all the tide predictions were computed by means of auxiliary tables and curves constructed from the results of tide observations at the different ports. From 1885 to 1911, inclusively, the predictions were generally made by means of the Ferrel tide-predicting machine. From 1912 to 1965, inclusively, they were made by means of the Coast and Geodetic Survey tide-predicting machine No. 2. Since 1966, predictions have been made by electronic computer.

The information presented in Table 4 - *Local mean time of sunrise and sunset* and in Table 6 - *Moonrise and Moonset* is computed by the National Ocean Service using the Interactive Computer Ephemeris Program provided by the United States Naval Observatory.

In the preparation of these tables all available observations were used. In some cases, however, the observations were insufficient for obtaining final results. As further information becomes available it will be included in subsequent editions. All persons using these tables are invited to send information or suggestions for increasing their usefulness to the National Ocean Service, Oceanographic Division, 1305 East-West Highway, N/OPS3, Silver Spring, Maryland 20910, U.S.A.

In accordance with cooperative arrangements between the National Ocean Service and the authorities listed below, predictions for the following stations appear in this issue:

Canadian Hydrographic Service.— Victoria and Vancouver, B.C.

Servicio Hidrografico y Oceanografico de la Armada, Chile.—Antofagasta, Cabo de Hornos, Puerto Montt, Punta Arenas, and Valparaiso.

LIST OF REFERENCE STATIONS

Station Name	Page	Datum below mean sea-level	Updated	Data Series
Aberdeen, Washington.....	120	5.56	1994	1 year beginning 6/1/1982
Alitak, Alaska.....	196	6.14	2014	1 year (April 2007 - March 2008)
*Anchorage, Alaska.....	188	16.04	2019	5 years (2012-2016)
Antofagasta, Chile.....	20	2.62		
*Arena Cove, California.....	96	3.15	2019	5 years (2012-2016)
Astoria (Tongue Pt.), Oregon.....	112	4.39	2016	6 years (2007-2012)
Balboa, Panama.....	52	8.43		
Bethel, Kuskokwim River, Alaska.....	228	1.62	2012	4 months (6-10/2010)
Buenaventura, Colombia.....	48	6.48		
Cabo de Hornos, Chile.....	4	4.43		
Callao, Peru.....	28	1.69		
Cape Krusenstern, Alaska.....	240	0.23	2014	3 months (July-Sept 2011)
Charleston, Oregon.....	108	4.08	2003	5 years (1996-2000)
Cherry Point, Washington.....	136	5.26	2017	6 years (2009-2014)
Cordova, Alaska.....	168	6.70	2007	5 years (2000-2004)
Crescent City, California.....	104	3.75	2007	4 years (2001-2004)
Elfin Cove, Port Althorp, Alaska.....	160	5.75	2014	6 Months (Sept 2005 -Feb 2006)
Guayaquil, Ecuador.....	36	6.35		
Guaymas, Mexico.....	68	1.52		
Hilo, Hawaii Island, Hawaii.....	268	1.19	2002	5 years (1994-1998)
Honolulu, Oahu Island, Hawaii.....	256	0.85	2003	5 years (1996-2000)
Humboldt Bay, California.....	100	3.74	2007	5 years (2000-2004)
Johnston Island.....	272	1.07	2002	5 years (1994-1998)
Juneau, Alaska.....	152	8.53	2007	5 years (2000-2004)
Kahului, Maui Island, Hawaii.....	264	1.16	2002	5 years (1994-1998)
Ketchikan, Alaska.....	148	8.04	2007	5 years (2000-2004)
Kodiak, Alaska.....	192	4.48	2017	6 years (2009-2014)
La Libertad, Ecuador.....	40	3.50		
La Union, El Salvador.....	60	5.10		
Los Angeles (Outer Harbor), California.....	76	2.84	2007	5 years (2000-2004)
Massacre Bay, Attu Island, Alaska.....	212	1.94	1985	369 days beginning 6/12/1943
Matarani, Peru.....	24	1.36		
Moku O Loe, Oahu Island, Hawaii.....	260	1.07	2002	4 years (1993-1996)
*Monterey, California.....	84	2.88	2019	5 years (2012-2016)
Nawiliwili, Kauai Island, Hawaii.....	252	0.85	2002	4 years (1993-1996)
Neah Bay, Washington.....	124	4.30	2007	5 years (2000-2004)
Nikiski, Alaska.....	184	11.21	2007	5 years (2000-2004)
Nome, Alaska.....	236	0.84	2001	2 years (1993,1998)
Platinum, Alaska.....	224	3.85	2012	2 months (6-7/2007)
*Port Chicago, Suisun Bay, California.....	92	2.55	2019	5 years (2012-2016)
Port Moller, Bristol Bay, Alaska.....	220	5.84	2016	5 years (2007-2012)
Port San Luis, California.....	80	2.83	2003	5 years (1996-2000)
Port Townsend, Washington.....	128	4.69	2007	5 years (2000-2004)
Prudhoe Bay, Alaska.....	244	4.50	1998	4 years (1989-1995)
Puerto Montt, Chile.....	12	11.81		
Punta Arenas, Chile.....	8	4.00		
Puntarenas, Costa Rica.....	56	4.57		
Salina Cruz, Mexico.....	64	1.93		
San Cristobal, Galapagos Island, Ecuador ...	44	3.06		
San Diego, California.....	72	2.94	2004	5 years (1997-2001)
San Francisco (Golden Gate), California.....	88	3.13	1999	5 years (1991-1995)
Sand Island, Midway Islands.....	248	0.65	2002	5 years (1994-1998)

LIST OF REFERENCE STATIONS

Station Name	Page	Datum below mean sea-level	Updated	Data Series
*Sand Point, Popof Island, Alaska.....	200	3.84	2019	5 years (2012-2016)
Seattle, Washington	132	6.63	2007	5 years (2000-2004)
Seldovia, Alaska.....	180	9.50	1999	1 year beginning 2/1/1996
*Seward, Alaska.....	176	5.56	2019	5 years (2012-2016)
Sitka, Alaska.....	156	5.25	2007	5 years (2000-2004)
Sweeper Cove, Adak Island, Alaska	208	2.22	2016	6 years (2007-2013)
Talara, Peru.....	32	2.59		
Toke Point, Willapa Bay, Washington	116	4.79	2005	5 years (1998-2002)
Unalakleet, Alaska.....	232	1.78	2014	2 months (July-Aug 2011)
Unalaska, Alaska.....	204	2.19	2007	5 years (2000-2004)
Valdez, Alaska.....	172	6.43	2007	5 years (2000-2004)
Valparaiso, Chile	16	2.99		
Vancouver, British Columbia	144	10.00		
Victoria, British Columbia	140	6.10		
Village Cove, St. Paul Bay, Alaska.....	216	1.96	2014	1 year (2007)
Yakutat, Alaska	164	5.28	2017	5 years (2010-2014)

* New or updated station

Each datum figure above represents the difference in elevation between the local mean sea (or river) level and the reference level from which the predicted heights in table 1 were calculated.

Local mean sea level datum should not be confused with the National Geodetic Vertical Datum which is the datum of the geodetic level net of the United States. Relationships between geodetic and local tidal datums are published in connection with the tidal benchmark data of the National Ocean Service.

TABLE 1.— DAILY TIDE PREDICTIONS

EXPLANATION OF TABLE

This table contains the predicted times and heights of the high and low waters for each day of the year at a number of places which are designated as *reference stations*. By using tidal differences from Table 2, one can calculate the approximate times and heights of the tide at many other places which are called *subordinate stations*. Instructions on the use of the tidal differences are found in the explanation of Table 2.

High water is the maximum height reached by each rising tide, and low water is the minimum height reached by each falling tide. High and low waters can be selected from the predictions by the comparison of consecutive heights. Because of diurnal inequality at certain places, however, there may be a difference of only a few tenths of a foot between one high water and low water of a day, but a marked difference in height between the other high water and low water. Therefore, in using the Tide Tables it is essential, to note carefully the heights as well as the times of the tides.

Time.— The kind of time used for the predictions at each reference station is indicated by the time meridian at the bottom of each page. **Daylight-saving time is not used in this publication.** If daylight-saving time is required, add one (1) hour to the predicted time.

Datum.— The datum from which the predicted heights are recorded is the same as that used for the nautical charts of the locality. The datum for the Pacific coast of the United States (including Hawaii and Alaska) is the mean of the lower of the two low waters of each day. For foreign coasts a datum approximating to mean low water springs, Indian spring low water, or the lowest possible low water is generally used. The depression of the datum below mean sea level (MSL) for each of the reference stations of this volume is given on the preceding page.

Depth of water.— The nautical charts published by the United States and other maritime nations show the depth of the water as referred to a low water datum corresponding to that from which the predicted tidal heights are recorded. To find the actual depth of water at any time, the height of the tide should be added to the charted depth. If the height of the tide is negative—that is, if there is a minus sign (—) before the tabular height—the height should be subtracted from the charted depth. For any time between high and low water, the height of the tide may be estimated from the heights of the preceding and the following tides, or Table 3 may be used. The reference stations in Table 1 contain the heights in centimeters as well as in feet.

Variation in sea level.— Changes in winds and barometric conditions cause variations in sea level from day to day. In general, with onshore winds or a low barometer the heights of both the high and low waters will be higher than predicted, while with offshore winds or a high barometer they will be lower. There are also seasonal variations in sea level, but these variations have been included in the predictions for each station. At ocean stations the seasonal variation in sea level is usually less than half a foot.

At stations on tidal rivers the average seasonal variation in river level due to freshets and droughts may be considerably more than a foot. The predictions for these stations include an allowance for this seasonal variation representing average freshet and drought conditions. Unusual freshets or droughts, however, will cause the tides to be higher or lower, respectively, than predicted.

Number of tides.— There are usually two high and two low waters in a day. Tides follow the Moon more closely than they do the Sun, and the lunar or tidal day is about 50 minutes longer than the solar day. This causes the tide to occur later each day, and a tide that has occurred near the end of one calendar day will be followed by a corresponding tide that may skip the next day and occur in the early morning of the third day. Thus, on certain days of each month only a single high or a single low water occurs. At some stations, during portions of each month, the tide becomes diurnal—that is, only one high and one low water will occur during the period of a lunar day.

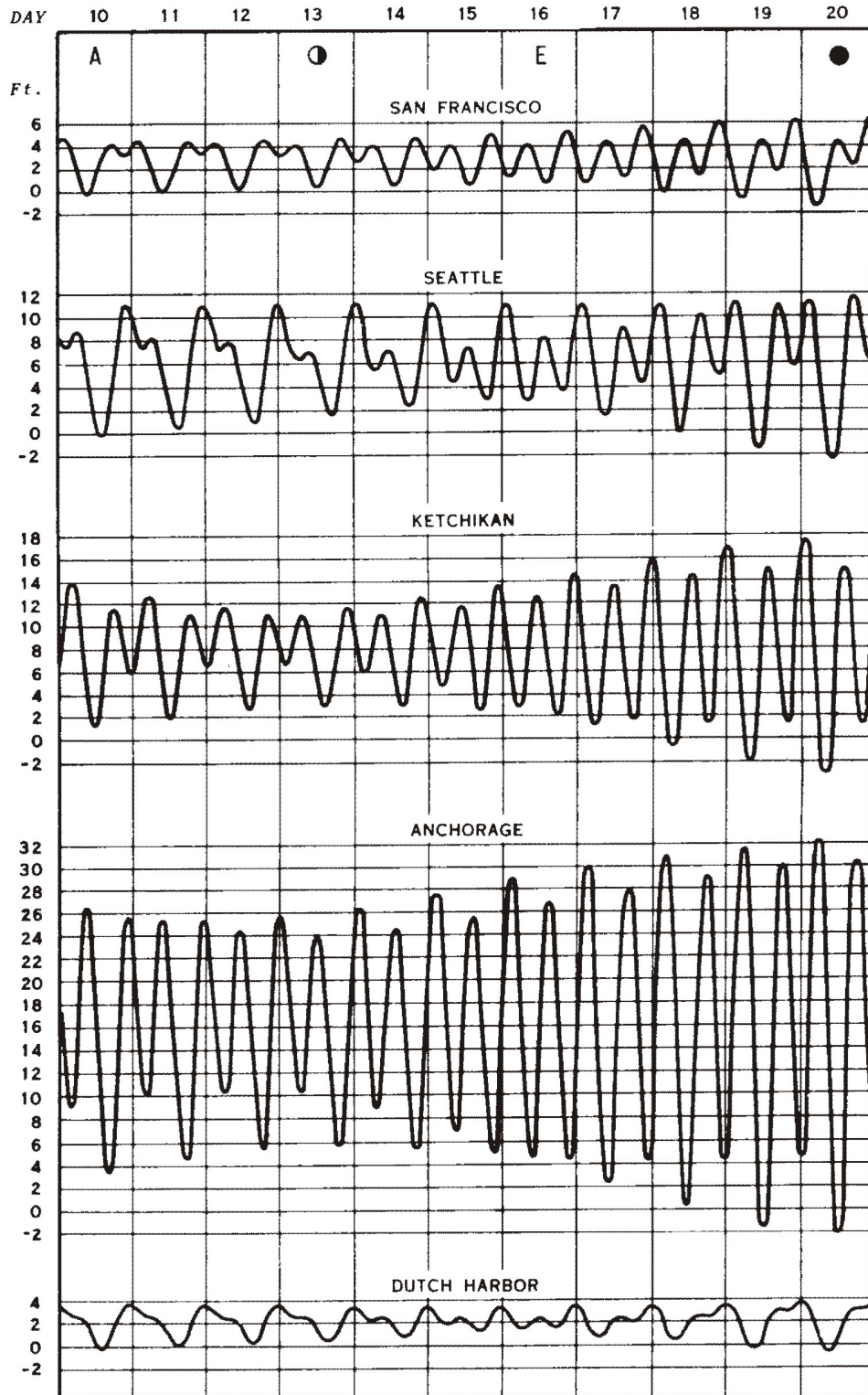
Relation of tide to current.— In using these tables of tide predictions bear in mind that they give the times and heights of high and low waters and not the times of turning of the current or slack water. For stations on the outer coast there is usually a small difference between the time of high or low water

TABLE 1.—DAILY TIDE PREDICTIONS

and the beginning of ebb or flood current, but for places in narrow channels, landlocked harbors, or on tidal rivers, the time of slack water may differ by several hours from the time of high or low water stand. The relation of the times of high and low water to the turning of the current depends upon a number of factors, so no simple or general rule can be given. For the predicted time of slack water, and other current data, reference should be made to the Tidal Current Tables prepared by the National Ocean Service, for the Atlantic and the Pacific coast of North America and Asia.

Typical tide curves.— The variations in the tide from day to day and from place to place are illustrated on the opposite page by the tide curves for representative ports along the Pacific coast of the United States. Note that one of the chief characteristics of the tide in this region is diurnal inequality, i.e., the difference in heights of successive high waters or low waters. The largest inequality is in the low waters although at Seattle there is also considerable difference between the two high waters on certain days. The importance of this inequality at Seattle is brought out by the curve which shows that, at times, the two high waters of a day differ by more than 4 feet and the two low waters differ by more than 8 feet. At Ketchikan and Anchorage the inequality is less pronounced because of the large range of tide. In these localities the principal variations in the tide follow the changes in the Moon's phase and distance. The tide at Anchorage is one of the largest in the world. At Unalaska and Dutch Harbor the tide is such that it is semidiurnal around the times the Moon is on the Equator but becomes diurnal around the times of maximum north or south declination of the Moon.

TYPICAL TIDE CURVES FOR UNITED STATES PORTS



A discussion of these curves is given on the preceding page.

Lunar data: A - Moon in apogee
 ☉ - last quarter
 E - Moon on Equator
 ● - new Moon

Cabo de Hornos, Chile, 2019

Times and Heights of High and Low Waters

January				February				March																					
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height																
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm		h	m	ft	cm										
1 Tu	0025	7.0	212		16 W	0559	3.0	90		1 F	0136	7.3	221		16 Sa	0038	7.4	226		1 F	0015	7.1	217		16 Sa	0612	2.1	63	
	0654	2.2	68			1156	5.5	169			0834	1.9	59			0733	1.9	59			0713	2.1	64			1224	5.6	171	
	1254	6.0	182			1747	2.9	88			1441	5.5	168			1340	5.6	170			1323	5.6	170			1745	3.3	100	
	1852	2.5	76								2003	3.3	100			1902	3.1	93			1848	3.4	105						
2 W	0116	7.1	217		17 Th	0021	6.7	205		2 Sa	0224	7.3	222		17 Su	0134	7.8	237		2 Sa	0106	7.1	217		17 Su	0015	7.6	231	
	0758	2.0	61			0700	2.6	78			0924	1.9	57			0830	1.6	48			0805	2.1	63			0711	1.8	54	
	1359	5.8	176			1259	5.5	167			1532	5.5	168			1438	5.7	175			1416	5.6	170			1322	5.8	176	
	1942	2.8	84			1836	3.0	90			2050	3.3	102			2001	2.9	88			1938	3.5	106			1847	3.1	94	
3 Th	0205	7.3	222		18 F	0110	7.1	216		3 Su	0309	7.3	222		18 M	0231	8.1	247		3 Su	0155	7.1	217		18 M	0114	7.8	239	
	0855	1.8	55			0759	2.1	65			1008	1.8	56			0925	1.2	38			0852	2.1	63			0807	1.5	46	
	1459	5.6	172			1402	5.5	168			1617	5.5	168			1533	6.0	182			1501	5.6	172			1417	6.0	184	
	2031	3.0	90			1929	3.0	90			2135	3.3	102			2100	2.7	82			2026	3.4	104			1949	2.8	86	

Time meridian 60° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Cabo de Hornos, Chile, 2019

Times and Heights of High and Low Waters

April				May				June											
Day	Time		Height		Day	Time		Height		Day	Time		Height						
	h m	ft	m	cm		h m	ft	m	cm		h m	ft	m	cm					
1 M	0123	6.9	210		16 Tu	0100	7.7	234		1 Sa	0242	6.0	184	16 Su	0337	6.2	188		
	0814	2.2	68			0744	1.6	48			0836	2.7	83			0916	2.6	79	
	1427	5.8	178			1358	6.5	197			1457	7.0	214			1533	7.8	239	
	2001	3.4	104			1944	2.6	80			2128	2.3	69			2221	1.3	39	
2 Tu	0210	6.9	210		17 W	0200	7.7	236		2 Su	0330	6.0	182	17 M	0429	6.0	184		
	0854	2.3	69			0835	1.5	47			0913	2.8	85			0959	2.8	85	
	1505	6.0	182			1447	6.8	208			1534	7.3	222			1616	7.8	239	
	2046	3.3	100			2044	2.2	68			2212	1.9	59			2308	1.2	38	
3 W	0255	6.9	210		18 Th	0258	7.7	234		3 M	0417	5.9	180	18 Tu	0518	5.9	179		
	0931	2.3	70			0922	1.6	50			0950	2.9	88			1041	3.0	92	
	1541	6.1	187			1534	7.2	219			1612	7.5	229			1658	7.7	236	
	2130	3.1	95			2141	1.9	58			2257	1.7	51			2353	1.3	41	
4 Th	0338	6.8	208		19 F	0354	7.5	229		4 Tu	0505	5.8	178	19 W	0605	5.7	175		
	1006	2.4	73			1009	1.8	56			1029	3.0	91			1123	3.2	98	
	1616	6.3	191			1620	7.5	228			1653	7.7	235			1740	7.5	230	
	2212	3.0	90			2238	1.6	50			2344	1.5	46						
5 F	0420	6.7	204		20 Sa	0450	7.2	220		5 W	0554	5.7	175	20 Th	0038	1.5	45		
	1040	2.5	77			1055	2.1	64			1111	3.1	94			0652	5.6	170	
	1651	6.4	196			1706	7.6	233			1736	7.8	238			1205	3.4	104	
	2255	2.8	86			2333	1.5	46								1822	7.3	223	
6 Sa	0502	6.5	199		21 Su	0546	6.9	210		6 M	0033	1.4	43	21 F	0122	1.7	52		
	1113	2.7	82			1140	2.5	75			0646	5.7	173			0738	5.4	166	
	1725	6.5	199			1753	7.7	234			1157	3.2	97			1248	3.6	109	
	2337	2.7	83								1824	7.8	238			1904	7.0	214	
7 Su	0545	6.3	193		22 M	0028	1.5	46		7 Tu	0125	1.4	42	22 Sa	0206	1.9	58		
	1146	2.9	88			0642	6.5	199			0741	5.6	171			0826	5.4	164	
	1800	6.7	203			1226	2.8	86			1250	3.3	100			1334	3.7	114	
						1840	7.6	231			1917	7.7	236			1949	6.7	205	
8 M	0021	2.6	80		23 Tu	0124	1.6	49		8 W	0220	1.4	43	23 Su	0251	2.1	65		
	0630	6.1	186			0739	6.2	188			0838	5.6	172			0914	5.3	163	
	1220	3.1	94			1314	3.2	97			1350	3.3	102			1427	3.8	117	
	1837	6.8	206			1928	7.4	226			2015	7.6	231			2037	6.4	196	
9 Tu	0108	2.5	77		24 W	0220	1.8	54		9 Th	0316	1.5	45	24 M	0336	2.3	71		
	0719	5.9	179			0838	5.9	180			0937	5.7	175			1003	5.4	165	
	1256	3.3	100			1404	3.5	107			1459	3.3	101			1526	3.8	117	
	1917	6.9	209			2018	7.2	219			2118	7.3	224			2130	6.2	188	
10 W	0159	2.4	74		25 Th	0317	1.9	59		10 F	0414	1.6	49	10 Sa	0421	2.5	76		
	0811	5.7	173			0938	5.7	174			1036	6.0	183			1051	5.6	170	
	1337	3.4	105			1458	3.7	114			1512	4.0	121			1631	3.8	115	
	2002	7.0	212			2111	7.0	213			2122	6.6	201			2227	5.9	180	
11 Th	0254	2.3	71		26 F	0414	2.1	64		11 M	0510	1.7	53	11 Tu	0506	2.6	80		
	0909	5.5	169			1038	5.6	171			1133	6.3	193			1136	5.8	177	
	1425	3.6	109			1556	3.9	118			1726	2.9	89			1735	3.5	108	
	2054	7.1	216			2206	6.8	207			2333	6.9	209			2327	5.7	175	
12 F	0353	2.2	66		27 Sa	0509	2.2	67		12 W	0604	1.9	57	12 Th	0549	2.8	84		
	1011	5.5	168			1135	5.6	171			1226	6.7	205			1219	6.1	186	
	1523	3.6	110			1655	3.9	118			1836	2.5	77			1834	3.2	98	
	2152	7.2	220			2302	6.7	204											
13 Sa	0455	2.0	61		28 Su	0601	2.3	70		13 M	0039	6.7	203	13 Tu	0026	5.6	172		
	1113	5.6	171			1225	5.7	173			0656	2.0	62			0632	2.8	86	
	1629	3.5	108			1752	3.8	116			1316	7.1	217			1300	6.4	196	
	2255	7.4	225			2356	6.6	202			1940	2.1	64			1928	2.8	86	
14 Su	0554	1.8	56		29 M	0648	2.3	71		14 W	0143	6.5	198	14 Th	0123	5.6	171		
	1212	5.8	177			1309	5.8	178			0744	2.2	68			0714	2.9	87	
	1736	3.3	101			1846	3.6	110			1404	7.5	228			1340	6.8	208	
	2358	7.5	230								2038	1.7	52			2018	2.4	72	
15 M	0651	1.7	51		30 Tu	0048	6.6	201		15 F	0242	6.3	193	15 Sa	0217	5.6	171		
	1306	6.1	186			0730	2.4	72			0831	2.4	73			0755	2.9	87	
	1841	3.0	92			1349	6.0	184			1449	7.7	235			1421	7.2	219	
						1936	3.4	103			2131	1.4	44			2105	1.9	59	

Time meridian 60° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Punta Arenas, Chile, 2019

Times and Heights of High and Low Waters

July				August				September											
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height						
	h	m		h	m		h	m		h	m		h	m					
1 M	0500	1.5	46	16 Tu	0006	3.9	120	1 Th	0616	1.1	35	16 F	0118	4.4	133	1 Su	0203	5.1	154
	1207	6.8	206		0625	0.8	25		1331	7.3	221		0732	1.0	30		0820	1.1	35
	1840	3.5	107		1301	6.9	209		2005	3.1	94		1357	6.8	206		1439	7.2	219
	2330	4.4	134		1929	2.7	82		2231	4.2	127		2022	2.2	67		2100	2.1	63
					2206*	3.8	115												
2 Tu	0550	1.3	39	17 W	0049	4.0	121	2 F	0541	1.1	34	17 Sa	0150	4.8	145	2 M	0249	5.7	174
	1258	7.2	219		0706	0.7	21		1418	7.5	229		0806	1.0	31		0907	1.2	37
	1932	3.3	101		1341	7.0	213		2047	2.9	87		1426	6.8	208		1517	7.1	215
	2212	4.3	130		2009	2.5	77		2321	4.4	135		2051	2.0	62		2138	1.7	52
3 W	0029	4.2	129	18 Th	0125	4.1	125	3 Sa	0046	4.2	128	18 Su	0220	5.2	157	3 Tu	0332	6.2	190
	0641	1.1	34		0741	0.7	21		0207	4.4	133		0835	1.0	32		0950	1.4	44
	1346	7.5	229		1416	7.0	214		0825	1.0	29		1453	6.9	210		1551	6.9	209
	2020	3.2	98		2045	2.4	72		1501	7.6	231		2115	1.9	57		2213	1.3	41
									2128	2.6	79								

Time meridian 60° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
 Heights are referred to the chart datum of soundings.
 * See Page 276 for the remaining tides on this day.

Puerto Montt, Chile, 2019

Times and Heights of High and Low Waters

January				February				March																					
Time	Height			Time	Height			Time	Height			Time	Height																
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm		h	m	ft	cm										
1 Tu	0425	6.2	190		16 W	0251	9.2	279		1 F	0610	5.3	163		16 Sa	0507	7.1	217		1 F	0506	7.0	214		16 Sa	0334	8.4	257	
	1031	17.4	531			0859	15.4	470			1214	17.6	537			1115	16.7	509			1114	16.1	491			0954	15.2	464	
	1644	6.0	183			1515	8.4	255			1811	6.2	189			1717	7.1	216			1711	7.9	240			1559	8.8	268	
	2301	19.0	579			2139	17.0	519			2332	19.8	602			2324	18.4	560			2216	17.7	538						
2 W	0525	5.3	163		17 Th	0407	8.1	247		2 Sa	0024	20.2	615		17 Su	0607	5.0	153		2 Sa	0554	5.7	174		17 Su	0459	6.6	200	
	1129	18.0	549			1013	16.2	494			0651	4.5	137			1214	18.5	563			1200	17.3	528			1111	17.1	520	
	1736	5.5	167			1623	7.5	228			1253	18.4	561			1816	5.2	160			1756	6.8	206			1714	6.8	207	
	2351	19.9	607			2241	18.4	562			1849	5.6	171			1906	3.6	109			1832	5.8	178			2325	19.7	601	
3 Th	0615	4.6	140		18 F	0513	6.6	201		3 Su	0100	20.9	636		18 M	0028	21.7	660		3 Su	0005	19.5	595		18 M	0556	4.4	133	
	1217	18.6	568			1118	17.4	529			0726	3.9	120			0658	3.1	93			0631	4.6	141			1205	19.1	583	
	1821	5.1	155			1724	6.3	193			1327	18.9	576			1304	20.1	613			1236	18.3	558			1808	4.6	140	
						2339	20.0	611			1922	5.2	160			1906	3.6	109			1832	5.8	178						
4 F	0034	20.6	628		19 Sa	0610	4.9	150		4 M	0133	21.2	647		19 Tu	0117	23.2	707		4 M	0040	20.4	621		19 Tu	0018	21.7	662	
	0657	4.1	124			1215	18.6	567			0757	3.7	114			0744	1.6	48			0704	3.9	118			0643	2.4	74	
	1259	19.1	581			1819	5.1	154			1358	19.1	581			1349	21.3	650			1307	19.0	579			1250	20.9	637	
	1900	4.9	149								1953	5.2	157			1953	2.3	71			1904	5.1	156			1855	2.7	83	
5 Sa	0111	21.0	640		20 Su	0032	21.6	657		5 Tu	0203	21.2	647		20 W	0202	24.0	732		5 Tu	0111	20.9	638		20 W	0104	23.2	707	
	0735	3.9	118			0702	3.4	103			0827	3.8	117			0826	0.8	25			0733	3.4	105			0725	1.1	34	
	1336	19.2	585			1308	19.8	602			1427	19.0	579			1432	21.9	669			1336	19.4	592			1331	22.1	675	
	1935	4.9	150			1910	3.9	119			2023	5.2	160			2036	1.8	54			1934	4.7	142			1938	1.5	45	
6 Su	0146	21.1	642		21 M	0123	22.8	694		6 W	0231	20.9	637		21 Th	0245	24.0	732		6 W	0141	21.1	643		21 Th	0146	23.9	727	
	0809	4.0	122			0752	2.2	67			0855	4.2	127			0907	0.9	26			0801	3.3	102			0805	0.6	18	
	1409	19.1	582			1357	20.6	627			1456	18.7	570			1512	21.9	667			1404	19.6	597			1410	22.7	691	
	2007	5.2	158			2000	3.1	94			2051	5.6	170			2119	2.0	60			2003	4.5	136			2019	1.0	32	
7 M	0217	20.8	635		22 Tu	0211	23.5	715		7 Th	0259	20.3	620		22 F	0326	23.2	706		7 Th	0209	21.0	639		22 F	0226	23.7	721	
	0841	4.4	133			0839	1.5	47			0922	4.7	144			0946	1.6	50			0828	3.5	107			0842	0.9	27	
	1441	18.7	571			1444	21.0	639			1524	18.3	557			1552	21.2	647			1430	19.5	595			1448	22.5	685	
	2037	5.6	171			2047	2.7	83			2120	6.1	185			2200	2.9	87			2031	4.5	138			2059	1.4	44	
8 Tu	0248	20.3	620		23 W	0258	23.5	715		8 F	0326	19.5	595		23 Sa	0406	21.7	660		8 F	0237	20.5	625		23 Sa	0304	22.6	690	
	0912	4.9	150			0924	1.5	47			0948	5.4	165			1024	3.0	91			0853	3.9	120			0918	1.9	57	
	1513	18.2	555			1530	20.8	635			1551	17.7	541			1632	20.1	614			1456	19.3	588			1525	21.7	661	
	2108	6.2	189			2133	2.9	89			2149	6.7	204			2243	4.3	130			2100	4.8	147			2138	2.5	76	
9 W	0318	19.7	599		24 Th	0343	22.8	695		9 Sa	0353	18.6	567		24 Su	0448	19.7	601		9 Sa	0304	19.8	605		24 Su	0342	21.1	643	
	0942	5.6	171			1008	2.1	65			1015	6.2	188			1104	4.7	143			0919	4.6	139			0954	3.4	103	
	1544	17.6	535			1615	20.3	619			1619	17.2	525			1716	18.8	573			1522	18.9	577			1601	20.4	623	
	2139	6.9	210			2220	3.6	111			2219	7.4	225			2331	6.0	182			2128	5.3	163			2218	4.0	123	
10 Th	0348	18.8	572		25 F	0429	21.5	656		10 Su	0421	17.7	540		25 M	0535	17.7	538		10 Su	0330	19.0	580		25 M	0421	19.2	586	
	1014	6.4	195			1053	3.2	98			1042	6.9	211			1149	6.5	199			0944	5.3	162			1030	5.2	158	
	1617	16.8	513			1701	19.4	592			1648	16.8	511			1811	17.4	531			1548	18.5	563			1641	18.9	577	
	2212	7.6	233			2308	4.8	145			2252	8.0	245								2157	6.0	182			2301	5.7	175	
11 F	0420	17.8	543		26 Sa	0516	19.8	605		11 M	0451	16.8	513		26 Tu	0032	7.6	233		11 M	0358	18.1	552		26 Tu	0506	17.3	526	
	1046	7.2	219			1139	4.6	140			1113	7.6	233			0639	15.7	480			1010	6.1	187			1111	7.1	215	
	1652	16.1	492			1753	18.4	560			1724	16.4	500			1250	8.2	251			1615	18.0	549			1728	17.4	530	
	2248	8.4	256								2332	8.7	265			1926	16.4	499			2229	6.7	205			2356	7.4	226	
12 Sa	0454	16.9	514		27 Su	0003	6.1	187		12 Tu	0531	16.0	488		27 W	0206	8.6	263		12 Tu	0428	17.2	524		27 W	0606	15.5	473	
	1122	7.9	240			0610	18.0	549			1153	8.3	254			0816	14.6	446			1040	7.1	215			1207	8.8	267	
	1732	15.6	476			1232	6.1	185			1814	16.1	491			1426	9.2	281			1649	17.5	532			1837	16.1	490	
	2329	9.1	276			1855	17.4	531								2104	16.3	496			2308	7.5	230						
13 Su	0535	16.0	489		28 M	0111	7.4	226		13 W	0029	9.3	282		28 Th	0354	8.3	252		13 W	0508	16.2	493		28 Th	0121	8.6	261	
	1204	8.5	258			0719	16.4	500			0632	15.2	463			1004	15.0	456			1118	8.0	245			0741	14.5	441	
	1822	15.4	468			1339	7.3	224			1253	9.0	274			1607	8.9	271			1736	16.8	512			1343	9.9	301	
						2012	16.9	516			1927	16.0	489			2227	17.2	523								2016	15.6	474	
14 M	0022	9.5	290		29 Tu	0241	8.0	245		14 Th	0156	9.5	290		14 Th	0002	8.4	257		14 Th	0002	8.4	257		29 F	0312	8.5	258	
	0628	15.4	470			0848	15.6	474			0806	14.7	449			0608	15.1	459			0932	14.8	450						
	1257	8.8	268			1504	8.0	243			1423	9.3	282			1218	9.1	277			1537	9.5	291						
	1923	15.4	470			2135	17.2	524			2058	16.5	504			1850	16.2	494			2149	16.1	492						
15 Tu	0131	9.6	293																										

Puerto Montt, Chile, 2019

Times and Heights of High and Low Waters

July				August				September															
Time		Height		Time		Height		Time		Height		Time		Height									
h	m	ft	cm	h	m	ft	cm	h	m	ft	cm	h	m	ft	cm								
1 M	0601	4.8	146	16 Tu	0113	19.1	582	1 Th	0124	20.3	619	16 F	0203	19.6	597	1 Su	0237	22.5	686	16 M	0231	19.8	605
	1215	21.3	649		0712	4.9	149		0726	3.3	101		0801	4.8	145		0846	1.3	39		0837	4.4	133
	1842	3.8	117		1324	21.4	653		1338	23.4	713		1408	21.2	647		1453	23.7	721		1440	20.0	610
2 Tu	0045	19.2	584	17 W	0149	19.2	585	2 F	0211	21.0	639	17 Sa	0231	19.4	590	2 M	0318	22.1	674	17 Tu	0257	19.4	591
	0647	4.1	125		0747	5.0	151		0814	2.6	80		0830	5.0	152		0929	1.9	57		0906	5.0	151
	1301	22.2	677		1358	21.4	651		1425	23.7	723		1437	20.7	631		1534	22.4	682		1507	19.1	582
3 W	0133	19.7	599	18 Th	0222	19.0	580	3 Sa	0257	21.2	646	18 Su	0259	19.0	578	3 Tu	0358	21.2	646	18 W	0323	18.8	574
	0734	3.6	111		0819	5.2	160		0901	2.5	75		0900	5.4	166		1012	3.1	95		0935	5.7	173
	1348	22.8	694		1429	21.0	640		1511	23.4	712		1505	19.9	607		1617	20.5	625		1535	18.1	551
4 Th	0221	19.9	606	19 F	0254	18.7	569	4 Su	0341	21.0	639	19 M	0327	18.4	562	4 W	0442	19.8	605	19 Th	0351	18.2	555
	0822	3.5	107		0850	5.7	174		0947	2.8	86		0929	6.1	185		1100	4.8	145		1007	6.5	199
	1435	22.9	697		1459	20.4	622		1556	22.4	682		1533	19.0	578		1704	18.4	561		1605	17.1	520
5 F	0310	19.8	603	20 Sa	0325	18.1	553	5 M	0426	20.3	620	20 Tu	0356	17.8	544	5 Th	0533	18.4	561	20 F	0423	17.6	535
	0911	3.7	112		0921	6.3	192		1035	3.7	114		1000	6.8	207		1157	6.5	198		1044	7.4	225
	1523	22.8	686		1530	19.6	597		1642	20.9	636		1602	17.9	547		1804	16.4	499		1643	16.0	489
6 Sa	0359	19.5	594	21 Su	0358	17.5	533	6 Tu	0514	19.4	592	21 W	0426	17.3	526	6 F	0011	7.5	230	21 Sa	0506	16.9	514
	1001	4.1	125		0954	7.0	214		1126	5.0	152		1034	7.6	231		0641	17.1	521		1135	8.2	251
	1613	21.7	661		1602	18.6	568		1733	19.1	581		1634	16.9	516		1319	7.8	238		1740	15.0	458
7 Su	0450	19.0	578	22 M	0433	16.8	513	7 W	0610	18.4	561	22 Th	0501	16.8	511	7 Sa	0136	8.9	270	22 Su	0614	16.3	496
	1053	4.8	147		1030	7.8	237		1226	6.4	194		1113	8.3	253		0813	16.5	504		1255	8.8	269
	1705	20.6	627		1636	17.6	537		1834	17.3	527		1713	16.0	488		1505	7.9	240		1915	14.4	440
8 M	0545	18.4	561	23 Tu	0511	16.3	496	8 Th	0051	6.6	202	23 F	0547	16.4	499	8 Su	0323	8.9	270	23 M	0119	9.6	294
	1151	5.6	172		1110	8.5	260		0718	17.6	536		1206	8.9	271		0944	17.1	522		0753	16.2	495
	1802	19.3	588		1715	16.6	507		1344	7.4	225		1809	15.2	463		1627	6.8	207		1445	8.4	256
9 Tu	0030	4.9	150	24 W	0558	15.9	484	9 F	0207	7.7	235	24 Sa	0023	9.0	274	9 M	0438	7.8	239	24 Tu	0311	9.0	273
	0647	17.9	546		1159	9.1	278		0840	17.4	529		0653	16.2	494		1049	18.3	558		0930	17.4	529
	1257	6.5	197		1804	15.8	482		1518	7.5	229		1322	9.2	280		1721	5.4	166		1614	6.8	206
10 W	0133	5.8	176	25 Th	0029	8.5	258	10 Sa	0335	7.9	240	25 Su	0143	9.4	285	10 Tu	0527	6.6	200	25 W	0431	7.1	217
	0757	17.7	541		0654	15.8	481		1000	17.9	547		0816	16.5	504		1135	19.5	595		1042	19.3	588
	1414	6.9	211		1301	9.4	287		1639	6.7	203		1457	8.7	265		1801	4.3	130		1714	4.6	141
11 Th	0244	6.3	191	26 F	0129	8.7	265	11 Su	0447	7.3	221	26 M	0317	8.9	270	11 W	0007	18.6	568	26 Th	0529	4.9	149
	0910	18.0	550		0759	16.1	492		1104	19.0	578		0940	17.6	536		0606	5.5	167		1138	21.4	651
	1534	6.8	206		1415	9.2	281		1737	5.5	167		1622	7.3	221		1213	20.5	625		1803	2.6	79
12 F	0355	6.3	191	27 Sa	0237	8.5	260	12 M	0541	6.4	194	27 Tu	0436	7.5	229	12 Th	0040	19.5	593	27 F	0011	20.7	631
	1017	18.8	573		0904	16.9	516		1153	20.0	611		1050	19.3	587		0640	4.7	142		0617	2.8	86
	1646	6.0	184		1531	8.4	257		1822	4.5	137		1726	5.3	162		1245	21.1	643		1226	23.0	702
13 Sa	0457	5.9	180	28 Su	0345	7.9	240	13 Tu	0025	18.5	564	28 W	0537	5.7	173	13 F	0109	20.0	609	28 Sa	0054	22.2	676
	1116	19.7	601		1006	18.1	553		0623	5.6	170		1148	21.1	644		0710	4.2	127		0702	1.3	40
	1744	5.2	157		1638	7.1	217		1233	20.9	636		1819	3.3	102		1315	21.3	650		1310	24.0	731
14 Su	0550	5.4	165	29 M	0447	6.9	209	14 W	0101	19.2	585	29 Th	0026	19.9	608	14 Sa	0137	20.2	615	29 Su	0135	23.0	700
	1205	20.6	627		1103	19.6	598		0659	5.0	153		0630	3.8	117		0740	3.9	120		0745	0.6	17
	1832	4.4	134		1736	5.5	168		1307	21.4	651		1239	22.8	695		1344	21.2	646		1352	24.1	734
15 M	0033	18.7	571	30 Tu	0544	5.6	171	15 Th	0133	19.5	595	30 F	0112	21.4	651	15 Su	0205	20.1	613	30 M	0214	23.1	703
	0634	5.0	153		1158	21.1	644		0731	4.8	145		0717	2.3	71		0808	4.0	122		0827	0.7	21
	1247	21.2	645		1829	3.9	120		1339	21.5	654		1326	23.9	729		1412	20.7	632		1432	23.3	709
16 W	0034	19.3	588	31 Th	0034	19.3	588	16 Su	0202	3.5	106	31 Sa	0156	22.2	678	31 Su	0205	20.1	613	31 M	0214	23.1	703
	0636	4.4	133		0636	4.4	133		0802	1.4	43		0802	1.4	43		0808	4.0	122		0827	0.7	21
	1249	22.5	685		1249	22.5	685		1410	24.2	738		1326	23.9	729		1412	20.7	632		1432	23.3	709
17 Th	0198	2.6	78	17 Su	0198	2.6	78	17 Su	0203	3.8	115	17 Su	2057	4.3	131	17 Su	2151	2.1	65	17 Su	2119	5.1	156

Time meridian 60° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Puerto Montt, Chile, 2019

Times and Heights of High and Low Waters

October				November				December																		
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height													
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm												
1 Tu	0253	22.4	684	16 W	0228	20.1	614	1 F	0349	19.4	592	16 Sa	0314	19.7	600											
	0907	1.6	49		0842	4.0	121		1012	5.2	158		0939	4.9	149	1 Su	0414	18.2	556							
	1512	21.8	665		1444	19.2	585		1617	17.7	539		1543	17.5	534	1040	6.6	200	16 M	0357	20.1	614				
	2124	2.5	76		2051	4.6	140		2221	6.6	200		2146	6.1	186	1646	16.6	507	1027	4.6	140	1634	17.7	538		
2 W	0331	21.3	648	17 Th	0256	19.6	598	2 Sa	0434	17.9	545	17 Su	0357	18.9	575	2 M	0502	17.1	520	17 Tu	0451	19.4	590			
	0949	3.1	94		0914	4.7	143		1103	6.7	205		1027	5.8	176		1133	7.6	232		1122	5.2	160	1122	5.2	160
	1552	19.9	606		1515	18.2	556		1711	16.1	492		1633	16.6	505		1743	15.6	477		1732	17.2	523	1732	17.2	523
	2202	4.3	131		2120	5.5	169		2313	8.1	247		2236	7.1	215		2344	8.7	266		2337	6.5	198	2337	6.5	198
3 Th	0412	19.8	602	18 F	0327	18.9	577	3 Su	0535	16.5	503	18 M	0453	17.9	547	3 Tu	0603	16.1	490	18 W	0552	18.6	566			
	1034	4.9	148		0948	5.6	171		1212	8.0	243		1127	6.6	202		1240	8.3	254		1224	5.8	177	1224	5.8	177
	1638	17.8	544		1549	17.2	524		1827	15.0	458		1739	15.8	482		1857	15.1	459		1839	16.9	515	1839	16.9	515
	2244	6.2	190		2153	6.6	201		0030	9.2	279		0605	17.3	526		0100	9.3	283		0046	6.9	209	0046	6.9	209
4 F	0500	18.1	551	19 Sa	0403	18.1	553	4 M	0659	15.6	477	19 Tu	0605	17.3	526	4 W	0721	15.5	473	19 Th	0702	18.0	548			
	1129	6.7	203		1029	6.6	201		1345	8.4	255		1243	7.1	216		1359	8.5	258		1333	6.1	187	1333	6.1	187
	1737	15.9	486		1632	16.1	491		2003	14.8	452		1902	15.6	477		2017	15.1	461		1952	17.0	519	1952	17.0	519
	2339	8.1	246		2236	7.7	235		0213	9.3	282		0108	7.9	242		0227	9.1	278		0204	6.9	209	0204	6.9	209
5 Sa	0607	16.6	505	20 Su	0451	17.2	525	5 Tu	0831	15.7	480	20 W	0731	17.2	524	5 Th	0840	15.6	475	20 F	0819	17.7	541			
	1249	8.0	244		1126	7.6	231		1510	7.8	237		1409	6.8	207		1509	8.0	245		1445	6.1	185	1445	6.1	185
	1906	14.7	449		2339	8.7	266		2124	15.6	474		2028	16.3	497		2124	15.8	481		2105	17.7	539	2105	17.7	539
	0108	9.3	284		0606	16.4	501		0333	8.3	254		0237	7.2	219		0336	8.4	256		0322	6.3	193	0322	6.3	193
6 Su	0743	15.9	484	21 M	1250	8.2	249	6 W	0942	16.6	505	21 Th	0853	17.9	547	6 F	0943	16.1	492	21 Sa	0933	18.0	549			
	1436	8.1	248		1913	14.7	448		1609	6.8	206		1525	5.8	177		1602	7.3	224		1554	5.6	172	1554	5.6	172
	2055	14.8	452		0118	9.1	278		2219	16.7	508		2139	17.6	537		2213	16.7	509		2211	18.7	569	2211	18.7	569
	0301	9.2	279		0746	16.4	501		0427	7.1	217		0350	5.8	176		0426	7.4	226		0431	5.4	166	0431	5.4	166
7 M	0918	16.4	500	22 Tu	1434	7.6	233	7 Th	1033	17.6	536	22 F	1002	19.2	584	7 Sa	1031	16.8	513	22 Su	1039	18.6	567			
	1558	7.1	216		2056	15.6	474		1652	5.7	174		1626	4.5	138		1643	6.6	202		1655	5.1	154	1655	5.1	154
	2212	16.0	487		0302	8.1	248		2259	17.7	541		2236	19.2	584		2252	17.7	538		2309	19.8	602	2309	19.8	602
	0415	8.0	243		0918	17.7	538		0507	5.9	181		0449	4.2	129		0506	6.4	196		0531	4.5	136	0531	4.5	136
8 Tu	1023	17.6	535	23 W	1555	6.1	186	8 F	1112	18.5	564	23 Sa	1059	20.4	621	8 Su	1110	17.6	535	23 M	1137	19.2	586			
	1651	5.8	176		2209	17.3	526		1728	4.8	147		1717	3.4	103		1718	5.9	180		1748	4.5	137	1748	4.5	137
	2300	17.3	527		0416	6.2	189		2333	18.7	570		2326	20.5	626		2326	18.6	568		0001	20.7	631	0001	20.7	631
	0503	6.6	201		1026	19.5	593		0542	4.9	150		0541	3.0	90		0542	5.5	167		0624	3.7	113	0624	3.7	113
9 W	1109	18.8	572	24 Th	1654	4.2	128	9 Sa	1147	19.2	586	24 Su	1149	21.3	648	9 M	1146	18.2	554	24 Tu	1228	19.8	602			
	1731	4.6	140		2303	19.2	586		1759	4.2	127		1804	2.6	79		1751	5.2	160		1835	4.1	126	1835	4.1	126
	2337	18.5	563		0511	4.1	124		0004	19.6	596		0012	21.6	657		0617	4.6	141		0047	21.3	650	0047	21.3	650
	0541	5.4	164		1120	21.3	649		0614	4.1	125		0629	2.1	65		1221	18.7	571		0710	3.3	101	0710	3.3	101
10 Th	1145	19.8	602	25 F	1742	2.5	76	10 Su	1218	19.7	601	25 M	1235	21.7	661	10 Tu	1824	4.7	144	25 W	1314	20.0	609			
	1805	3.7	113		2349	21.0	639		1828	3.7	113		1847	2.3	70		1918	4.1	124		1918	4.1	124			
	0009	19.4	591		0559	2.3	70		0033	20.2	615		0055	22.1	673		0033	20.3	620		0130	21.5	656	0130	21.5	656
	0613	4.4	134		1207	22.6	690		0645	3.5	107		0713	1.9	58		0653	4.0	121		0753	3.3	101	0753	3.3	101
11 F	1218	20.4	623	26 Sa	1826	1.3	39	11 M	1249	20.0	609	26 Tu	1318	21.6	658	11 W	1257	19.1	582	26 Th	1355	19.9	607			
	1835	3.1	95		0032	22.2	677		1857	3.5	107		1928	2.5	77		1859	4.4	133		1958	4.3	132	1958	4.3	132
	0039	20.0	610		0644	1.1	34		0102	20.6	628		0136	22.0	671		0108	20.9	638		0208	21.4	651	0208	21.4	651
	0644	3.7	113		1251	23.3	710		0716	3.2	98		0756	2.3	69		0730	3.5	108		0832	3.7	113	0832	3.7	113
12 Sa	1248	20.8	634	27 Su	1907	0.8	25	12 Tu	1320	20.0	609	27 W	1400	21.0	641	12 Th	1334	19.2	585	27 F	1433	19.5	595			
	1903	2.9	87		0113	22.8	696		1926	3.5	108		2007	3.2	98		1936	4.3	130		2034	4.9	148	2034	4.9	148
	0107	20.4	622		0727	0.7	22		0132	20.8	634		0216	21.5	655		0146	21.2	647		0244	20.8	635	0244	20.8	635
	0713	3.3	101		1333	23.2	706		0748	3.2	97		0836	3.1	93		0810	3.4	104		0908	4.3	132	0908	4.3	132
13 Su	1318	20.8	634	28 M	1946	1.0	32	13 W	1352	19.7	601	28 Th	1440	20.1	613	13 F	1414	19.1	582	28 Sa	1509	18.9	576			
	1930	2.9	89		0152	22.7	693		1957	3.8	117		2045	4.2	128		2015	4.4	134		2109	5.6	170	2109	5.6	170
	0134	20.6	627		0808	1.1	33		0203	20.7	631		0254	20.6	627		0226	21.2	645		0319	20.0	611	0319	20.0	611
	0743	3.2	99		1413	22.3	680		0822	3.5	107		0916	4.1	126		0852	3.6	109		0944	5.2	157	0944	5.2	157
14 M	1346	20.5	626	29 Tu	2024	1.9	59	14 Th	1426	19.2	584	29 F	1519	19.0	580	14 Sa	1457	18.7	571	29 Su	1545	18.1	552			
	1956	3.2	99		0231	22.0	672		2029																	

Valparaiso, Chile, 2019

Times and Heights of High and Low Waters

January				February				March																					
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height																
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm															
1 Tu	0057	1.9	59		16 W	0020	2.3	71		1 F	0253	1.6	49		16 Sa	0208	1.6	48		1 F	0145	1.8	56		16 Sa	0049	1.7	53	
	0645	4.0	123			0553	3.7	112			0837	3.6	110			0748	3.6	109			0738	3.4	105			0636	3.3	101	
	1259	1.4	42			1208	1.8	54			1414	1.7	51			1324	1.6	50			1307	2.0	62			1159	2.0	62	
	1934	4.9	148			1853	4.5	137			2051	5.2	158			2007	5.3	162			1945	4.8	145			1846	4.8	147	
2 W	0203	1.7	53		17 Th	0129	2.0	62		2 Sa	0335	1.4	42		17 Su	0256	1.1	34		2 Sa	0235	1.6	48		17 Su	0147	1.4	42	
	0747	3.9	119			0701	3.7	112			0921	3.7	113			0842	3.9	118			0829	3.6	110			0740	3.6	111	
	1346	1.4	43			1258	1.7	51			1457	1.6	48			1420	1.3	41			1401	1.9	58			1311	1.7	53	
	2022	5.1	155			1942	4.9	150			2130	5.3	163			2057	5.7	175			2032	5.0	151			1946	5.2	159	
3 Th	0258	1.5	46		18 F	0224	1.7	51		3 Su	0412	1.2	36		18 M	0340	0.7	22		3 Su	0314	1.4	42		18 M	0233	1.0	30	
	0841	3.8	117			0801	3.7	114			0958	3.8	116			0930	4.2	128			0907	3.8	116			0829	4.0	123	
	1429	1.4	43			1347	1.5	45			1536	1.4	44			1512	1.0	31			1445	1.7	52			1410	1.3	41	
	2105	5.3	162			2029	5.3	163			2206	5.4	166			2144	6.1	186			2110	5.2	157			2038	5.6	171	
4 F	0344	1.3	40		19 Sa	0313	1.2	38		4 M	0445	1.1	33		19 Tu	0422	0.4	13		4 M	0346	1.2	37		19 Tu	0315	0.6	19	
	0927	3.8	117			0853	3.9	119			1032	3.9	119			1015	4.5	137			0939	4.0	122			0913	4.5	136	
	1509	1.4	42			1434	1.3	39			1612	1.4	42			1602	0.7	22			1523	1.5	46			1502	1.0	29	
	2144	5.5	167			2114	5.8	176			● 2240	5.5	167			○ 2230	6.3	192			2145	5.3	161			2125	5.9	180	
5 Sa	0425	1.1	35		20 Su	0358	0.9	27		5 Tu	0516	1.0	32		20 W	0504	0.3	8		5 Tu	0416	1.1	34		20 W	0355	0.4	11	
	1009	3.8	116			0943	4.1	124			1103	3.9	120			1059	4.8	145			1009	4.1	126			0955	4.9	148	
	1548	1.4	42			1523	1.0	32			1646	1.3	41			1651	0.6	17			1557	1.4	42			1551	0.7	20	
	● 2221	5.5	169			2200	6.1	187			2311	5.4	166			2315	6.3	192			2217	5.3	162			○ 2210	6.0	183	
6 Su	0503	1.0	32		21 M	0443	0.6	18		6 W	0546	1.0	32		21 Th	0546	0.2	7		6 W	0444	1.0	32		21 Th	0435	0.3	8	
	1047	3.8	116			1030	4.2	129			1134	4.0	121			1144	4.9	150			1038	4.3	130			1037	5.2	158	
	1625	1.4	42			1612	0.9	27			1719	1.3	41			1741	0.6	17			1630	1.3	39			1639	0.5	15	
	2257	5.5	169			○ 2246	6.3	193			2342	5.3	162			● 2247	5.3	162			● 2247	5.3	162			2253	5.9	181	
7 M	0540	1.0	31		22 Tu	0528	0.4	12		7 Th	0616	1.1	34		22 F	0000	6.1	185		7 Th	0511	1.0	32		22 F	0514	0.3	9	
	1123	3.7	114			1118	4.4	133			1206	4.0	121			0629	0.4	12			1106	4.4	133			1120	5.3	163	
	1700	1.4	43			1702	0.8	23			1752	1.4	44			1230	5.0	151			1702	1.2	38			1727	0.5	15	
	2331	5.4	166			2333	6.4	194			● 2342	5.3	162			1831	0.7	22			2317	5.2	159			2336	5.6	172	
8 Tu	0615	1.1	33		23 W	0614	0.3	10		8 F	0014	5.2	157		23 Sa	0045	5.6	172		8 F	0538	1.1	33		23 Sa	0553	0.5	15	
	1158	3.7	113			1206	4.5	136			0646	1.2	37			0712	0.7	20			1136	4.4	135			1202	5.4	164	
	1735	1.5	46			1754	0.8	23			1239	4.0	121			1318	4.9	150			1735	1.3	39			1815	0.7	21	
											1826	1.6	48			1923	1.1	33			2347	5.0	153						
9 W	0005	5.3	162		24 Th	0020	6.2	189		9 Sa	0046	4.9	150		24 Su	0131	5.1	155		9 Sa	0606	1.2	36		24 Su	0019	5.2	158	
	0650	1.2	36			0700	0.4	13			0718	1.3	41			0756	1.0	30			1208	4.5	136			0633	0.8	24	
	1234	3.6	111			1256	4.5	137			1316	3.9	120			1410	4.8	146			1811	1.3	41			1247	5.3	161	
	1810	1.6	50			1846	0.9	28			1905	1.7	53			2022	1.5	45			● 1811	1.3	41			1906	1.0	31	
10 Th	0039	5.1	156		25 F	0109	5.9	179		10 Su	0121	4.6	141		25 M	0221	4.5	136		10 Su	0019	4.8	146		25 M	0104	4.6	140	
	0725	1.3	40			0748	0.6	19			0752	1.5	46			0844	1.4	42			0635	1.3	40			0713	1.2	36	
	1313	3.6	109			1350	4.5	136			1358	3.9	120			1509	4.6	141			1242	4.5	136			1334	5.1	155	
	1846	1.8	55			1941	1.2	36			1950	2.0	60			2132	1.9	57			1850	1.5	46			2003	1.4	43	
11 F	0114	4.9	149		26 Sa	0159	5.4	164		11 M	0201	4.3	130		26 Tu	0321	3.9	119		11 M	0054	4.5	136		26 Tu	0153	4.0	123	
	0803	1.4	44			0838	0.9	28			0830	1.7	51			0939	1.7	53			0706	1.5	45			0757	1.6	49	
	1356	3.5	107			1448	4.4	135			1449	3.9	120			1618	4.5	137			1321	4.4	135			1426	4.8	146	
	1927	2.0	61			2042	1.5	47			2048	2.2	67			● 2300	2.1	64			1935	1.7	52			2111	1.8	54	
12 Sa	0153	4.6	141		27 Su	0253	4.8	147		12 Tu	0249	3.9	119		27 W	0444	3.5	106		12 Tu	0133	4.1	124		27 W	0255	3.5	108	
	0844	1.6	49			0931	1.2	37			0915	1.8	56			1045	2.0	61			0740	1.7	51			0849	2.0	60	
	1448	3.5	108			1552	4.4	134			1551	4.0	123			1733	4.5	136			1406	4.4	133			1530	4.5	138	
	2017	2.2	67			○ 2154	1.9	58			● 2211	2.3	71			● 2300	2.1	64			2032	1.9	59			2234	2.0	60	
13 Su	0238	4.3	132		28 M	0354	4.3	130		13 W	0354	3.6	109		28 Th	0033	2.0	62		13 W	0221	3.7	112		28 Th	0426	3.2	99	
	0930	1.7	52			1028	1.5	45			1011	1.9	59			0621	3.3	102			0822	1.9	57			0959	2.3	69	
	1549	3.6	110			1701	4.4	135			1702	4.2	128			1159	2.1	64			1503	4.3	132			1646	4.4	133	
	2123	2.4	73			2320	2.1	64			2349	2.3	69			1845	4.6	139			2152	2.1	64			● 1646	4.4	133	
14 M	03																												

Valparaiso, Chile, 2019

Times and Heights of High and Low Waters

July				August				September															
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height										
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm									
1 M	0240	1.4	42	16 Tu	0333	1.3	41	1 Th	0351	1.0	31	16 F	0436	1.3	39	1 Su	0516	0.5	16	16 M	0525	1.2	38
	0918	5.5	169		1007	5.6	171		1025	6.2	188		1100	5.5	167		1135	6.1	187		1133	5.0	151
	1559	1.1	35		1650	1.0	30		1707	0.5	15		1732	1.0	30		1802	0.3	10		1748	1.2	36
	2140	4.0	121		2235	3.8	117		2256	4.3	131		2322	4.1	124		2352	4.6	139		2352	4.6	139
2 Tu	0320	1.2	38	17 W	0412	1.3	40	2 F	0439	0.9	26	17 Sa	0510	1.3	39	2 M	0004	5.1	156	17 Tu	0558	1.3	40
	0959	5.8	178		1044	5.6	172		1110	6.3	192		1131	5.3	163		1220	5.8	176		1204	4.7	143
	1642	0.9	27		1727	1.0	29		1750	0.4	12		1801	1.1	33		1844	0.5	16		1814	1.3	40
	2225	4.0	122		2312	3.8	117		2342	4.5	136		2352	4.1	125		1844	0.5	16		1814	1.3	40
3 W	0403	1.1	35	18 Th	0450	1.3	40	3 Sa	0529	0.8	23	18 Su	0542	1.3	41	3 Tu	0050	5.1	156	18 W	0024	4.6	139
	1041	6.0	184		1120	5.6	170		1156	6.2	190		1201	5.2	158		1220	5.8	176		1204	4.7	143
	1642	0.7	21		1802	1.0	30		1833	0.4	13		1830	1.2	36		1927	0.9	26		1843	1.5	45
	2311	4.0	123		2347	3.8	116		2342	4.5	136		2352	4.1	125		1927	0.9	26		1843	1.5	45
4 Th	0449	1.1	33	19 F	0526	1.4	42	4 Su	0029	4.6	139	19 M	0024	4.1	124	4 W	0140	5.1	154	19 Th	0059	4.5	138
	1125	6.1	187		1154	5.4	165		1242	6.0	182		1232	4.9	150		1354	4.6	141		1312	4.0	123
	1811	0.6	19		1837	1.1	33		1919	0.6	17		1859	1.3	41		2013	1.2	37		1913	1.7	51
	2359	4.0	123		2347	3.8	116		2342	4.5	136		2352	4.1	125		2013	1.2	37		1913	1.7	51
5 F	0538	1.1	33	20 Sa	0022	3.7	114	5 M	0118	4.6	140	20 Tu	0058	4.1	124	5 Th	0236	4.9	148	20 F	0139	4.5	136
	1211	6.1	185		0601	1.5	46		0712	1.0	31		0651	1.7	51		0901	1.6	50		0809	1.9	57
	1859	0.6	19		1228	5.2	159		1330	5.5	169		1304	4.6	141		1452	4.0	122		1356	3.6	111
	2359	4.0	123		1911	1.2	37		2006	0.8	24		1930	1.5	46		2105	1.6	49		1950	1.9	58
6 Sa	0050	4.0	123	21 Su	0059	3.7	112	6 Tu	0213	4.6	139	21 W	0136	4.0	123	6 F	0342	4.7	143	21 Sa	0229	4.4	133
	0630	1.1	35		0637	1.7	51		0810	1.3	41		0732	1.9	58		1025	1.9	59		0921	2.0	62
	1300	5.9	179		1302	5.0	151		1421	5.0	152		1340	4.3	130		1610	3.5	107		1459	3.3	100
	1949	0.7	22		1946	1.4	42		2056	1.1	33		2003	1.7	52		2209	1.9	59		2039	2.1	64
7 Su	0144	4.0	123	22 M	0138	3.6	111	7 W	0313	4.5	138	22 Th	0221	4.0	122	7 Sa	0457	4.6	139	22 Su	0336	4.3	132
	0725	1.3	40		0715	1.9	57		0917	1.7	52		0824	2.1	65		1200	2.0	60		1056	2.1	63
	1352	5.5	169		1337	4.7	142		1518	4.4	134		1423	3.9	119		1751	3.3	101		1634	3.1	94
	2042	0.9	27		2023	1.6	48		2150	1.4	42		2043	1.9	57		2326	2.1	64		2152	2.3	69
8 M	0244	4.1	124	23 Tu	0224	3.6	110	8 Th	0421	4.5	138	23 F	0317	4.0	123	8 Su	0615	4.6	140	23 M	0456	4.4	133
	0826	1.5	47		0759	2.1	65		1039	2.0	61		0939	2.3	70		1321	1.8	54		1224	1.8	56
	1448	5.1	156		1418	4.4	133		1628	3.9	119		1522	3.5	108		1918	3.4	104		1813	3.2	97
	2137	1.0	32		2104	1.7	53		2250	1.6	49		2134	2.0	62		2014	3.6	110		2323	2.2	68
9 Tu	0350	4.1	126	24 W	0319	3.6	111	9 F	0533	4.6	140	24 Sa	0426	4.1	126	9 M	0042	2.1	64	24 Tu	0614	4.6	140
	0936	1.8	55		0857	2.3	71		1211	2.0	62		1120	2.3	71		0722	4.7	144		1325	1.5	46
	1549	4.7	143		1506	4.0	123		1753	3.6	109		1648	3.3	100		1416	1.5	47		1920	3.5	106
	2233	1.2	37		2152	1.9	57		2355	1.8	54		2240	2.1	65		2014	3.6	110		2014	3.6	110
10 W	0458	4.3	131	25 Th	0424	3.8	115	10 Sa	0642	4.7	144	25 Su	0540	4.3	132	10 Tu	0144	1.9	59	25 W	0042	2.0	61
	1056	2.0	60		1020	2.5	76		1333	1.8	56		1250	2.1	64		0814	4.9	150		0718	5.0	151
	1656	4.3	131		1609	3.7	114		1916	3.5	107		1821	3.2	99		1457	1.3	41		1411	1.1	35
	2331	1.3	40		2245	1.9	59		2020	3.6	109		2353	2.1	63		2054	3.8	117		2008	3.9	119
11 Th	0604	4.5	138	26 F	0530	4.0	122	11 Su	0058	1.8	55	26 M	0648	4.7	142	11 W	0231	1.7	52	26 Th	0145	1.6	49
	1219	2.0	60		1156	2.4	74		0743	5.0	151		1352	1.7	52		0855	5.1	155		0812	5.3	163
	1808	4.0	122		1726	3.5	108		1434	1.6	48		1932	3.4	104		1531	1.2	36		1452	0.8	24
	2341	1.9	59		2341	1.9	59		2020	3.6	109		2020	3.6	109		2127	4.0	123		2051	4.4	133
12 F	0026	1.4	43	27 Sa	0631	4.3	132	12 M	0154	1.7	53	27 Tu	0100	1.9	58	12 Th	0311	1.5	46	27 F	0238	1.2	36
	0704	4.8	146		1314	2.2	67		0833	5.2	157		0745	5.1	154		0931	5.2	159		0900	5.7	173
	1334	1.8	55		1841	3.5	107		1519	1.3	41		1439	1.3	40		1601	1.1	33		1531	0.5	15
	1917	3.8	117		2108	3.7	113		2108	3.7	113		2026	3.7	113		2157	4.2	128		2132	4.8	146
13 Sa	0118	1.4	43	28 Su	0035	1.9	57	13 Tu	0242	1.6	49	28 W	0158	1.6	49	13 F	0347	1.3	41	28 Sa	0327	0.8	24
	0758	5.1	155		0724	4.7	144		0915	5.3	163		0836	5.5	167		1004	5.3	161		0945	5.9	179
	1436	1.6	48		1413	1.8	56		1557	1.1	35		1521	0.9	28		1629	1.0	32		1609	0.3	9
	2018	3.8	115		1945	3.6	109		2146	3.8	117		2111	4.1	124		2225	4.4	133		2213	5.2	158
14 Su	0206	1.4	43	29 M	0126	1.7	52	14 W	0324	1.4	44	29 Th	0250	1.2	38	14 Sa	0420	1.2	38	29 Su	0415	0.5	16
	0845	5.3	162		0812	5.1	156		0953	5.4	166		0922	5.9	179		1034	5.2	160		1029	5.9	179
	1527	1.3	40		1500	1.4	44		1631	1.0	31		1600	0.6	18		1656	1.0	32		1648	0.3	8
	2110	3.8	115		2038	3.7	113		2220	3.9	120		2154	4.4	134		2254	4.5	136		2255	5.5	167
15 M	0251	1.4	42	30 Tu	0215	1.5	46	15 Th	0401	1.3	41	30 F	0340	0.9	27	15 Su	0452	1.2	37	30 M	0503	0.4	13
	0928	5.5	168		0857	5.5	168		1027	5.5	168		1007	6.1	187		1104	5.2	157		1112	5.7	173
	1610	1.1	34		1543	1.0	32		1702	1.0	30		1640	0.4	11		1722	1.1	33		1727	0.4	12
	2155	3.8	116		2126	3.9	119		2251	4.0	123		2236	4.7	144		2322	4.5	138		2338	5.6	17

Valparaiso, Chile, 2019

Times and Heights of High and Low Waters

October				November				December																										
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height																					
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm																				
1 Tu	0553	0.5	16		16 W	0545	1.2	37		1 F	0043	5.6	170		16 Sa	0013	5.4	164		1 Su	0105	5.3	161		16 M	0048	5.6	170						
	1156	5.2	160			1140	4.4	133			0729	1.1	33			0704	1.2	36			0804	1.2	38			0745	1.0	31						
	1807	0.6	19			1735	1.3	40			1315	3.8	115			1247	3.6	109			1353	3.4	104			1333	3.6	110		1903	1.6	48		
2 W	0022	5.6	170		17 Th	0624	1.3	39		2 Sa	0131	5.2	159		17 Su	0057	5.2	160		2 M	0153	5.0	151		17 Tu	0138	5.4	164		17 W	0839	1.1	34	
	0644	0.8	24			1215	4.1	124			0829	1.4	42			0758	1.3	40			0859	1.4	44			1435	3.6	110			2002	1.7	53	
	1242	4.7	144			1804	1.5	45			1417	3.4	104			1342	3.4	103			1456	3.3	101			2014	2.2	66			1435	3.6	110	
3 Th	0109	5.4	164		18 F	0031	5.0	152		3 Su	0225	4.9	148		18 M	0148	5.1	154		3 Tu	0245	4.6	141		18 W	0235	5.1	155		18 Th	0936	1.2	36	
	0741	1.1	35			0709	1.4	44			0937	1.6	49			0900	1.4	43			0958	1.6	49			1610	3.3	101			2111	1.9	58	
	1332	4.1	126			1255	3.7	114			1537	3.2	99			1452	3.2	99			1610	3.3	101			2119	2.4	73			1542	3.7	113	
4 Fr	0201	5.1	155		19 Sa	0112	4.9	149		4 M	0330	4.5	138		19 Tu	0250	4.8	147		4 W	0344	4.3	132		19 Th	0337	4.8	147		19 F	1035	1.2	37	
	0847	1.5	46			0803	1.6	49			1051	1.7	52			1008	1.4	43			1058	1.7	52			1651	3.9	119			2228	2.0	61	
	1433	3.6	110			1345	3.4	104			1709	3.3	100			1613	3.3	101			1722	3.5	106			2238	2.5	76			2228	2.0	61	
5 Sa	0302	4.8	146		20 Su	0202	4.7	144		5 Tu	0444	4.3	132		20 W	0400	4.7	143		5 Th	0450	4.2	127		20 F	0443	4.6	140		20 Sa	1132	1.2	37	
	1006	1.8	54			0912	1.7	53			1200	1.7	52			1114	1.3	41			1154	1.7	53			1821	3.7	113			2349	1.9	59	
	1559	3.3	100			1455	3.1	96			1822	3.5	106			1727	3.6	109			1821	3.7	113			2359	2.5	75			1755	4.2	129	
6 Su	0415	4.5	138		21 M	0306	4.6	139		6 W	0556	4.3	131		21 Th	0513	4.6	141		6 F	0556	4.1	124		21 Sa	0550	4.4	134		21 Su	1224	1.1	35	
	1134	1.8	56			1034	1.7	53			1254	1.6	49			1212	1.2	37			1241	1.7	52			1852	4.6	141			1852	4.6	141	
	1743	3.2	99			1631	3.1	94			1913	3.7	114			1827	4.0	121			1907	4.0	122			2228	2.0	61			2228	2.0	61	
7 M	0536	4.4	135		22 Tu	0424	4.5	137		7 Th	0050	2.3	69		22 F	0008	1.9	59		7 Sa	0106	2.3	70		22 Su	0103	1.8	54		22 M	0655	4.3	130	
	1249	1.7	52			1151	1.6	48			0657	4.3	132			0620	4.7	143			0654	4.1	124			1313	1.1	34			1944	5.0	153	
	1901	3.4	105			1757	3.3	101			1336	1.5	46			1301	1.0	31			1320	1.6	50			1946	4.4	133			1944	5.0	153	
8 Tu	0020	2.3	70		23 W	0543	4.6	141		8 F	0144	2.1	63		23 Sa	0115	1.6	50		8 Su	0159	2.1	63		23 M	0208	1.5	46		23 Th	0755	4.2	127	
	0647	4.5	137			1251	1.3	40			0745	4.4	135			0719	4.8	145			0744	4.1	124			1359	1.1	33			2032	5.4	164	
	1342	1.5	47			1857	3.7	113			1410	1.4	44			1345	0.9	26			1354	1.6	48			2032	5.4	164			2032	5.4	164	
9 W	0124	2.1	64		24 Th	0026	2.0	60		9 Sa	0227	1.8	56		24 Su	0213	1.3	40		9 M	0244	1.8	55		24 Tu	0304	1.2	38		24 W	0849	4.1	125	
	0742	4.6	141			0650	4.9	148			0825	4.5	137			0812	4.8	145			0827	4.1	124			1443	1.1	33			2117	5.6	172	
	1421	1.4	43			1338	1.0	31			1440	1.4	42			1427	0.8	23			1425	1.5	45			2055	5.0	153			2117	5.6	172	
10 Th	0212	1.8	56		25 F	0130	1.6	49		10 Su	0306	1.6	49		25 M	0306	1.0	31		10 Tu	0324	1.5	47		25 W	0355	1.0	30		25 Th	0940	4.0	123	
	0825	4.8	146			0746	5.1	156			0901	4.5	137			0901	4.7	144			0907	4.1	124			1526	1.1	33			2200	5.8	178	
	1454	1.3	39			1419	0.8	23			1508	1.3	40			1507	0.7	21			1457	1.4	43			2200	5.8	178			2200	5.8	178	
11 Fr	0252	1.6	50		26 Sa	0224	1.2	36		11 M	0343	1.4	43		26 Tu	0356	0.8	25		11 W	0404	1.3	40		26 Th	0442	0.9	26		26 F	1028	3.9	120	
	0902	4.9	149			0835	5.3	162			0935	4.5	136			0949	4.6	139			0946	4.0	123			1608	1.1	35			2242	5.9	179	
	1523	1.2	37			1458	0.5	16			1535	1.2	38			1546	0.8	23			1530	1.3	41			2204	5.5	169			2242	5.9	179	
12 Sa	0328	1.4	44		27 Su	0315	0.9	26		12 Tu	0418	1.3	39		27 W	0446	0.7	21		12 Th	0443	1.1	34		27 F	0527	0.8	24		27 Sa	1112	3.9	118	
	0935	4.9	150			0921	5.4	164			1009	4.4	134			1036	4.4	133			1025	4.0	121			1650	1.2	37			2323	5.8	177	
	1550	1.1	35			1537	0.4	13			1603	1.2	38			1626	0.9	27			1604	1.3	40			2323	5.8	177			2323	5.8	177	
13 Su	0402	1.3	40		28 M	0403	0.6	19		13 W	0455	1.1	35		28 Th	0535	0.7	21		13 F	0524	1.0	30		28 Sa	0610	0.8	25		28 Su	1155	3.8	115	
	1006	4.9	149			1006	5.3	161			1044	4.3	130			1122	4.1	125			1107	3.9	119			1731	1.3	41			1731	1.3	41	
	1616	1.1	35			1615	0.5	14			1632	1.3	39			1707	1.1	33			1642	1.3	40			2319	5.8	176			2319	5.8	176	
14 M	0435	1.2	37		29 Tu	0452	0.5	16		14 Th	0534	1.1	34		29 F	0624	0.8	25		14 Sa	0608	0.9	28		29 Su	0651	1.0	30		29 M	1237	3.7	112	
	1036	4.8	146			1051	5.0	153			1121	4.1	124			1209	3.8	117			1151	3.8	115			1812	1.5	46			1812	1.5	46	
	1641	1.1	35			1654	0.6	18			1703	1.3	41			1748	1.3	41			1724	1.3	41			1812	1.5	46			1812	1.5	46	
15 Tu	0509	1.2	36		30 W	0542	0.6	18		15 F	0616	1.1	34		30 Sa	0021	5.6	171		15 Su	0002	5.7	175		30 M	0042	5.3	163		30 Tu	0733	1.1	35	
	110																																	

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Times and Heights of High and Low Waters

April				May				June																										
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height																					
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm																				
1 M	0146	1.3	40		16 Tu	0110	0.9	27		1 W	0130	1.0	30		16 Th	0117	0.6	17		1 Sa	0141	0.9	28		16 Su	0210	0.8	23						
	0749	3.3	100			0710	3.4	104			0747	3.4	104			0732	3.9	120			0812	4.1	125			0842	4.7	143						
	1328	1.6	50			1250	1.3	39			1342	1.5	45			1337	1.0	32			1438	1.3	40			1521	0.9	28						
	1940	4.2	128			1912	4.4	133			1938	3.8	115			1936	3.8	117			2016	3.4	103			2100	3.2	98						
2 Tu	0218	1.1	35		17 W	0152	0.7	20		2 Th	0201	0.9	27		17 F	0157	0.5	14		2 Su	0212	0.9	26		17 M	0252	0.8	24		17 O	0925	4.8	146	
	0820	3.5	106			0753	3.8	115			0817	3.6	111			0815	4.3	130			0845	4.4	133			1609	0.9	26						
	1409	1.5	45			1345	1.0	30			1422	1.3	40			1432	0.8	25			1519	1.1	35			2148	3.1	96						
	2018	4.3	130			2000	4.4	135			2015	3.7	114			2025	3.7	113			2055	3.3	101											
3 W	0248	1.0	32		18 Th	0231	0.5	14		3 F	0229	0.8	24		18 Sa	0236	0.4	12		3 M	0244	0.8	25		18 Tu	0333	0.9	27		18 Tu	1008	4.8	147	
	0850	3.6	111			0835	4.1	125			0847	3.9	118			0859	4.5	137			0921	4.6	140			1653	0.9	26						
	1446	1.3	41			1437	0.8	23			1500	1.2	36			2112	3.5	107			1601	1.0	32			2233	3.1	93						
	2053	4.3	130			2047	4.4	133			2051	3.7	112			2112	3.5	107			2136	3.2	99											
4 Th	0316	1.0	29		19 F	0309	0.3	10		4 Sa	0257	0.8	23		19 Su	0316	0.4	13		4 Tu	0319	0.8	25		19 W	0412	1.0	31		19 W	1050	4.8	145	
	0920	3.8	115			0919	4.4	133			0917	4.1	124			0942	4.7	142			0959	4.8	145			1737	0.9	28						
	1522	1.2	38			1528	0.6	19			1538	1.0	32			1615	0.7	20			1645	1.0	30			2317	3.0	91						
	2127	4.2	128			2133	4.2	128			2126	3.6	109			2200	3.3	101			2220	3.2	97											
5 F	0344	0.9	28		20 Sa	0348	0.3	10		5 Su	0325	0.7	22		20 M	0355	0.6	17		5 W	0357	0.9	28		20 Th	0452	1.2	37		20 Th	1131	4.7	142	
	0950	3.9	119			1003	4.6	139			0949	4.2	129			1026	4.7	143			1041	4.9	148			1820	1.0	32						
	1557	1.2	36			1620	0.6	18			1617	1.0	31			1705	0.7	21			1733	1.0	30											
	2200	4.1	124			2219	3.9	120			2202	3.4	104			2248	3.1	94			2308	3.1	95											
6 Sa	0411	0.9	28		21 Su	0427	0.5	14		6 M	0354	0.8	23		21 Tu	0434	0.8	23		6 Th	0440	1.0	31		21 F	0531	2.9	89		21 F	1212	4.5	136	
	1021	4.0	123			1047	4.6	141			1024	4.4	133			1110	4.6	141			1127	4.9	148			1903	1.2	36						
	1633	1.2	36			1712	0.7	21			1658	1.0	31			1755	0.8	24			1824	1.0	31											
	2233	3.9	119			2305	3.6	109			2240	3.2	99			2336	2.9	88																
7 Su	0437	1.0	29		22 M	0505	0.7	20		7 Tu	0425	0.9	26		22 W	0514	1.0	31		7 F	0528	1.2	37		22 Sa	0612	1.7	51		22 Sa	1254	4.3	130	
	1053	4.1	125			1133	4.6	139			1101	4.4	135			1154	4.5	137			1217	4.8	145			1948	1.3	40						
	1711	1.2	38			1806	0.9	26			1744	1.0	32			1845	1.0	29			1919	1.0	32											
	2306	3.7	112			2354	3.2	98			2321	3.1	94																					
8 M	0504	1.0	32		23 Tu	0545	1.0	29		8 W	0459	1.0	31		23 Th	0527	2.7	83		8 Sa	0624	1.4	43		23 Su	0659	1.9	58		23 Su	1338	4.1	124	
	1128	4.2	127			1220	4.4	135			1143	4.4	135			1240	4.3	131			1311	4.6	141			2036	1.4	43						
	1753	1.3	41			1903	1.0	32			1835	1.1	35			1938	1.1	34			2019	1.1	33											
	2341	3.4	104																															
9 Tu	0534	1.2	36		24 W	0646	2.9	88		9 Th	0509	2.9	88		24 F	0641	1.6	48		9 Su	0729	1.6	48		24 M	0758	2.1	64		24 M	1428	3.8	117	
	1205	4.2	127			0628	1.3	39			0540	1.2	37			0641	1.6	48			0729	1.6	48			1428	3.8	117						
	1841	1.5	45			1310	4.2	129			1229	4.4	133			1328	4.1	124			1410	4.4	135			2125	1.5	45						
						2007	1.2	38			1933	1.2	37			2035	1.2	38			2120	1.1	33											
10 W	0607	1.3	41		25 Th	0717	1.6	48		10 F	0629	1.4	44		25 Sa	0737	1.8	56		10 M	0844	1.7	52		25 Tu	0912	2.2	67		25 Tu	1523	3.6	111	
	1248	4.1	125			1405	4.0	122			1322	4.3	130			1422	3.9	118			1514	4.2	128			2213	1.5	45						
	1938	1.6	48			2117	1.4	42			2041	1.2	38			2134	1.3	41			2218	1.0	32											
11 Th	0648	1.5	47		26 F	0821	1.8	56		11 Sa	0722	1.6	50		26 Su	0850	2.0	61		11 Tu	1005	1.7	53		26 W	1031	2.2	68		26 W	1621	3.5	106	
	1338	4.0	123			1510	3.8	117			1425	4.1	126			1521	3.7	113			1620	4.0	122			2258	1.4	44						
	2051	1.6	50			2230	1.4	43			2152	1.2	37			2230	1.3	41			2311	1.0	30											
12 F	0743	1.7	53		27 Sa	0944	2.0	60		12 Su	0848	2.7	82		27 M	1011	2.1	63		12 W	1122	1.6	50		27 Th	1719	3.4	103		27 Th	2339	1.4	42	
	1441	4.0	121			1618	3.7	114			1537	4.0	123			1623	3.6	110			1723	3.8	115											
	2216	1.6	48			2331	1.4	42			2256	1.1	33			2318	1.3	39			2359	0.9	27											
13 Sa	0855	2.6	80		28 Su	0558	2.8	84		13 M	0503	2.9	89		28 Tu	0556	3.0	91		13 Th	0624	3.9	120		28 F	0623	3.7	114		28 F	1240	1.9	59	
	0900	1.8	56			1103	1.9	59			1019	1.7	52			1122	2.0	61			1232	1.5	45			1812	3.3	101						
	1559	4.0	121			1720	3.7	113			1648	4.0	122			1719	3.5	108			1822	3.6	110											
	2329	1.4	43								2349	0.9	27																					
14 Su	0524	2.8	85		29 M	0618</																												

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Times and Heights of High and Low Waters

July				August				September																			
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height														
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm													
1 M	0133	1.1	35			1 Th	0242	1.0	32	16 F	0342	1.2	36	1 Su	0409	0.6	19	16 M	0435	1.1	33						
	0816	4.7	142				0924	5.3	163				1008		4.8	145				1036	5.2	159			1046	4.1	125
	1502	1.3	40				1610	1.0	29				1640		1.0	31				1706	0.6	17			1659	1.0	29
	2032	3.3	101				2149	3.7	113				2227		3.5	107				2303	4.3	131			2303	3.7	114
2 Tu	0213	1.0	32			2 F	0330	1.0	29	17 Sa	0417	1.2	38	2 M	0500	0.7	22	17 Tu	0510	1.2	37						
	0857	4.9	150				1011	5.5	167				1042		4.7	142				1122	5.0	151			1118	3.9	118
	1545	1.1	35				1654	0.9	26				1712		1.1	33				1748	0.6	19			1726	1.0	32
	2118	3.3	102				2237	3.8	117				2301		3.5	107				2352	4.3	132			2337	3.8	115
3 W	0256	1.0	31			3 Sa	0420	0.9	28	18 Su	0451	1.3	41	3 Tu	0554	0.9	28	18 W	0549	1.3	41						
	0940	5.1	156				1058	5.5	167				1116		4.5	137				1209	4.5	138			1151	3.6	109
	1630	1.0	31				1738	0.8	25				1743		1.1	35				1831	0.8	25			1754	1.2	36
	2205	3.4	104				2326	4.0	121				2336		3.5	107											
4 Th	0341	1.0	31			4 Su	0511	1.0	30	19 M	0527	1.5	46	4 W	0044	4.3	132	19 Th	0013	3.7	114						
	1026	5.2	160				1145	5.3	162				1149		4.3	130				0654	1.2	37			0632	1.5	46
	1717	1.0	30				1824	0.9	26				1814		1.3	39				1300	4.0	123			1226	3.3	100
	2254	3.4	105																1918	1.1	33			1825	1.3	41	
5 F	0429	1.0	32			5 M	0018	4.0	122	20 Tu	0013	3.5	107	5 Th	0141	4.2	129	20 F	0053	3.7	113						
	1114	5.3	161				0606	1.2	36				0605		1.7	51				0804	1.5	45			0725	1.7	51
	1805	1.0	29				1234	5.0	152				1223		4.0	122				1358	3.5	107			1307	3.0	92
	2347	3.5	106				1911	1.0	30				1845		1.4	42				2011	1.4	42			1900	1.5	47
6 Sa	0521	1.2	36			6 Tu	0114	4.0	123	21 W	0053	3.5	107	6 F	0247	4.1	126	21 Sa	0140	3.7	112						
	1204	5.2	158				0706	1.4	44				0650		1.9	57				0929	1.7	51			0834	1.8	55
	1855	1.0	30				1325	4.5	138				1258		3.7	113				1513	3.1	94			1404	2.8	84
							2001	1.1	35				1919		1.5	46				2116	1.6	48			1948	1.7	52
7 Su	0043	3.5	107			7 W	0214	4.0	123	22 Th	0138	3.5	107	7 Sa	0402	4.1	125	22 Su	0240	3.7	112						
	0617	1.3	41				0816	1.7	52				0745		2.0	62				1103	1.7	51			1004	1.8	55
	1255	5.0	151				1421	4.0	123				1339		3.4	104				1652	2.9	87			1532	2.6	79
	1948	1.0	32				2054	1.3	40				1957		1.6	50				2232	1.7	52			2055	1.8	55
8 M	0143	3.5	108			8 Th	0321	4.1	124	23 F	0230	3.5	108	8 Su	0517	4.1	126	23 M	0356	3.7	113						
	0719	1.5	47				0938	1.9	57				0856		2.2	66				1221	1.5	47			1127	1.6	50
	1350	4.7	142				1528	3.6	109				1432		3.1	95				1816	2.9	89			1711	2.7	81
	2042	1.1	34				2153	1.5	45				2043		1.7	53				2344	1.6	50			2218	1.8	55
9 Tu	0248	3.6	111			9 F	0433	4.2	127	24 Sa	0333	3.6	111	9 M	0620	4.2	129	24 Tu	0514	3.9	119						
	0830	1.7	53				1109	1.9	58				1026		2.1	65				1316	1.3	41			1227	1.4	42
	1448	4.3	130				1649	3.2	98				1547		2.9	89				1911	3.1	93			1817	2.9	87
	2137	1.2	36				2256	1.5	47				2140		1.8	55									2335	1.6	49
10 W	0356	3.8	115			10 Sa	0542	4.3	131	25 Su	0442	3.8	116	10 Tu	0043	1.5	46	25 W	0617	4.2	127						
	0950	1.9	57				1231	1.7	53				1150		2.0	60				0710	4.3	132			1313	1.1	33
	1552	3.9	119				1810	3.1	94				1714		2.9	87				1357	1.2	36			1904	3.2	97
	2232	1.2	37				2359	1.5	47				2245		1.8	54				1951	3.2	98					
11 Th	0502	4.0	121			11 Su	0641	4.5	136	26 M	0546	4.1	124	11 W	0132	1.3	41	26 Th	0037	1.3	40						
	1113	1.9	57				1334	1.5	47				1251		1.7	53				0753	4.4	134			0709	4.5	136
	1701	3.6	109				1915	3.1	95				1824		3.0	91				1432	1.0	32			1354	0.8	25
	2325	1.2	38										2350		1.6	50				2025	3.4	103			1946	3.5	107
12 F	0602	4.2	129			12 M	0055	1.4	44	27 Tu	0641	4.4	134	12 Th	0213	1.2	36	27 F	0130	1.0	29						
	1230	1.7	52				0731	4.6	141				1340		1.4	44				0831	4.5	136			0757	4.7	143
	1809	3.3	102				1421	1.3	41				1917		3.2	97				1504	1.0	29			1433	0.6	17
							2004	3.2	98										2057	3.5	107			2027	3.8	117	
13 Sa	0017	1.2	37			13 Tu	0144	1.3	41	28 W	0048	1.4	43	13 F	0251	1.1	33	28 Sa	0220	0.7	20						
	0656	4.5	136				0815	4.7	144				0732		4.7	144				0907	4.5	136			0843	4.8	147
	1336	1.5	46				1500	1.2	36				1422		1.1	35				1534	0.9	26			1512	0.4	11
	1912	3.2	98				2044	3.3	101				2002		3.4	104				2128	3.6	110			2109	4.2	127
14 Su	0107	1.2	36			14 W	0227	1.2	38	29 Th	0141	1.1	35	14 Sa	0326	1.0	31	29 Su	0309	0.5	14						
	0744	4.7	142				0855	4.8	146				0819		5.0	153				0941	4.4	135			0928	4.8	146
	1430	1.3	40				1535	1.1	33				1503		0.9	27				1603	0.9	26			1551	0.3	8
	2007	3.2	98				2119	3.4	104				2046		3.7	113				2159	3.7	112			2153	4.4	134
15 M	0154	1.1	35			15 Th	0306	1.2	36	30 F	0231	0.9	27	15 Su	0400	1.0	32	30 M	0359	0.4	12						
	0829	4.8	147				0932	4.8	147				0905		5.2	160				1014	4.3	131			1013	4.6	140
	1516	1.1	35				1608	1.0	31				1543		0.7	21				1631	0.9	26			1630	0.3	9
	2054	3.2	98				2153	3.5	106				2130		4.0	121				2231	3.7	114			2239	4.5	138
					31 W	0153	1.2	37	31 Sa	0319	0.7	21															

Antofagasta, Chile, 2019

Times and Heights of High and Low Waters

October				November				December																						
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height																	
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm																
1 Tu	0451	0.5	14		16 W	0457	1.0	29		1 F	0638	0.8	23		16 Sa	0615	1.1	33		1 Su	0020	4.6	141		16 M	0654	1.2	37		
	1059	4.3	130			1051	3.4	104			1228	3.0	90			1155	2.9	88			0718	1.0	32			1240	3.2	99		
	1710	0.5	14			1642	0.9	28			1805	1.2	36			1716	1.4	42			1313	2.9	88			1759	1.7	52		
	2326	4.6	139			2305	4.1	124													1832	1.7	52							
2 W	0546	0.7	20		17 Th	0537	1.0	32		2 Sa	0043	4.4	134		17 Su	0002	4.4	134		2 M	0110	4.4	133		17 Tu	0042	4.8	146		
	1147	3.8	117			1126	3.2	97			0740	1.0	30			0708	1.2	36			0812	1.2	38			0748	1.3	39		
	1752	0.7	22			1710	1.1	33			1333	2.7	83			1250	2.8	85			1421	2.9	87			1341	3.3	100		
						2341	4.0	123			1858	1.5	46			1803	1.6	49			1932	2.0	60			1900	1.9	57		
3 Th	0016	4.5	136		18 F	0622	1.2	37		3 Su	0140	4.1	126		18 M	0051	4.3	130		3 Tu	0204	4.1	125		18 W	0137	4.6	141		
	0646	0.9	28			1206	2.9	89			0849	1.1	35			0809	1.2	38			0909	1.4	42			0844	1.3	40		
	1240	3.3	102			1742	1.3	39			1456	2.6	79			1359	2.8	84			1538	2.9	89			1448	3.4	103		
	1838	1.0	32								2008	1.8	54			1904	1.8	55			2046	2.2	66			2011	2.0	61		
4 F	0111	4.3	131		19 Sa	0021	4.0	121		4 M	0245	3.9	118		19 Tu	0150	4.1	125		4 W	0304	3.9	118		19 Th	0237	4.4	134		
	0754	1.2	36			0715	1.3	41			1000	1.2	38			0916	1.2	38			1005	1.4	44			0941	1.3	40		
	1343	3.0	90			1254	2.7	83			1630	2.7	82			1520	2.8	86			1648	3.1	94			1556	3.6	109		
	1931	1.4	42			1821	1.5	45			2134	1.9	58			2023	1.9	58			2206	2.2	68			2130	2.0	62		
5 Sa	0212	4.1	125		20 Su	0108	3.9	118		5 Tu	0357	3.7	114		20 W	0300	4.0	122		5 Th	0406	3.7	113		20 F	0342	4.2	127		
	0915	1.3	41			0822	1.4	44			1103	1.2	38			1020	1.2	36			1056	1.4	44			1034	1.3	39		
	1508	2.7	82			1400	2.5	77			1737	2.9	88			1634	3.0	92			1741	3.3	101			1658	3.8	117		
	2042	1.7	51			1914	1.7	52			2254	1.9	58			2150	1.9	57			2318	2.2	66			2250	2.0	60		
6 Su	0326	3.9	120		21 M	0207	3.8	115		6 W	0502	3.7	112		21 Th	0413	3.9	120		6 F	0505	3.6	109		21 Sa	0448	3.9	120		
	1040	1.4	42			0943	1.4	43			1153	1.2	36			1115	1.0	32			1140	1.4	42			1125	1.2	37		
	1653	2.7	81			1535	2.5	77			1823	3.1	95			1732	3.3	102			1822	3.6	109			1754	4.2	127		
	2208	1.8	54			2032	1.8	56			2358	1.8	54			2308	1.7	52												
7 M	0443	3.9	118		22 Tu	0323	3.7	114		7 Th	0557	3.6	111		22 F	0519	3.9	120		7 Sa	0018	2.0	61		22 Su	0004	1.8	55		
	1150	1.3	40			1057	1.3	40			1234	1.1	33			1202	0.9	28			0558	3.5	107			0552	3.7	114		
	1806	2.8	86			1703	2.7	82			1859	3.3	102			1820	3.7	113			1218	1.3	41			1212	1.2	36		
	2325	1.7	52			2205	1.8	55													1856	3.8	117			1844	4.5	137		
8 Tu	0548	3.9	118		23 W	0444	3.8	116		8 F	0050	1.6	48		23 Sa	0014	1.4	44		8 Su	0110	1.8	56		23 M	0111	1.6	48		
	1241	1.2	36			1153	1.1	33			0643	3.6	111			0616	3.9	119			0646	3.5	106			0653	3.6	109		
	1853	3.0	92			1800	3.0	91			1309	1.0	30			1245	0.8	23			1253	1.3	39			1259	1.1	34		
						2324	1.6	48			1931	3.6	109			1904	4.1	125			1929	4.1	125			1932	4.8	146		
9 W	0025	1.5	47		24 Th	0549	4.0	121		9 Sa	0134	1.4	42		24 Su	0112	1.1	35		9 M	0155	1.6	50		24 Tu	0210	1.3	41		
	0639	3.9	120			1239	0.9	26			0725	3.6	111			0709	3.8	117			0730	3.4	105			0750	3.5	106		
	1321	1.0	32			1844	3.3	102			1340	0.9	27			1326	0.6	19			1326	1.2	37			1344	1.1	34		
	1929	3.2	99								2001	3.8	116			1947	4.5	136			2000	4.3	132			2019	5.0	153		
10 Th	0114	1.3	41		25 F	0026	1.2	38		10 Su	0215	1.2	37		25 M	0208	0.9	28		10 Tu	0236	1.4	44		25 W	0303	1.1	34		
	0722	4.0	121			0644	4.1	126			0803	3.6	110			0800	3.7	114			0811	3.4	103			0844	3.4	104		
	1354	0.9	28			1320	0.6	19			1410	0.9	26			1407	0.6	17			1357	1.2	36			1430	1.1	34		
	2001	3.4	105			1925	3.7	114			2031	4.0	122			2031	4.8	145			2033	4.6	139			2104	5.2	158		
11 F	0155	1.2	36		26 Sa	0120	0.9	28		11 M	0253	1.1	33		26 Tu	0301	0.7	22		11 W	0316	1.3	40		26 Th	0352	1.0	30		
	0800	4.0	122			0733	4.2	129			0840	3.5	108			0850	3.6	110			0850	3.3	102			0935	3.4	104		
	1425	0.8	25			1359	0.4	13			1439	0.8	25			1448	0.6	18			1429	1.2	36			1515	1.2	36		
	2030	3.6	110			2006	4.1	125			2101	4.2	128			2115	5.0	151			2107	4.8	145			2149	5.2	160		
12 Sa	0233	1.0	32		27 Su	0211	0.6	19		12 Tu	0330	1.0	30		27 W	0352	0.6	18		12 Th	0355	1.2	37		27 F	0438	1.0	29		
	0836	4.0	122			0819	4.2	129			0916	3.4	105			0940	3.4	105			0930	3.3	101			1023	3.4	103		
	1454	0.7	22			1438	0.3	9			1507	0.9	26			1529	0.7	21			1503	1.2	37			1558	1.3	39		
	2100	3.8	115			2048	4.4	135			2132	4.3	132			2200	5.0	153			2143	4.9	150			2234	5.2	158		
13 Su	0309																													

Matarani, Peru, 2019

Times and Heights of High and Low Waters

January				February				March															
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height										
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm									
1 Tu	0405	2.1	64	16 W	0258	1.8	55	1 F	0049	0.5	15	16 Sa	0500	1.5	46								
	1028	0.0	0		0929	0.3	9		0603	1.6	49		1029	0.5	15	0345	1.4	43					
	1723	2.8	85		1636	2.5	76		1140	0.2	6		1731	2.8	85	0910	0.5	15					
	2348	0.6	18		2305	0.9	27		1841	3.1	94		1746	3.1	94	1623	2.8	85					
2 W	0508	1.9	58	17 Th	0406	1.7	52	2 Sa	0134	0.3	9	17 Su	0041	0.3	9	17 Su	0458	1.6	49				
	1114	0.0	0		1015	0.2	6		0653	1.6	49		0602	1.7	52		0559	1.6	49	1025	0.4	12	
	1812	3.1	94		1724	2.8	85		1225	0.2	6		1138	0.0	0		1125	0.4	12	1720	3.1	94	
3 Th	0049	0.5	15	18 F	0007	0.7	21	3 Su	0212	0.2	6	18 M	0124	0.0	0	3 Su	0109	0.3	9	18 M	0014	0.2	6
	0606	1.8	55		0511	1.6	49		0735	1.7	52		0655	1.9	58		0642	1.7	52		0554	1.8	55
	1157	0.0	0		1104	0.1	3		1306	0.1	3		1233	-0.1	-3		1212	0.3	9		1129	0.2	6
4 F	0141	0.3	9	19 Sa	0058	0.4	12	4 M	0245	0.2	6	19 Tu	0206	-0.2	-6	4 M	0141	0.2	6	19 Tu	0055	-0.1	-3
	0658	1.7	52		0611	1.7	52		0813	1.8	55		0744	2.1	64		0718	1.8	55		0642	2.1	64
	1238	0.0	0		1154	-0.1	-3		1344	0.1	3		1326	-0.3	-9		1252	0.2	6		1225	-0.1	-3
5 Sa	0226	0.2	6	20 Su	0145	0.1	3	5 Tu	0317	0.1	3	20 W	0247	-0.3	-9	5 Tu	0209	0.1	3	20 W	0134	-0.3	-9
	0744	1.7	52		0706	1.7	52		0849	1.8	55		0832	2.3	70		0751	2.0	61		0728	2.4	73
	1317	0.0	0		1244	-0.2	-6		1421	0.1	3		1417	-0.4	-12		1330	0.2	6		1318	-0.2	-6
6 Su	0307	0.2	6	21 M	0230	-0.1	-3	6 W	0347	0.1	3	21 Th	0328	-0.4	-12	6 W	0236	0.1	3	21 Th	0213	-0.4	-12
	0828	1.6	49		0758	1.8	55		0924	1.9	58		0920	2.5	76		0822	2.1	64		0814	2.7	82
	1356	0.1	3		1334	-0.3	-9		1457	0.2	6		1509	-0.3	-9		1406	0.1	3		1410	-0.3	-9
7 M	0345	0.1	3	22 Tu	0315	-0.2	-6	7 Th	0418	0.1	3	22 F	0410	-0.4	-12	7 Th	0303	0.0	0	22 F	0252	-0.4	-12
	0909	1.6	49		0849	2.0	61		1000	1.9	58		1010	2.6	79		0855	2.2	67		0859	2.9	88
	1433	0.1	3		1425	-0.3	-9		1533	0.3	9		1602	-0.2	-6		1441	0.1	3		1502	-0.3	-9
8 Tu	0423	0.1	3	23 W	0400	-0.3	-9	8 F	0448	0.1	3	23 Sa	0452	-0.3	-9	8 F	0331	0.0	0	23 Sa	0331	-0.4	-12
	0951	1.6	49		0940	2.1	64		1037	1.9	58		1101	2.6	79		0927	2.3	70		0946	3.0	91
	1511	0.2	6		1516	-0.2	-6		1609	0.4	12		1658	0.1	3		1517	0.2	6		1555	-0.2	-6
9 W	0500	0.1	3	24 Th	0446	-0.4	-12	9 Sa	0519	0.2	6	24 Su	0536	-0.2	-6	9 Sa	0358	0.1	3	24 Su	0412	-0.3	-9
	1033	1.6	49		1033	2.1	64		1116	1.9	58		1157	2.6	79		1001	2.3	70		1034	3.0	91
	1549	0.4	12		1610	-0.1	-3		1648	0.6	18		1801	0.3	9		1555	0.3	9		1651	0.0	0
10 Th	0537	0.2	6	25 F	0532	-0.3	-9	10 Su	0549	0.3	9	25 M	0002	2.5	76	10 Su	0425	0.2	6	25 M	0453	-0.1	-3
	1117	1.6	49		1130	2.2	67		1157	2.0	61		0623	0.0	0		1036	2.4	73		1126	3.0	91
	1628	0.5	15		1707	0.1	3		1733	0.8	24		1259	2.6	79		1635	0.5	15		1754	0.3	9
11 F	0614	0.2	6	26 Sa	0620	-0.2	-6	11 M	0620	0.4	12	26 Tu	0100	2.0	61	11 M	0453	0.3	9	26 Tu	0538	0.2	6
	1204	1.6	49		1231	2.3	70		1245	2.0	61		0715	0.2	6		1114	2.4	73		1223	2.8	85
	1710	0.7	21		1811	0.4	12		1828	0.9	27		1409	2.6	79		1721	0.6	18		1907	0.5	15
12 Sa	0651	0.3	9	27 Su	0027	2.8	85	12 Tu	0018	2.0	61	27 W	0213	1.7	52	12 Tu	0522	0.4	12	27 W	0043	1.7	52
	1255	1.7	52		0710	-0.1	-3		0655	0.4	12		0815	0.4	12		1159	2.4	73		0629	0.4	12
	1758	0.9	27		1337	2.3	70		1342	2.1	64		1524	2.6	79		1818	0.8	24		1329	2.7	82
13 Su	0025	2.5	76	28 M	0125	2.4	73	13 W	0107	1.8	55	28 Th	0340	1.5	46	13 W	0556	0.5	15	28 Th	0204	1.5	46
	0728	0.3	9		0802	0.0	0		0738	0.5	15		0923	0.5	15		1253	2.4	73		0733	0.6	18
	1351	1.8	55		1448	2.5	76		1448	2.3	70		1634	2.7	82		1935	0.9	27		1443	2.6	79
14 M	0106	2.2	67	29 Tu	0232	2.0	61	14 Th	0217	1.6	49	29 F	0046	1.5	46	14 Th	0046	1.5	46	29 F	0336	1.4	43
	0805	0.4	12		0858	0.1	3		0832	0.5	15		1554	2.5	76		0643	0.6	18		0849	0.7	21
	1449	1.9	58		1559	2.6	79		1554	2.5	76		2249	0.9	27		1401	2.5	76		1554	2.6	79
15 Tu	0209	1.1	34	30 W	0230	0.8	24	15 F	0343	1.5	46	30 Sa	0210	1.4	43	15 F	0210	1.4	43	30 Sa	0450	1.5	46
	0845	0.4	12		0955	0.2	6		0936	0.4	12		1653	2.8	85		0750	0.6	18		1004	0.7	21
	1545	2.2	67		1702	2.8	85		2352	0.6	18		2352	0.6	18		1515	2.6	79		1653	2.7	82
31 Th	2147	1.1	34	31 Th	0501	1.6	49	31 Su	0501	1.6	49	31 Su	2231	0.7	21	31 Su	2353	0.4	12	31 Su	0541	1.7	52
					1050	0.2	6		1756	3.0	91		1741	2.7	82		1103	0.6	18				

Time meridian 75° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Matarani, Peru, 2019

Times and Heights of High and Low Waters

April				May				June			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	h m	ft	h m	ft	h m	ft	h m	ft	h m	ft
1 M	0028 0.3 9 0619 1.9 58 1151 0.5 15 1820 2.8 85	16 Tu	0541 2.1 64 1120 0.3 9 1744 3.0 91	1 W	0003 0.2 6 0618 2.2 67 1207 0.6 18 1808 2.5 76	16 Th	0611 2.8 85 1214 0.3 9 1807 2.6 79	1 Sa	0006 0.0 0 0649 2.9 88 1312 0.5 15 1841 2.0 61	16 Su	0033 -0.2 -6 0726 3.4 104 1408 0.2 6 1932 1.8 55
2 Tu	0056 0.2 6 0651 2.1 64 1233 0.4 12 1854 2.8 85	17 W	0020 -0.2 -6 0627 2.5 76 1218 0.1 3 1833 3.1 94	2 Th	0030 0.1 3 0649 2.5 76 1248 0.4 12 1843 2.4 73	17 F	0023 -0.3 -9 0655 3.1 94 1311 0.1 3 1856 2.4 73	2 Su	0038 0.0 0 0725 3.1 94 1358 0.3 9 1924 1.9 58	17 M	0114 -0.1 -3 0809 3.5 107 1458 0.1 3 2022 1.7 52
3 W	0123 0.1 3 0722 2.2 67 1311 0.3 9 1926 2.8 85	18 Th	0058 -0.3 -9 0711 2.8 85 1313 -0.1 -3 1920 3.0 91	3 F	0057 0.0 0 0721 2.7 82 1329 0.3 9 1919 2.3 70	18 Sa	0102 -0.3 -9 0739 3.3 101 1405 0.0 0 1945 2.3 70	3 M	0113 0.0 0 0803 3.3 101 1444 0.2 6 2009 1.8 55	18 Tu	0155 -0.1 -3 0852 3.5 107 1546 0.1 3 2111 1.7 52
4 Th	0149 0.0 0 0752 2.4 73 1348 0.2 6 1958 2.7 82	19 F	0137 -0.4 -12 0755 3.1 94 1405 -0.1 -3 2006 2.8 85	4 Sa	0125 0.0 0 0753 2.9 88 1411 0.3 9 1956 2.2 67	19 Su	0141 -0.3 -9 0822 3.5 107 1457 0.0 0 2034 2.1 64	4 Tu	0149 0.0 0 0843 3.4 104 1532 0.1 3 2056 1.7 52	19 W	0237 0.1 3 0934 3.5 107 1633 0.1 3 2200 1.6 49
5 F	0215 0.0 0 0824 2.6 79 1425 0.2 6 2030 2.6 79	20 Sa	0215 -0.4 -12 0839 3.3 101 1458 -0.2 -6 2052 2.6 79	5 Su	0154 0.0 0 0827 3.0 91 1454 0.2 6 2034 2.1 64	20 M	0220 -0.2 -6 0906 3.5 107 1550 0.0 0 2123 1.9 58	5 W	0229 0.0 0 0925 3.5 107 1622 0.1 3 2147 1.6 49	20 Th	0318 0.2 6 1016 3.4 104 1719 0.1 3 2251 1.5 46
6 Sa	0242 0.0 0 0856 2.7 82 1504 0.2 6 2103 2.5 76	21 Su	0254 -0.3 -9 0924 3.3 101 1551 -0.1 -3 2140 2.3 70	6 M	0224 0.0 0 0904 3.1 94 1539 0.2 6 2114 1.9 58	21 Tu	0300 0.0 0 0951 3.5 107 1644 0.1 3 2215 1.7 52	6 Th	0312 0.1 3 1011 3.5 107 1713 0.0 0 2242 1.6 49	21 F	0401 0.4 12 1057 3.2 98 1805 0.1 3 2344 1.5 46
7 Su	0309 0.1 3 0930 2.7 82 1545 0.3 9 2137 2.3 70	22 M	0333 -0.1 -3 1010 3.3 101 1648 0.0 0 2230 2.0 61	7 Tu	0257 0.1 3 0943 3.2 98 1628 0.2 6 2158 1.7 52	22 W	0341 0.2 6 1037 3.3 101 1740 0.1 3 2312 1.5 46	7 F	0359 0.2 6 1059 3.4 104 1807 0.0 0 2344 1.5 46	22 Sa	0446 0.6 18 1139 3.0 91 1850 0.2 6
8 M	0337 0.1 3 1005 2.8 85 1630 0.4 12 2213 2.0 61	23 Tu	0414 0.1 3 1059 3.2 98 1749 0.2 6 2326 1.7 52	8 W	0332 0.2 6 1025 3.2 98 1722 0.3 9 2248 1.6 49	23 Th	0425 0.4 12 1125 3.1 94 1837 0.2 6	8 Sa	0453 0.4 12 1151 3.3 101 1902 0.0 0	23 Su	0040 1.5 46 0534 0.7 21 1221 2.8 85 1934 0.2 6
9 Tu	0406 0.3 9 1045 2.8 85 1720 0.5 15 2253 1.8 55	24 W	0457 0.3 9 1152 3.0 91 1857 0.3 9	9 Th	0411 0.3 9 1113 3.1 94 1822 0.3 9 2349 1.4 43	24 F	0015 1.4 43 0514 0.6 18 1215 2.9 88 1936 0.3 9	9 Su	0052 1.6 49 0557 0.5 15 1246 3.1 94 1957 0.0 0	24 M	0139 1.6 49 0630 0.9 27 1305 2.6 79 2016 0.3 9
10 W	0438 0.4 12 1130 2.7 82 1822 0.6 18 2344 1.5 46	25 Th	0032 1.5 46 0548 0.6 18 1251 2.8 85 2010 0.4 12	10 F	0459 0.5 15 1207 3.0 91 1927 0.3 9	25 Sa	0125 1.4 43 0610 0.8 24 1308 2.7 82 2031 0.3 9	10 M	0204 1.8 55 0712 0.7 21 1346 2.9 88 2050 -0.1 -3	25 Tu	0238 1.7 52 0736 1.0 30 1350 2.3 70 2054 0.3 9
11 Th	0517 0.5 15 1225 2.7 82 1936 0.6 18	26 F	0153 1.4 43 0651 0.8 24 1356 2.7 82 2121 0.4 12	11 Sa	0103 1.4 43 0601 0.6 18 1308 2.9 88 2031 0.2 6	26 Su	0236 1.5 46 0718 0.9 27 1402 2.6 79 2119 0.3 9	11 Tu	0312 2.0 61 0834 0.8 24 1447 2.7 82 2139 -0.1 -3	26 W	0331 1.9 58 0849 1.1 34 1438 2.1 64 2131 0.3 9
12 F	0053 1.4 43 0611 0.6 18 1331 2.7 82 2055 0.5 15	27 Sa	0317 1.5 46 0808 0.9 27 1501 2.6 79 2218 0.4 12	12 Su	0224 1.5 46 0720 0.7 21 1414 2.9 88 2128 0.1 3	27 M	0338 1.7 52 0832 1.0 30 1455 2.4 73 2200 0.3 9	12 W	0413 2.3 70 0956 0.7 21 1548 2.5 76 2225 -0.2 -6	27 Th	0418 2.1 64 1002 1.0 30 1530 2.0 61 2206 0.2 6
13 Sa	0224 1.4 43 0728 0.7 21 1443 2.7 82 2203 0.4 12	28 Su	0423 1.6 49 0925 0.9 27 1559 2.5 76 2301 0.3 9	13 M	0336 1.7 52 0846 0.7 21 1518 2.8 85 2218 0.0 0	28 Tu	0427 1.9 58 0942 1.0 30 1545 2.3 70 2234 0.2 6	13 Th	0507 2.6 79 1110 0.6 18 1648 2.3 70 2309 -0.2 -6	28 F	0500 2.4 73 1109 0.9 27 1624 1.9 58 2242 0.2 6
14 Su	0348 1.5 46 0856 0.7 21 1551 2.8 85 2255 0.2 6	29 M	0510 1.8 55 1029 0.8 24 1648 2.5 76 2334 0.2 6	14 Tu	0435 2.0 61 1004 0.6 18 1619 2.8 85 2302 -0.1 -3	29 W	0506 2.1 64 1044 0.9 27 1631 2.2 67 2305 0.2 6	14 F	0556 3.0 91 1216 0.5 15 1745 2.1 64 2352 -0.2 -6	29 Sa	0540 2.7 82 1206 0.7 21 1717 1.8 55 2320 0.1 3
15 M	0450 1.8 55 1014 0.5 15 1651 3.0 91 2339 0.0 0	30 Tu	0546 2.0 61 1121 0.7 21 1730 2.5 76	15 W	0525 2.4 73 1113 0.5 15 1714 2.7 82 2343 -0.2 -6	30 Th	0541 2.3 70 1137 0.8 24 1715 2.1 64 2336 0.1 3	15 Sa	0642 3.2 98 1314 0.3 9 1840 2.0 61	30 Su	0619 3.0 91 1257 0.5 15 1809 1.7 52 2359 0.0 0
						31 F	0615 2.6 79 1226 0.6 18 1758 2.1 64				

Time meridian 75° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Matarani, Peru, 2019

Times and Heights of High and Low Waters

July				August				September																
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height											
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm										
1 M	0659	3.2	98		16 Tu	0058	0.0	0		1 Th	0111	-0.2	-6											
	1345	0.3	9	0757		3.5	107	0804	3.7		113	16 F	0208	0.1	3									
	1900	1.7	52	1450		0.1	3	1452	-0.1		-3	0849	3.3	101	1530	0.1	3							
				2012	1.7	52	2024	1.9	58	2110	2.0	61	1 Su	0243	-0.3	-9	16 M	0306	0.2	6				
2 Tu	0042	-0.1	-3	17 W	0141	0.0	0	2 F	0201	-0.2	-6	17 Sa	0245	0.1	3	2 M		0336	-0.2	-6	17 Tu	0343	0.3	9
	0741	3.5	107		0836	3.5	107		0849	3.8	116		0921	3.1	94			0956	3.3	101		0950	2.5	76
	1431	0.2	6		1530	0.1	3		1534	-0.3	-9		1600	0.1	3		1621	-0.3	-9	1605		0.2	6	
●	1950	1.7	52	2056	1.7	52	2114	2.1	64	2145	2.0	61	2231	2.7	82	2219	2.4	73						
3 W	0126	-0.1	-3	18 Th	0221	0.1	3	3 Sa	0252	-0.2	-6	18 Su	0322	0.2	6	3 Tu	0432	0.0	0	18 W	0424	0.5	15	
	0824	3.6	110		0914	3.4	104		0934	3.7	113		0953	3.0	91		1044	2.9	88		1022	2.2	67	
	1517	0.0	0		1608	0.1	3		1618	-0.3	-9		1630	0.1	3		1705	-0.2	-6		1632	0.3	9	
	2041	1.7	52	2138	1.7	52	2205	2.2	67	2222	2.0	61	2325	2.8	85	2257	2.4	73						
4 Th	0212	-0.1	-3	19 F	0301	0.2	6	4 Su	0344	-0.1	-3	19 M	0400	0.4	12	4 W	0534	0.2	6	19 Th	0510	0.6	18	
	0909	3.7	113		0951	3.3	101		1020	3.6	110		1025	2.8	85		1135	2.5	76		1056	2.0	61	
	1604	-0.1	-3		1645	0.1	3		1702	-0.3	-9		1701	0.2	6		1752	0.0	0		1700	0.4	12	
	2133	1.7	52	2220	1.7	52	2259	2.3	70	2300	2.0	61				2339	2.4	73						
5 F	0301	-0.1	-3	20 Sa	0341	0.3	9	5 M	0440	0.1	3	20 Tu	0440	0.5	15	5 Th	0026	2.7	82	20 F	0606	0.8	24	
	0954	3.7	113		1027	3.2	98		1108	3.3	101		1057	2.5	76		0647	0.4	12		1136	1.7	52	
	1651	-0.2	-6		1721	0.1	3		1748	-0.2	-6		1731	0.3	9		1234	2.1	64		1733	0.6	18	
	2227	1.8	55	2304	1.7	52	2356	2.3	70	2341	2.0	61	●	1844	0.2	6	1816	0.6	18					
6 Sa	0352	0.0	0	21 Su	0421	0.5	15	6 Tu	0542	0.3	9	21 W	0524	0.7	21	6 F	0134	2.7	82	21 Sa	0030	2.4	73	
	1042	3.6	110		1102	3.0	91		1158	2.9	88		1130	2.3	70		0813	0.6	18		0719	0.9	27	
	1739	-0.2	-6		1757	0.2	6		1836	-0.1	-3		1802	0.4	12		1347	1.8	55		1230	1.5	46	
	2325	1.8	55	2349	1.7	52							1945	0.3	9	1816	0.6	18						
7 Su	0448	0.2	6	22 M	0504	0.6	18	7 W	0059	2.4	73	22 Th	0027	2.1	64	7 Sa	0249	2.7	82	22 Su	0135	2.4	73	
	1131	3.4	104		1137	2.7	82		0653	0.5	15		0618	0.9	27		0947	0.6	18		0849	0.8	24	
	1828	-0.2	-6		1833	0.3	9		1254	2.5	76		1206	2.0	61		1514	1.6	49		1353	1.3	40	
							●	1927	0.0	0	1836	0.5	15	2054	0.5	15	1920	0.7	21					
8 M	0027	1.9	58	23 Tu	0038	1.8	55	8 Th	0208	2.5	76	23 F	0121	2.1	64	8 Su	0401	2.8	85	23 M	0247	2.5	76	
	0551	0.4	12		0551	0.8	24		0818	0.7	21		0730	1.0	30		1105	0.5	15		1008	0.7	21	
	1223	3.1	94		1213	2.5	76		1358	2.1	64		1253	1.7	52		1636	1.6	49		1526	1.4	43	
	1918	-0.2	-6	1909	0.3	9	2022	0.1	3	1916	0.5	15	2204	0.5	15	2041	0.7	21						
9 Tu	0133	2.1	64	24 W	0130	1.8	55	9 F	0319	2.7	82	24 Sa	0224	2.2	67	9 M	0504	2.9	88	24 Tu	0354	2.7	82	
	0702	0.6	18		0649	1.0	30		0950	0.7	21		0902	1.0	30		1203	0.3	9		1103	0.5	15	
	1318	2.8	85		1252	2.2	67		1513	1.8	55		1400	1.5	46		1739	1.6	49		1636	1.5	46	
●	2009	-0.1	-3	1945	0.4	12	2121	0.2	6	2121	0.2	6	2009	0.6	18	2305	0.4	12	2157	0.5	15			
10 W	0241	2.3	70	25 Th	0226	2.0	61	10 Sa	0427	2.8	85	25 Su	0330	2.4	73	10 Tu	0554	3.0	91	25 W	0452	2.9	88	
	0824	0.8	24		0801	1.1	34		1114	0.6	18		1028	0.9	27		1246	0.2	6		1147	0.2	6	
	1419	2.4	73		1338	2.0	61		1630	1.6	49		1523	1.4	43		1825	1.8	55		1729	1.8	55	
	2100	-0.1	-3	2024	0.4	12	2220	0.2	6	2220	0.2	6	2111	0.5	15	2355	0.3	9	2302	0.3	9			
11 Th	0347	2.5	76	26 F	0323	2.1	64	11 Su	0526	3.0	91	26 M	0430	2.7	82	11 W	0636	3.0	91	26 Th	0542	3.1	94	
	0951	0.8	24		0926	1.1	34		1220	0.4	12		1131	0.7	21		1320	0.2	6		1226	0.0	0	
	1524	2.1	64		1435	1.8	55		1738	1.6	49		1639	1.5	46		1902	1.9	58		1816	2.1	64	
	2151	0.0	0	2106	0.4	12	2315	0.2	6	2315	0.2	6	2215	0.4	12	2359	0.1	3						
12 F	0447	2.8	85	27 Sa	0416	2.4	73	12 M	0617	3.1	94	27 Tu	0522	3.0	91	12 Th	0038	0.2	6	27 F	0630	3.3	101	
	1112	0.7	21		1045	1.0	30		1311	0.3	9		1218	0.4	12		0713	3.1	94		1304	-0.2	-6	
	1632	1.9	58		1542	1.6	49		1833	1.6	49		1739	1.6	49		1349	0.1	3		1901	2.4	73	
	2241	0.0	0	2153	0.3	9						2314	0.2	6	1935	2.1	64							
13 Sa	0542	3.0	91	28 Su	0505	2.7	82	13 Tu	0005	0.2	6	28 W	0610	3.3	101	13 F	0116	0.2	6	28 Sa	0052	-0.1	-3	
	1221	0.5	15		1149	0.8	24		0700	3.2	98		1259	0.1	3		0746	3.0	91		0715	3.3	101	
	1736	1.7	52		1649	1.6	49		1351	0.2	6		1830	1.8	55		1417	0.1	3		1342	-0.4	-12	
	2329	0.0	0	2242	0.2	6	1918	1.7	52				2007	2.2	67	1945	2.7	82						
14 Su	0630	3.2	98	29 M	0551	3.0	91	14 W	0049	0.1	3	29 Th	0009	0.0	0	14 Sa	0153	0.1	3	29 Su	0144	-0.3	-9	
	1318	0.3	9		1241	0.5	15		0739	3.3	101		0656	3.5	107		0817	3.0	91		0800	3.3	101	
	1834	1.7	52		1749	1.6	49		1427	0.1	3		1339	-0.1	-3		1443	0.0	0		1420	-0.4	-12	
				2332	0.1	3	1957	1.8	55				2039	2.3	70	2030	3.0	91						
15 M	0015	0.0	0	30 Tu	0635	3.3	101	15 Th	0130	0.1	3	30 F	0101	-0.2	-6	15 Su	0229	0.2	6	30 M	0236	-0.3	-9	
	0715	3.4	104		1326	0.3	9		0815	3.3	101		0741	3.6	110		0848	2.9	88		0846	3.1	94	
	1407	0.2	6		1844	1.7	52		1459	0.1	3		1418	-0.3	-9		1510	0.1	3		1500	-0.4	-12	
	1925	1.7	52				●	2034	1.9	58	2052	2.3	70	2111	2.4	73	2117	3.1	94					
				31 W	0022	-0.1	-3	31 Sa	0152	-0.3	-9	31 Su	0152	-0.3	-9									
					0720	3.5	107		0825	3.6	110		0825	3.6	110									
					1409	0.1	3		1458</															

Matarani, Peru, 2019

Times and Heights of High and Low Waters

October				November				December																					
Time	Height			Time	Height			Time	Height			Time	Height																
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm		h	m	ft	cm										
1 Tu	0330	-0.2	-6		16 W	0332	0.3	9		1 F	0525	0.1	3		16 Sa	0502	0.3	9		1 Su	0613	0.1	3		16 M	0539	0.1	3	
	0932	2.8	85			0919	2.2	67			1102	1.7	52			1025	1.5	46			1150	1.5	46			1111	1.5	46	
	1541	-0.3	-9			1515	0.2	6			1632	0.2	6			1545	0.3	9			1654	0.5	15			1622	0.3	9	
	2205	3.2	98			2148	2.8	85			2328	3.2	98			2248	3.1	94			2354	3.1	94			2320	3.3	101	
2 W	0427	-0.1	-3		17 Th	0416	0.4	12		2 Sa	0633	0.2	6		17 Su	0558	0.3	9		2 M	0711	0.2	6		17 Tu	0629	0.1	3	
	1022	2.5	76			0955	1.9	58			1210	1.5	46			1121	1.4	43			1259	1.5	46			1213	1.6	49	
	1623	-0.1	-3			1643	0.3	9			1724	0.5	15			1628	0.5	15			1751	0.7	21			1719	0.5	15	
	2257	3.1	94			2225	2.8	85								2338	3.0	91											
3 Th	0529	0.1	3		18 F	0506	0.5	15		3 Su	0027	3.0	91		18 M	0659	0.3	9		3 Tu	0047	2.9	88		18 W	0011	3.1	94	
	1116	2.1	64			1035	1.7	52			0746	0.3	9			1230	1.3	40			0808	0.2	6			0721	0.0	0	
	1709	0.1	3			1613	0.4	12			1331	1.4	43			1723	0.6	18			1412	1.5	46			1322	1.7	52	
	2355	3.0	91			2307	2.7	82			1828	0.7	21								1858	0.9	27			1828	0.7	21	
4 F	0642	0.3	9		19 Sa	0604	0.6	18		4 M	0132	2.8	85		19 Tu	0034	2.9	88		4 W	0141	2.6	79		19 Th	0106	2.9	88	
	1221	1.7	52			1124	1.5	46			0856	0.3	9			0800	0.3	9			0859	0.2	6			0813	0.0	0	
	1802	0.4	12			1649	0.6	18			1457	1.5	46			1350	1.4	43			1519	1.7	52			1432	1.9	58	
						2358	2.7	82			1947	0.9	27			1837	0.8	24			2014	1.0	30			1949	0.8	24	
5 Sa	0100	2.9	88		20 Su	0715	0.6	18		5 Tu	0238	2.7	82		20 W	0136	2.8	85		5 Th	0236	2.4	73		20 F	0206	2.6	79	
	0806	0.4	12			1231	1.3	40			0956	0.3	9			0857	0.2	6			0942	0.2	6			0903	0.0	0	
	1343	1.5	46			1737	0.7	21			1606	1.6	49			1504	1.6	49			1614	1.9	58			1538	2.2	67	
	1907	0.6	18								2107	0.9	27			2004	0.8	24			2129	1.0	30			2116	0.8	24	
6 Su	0213	2.8	85		21 M	0100	2.7	82		6 W	0339	2.6	79		21 Th	0240	2.7	82		6 F	0328	2.3	70		21 Sa	0309	2.4	73	
	0930	0.4	12			0831	0.6	18			1041	0.2	6			0946	0.1	3			1019	0.2	6			0952	-0.1	-3	
	1515	1.5	46			1401	1.3	40			1657	1.8	55			1605	1.9	58			1657	2.1	64			1636	2.5	76	
	2026	0.7	21			1850	0.8	24			2216	0.8	24			2128	0.8	24			2235	1.0	30			2237	0.7	21	
7 M	0326	2.7	82		22 Tu	0209	2.7	82		7 Th	0430	2.5	76		22 F	0342	2.7	82		7 Sa	0417	2.2	67		22 Su	0414	2.2	67	
	1039	0.3	9			0937	0.4	12			1117	0.2	6			1031	-0.1	-3			1052	0.2	6			1039	-0.1	-3	
	1632	1.6	49			1524	1.4	43			1735	2.1	64			1657	2.3	70			1733	2.3	70			1729	2.9	88	
	2144	0.7	21			2020	0.8	24			2311	0.7	21			2242	0.6	18			2331	0.8	24			2348	0.5	15	
8 Tu	0429	2.7	82		23 W	0317	2.7	82		8 F	0514	2.5	76		23 Sa	0440	2.6	79		8 Su	0502	2.1	64		23 M	0515	2.1	64	
	1129	0.3	9			1027	0.2	6			1147	0.1	3			1113	-0.2	-6			1123	0.1	3			1124	-0.2	-6	
	1725	1.8	55			1626	1.7	52			1808	2.3	70			1744	2.7	82			1807	2.6	79			1817	3.2	98	
	2247	0.6	18			2142	0.6	18			2357	0.6	18			2346	0.4	12											
9 W	0519	2.8	85		24 Th	0418	2.8	85		9 Sa	0552	2.4	73		24 Su	0535	2.5	76		9 M	0020	0.7	21		24 Tu	0050	0.3	9	
	1206	0.2	6			1110	0.0	0			1214	0.1	3			1153	-0.3	-9			0546	2.0	61			0614	1.9	58	
	1805	1.9	58			1715	2.0	61			1838	2.5	76			1829	3.1	94			1153	0.1	3			1209	-0.2	-6	
	2338	0.5	15			2251	0.4	12													1840	2.8	85			1903	3.5	107	
10 Th	0601	2.8	85		25 F	0511	2.9	88		10 Su	0039	0.5	15		25 M	0045	0.2	6		10 Tu	0106	0.5	15		25 W	0145	0.2	6	
	1237	0.1	3			1149	-0.2	-6			0628	2.3	70			0627	2.4	73			0628	1.9	58			0709	1.9	58	
	1838	2.1	64			1800	2.4	73			1240	0.0	0			1233	-0.4	-12			1225	0.0	0			1252	-0.2	-6	
						2350	0.2	6			1909	2.7	82			1913	3.4	104			1915	3.1	94			1948	3.6	110	
11 F	0020	0.4	12		26 Sa	0601	2.9	88		11 M	0120	0.4	12		26 Tu	0140	0.0	0		11 W	0149	0.4	12		26 Th	0236	0.0	0	
	0636	2.7	82			1227	-0.3	-9			0703	2.3	70			0718	2.2	67			0711	1.8	55			0800	1.8	55	
	1304	0.1	3			1844	2.8	85			1308	0.0	0			1314	-0.4	-12			1258	0.0	0			1336	-0.2	-6	
	1908	2.3	70								1940	2.9	88			1958	3.6	110			1950	3.3	101			2031	3.7	113	
12 Sa	0059	0.3	9		27 Su	0045	0.0	0		12 Tu	0200	0.3	9		27 W	0234	0.0	0		12 Th	0233	0.3	9		27 F	0324	0.0	0	
	0709	2.7	82			0649	2.9	88			0739	2.1	64			0808	2.1	64			0754	1.8	55			0850	1.7	52	
	1329	0.0	0			1306	-0.4	-12			1336	0.0	0			1355	-0.3	-9			1333	0.0	0			1419	-0.1	-3	
	1938	2.5	76			1927	3.1	94			2013	3.0	91			2042	3.7	113			2028	3.4	104			2114	3.7	113	
13 Su	0136	0.2	6		28 M	0139	-0.1	-3		13 W	0242	0.3	9		28 Th	0327	-0.1	-3		13 F	0317	0.2	6		28 Sa	0410	0.0	0	
	0741	2.6	79			0736	2.8	85			0816	2.0	61			0859	1.9	58			0838	1.7	52			0939	1.7	52	
	1355	0.0	0			1344	-0.4	-12			1405	0.0	0			1437	-0.2	-6			1411	0.0	0			1502	0.1	3	
	2008	2.6	79			2012	3.4	104			2048	3.1	94			2128	3.6	110			2107	3.5	107			2157	3.5	107	
14 M	0213	0.2	6		29 Tu	0232	-0.2	-6		14 Th	0325	0.2	6		29 F	0421	-0.1	-3		14 Sa	0402	0.1	3		29 Su	0456	0.0	0	
	0812	2.5	76			0824	2.6	79																					

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Times and Heights of High and Low Waters

April				May				June																																				
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height																															
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm																														
1 M	0359	2.2	67		16 Tu	0316	2.4	73		1 W	0407	2.4	73		16 Th	0403	2.9	88		1 Sa	0443	2.9	88		16 Su	0530	3.4	104																
	0939	1.0	30			0904	0.8	24			0944	1.2	37			0954	1.0	30			1041	1.3	40			1149	1.2	37																
	1620	3.1	94			1538	3.4	104			1554	2.9	88			1551	3.0	91			1602	2.5	76			1652	2.3	70		1652	2.3	70												
	2253	1.1	34			2211	0.7	21			2224	0.8	24			2218	0.3	9			2226	0.4	12			2308	0.2	6		2308	0.2	6												
2 Tu	0431	2.3	70		17 W	0408	2.8	85		2 Th	0437	2.6	79		17 F	0450	3.2	98		2 Su	0518	3.1	94		17 M	0614	3.5	107		17 O	1242	1.2	37		17 M	1735	2.2	67		17 O	2345	0.2	6	
	1016	1.0	30			1002	0.7	21			1024	1.2	37			1051	1.0	30			1127	1.3	40			1242	1.2	37			1242	1.2	37											
	1648	3.1	94			1623	3.4	104			1623	2.8	85			1634	2.9	88			1639	2.4	73			1639	2.4	73			1735	2.2	67			1735	2.2	67						
	2315	1.0	30			2249	0.5	15			2247	0.7	21			2256	0.2	6			2258	0.3	9			2258	0.3	9			2345	0.2	6			2345	0.2	6						
3 W	0501	2.5	76		18 Th	0457	3.0	91		3 F	0508	2.8	85		18 Sa	0536	3.4	104		3 M	0556	3.3	101		18 Tu	0656	3.5	107		18 Tu	1334	1.2	37		18 Tu	1818	2.0	61						
	1051	0.9	27			1055	0.7	21			1103	1.1	34			1145	1.0	30			1214	1.2	37			1214	1.2	37			1334	1.2	37			1334	1.2	37						
	1715	3.1	94			1706	3.3	101			1652	2.8	85			1716	2.7	82			1717	2.3	70			1717	2.3	70			1717	2.3	70			1818	2.0	61		1818	2.0	61		
	2336	0.9	27			2327	0.3	9			2311	0.6	18			2333	0.2	6			2332	0.3	9			2332	0.3	9			2332	0.3	9			2332	0.3	9						
4 Th	0531	2.6	79		19 F	0544	3.2	98		4 Sa	0540	3.0	91		19 Su	0622	3.5	107		4 Tu	0637	3.4	104		19 W	0739	3.4	104		19 W	1426	1.2	37		19 W	1900	1.9	58						
	1125	0.9	27			1147	0.7	21			1124	1.1	34			1238	1.1	34			1304	1.2	37			1304	1.2	37			1426	1.2	37			1426	1.2	37						
	1741	3.0	91			1747	3.2	98			1721	2.7	82			1758	2.5	76			1757	2.2	67			1757	2.2	67			1900	1.9	58			1900	1.9	58						
	2359	0.8	24			○		○			●	2336	0.6	18																														
5 F	0602	2.8	85		20 Sa	0004	0.3	9		5 Su	0615	3.1	94		20 M	0010	0.3	9		5 W	0009	0.3	9		20 Th	0058	0.5	15		20 Th	0820	3.3	101		20 Th	1518	1.2	37						
	1200	0.9	27			0631	3.4	104			1224	1.2	37			0707	3.5	107			0720	3.5	107			0720	3.5	107			0820	3.3	101			0820	3.3	101						
	1807	2.9	88			1239	0.8	24			1751	2.5	76			1333	1.2	37			1356	1.2	37			1356	1.2	37			1518	1.2	37			1518	1.2	37						
						1828	3.0	91								1839	2.3	70			1842	2.1	64			1842	2.1	64			1945	1.8	55			1945	1.8	55						
6 Sa	0022	0.8	24		21 Su	0042	0.3	9		6 M	0003	0.5	15		21 Tu	0046	0.4	12		6 Th	0049	0.3	9		21 F	0134	0.7	21		21 F	0901	3.2	98		21 F	1612	1.2	37						
	0634	2.8	85			0718	3.4	104			0651	3.2	98			0753	3.4	104			0807	3.5	107			0807	3.5	107			0901	3.2	98			0901	3.2	98						
	1235	1.0	30			1332	1.0	30			1307	1.2	37			1431	1.3	40			1454	1.2	37			1454	1.2	37			1612	1.2	37			1612	1.2	37						
	1832	2.8	85			1909	2.7	82			1822	2.4	73			1921	2.1	64			1933	2.0	61			1933	2.0	61			2036	1.7	52			2036	1.7	52						
7 Su	0045	0.8	24		22 M	0120	0.4	12		7 Tu	0033	0.5	15		22 W	0123	0.6	18		7 F	0135	0.5	15		22 Sa	0210	0.9	27		22 Sa	0942	3.0	91		22 Sa	1705	1.2	37						
	0708	2.9	88			0808	3.4	104			0731	3.3	101			0841	3.3	101			0858	3.5	107			0858	3.5	107			0942	3.0	91			0942	3.0	91						
	1312	1.1	34			1429	1.2	37			1356	1.3	40			1535	1.3	40			1556	1.2	37			1556	1.2	37			1705	1.2	37			1705	1.2	37						
	1857	2.6	79			1950	2.4	73			1855	2.2	67			2007	1.9	58			2036	1.9	58			2036	1.9	58			2137	1.6	49			2137	1.6	49						
8 M	0109	0.8	24		23 Tu	0159	0.6	18		8 W	0105	0.6	18		23 Th	0201	0.8	24		8 Sa	0226	0.6	18		23 Su	0249	1.1	34		23 Su	1023	2.9	88		23 Su	1754	1.2	37						
	0744	2.9	88			0900	3.2	98			0816	3.3	101			0931	3.2	98			0952	3.4	104			0952	3.4	104			1023	2.9	88			1023	2.9	88						
	1352	1.3	40			1535	1.3	40			1452	1.4	43			1648	1.4	43			1701	1.1	34			1701	1.1	34			1754	1.2	37			1754	1.2	37						
	1922	2.5	76			2035	2.1	64			1933	2.1	64			2103	1.7	52			2156	1.8	55			2156	1.8	55			2253	1.6	49			2253	1.6	49						
9 Tu	0136	0.8	24		24 W	0239	0.8	24		9 Th	0143	0.7	21		24 F	0241	1.0	30		9 Su	0329	0.8	24		24 M	0336	1.3	40		24 M	1102	2.7	82		24 M	1835	1.1	34						
	0825	2.9	88			0958	3.1	94			0907	3.2	98			1024	3.0	91			1050	3.3	101			1050	3.3	101			1102	2.7	82			1102	2.7	82						
	1439	1.4	43			1658	1.5	46			1600	1.5	46			1805	1.3	40			1803	1.0	30			1803	1.0	30			1835	1.1	34			1835	1.1	34						
	1949	2.3	70			2130	1.9	58			2023	1.9	58			2222	1.6	49			2327	1.9	58			2327	1.9	58			2327	1.9	58			2327	1.9	58						
10 W	0207	0.8	24		25 Th	0325	1.0	30		10 F	0229	0.8	24		25 Sa	0329	1.2	37		10 M	0444	1.0	30		25 Tu	0015	1.7	52		25 Tu	0437	1.4	43		25 Tu	1142	2.6	79						
	0914	2.9	88			1105	3.0	91			1006	3.2	98			1119	2.9	88			1149	3.1	94			1149	3.1	94			1142	2.6	79			1142	2.6	79						
	1539	1.6	49			1839	1.5	46			1720	1.4	43			1909	1.3	40			1858	0.8	24			1858	0.8	24			1909	1.0	30			1909	1.0	30						
	2023	2.1	64			2257	1.7	52			2138	1.8	55																															
11 Th	0247	0.9	27		26 F	0424	1.2	37		11 Sa	0330	0.9	27		26 Su	0006	1.6	49		11 Tu	0054	2.1	64		26 W	0125	1.9	5																

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Times and Heights of High and Low Waters

July				August				September																									
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height																				
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm																			
1 M	0457	3.2	98		16 Tu	0603	3.3	101		1 Th	0601	3.5	107		16 F	0647	3.1	94		1 Su	0026	0.0	0		16 M	0038	0.6	18					
	1113	1.3	40			1230	0.8	24			1319	0.9	27			0701	3.4	104			0658	2.6	79										
	1607	2.2	67			1740	2.2	67			1829	2.0	61			1325	0.3	9			1316	0.6	18										
	2229	0.2	6			2346	-0.1	-3								1917	2.6	79			1915	2.2	67										
2 Tu	0538	3.4	104		17 W	0642	3.3	101		2 F	0645	3.6	110		17 Sa	0024	0.4	12		2 M	0118	0.1	3		17 Tu	0111	0.7	21					
	1203	1.2	37			1321	1.1	34			1316	0.7	21			0716	3.0	91			0745	3.2	98			0721	2.4	73					
	1656	2.2	67			1805	1.9	58			1834	2.2	67			1347	0.9	27			1410	0.2	6			1339	0.7	21					
	2311	0.1	3								1904	2.0	61			1904	2.0	61			2013	2.6	79			1949	2.2	67					
3 W	0621	3.5	107		18 Th	0005	0.3	9		3 Sa	0035	0.0	0		18 Su	0056	0.5	15		3 Tu	0212	0.4	12		18 W	0145	0.9	27					
	1252	1.1	34			0718	3.3	101			0730	3.6	110			0744	2.8	85			0830	2.9	88			1403	0.6	18		1456	0.3	9	
	1746	2.1	64			1401	1.1	34			1403	0.6	18			1415	0.9	27			1940	2.0	61			2114	2.5	76		2026	2.2	67	
	2355	0.1	3			1845	1.9	58			1929	2.3	70			1940	2.0	61															
4 Th	0706	3.6	110		19 F	0040	0.4	12		4 Su	0126	0.1	3		19 M	0127	0.7	21		4 W	0313	0.7	21		19 Th	0222	1.1	34					
	1343	1.0	30			0753	3.2	98			0815	3.4	104			0810	2.7	82			0918	2.5	76			0803	2.1	64					
	1838	2.1	64			1439	1.1	34			1451	0.5	15			1442	0.9	27			1547	0.4	12			1426	0.7	21					
						1925	1.8	55			2029	2.2	67			2017	1.9	58			2223	2.5	76			2111	2.2	67					
5 F	0042	0.1	3		20 Sa	0114	0.6	18		5 M	0219	0.4	12		20 Tu	0159	0.9	27		5 Th	0428	1.0	30		20 F	0310	1.3	40					
	0752	3.6	110			0826	3.1	94			0902	3.2	98			0833	2.5	76			1012	2.2	67			0826	1.9	58					
	1435	0.9	27			1517	1.1	34			1542	0.5	15			1509	0.9	27			1644	0.5	15			1458	0.7	21					
	1935	2.0	61			2007	1.8	55			2134	2.2	67			2058	1.9	58			2343	2.5	76			2210	2.2	67					
6 Sa	0131	0.3	9		21 Su	0147	0.8	24		6 Tu	0319	0.7	21		21 W	0234	1.1	34		6 F	0604	1.2	37		21 Sa	0421	1.4	43					
	0840	3.5	107			0857	2.9	88			0951	2.9	88			0856	2.3	70			1120	1.9	58			0858	1.7	52					
	1529	0.9	27			1554	1.1	34			1635	0.5	15			1537	0.9	27			1749	0.6	18			1545	0.7	21					
	2039	2.0	61			2053	1.7	52			2248	2.3	70			2149	1.9	58								2327	2.3	70					
7 Su	0225	0.5	15		22 M	0221	0.9	27		7 W	0430	1.0	30		22 Th	0317	1.3	40		7 Sa	0109	2.5	76		22 Su	0614	1.4	43					
	0930	3.4	104			0927	2.7	82			1044	2.6	79			0921	2.2	67			0751	1.2	37			1003	1.6	49					
	1625	0.8	24			1630	1.1	34			1732	0.5	15			1611	0.9	27			1246	1.7	52			1656	0.7	21					
	2151	2.0	61			2146	1.7	52								2255	2.0	61			1901	0.6	18										
8 M	0325	0.7	21		23 Tu	0258	1.1	34		8 Th	0011	2.3	70		23 F	0420	1.4	43		8 Su	0223	2.7	82		23 M	0050	2.4	73					
	1022	3.2	98			0957	2.6	79			0557	1.2	37			0954	2.0	61			0913	1.1	34			0754	1.3	40					
	1722	0.7	21			1705	1.0	30			1144	2.3	70			1656	0.8	24			1409	1.7	52			1201	1.5	46					
	2312	2.0	61			2251	1.8	55			1832	0.5	15								2007	0.6	18			1823	0.7	21					
9 Tu	0436	1.0	30		24 W	0345	1.3	40		9 F	0133	2.5	76		24 Sa	0015	2.1	64		9 M	0320	2.8	85		24 Tu	0157	2.6	79					
	1117	3.0	91			1028	2.4	73			0736	1.3	40			0600	1.5	46			1007	1.0	30			0849	1.1	34					
	1817	0.6	18			1741	1.0	30			1251	2.1	64			1047	1.9	58			1511	1.7	52			1340	1.7	52					
											1931	0.5	15			1755	0.7	21			2102	0.5	15			1941	0.5	15					
10 W	0035	2.2	67		25 Th	0006	1.9	58		10 Sa	0244	2.7	82		25 Su	0131	2.3	70		10 Tu	0405	2.9	88		25 W	0251	2.8	85					
	0559	1.2	37			0453	1.5	46			0905	1.3	40			0749	1.5	46			1045	0.9	27			0931	0.8	24					
	1214	2.7	82			1105	2.3	70			1401	2.0	61			1209	1.8	55			1558	1.8	55			1449	1.9	58					
	1910	0.5	15			1820	0.9	27			2026	0.4	12			1901	0.6	18			2147	0.5	15			2046	0.3	9					
11 Th	0152	2.4	73		26 F	0118	2.0	61		11 Su	0341	2.9	88		26 M	0232	2.6	79		11 W	0441	2.9	88		26 Th	0338	3.0	91					
	0728	1.3	40			0624	1.6	49			1013	1.2	37			0902	1.3	40			1116	0.8	24			1009	0.6	18					
	1312	2.5	76			1152	2.2	67			1503	1.9	58			1336	1.8	55			1635	1.9	58			1545	2.2	67					
	2000	0.4	12			1902	0.7	21			2116	0.4	12			2004	0.4	12			2225	0.4	12			2143	0.2	6					
12 F	0256	2.7	82		27 Sa	0217	2.3	70		12 M	0428	3.0	91		27 Tu	0322	2.8	85		12 Th	0513	2.9	88		27 F	0422	3.2	98					
	0852	1.3	40			0757	1.6	49			1104	1.1	34			0952	1.1	34			1142	0.7	21			1048	0.3	9					
	1409	2.3	70			1251	2.1	64			1555	1.9	58			1447	1.9	58			1708	2.0	61			1636	2.4	73					
	2047	0.3	9			1947	0.6	18			2200	0.3	9			2102	0.2	6			2300	0.4	12			2235	0.1	3					
13 Sa	0351	2.9	88		28 Su	0306	2.6	79		13 Tu	0508	3.1	94		28 W	0408	3.1	94		13 F	0541	2.9	88		28 Sa	0505	3.2	98					
	1003	1.3	40			0910	1.5	46			1144	1.0	30			1036	0.9	27			1206	0.7	21			1127	0.1	3					
	1504	2.2	67			1354	2.0	61			1639	1.9	58			1547	2.1	64			1739	2.1	64			1725	2.7	82					
	2130	0.3	9			2034	0.4	12			2240	0.3	9			2155	0.0	0			2334	0.4	12			2326	0.1	3					
14 Su	0440	3.1	94		29 M	0350	2.9	88		14 W	0544	3.1	94		29 Th	0452	3.3	101		14 Sa	0608	2.8	85		29 Su	0547	3.2	98					
	1103																																

Callao, Peru, 2019

Times and Heights of High and Low Waters

October				November				December																					
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height																
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm															
1 Tu	0110	0.3	9		16 W	0059	0.8	24		1 F	0312	0.9	27		16 Sa	0231	1.1	34		1 Su	0419	1.0	30		16 M	0323	1.0	30	
	0712	2.8	85			0636	2.2	67			0813	1.8	55			0703	1.7	52			0847	1.5	46			0758	1.7	52	
	1329	0.0	0			1248	0.4	12			1416	0.3	9			1314	0.3	9			1427	0.6	18			1353	0.4	12	
	1957	2.9	88			1928	2.6	79			2134	2.9	88			2041	2.9	88			2204	2.9	88			2118	3.2	98	
2 W	0207	0.5	15		17 Th	0139	1.0	30		2 Sa	0434	1.0	30		17 Su	0334	1.2	37		2 M	0534	1.0	30		17 Tu	0422	1.0	30	
	0756	2.4	73			0659	2.0	61			0913	1.5	46			0745	1.6	49			1004	1.4	43			0907	1.6	49	
	1412	0.2	6			1312	0.4	12			1505	0.6	18			1355	0.4	12			1516	0.9	27			1447	0.6	18	
	2053	2.8	85			2006	2.6	79			2241	2.8	85			2134	2.8	85			2259	2.7	82			2211	3.1	94	
3 Th	0311	0.8	24		18 F	0224	1.1	34		3 Su	0610	1.0	30		18 M	0450	1.2	37		3 Tu	0643	1.0	30		18 W	0522	0.9	27	
	0844	2.1	64			0722	1.8	55			1041	1.4	43			0849	1.4	43			1145	1.4	43			1033	1.6	49	
	1459	0.3	9			1338	0.5	15			1606	0.8	24			1447	0.6	18			1618	1.1	34			1555	0.8	24	
	2158	2.7	82			2051	2.5	76			2352	2.7	82			2235	2.8	85			2354	2.6	79			2307	2.9	88	
4 F	0431	1.0	30		19 Sa	0322	1.3	40		4 M	0734	0.9	27		19 Tu	0605	1.1	34		4 W	0733	0.9	27		19 Th	0619	0.7	21	
	0941	1.8	55			0750	1.7	52			1237	1.4	43			1031	1.4	43			1319	1.5	46			1207	1.8	55	
	1553	0.5	15			1413	0.6	18			1728	1.0	30			1601	0.8	24			1738	1.2	37			1718	1.0	30	
	2314	2.6	79			2147	2.5	76			●	●	●	●		●	●	●	●		●	●	●	●		●	●	●	●
5 Sa	0615	1.1	34		20 Su	0446	1.3	40		5 Tu	0059	2.6	79		20 W	0704	0.9	27		5 Th	0044	2.5	76		20 F	0005	2.8	85	
	1102	1.6	49			0833	1.5	46			0828	0.8	24			1221	1.5	46			0808	0.8	24			0711	0.6	18	
	1701	0.7	21			1502	0.6	18			1403	1.5	46			1734	0.9	27			1420	1.7	52			1329	2.1	64	
	●	●	●	●		2258	2.5	76			1852	1.1	34			1858	1.3	40			1858	1.3	40			1849	1.1	34	
6 Su	0036	2.6	79		21 M	0630	1.3	40		6 W	0153	2.6	79		21 Th	0043	2.8	85		6 F	0127	2.4	73		21 Sa	0103	2.7	82	
	0756	1.0	30			1006	1.4	43			0903	0.7	21			0750	0.6	18			0835	0.7	21			0758	0.4	12	
	1250	1.5	46			1617	0.7	21			1454	1.7	52			1342	1.8	55			1501	1.9	58			1435	2.4	73	
	1823	0.8	24			●	●	●	●		2000	1.0	30			1903	0.9	27			2006	1.3	40			2012	1.2	37	
7 M	0149	2.6	79		22 Tu	0014	2.6	79		7 Th	0235	2.5	76		22 F	0139	2.8	85		7 Sa	0205	2.4	73		22 Su	0159	2.6	79	
	0901	0.9	27			0740	1.1	34			0928	0.6	18			0831	0.4	12			0859	0.6	18			0842	0.2	6	
	1416	1.6	49			1217	1.4	43			1530	1.9	58			1443	2.2	67			1534	2.2	67			1531	2.8	85	
	1940	0.8	24			1754	0.8	24			2052	1.0	30			2018	0.9	27			2101	1.3	40			2125	1.1	34	
8 Tu	0245	2.7	82		23 W	0121	2.7	82		8 F	0309	2.5	76		23 Sa	0231	2.8	85		8 Su	0241	2.3	70		23 M	0252	2.4	73	
	0942	0.8	24			0825	0.8	24			0950	0.5	15			0910	0.2	6			0922	0.5	15			0925	0.1	3	
	1511	1.7	52			1346	1.7	52			1601	2.1	64			1536	2.6	79			1605	2.4	73			1620	3.1	94	
	2039	0.8	24			1921	0.7	21			2135	1.0	30			2123	0.8	24			2150	1.2	37			2228	1.1	34	
9 W	0327	2.7	82		24 Th	0216	2.8	85		9 Sa	0339	2.5	76		24 Su	0318	2.7	82		9 M	0315	2.3	70		24 Tu	0342	2.3	70	
	1012	0.7	21			0903	0.6	18			1011	0.4	12			0949	0.0	0			0947	0.3	9			1006	0.0	0	
	1550	1.9	58			1449	2.0	61			1630	2.3	70			1624	2.9	88			1637	2.7	82			1707	3.3	101	
	2125	0.7	21			2031	0.6	18			2215	0.9	27			2222	0.7	21			2235	1.2	37			2325	1.0	30	
10 Th	0401	2.7	82		25 F	0305	2.9	88		10 Su	0407	2.4	73		25 M	0404	2.6	79		10 Tu	0349	2.2	67		25 W	0430	2.2	67	
	1036	0.6	18			0940	0.3	9			1032	0.3	9			1028	-0.2	-6			1014	0.2	6			1047	-0.1	-3	
	1622	2.0	61			1541	2.3	70			1659	2.5	76			1711	3.1	94			1710	2.9	88			1752	3.4	104	
	2204	0.6	18			2131	0.4	12			2253	0.9	27			2318	0.7	21			2319	1.1	34			2319	1.1	34	
11 F	0430	2.7	82		26 Sa	0350	3.0	91		11 M	0435	2.4	73		26 Tu	0448	2.5	76		11 W	0424	2.1	64		26 Th	0019	1.0	30	
	1057	0.5	15			1017	0.1	3			1055	0.3	9			1106	-0.2	-6			1044	0.2	6			0516	2.1	64	
	1651	2.2	67			1629	2.7	82			1730	2.7	82			1757	3.3	101			1745	3.0	91			1127	0.0	0	
	2239	0.6	18			2226	0.4	12			2332	0.9	27			●	●	●			●	●	●	1836		3.5	107		
12 Sa	0457	2.7	82		27 Su	0433	2.9	88		12 Tu	0503	2.3	70		27 W	0013	0.8	24		12 Th	0003	1.1	34		27 F	0110	1.0	30	
	1119	0.5	15			1055	-0.1	-3			1119	0.2	6			0532	2.3	70			0500	2.1	64			0602	2.0	61	
	1720	2.3	70			1717	2.9	88			1803	2.8	85			1145	-0.2	-6			1115	0.1	3			1206	0.1	3	
	2314	0.6	18			●	●	●	●		○	○	○	○		○	○	○	○		○	○	○	○		○	○	○	○
13 Su	0523	2.6	79		28 M	0516	2.8	85		13 W	0011	0.9	27		28 Th	0109	0.8	24		13 F	0048	1.1	34		28 Sa	0200	1.0	30	
	1140	0.4	12			1134	-0.2	-6			0531	2.1	64			0616	2.1	64			0537	2.0	61			0646	1.9	58	
	1750	2.4	73			1804	3.1	94			1145	0.2	6			1225	-0.1	-3			1150	0.1	3			1245	0.2	6	
	2348	0.7	21			●	●	●	●		1837	2.9	88			1931	3.3	101			1902	3.2	98			2001	3.3	101	
14 M	0548	2.5	76		29 Tu	0012	0.4	12		14 Th	0053	1.0	30		29 F	0207	0.9	27		14 Sa	0136	1.1	34						

Talara, Peru, 2019

Times and Heights of High and Low Waters

January				February				March											
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height						
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm					
1 Tu	0632	0.5	15		16 W	0525	1.1	34		1 F	0000	3.9	119						
	1254	4.2	128			1146	3.8	116			0637	1.1	34		16 Sa	0517	1.0	30	
	1849	1.2	37			1735	1.7	52			1320	4.1	125			1200	4.3	131	
				2347	4.3	131		1936	1.4	43		1809	1.7	52					
2 W	0056	4.6	140		17 Th	0627	0.8	24		2 Sa	0113	3.9	119		17 Su	0007	4.2	128	
	0729	0.3	9			1255	4.1	125			0739	1.0	30			0636	0.7	21	
	1354	4.4	134			1848	1.5	46			1415	4.4	134			1312	4.7	143	
	1949	1.2	37		2119	1.4	43		2035	0.9	27		2021	1.6	49		1923	1.2	37
3 Th	0149	4.6	140		18 F	0050	4.5	137		3 Su	0208	4.1	125		18 M	0121	4.6	140	
	0818	0.1	3			0725	0.4	12			0826	0.8	24			0741	0.3	9	
	1446	4.6	140			1355	4.6	140			1456	4.7	143			1410	5.2	158	
	2041	1.2	37		1952	1.3	40		2103	1.3	40		2021	0.7	21				
4 F	0235	4.6	140		19 Sa	0149	4.8	146		4 M	0252	4.4	134		19 Tu	0221	5.0	152	
	0901	0.0	0			0818	-0.1	-3			0905	0.5	15			0836	-0.1	-3	
	1530	4.8	146			1448	5.1	155			1530	5.0	152			1459	5.7	174	
	2127	1.1	34		2048	0.9	27		2137	1.0	30		2110	0.2	6				
5 Sa	0317	4.7	143		20 Su	0244	5.0	152		5 Tu	0329	4.6	140		20 W	0313	5.5	168	
	0940	-0.1	-3			0908	-0.4	-12			0939	0.4	12			0925	-0.5	-15	
	1609	5.0	152			1537	5.5	168			1601	5.2	158			1544	6.0	183	
	2208	1.0	30		2140	0.6	18		2209	0.8	24		2156	-0.2	-6				
6 Su	0356	4.7	143		21 M	0335	5.3	162		6 W	0403	4.8	146		21 Th	0400	5.8	177	
	1016	-0.1	-3			0956	-0.7	-21			1011	0.2	6			1011	-0.6	-18	
	1646	5.1	155			1624	5.9	180			1630	5.3	162			1627	6.2	189	
	2246	1.0	30		2229	0.3	9		2239	0.6	18		2239	-0.5	-15				
7 M	0433	4.6	140		22 Tu	0425	5.5	168		7 Th	0435	4.9	149		22 F	0446	5.9	180	
	1051	-0.1	-3			1043	-0.9	-27			1041	0.2	6			1055	-0.6	-18	
	1721	5.1	155			1710	6.1	186			1658	5.4	165			1708	6.2	189	
	2323	1.0	30		2318	0.1	3		2308	0.5	15		2322	-0.6	-18				
8 Tu	0509	4.5	137		23 W	0514	5.5	168		8 F	0506	5.0	152		23 Sa	0531	5.9	180	
	1125	0.0	0			1130	-0.9	-27			1111	0.2	6			1138	-0.4	-12	
	1754	5.1	155			1756	6.1	186			1726	5.4	165			1749	6.0	183	
	2359	1.0	30						2337	0.4	12								
9 W	0545	4.4	134		24 Th	0006	0.0	0		9 Sa	0537	5.0	152		24 Su	0004	-0.5	-15	
	1158	0.1	3			0604	5.5	168			1141	0.3	9			0616	5.6	171	
	1828	5.0	152			1217	-0.7	-21			1754	5.3	162			1221	0.0	0	
				1842	6.0	183		1858	5.1	155		1830	5.6	171					
10 Th	0035	1.1	34		25 F	0055	0.1	3		10 Su	0117	0.9	27		25 M	0047	-0.2	-6	
	0620	4.3	131			0654	5.3	162			0708	4.4	134			0702	5.3	162	
	1231	0.4	12			1305	-0.3	-9			1310	0.8	24			1306	0.5	15	
	1901	4.9	149		1930	5.8	177		1930	4.9	149		1912	5.2	158				
11 F	0113	1.1	34		26 Sa	0146	0.2	6		11 M	0037	0.5	15		26 Tu	0132	0.2	6	
	0658	4.1	125			0748	4.9	149			0643	4.7	143			0751	4.8	146	
	1305	0.6	18			1356	0.1	3			1244	0.8	24			1354	1.1	34	
	1936	4.8	146		2019	5.4	165		2006	4.7	143		1957	4.6	140				
12 Sa	0152	1.2	37		27 Su	0241	0.5	15		12 Tu	0405	1.0	30		12 W	0221	0.7	21	
	0739	3.9	119			0846	4.6	140			1035	4.0	122			0722	4.5	137	
	1342	0.9	27			1451	0.7	21			1634	1.9	58			1321	1.1	34	
	2013	4.6	140		2113	5.0	152		2239	4.0	122		1929	4.7	143				
13 Su	0235	1.3	40		28 M	0341	0.7	21		13 W	0152	0.8	24		13 Th	0320	1.1	34	
	0826	3.8	116			0953	4.2	128			0809	4.3	131			0959	4.0	122	
	1425	1.2	37			1553	1.2	37			1407	1.4	43			1605	2.0	61	
	2055	4.5	137		2213	4.6	140		2149	4.3	131		2159	3.7	113				
14 M	0325	1.3	40		29 Tu	0449	0.8	24		14 Th	0244	0.9	27		29 F	0435	1.3	40	
	0922	3.6	110			1111	4.1	125			0911	4.1	125			1125	3.9	119	
	1517	1.4	43			1707	1.6	49			1510	1.7	52			1740	2.0	61	
	2145	4.3	131		2319	4.4	134		2303	4.2	128		2328	3.6	110				
15 Tu	0422	1.2	37		30 W	0600	0.9	27		15 F	0353	1.0	30		30 Sa	0556	1.4	43	
	1031	3.6	110			1231	4.1	125			1032	4.1	125			1243	4.1	125	
	1621	1.6	49			1826	1.7	52			1636	1.9	58			1900	1.9	58	
	2243	4.3	131						2237	4.0	122								
					31 Th	0028	4.3	131											
				0705		0.8	24												
				1340		4.3	131												
				1937	1.7	52													

Time meridian 75° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Talara, Peru, 2019

Times and Heights of High and Low Waters

July				August				September																		
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height													
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm												
1 M	0248	4.7	143	16 Tu	0352	4.9	149	1 Th	0401	5.5	168	16 F	0444	5.1	155	1 Su	0506	6.0	183	16 M	0508	5.0	152			
	0844	1.0	30		0952	1.0	30		1005	0.3	9		1050	0.6	18		1118	-0.6	-18		1120	0.1	3			
	1439	4.8	146		1541	4.6	140		1601	5.2	158		1642	4.5	137		1722	5.6	171		1722	4.6	140	1722	4.6	140
	2105	-0.2	-6		2202	-0.2	-6		2219	-0.9	-27		2252	-0.1	-3		2333	-0.9	-27		2325	0.1	3	2325	0.1	3
2 Tu	0333	5.0	152	17 W	0432	5.0	152	2 F	0446	5.7	174	17 Sa	0515	5.1	155	2 M	0550	5.9	180	17 Tu	0536	4.9	149			
	0932	0.8	24		1033	0.9	27		1053	0.1	3		1122	0.5	15		1203	-0.6	-18		1149	0.1	3			
	1526	5.0	155		1621	4.6	140		1649	5.3	162		1715	4.5	137		1810	5.4	165		1754	4.5	137			
	2149	-0.5	-15		2239	-0.2	-6		2306	-0.9	-27		2323	0.0	0		1859	5.1	155		2355	0.3	9			
3 W	0418	5.3	162	18 Th	0509	5.1	155	3 Sa	0531	5.9	180	18 Su	0544	5.1	155	3 Tu	0619	-0.6	-18	18 W	0604	4.7	143			
	1020	0.6	18		1112	0.9	27		1140	-0.1	-3		1154	0.5	15		1250	-0.5	-15		1219	0.2	6			
	1613	5.1	155		1659	4.5	137		1738	5.3	162		1748	4.5	137		1859	5.1	155		1827	4.4	134			
	2234	-0.7	-21		2315	-0.1	-3		2352	-0.9	-27		2354	0.1	3		1952	4.7	143		1904	4.2	128			
4 Th	0504	5.6	171	19 F	0544	5.1	155	4 Su	0616	5.9	180	19 M	0614	5.0	152	4 W	0106	-0.2	-6	19 Th	0027	0.6	18			
	1108	0.5	15		1149	0.9	27		1228	-0.1	-3		1225	0.5	15		1339	-0.2	-6		0634	4.5	137			
	1701	5.1	155		1736	4.4	134		1828	5.2	158		1821	4.3	131		1952	4.7	143		1252	0.3	9			
	2320	-0.7	-21		2349	0.0	0		0040	-0.6	-18		0025	0.3	9		0157	0.4	12		0102	0.9	27			
5 F	0550	5.7	174	20 Sa	0618	5.0	152	5 M	0703	5.7	174	20 Tu	0643	4.8	146	5 Th	0809	4.7	143	20 F	0707	4.3	131			
	1157	0.4	12		1226	0.9	27		1318	-0.1	-3		1258	0.6	18		1433	0.2	6		1330	0.5	15			
	1750	5.0	152		1813	4.3	131		1920	5.0	152		1856	4.2	128		2053	4.3	131		1948	3.9	119			
	0007	-0.6	-18		0023	0.2	6		0129	-0.2	-6		0057	0.6	18		0256	0.9	27		0145	1.2	37			
6 Sa	0637	5.6	171	21 Su	0651	4.9	149	6 Tu	0751	5.4	165	21 W	0714	4.6	140	6 F	0905	4.3	131	21 Sa	0748	4.0	122			
	1248	0.4	12		1303	0.9	27		1410	0.1	3		1332	0.7	21		1537	0.5	15		1417	0.7	21			
	1842	4.9	149		1851	4.1	125		2017	4.6	140		1934	4.0	122		2207	3.9	119		2045	3.8	116			
	0057	-0.4	-12		0057	0.5	15		0223	0.3	9		0132	0.9	27		0410	1.4	43		0243	1.5	46			
7 Su	0727	5.5	168	22 M	0725	4.8	146	7 W	0843	5.0	152	22 Th	0749	4.4	134	7 Sa	1015	3.9	119	22 Su	0844	3.7	113			
	1342	0.4	12		1341	1.0	30		1508	0.3	9		1412	0.8	24		1652	0.7	21		1521	0.8	24			
	1938	4.7	143		1930	3.9	119		2120	4.3	131		2019	3.8	116		2332	3.8	116		2202	3.7	113			
	0150	-0.1	-3		0133	0.7	21		0322	0.8	24		0215	1.2	37		0539	1.5	46		0406	1.6	49			
8 M	0819	5.3	162	23 Tu	0801	4.6	140	8 Th	0940	4.6	140	23 F	0829	4.1	125	8 Su	1136	3.7	113	23 M	1004	3.6	110			
	1439	0.5	15		1422	1.1	34		1612	0.5	15		1501	0.9	27		1810	0.7	21		1642	0.8	24			
	2038	4.5	137		2014	3.7	113		2233	4.1	125		2117	3.6	110		0051	3.9	119		2328	3.8	116			
	0247	0.3	9		0213	1.0	30		0432	1.2	37		0310	1.5	46		0700	1.4	43		0539	1.4	43			
9 Tu	0915	5.1	155	24 W	0840	4.4	134	9 F	1045	4.3	131	24 Sa	0923	3.9	119	9 M	1251	3.7	113	24 Tu	1134	3.7	113			
	1540	0.5	15		1507	1.1	34		1723	0.6	18		1603	0.9	27		1915	0.6	18		1803	0.5	15			
	2146	4.3	131		2106	3.6	110		2353	4.0	122		2232	3.6	110		0051	3.9	119		0041	4.2	128			
	0349	0.7	21		0259	1.3	40		0551	1.4	43		0426	1.7	52		0151	4.2	128		0654	1.0	30			
10 W	1014	4.9	149	25 Th	0924	4.2	128	10 Sa	1156	4.1	125	25 Su	1033	3.8	116	10 Tu	1350	3.9	119	25 W	1251	4.0	122			
	1646	0.5	15		1559	1.1	34		1832	0.5	15		1716	0.8	24		2006	0.4	12		1910	0.1	3			
	2258	4.2	128		2207	3.5	107		0107	4.1	125		0553	1.6	49		0235	4.4	134		0139	4.7	143			
	0458	1.0	30		0357	1.5	46		0706	1.4	43		1152	3.9	119		0844	0.9	27		0752	0.5	15			
11 Th	1117	4.7	143	26 F	1017	4.1	125	11 Su	1302	4.1	125	26 M	1829	0.5	15	11 W	1436	4.1	125	26 Th	1352	4.5	137			
	1751	0.5	15		2318	3.6	110		1934	0.4	12		1829	0.5	15		2047	0.2	6		2006	-0.3	-9			
	0012	4.2	128		0506	1.6	49		0208	4.3	131		0106	4.2	128		0311	4.7	143		0229	5.2	158			
	0608	1.1	34		1118	4.1	125		0809	1.3	40		0708	1.3	40		0920	0.6	18		0841	-0.1	-3			
12 F	1219	4.6	140	27 Sa	1800	0.8	24	12 M	1400	4.2	128	27 Tu	1304	4.2	128	12 Th	1514	4.3	131	27 F	1444	5.0	152			
	1853	0.3	9		0029	3.8	116		2025	0.2	6		1931	0.1	3		2123	0.1	3		2056	-0.7	-21			
	0119	4.4	134		0029	3.8	116		0257	4.6	140		0203	4.6	140		0343	4.9	149		0314	5.6	171			
	0715	1.2	37		0619	1.6	49		0859	1.1	34		0808	0.8	24		0952	0.4	12		0927	-0.6	-18			
13 Sa	1317	4.6	140	28 Su	1222	4.2	128	13 Tu	1448	4.3	131	28 W	1405	4.6	140	13 F	1548	4.5	137	28 Sa	1532	5.4	165			
	1948	0.1	3		1859	0.5	15		2108	0.1	3		2025	-0.3	-9		2155	0.0	0		2142	-0.9	-27			
	0218	4.6	140		0131	4.2	128		0337	4.8	146		0253	5.1	155		0412	5.0	152		0357	5.8	177			
	0814	1.2	37		0726	1.4	43		0940	0.9	27		0900	0.3	9		1022	0.2	6		1010	-0.9	-27			
14 Su	1410	4.6	140	29 M	1322	4.4	134	14 W	1530	4.4	134	29 Th	1458	5.0	152	14 Sa	1620	4.6	140	29 Su	1619	5.6	171			
	2038	0.0	0		1954	0.1	3		2145	-0.1	-3		2115	-0.7	-21		2225	-0.1	-3		2227	-0.9	-27			
	0308	4.8	146		0225	4.6	140		0412	4.9	149		0339	5.6	171		0441	5.0	152		0440	5.9	180			
	0906	1.1	34		0824	1.0	30		1017	0.7	21		0947	-0.1	-3		1051	0.1	3		1054	-1.0	-30			
15 M	1458	4.6	140	30 Tu	1418	4.7	143	15 Th	1607	4.5	137	30 F	1548	5.3	162	15 Su	1651	4.6	140	30 M	1704	5.6	171			
	2122	-0.1	-3		2044	-0.3	-9		2220	-0.1	-3		2202	-1.0	-30		2255	0.0	0		2312	-0.8	-24			
	0314	5.1	155		0314	5.1	155		0423	5.9	180		0423	5.9	180		0441	5.0	152		0440	5.9	180			
	0916	0.7	21		0916	0.7	21		1033	-0.5	-15		1033	-0.5	-15		1136	3.7	113		1136	3.7	11			

Talara, Peru, 2019

Times and Heights of High and Low Waters

October				November				December																					
Time	Height			Time	Height			Time	Height			Time	Height																
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm		h	m	ft	cm										
1 Tu	0522	5.7	174		16 W	0501	4.8	146		1 F	0023	0.3	9		16 Sa	0543	4.5	137		1 Su	0056	0.9	27		16 M	0031	0.7	21	
	1137	-1.0	-30			1117	-0.3	-9			0620	4.7	143			1204	-0.2	-6			0643	4.2	128			0620	4.6	140	
	1750	5.5	168			1731	4.7	143			1240	-0.4	-12			1834	4.7	143			1301	0.1	3			1238	-0.2	-6	
	2357	-0.4	-12			2330	0.4	12			1909	4.8	146								1937	4.6	140			1912	5.1	155	
2 W	0604	5.4	165		17 Th	0531	4.7	143		2 Sa	0113	0.8	24		17 Su	0036	0.9	27		2 M	0147	1.2	37		17 Tu	0122	0.8	24	
	1221	-0.7	-21			1148	-0.2	-6			0706	4.2	128			0625	4.2	128			0731	3.8	116			0712	4.4	134	
	1838	5.1	155			1805	4.6	140			1328	0.1	3			1247	0.0	0			1347	0.5	15			1329	0.0	0	
3 Th	0043	0.0	0		18 F	0004	0.6	18		3 Su	0211	1.2	37		18 M	0128	1.1	34		3 Tu	0246	1.4	43		18 W	0220	0.9	27	
	0648	5.0	152			0602	4.4	134			0759	3.7	113			0716	4.0	122			0827	3.5	107			0813	4.2	128	
	1308	-0.4	-12			1222	0.0	0			1422	0.5	15			1338	0.2	6			1439	0.9	27			1426	0.3	9	
	1929	4.7	143			1844	4.4	134			2106	4.1	125			2018	4.4	134			2123	4.2	128			2101	4.9	149	
4 F	0133	0.6	18		19 Sa	0043	0.9	27		4 M	0322	1.5	46		19 Tu	0232	1.2	37		4 W	0351	1.5	46		19 Th	0325	0.9	27	
	0736	4.4	134			0639	4.2	128			0907	3.3	101			0820	3.7	113			0935	3.3	101			0922	4.0	122	
	1359	0.1	3			1302	0.2	6			1528	0.9	27			1441	0.5	15			1539	1.2	37			1531	0.6	18	
	2027	4.3	131			1930	4.2	128			2218	3.9	119			2124	4.4	134			2222	4.1	125			2204	4.8	146	
5 Sa	0233	1.1	34		20 Su	0131	1.2	37		5 Tu	0446	1.5	46		20 W	0346	1.2	37		5 Th	0458	1.4	43		20 F	0433	0.8	24	
	0831	3.9	119			0724	3.9	119			1031	3.2	98			0939	3.6	110			1050	3.2	98			1039	4.0	122	
	1459	0.5	15			1351	0.4	12			1643	1.1	34			1555	0.6	18			1644	1.3	40			1642	0.8	24	
	2139	3.9	119			2029	4.0	122			2329	3.9	119			2235	4.4	134			2320	4.1	125			2309	4.8	146	
6 Su	0349	1.5	46		21 M	0235	1.4	43		6 W	0601	1.3	40		21 Th	0503	0.9	27		6 F	0558	1.2	37		21 Sa	0541	0.5	15	
	0943	3.5	107			0826	3.6	110			1153	3.2	98			1103	3.8	116			1200	3.4	104			1154	4.2	128	
	1614	0.8	24			1456	0.6	18			1754	1.1	34			1711	0.6	18			1748	1.4	43			1754	0.9	27	
	2303	3.8	116			2143	3.9	119								2343	4.6	140											
7 M	0522	1.6	49		22 Tu	0358	1.4	43		7 Th	0028	4.0	122		22 F	0610	0.5	15		7 Sa	0012	4.2	128		22 Su	0011	4.8	146	
	1112	3.3	101			0950	3.5	107			0656	1.1	34			1217	4.1	125			0647	0.9	27			0643	0.2	6	
	1736	0.9	27			1617	0.7	21			1255	3.5	107			1821	0.5	15			1257	3.6	110			1302	4.4	134	
8 Tu	0021	3.9	119		23 W	0525	1.2	37		8 F	0113	4.2	128		23 Sa	0042	4.9	149		8 Su	0058	4.3	131		23 M	0109	4.9	149	
	0641	1.4	43			1121	3.6	110			0738	0.7	21			0708	0.1	3			0729	0.6	18			0739	-0.1	-3	
	1232	3.4	104			1738	0.6	18			1341	3.8	116			1319	4.5	137			1344	3.9	119			1402	4.7	143	
	1844	0.8	24								1936	0.8	24			1921	0.3	9			1933	1.2	37			2000	0.8	24	
9 W	0118	4.1	125		24 Th	0014	4.4	134		9 Sa	0151	4.4	134		24 Su	0135	5.1	155		9 M	0139	4.5	137		24 Tu	0202	5.0	152	
	0736	1.1	34			0635	0.7	21			0813	0.4	12			0758	-0.3	-9			0807	0.3	9			0829	-0.3	-9	
	1330	3.6	110			1236	4.0	122			1420	4.1	125			1414	4.9	149			1425	4.2	128			1454	5.0	152	
	1936	0.7	21			1847	0.2	6			2016	0.7	21			2015	0.1	3			2017	1.0	30			2053	0.7	21	
10 Th	0201	4.3	131		25 F	0112	4.8	146		10 Su	0225	4.6	140		25 M	0223	5.3	162		10 Tu	0218	4.6	140		25 W	0251	5.0	152	
	0817	0.7	21			0731	0.2	6			0845	0.1	3			0845	-0.7	-21			0843	0.0	0			0915	-0.5	-15	
	1414	3.9	119			1337	4.5	137			1456	4.3	131			1503	5.2	158			1504	4.6	140			1542	5.2	158	
	2017	0.5	15			1944	-0.1	-3			2052	0.5	15			2105	0.0	0			2058	0.9	27			2142	0.6	18	
11 F	0236	4.6	140		26 Sa	0202	5.2	158		11 M	0257	4.8	146		26 Tu	0308	5.4	165		11 W	0255	4.7	143		26 Th	0337	5.0	152	
	0850	0.4	12			0820	-0.4	-12			0916	-0.1	-3			0929	-0.9	-27			0919	-0.2	-6			0959	-0.6	-18	
	1451	4.2	128			1429	5.0	152			1530	4.6	140			1550	5.4	165			1542	4.8	146			1627	5.3	162	
	2052	0.3	9			2035	-0.4	-12			2126	0.4	12			2152	0.1	3			2138	0.8	24			2228	0.6	18	
12 Sa	0306	4.8	146		27 Su	0248	5.5	168		12 Tu	0328	4.8	146		27 W	0352	5.3	162		12 Th	0333	4.8	146		27 F	0420	5.0	152	
	0921	0.2	6			0905	-0.8	-24			0947	-0.3	-9			1012	-1.0	-30			0955	-0.4	-12			1040	-0.5	-15	
	1524	4.4	134			1517	5.3	162			1603	4.8	146			1635	5.4	165			1620	5.0	152			1709	5.4	165	
	2125	0.2	6			2122	-0.5	-15			2201	0.4	12			2237	0.2	6			2219	0.7	21			2312	0.7	21	
13 Su	0336	4.9	149		28 M	0331	5.7	174		13 W	0400	4.8	146		28 Th	0434	5.2	158		13 F	0411	4.8	146		28 Sa	0501	4.8	146	
	0950	-0.1	-3			0948	-1.1	-34			1019	-0.4	-12			1054	-0.9	-27			1032	-0.5	-15			1119	-0.4	-12	
	1556	4.6	140			1603	5.5	168			1638	4.9	149			1720	5.4	165			1700	5.2	158			1749	5.3	162	
	2156	0.1	3			2208	-0.5	-15			2236	0.5	15			2322	0.4	12			2300	0.7	21			2354	0.8	24	
14 M	0404	5.0	152		29 Tu	0414	5.6	171		14 Th	0432	4.8	146		29 F	0516	4.9	149		14 Sa	0451	4.8	146		29 Su	0542	4.6	140	
	1018	-0.2	-6			1031	-1.1	-34			1051	-0.4	-12			1136	-0.6	-18			1111	-0.5	-15			1158	-0.2	-6	

Guayaquil, Ecuador, 2019

Times and Heights of High and Low Waters

January				February				March															
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height										
	h	m	ft	cm	h	m	ft	cm	h	m	ft	cm	h	m	ft	cm							
1 Tu	0302	11.5	351	16 W	0216	11.3	344	1 F	0429	10.7	326	16 Sa	0357	10.8	329	1 F	0249	10.4	317	16 Sa	0218	10.7	326
	1006	0.7	21		0942	2.1	64		1129	0.8	24		1116	1.5	46		1001	1.6	49		0945	2.0	61
	1537	10.9	332		1453	10.6	323		1709	10.6	323		1640	10.9	332		1529	10.2	311		1503	10.8	329
	2231	1.1	34		2209	2.5	76		2356	1.5	46		2347	1.8	55		2231	2.1	64		2221	2.3	70
2 W	0403	11.4	347	17 Th	0320	11.1	338	2 Sa	0529	10.7	326	17 Su	0506	11.0	335	2 Sa	0354	10.2	311	17 Su	0334	10.7	326
	1102	0.5	15		1044	1.8	55		1222	0.6	18		1214	0.7	21		1059	1.3	40		1051	1.4	43
	1640	10.9	332		1600	10.6	323		1808	10.9	332		1747	11.4	347		1635	10.3	314		1617	11.1	338
	2328	1.1	34		2312	2.3	70										2328	1.7	52		2324	1.5	46
3 Th	0502	11.3	344	18 F	0425	11.0	335	3 Su	0049	1.2	37	18 M	0044	1.0	30	3 Su	0458	10.3	314	18 M	0447	11.0	335
	1156	0.2	6		1142	1.3	40		0623	10.9	332		0610	11.5	351		1154	1.0	30		1150	0.6	18
	1740	11.1	338		1706	10.9	332		1312	0.3	9		1308	0.0	0		1736	10.7	326		1725	11.6	354
									1858	11.2	341		1846	12.1	369								
4 F	0022	0.9	27	19 Sa	0010	1.8	55	4 M	0138	1.0	30	19 Tu	0136	0.3	9	4 M	0022	1.3	40	19 Tu	0021	0.6	18
	0557	11.3	344		0529	11.2	341		0711	11.0	335		0707	12.1	369		0556	10.6	323		0552	11.6	354
	1247	0.0	0		1237	0.7	21		1358	0.2	6		1359	-0.6	-18		1245	0.6	18		1245	-0.2	-6
	1833	11.3	344		1807	11.3	344		1940	11.5	351		1939	12.7	387		1828	11.1	338		1825	12.3	375
5 Sa	0113	0.9	27	20 Su	0105	1.3	40	5 Tu	0223	0.8	24	20 W	0226	-0.3	-9	5 Tu	0111	0.9	27	20 W	0113	-0.2	-6
	0647	11.3	344		0628	11.5	351		0752	11.2	341		0758	12.5	381		0645	11.0	335		0649	12.2	372
	1336	0.0	0		1330	0.2	6		1442	0.2	6		1447	-1.0	-30		1332	0.4	12		1336	-0.8	-24
	1920	11.4	347		1904	11.9	363		2017	11.7	357		2026	13.1	399		1912	11.5	351		1918	12.9	393
6 Su	0201	0.9	27	21 M	0157	0.7	21	6 W	0306	0.9	27	21 Th	0313	-0.6	-18	6 W	0157	0.7	21	21 Th	0203	-0.8	-24
	0732	11.3	344		0722	11.9	363		0829	11.3	344		0845	12.8	390		0727	11.2	341		0740	12.7	387
	1422	0.0	0		1419	-0.3	-9		1522	0.4	12		1533	-1.1	-34		1415	0.3	9		1424	-1.1	-34
	2002	11.6	354		1955	12.4	378		2052	11.9	363		2111	13.3	405		1950	11.8	360		2005	13.2	402
7 M	0246	0.9	27	22 Tu	0246	0.3	9	7 Th	0346	1.0	30	22 F	0359	-0.7	-21	7 Th	0239	0.6	18	22 F	0249	-1.0	-30
	0812	11.3	344		0812	12.2	372		0903	11.5	351		0929	12.9	393		0804	11.5	351		0826	12.9	393
	1505	0.2	6		1507	-0.6	-18		1600	0.6	18		1618	-0.9	-27		1456	0.4	12		1510	-1.1	-34
	2039	11.7	357		2043	12.8	390		2125	12.0	366		2153	13.3	405		2025	12.0	366		2048	13.3	405
8 Tu	0329	1.1	34	23 W	0334	0.0	0	8 F	0423	1.2	37	23 Sa	0444	-0.5	-15	8 F	0318	0.7	21	23 Sa	0335	-1.0	-30
	0849	11.3	344		0900	12.4	378		0937	11.6	354		1012	12.7	387		0839	11.6	354		0909	12.9	393
	1546	0.5	15		1553	-0.7	-21		1635	1.0	30		1703	-0.4	-12		1534	0.7	21		1555	-0.8	-24
	2115	11.8	360		2129	13.1	399		2157	12.2	372		2235	13.1	399		2057	12.1	369		2129	13.1	399
9 W	0410	1.3	40	24 Th	0421	-0.1	-3	9 Sa	0458	1.4	43	24 Su	0529	-0.1	-3	9 Sa	0355	0.9	27	24 Su	0419	-0.7	-21
	0924	11.3	344		0946	12.5	381		1010	11.7	357		1056	12.4	378		0912	11.8	360		0950	12.7	387
	1625	0.8	24		1639	-0.6	-18		1705	1.3	40		1750	0.1	3		1608	1.0	30		1640	-0.2	-6
	2149	11.9	363		2214	13.1	399		2231	12.3	375		2318	12.6	384		2129	12.2	372		2209	12.8	390
10 Th	0450	1.5	46	25 F	0507	0.0	0	10 Su	0529	1.6	49	25 M	0617	0.4	12	10 Su	0428	1.2	37	25 M	0503	-0.2	-6
	1000	11.3	344		1032	12.4	378		1046	11.7	357		1141	12.0	366		0945	11.9	363		1031	12.4	378
	1702	1.1	34		1726	-0.3	-9		1722	1.6	49		1839	0.8	24		1637	1.3	40		1725	0.4	12
	2225	12.0	366		2259	13.0	396		2307	12.2	372						2201	12.3	375		2249	12.3	375
11 F	0528	1.7	52	26 Sa	0556	0.2	6	11 M	0554	1.8	55	26 Tu	0003	12.1	369	11 M	0456	1.4	43	26 Tu	0549	0.4	12
	1037	11.3	344		1119	12.2	372		1126	11.6	354		0708	0.9	27		1019	11.9	363		1114	11.9	363
	1737	1.4	43		1815	0.2	6		1732	1.9	58		1229	11.4	347		1651	1.6	49		1813	1.1	34
	2301	12.0	366		2345	12.7	387		2348	12.1	369		1933	1.5	46		2236	12.2	372		2332	11.7	357
12 Sa	0607	1.9	58	27 Su	0646	0.5	15	12 Tu	0616	2.0	61	27 W	0052	11.4	347	12 Tu	0506	1.6	49	27 W	0638	1.0	30
	1116	11.3	344		1208	11.8	360		1213	11.4	347		0803	1.3	40		1058	11.9	363		1159	11.4	347
	1810	1.7	52		1907	0.7	21		1813	2.2	67		1323	10.8	329		1701	1.9	58		1905	1.8	55
	2342	12.0	366		2345	12.7	387		2348	12.1	369		2031	1.9	58		2317	12.0	366				
13 Su	0648	2.1	64	28 M	0034	12.2	372	13 W	0037	11.7	357	28 Th	0147	10.8	329	13 W	0529	1.8	55	28 Th	0019	11.1	338
	1200	11.2	341		0739	0.8	24		0735	2.2	67		0902	1.6	49		1144	11.6	354		0731	1.5	46
	1847	2.1	64		1301	11.3	344		1308	11.0	335		1424	10.4	317		1743	2.2	67		1250	10.9	332
					2003	1.2	37		2004	2.7	82		2131	2.2	67						2001	2.2	67
14 M	0027	11.8	360	29 Tu	0127	11.7	357	14 Th	0135	11.3	344	29 F	0006	11.6	354	14 Th	0006	11.6	354	29 F	0112	10.6	323
	0738	2.2	67		0836	1.0	30		0901	2.3	70		0901	2.3	70		0624	2.1	64		0829	1.8	55
	1251	11.0	335		1358	10.9	332		1415	10.7	326		1415	10.7	326		1240	11.2	341		1348	10.5	320
	1949	2.4	73		2102	1.6	49		2135	2.8	85						1937	2.7	82		2101	2.3	70
15 Tu	0118	11.6	354	30 W	0225	11.2	341	15 F	0244	10.9	332	15 F	0106	11.1	338	15 F	0106	11.1	338	30 Sa	0213	10.2	311
	0839	2.2	67		0934	1.1	34		1012	2.0	61		1012	2.0	61		0830	2.3	70		0928	1.9	58
	1348	10.7	326		1501	10.6	323		1528	10.6	323		1528	10.6	323		1348	10.9	332		1451	10.3	314
	2101	2.6	79		2201	1.7	52		2245	2.4	73						2111</						

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Times and Heights of High and Low Waters

April				May				June																		
Time		Height		Time		Height		Time		Height		Time		Height												
h	m	ft	cm	h	m	ft	cm	h	m	ft	cm	h	m	ft	cm											
1 M	0422	10.2	311	16 Tu	0426	11.1	338	1 W	0440	10.5	320	16 Th	0505	11.7	357	1 Sa	0020	0.9	27	16 Su	0048	-0.4	-12			
	1122	1.3	40		1124	0.5	15		1138	1.3	40		1153	0.1	3		0545	11.0	335		0632	11.8	360			
	1656	10.7	326		1700	11.9	363		1707	11.2	341		1731	12.3	375		1243	1.5	46		1803	11.4	347	1313	0.4	12
	2351	1.3	40		2355	0.2	6																	1849	11.9	363
2 Tu	0521	10.5	320	17 W	0530	11.7	357	2 Th	0006	0.9	27	17 F	0022	-0.5	-15	2 Su	0108	0.7	21	17 M	0138	-0.4	-12			
	1213	0.9	27		1219	-0.1	-3		0534	10.8	329		0603	12.0	366		0634	11.2	341		0721	11.8	360			
	1750	11.1	338		1800	12.4	378		1228	1.1	34		1246	-0.2	-6		1331	1.4	43		1850	11.5	351	1403	0.5	15
3 W	0040	0.9	27	18 Th	0048	-0.5	-15	3 F	0054	0.7	21	18 Sa	0113	-0.8	-24	3 M	0154	0.7	21	18 Tu	0225	-0.3	-9			
	0612	10.9	332		0627	12.2	372		0622	11.1	338		0655	12.3	375		0719	11.5	351		0806	11.8	360			
	1301	0.6	18		1311	-0.6	-18		1314	1.0	30		1336	-0.2	-6		1417	1.4	43		1417	1.4	43	2018	11.6	354
	1836	11.5	351		1852	12.8	390		1840	11.6	354		1914	12.5	381		1934	11.6	354							
4 Th	0126	0.6	18	19 F	0138	-0.9	-27	4 Sa	0139	0.5	15	19 Su	0201	-0.8	-24	4 Tu	0238	0.7	21	19 W	0310	-0.1	-3			
	0657	11.2	341		0718	12.6	384		0705	11.4	347		0742	12.3	375		0803	11.7	357		0846	11.8	360			
	1346	0.5	15		1400	-0.8	-24		1359	1.0	30		1424	-0.1	-3		1502	1.5	46		1535	0.9	27			
	1917	11.8	360		1940	13.0	396		1921	11.7	357		1958	12.3	375		2017	11.6	354		2057	11.4	347			
5 F	0210	0.5	15	20 Sa	0225	-1.1	-34	5 Su	0221	0.6	18	20 M	0247	-0.6	-18	5 W	0321	0.7	21	20 Th	0353	0.3	9			
	0736	11.5	351		0804	12.8	390		0745	11.6	354		0826	12.3	375		0846	11.9	363		0925	11.7	357			
	1428	0.6	18		1447	-0.7	-21		1441	1.2	37		1511	0.3	9		1547	1.5	46		1619	1.3	40			
	1954	11.9	363		2023	12.9	393		1959	11.8	360		2039	12.1	369		2100	11.7	357		2135	11.2	341			
6 Sa	0250	0.6	18	21 Su	0311	-0.9	-27	6 M	0301	0.7	21	21 Tu	0332	-0.3	-9	6 Th	0405	0.8	24	21 F	0435	0.7	21			
	0812	11.7	357		0847	12.7	387		0823	11.7	357		0906	12.1	369		0931	12.0	366		1002	11.7	357			
	1507	0.9	27		1533	-0.3	-9		1522	1.4	43		1556	0.7	21		1633	1.6	49		1702	1.5	46			
	2028	12.0	366		2104	12.7	387		2036	11.8	360		2119	11.8	360		2145	11.7	357		2213	11.1	338			
7 Su	0327	0.8	24	22 M	0355	-0.5	-15	7 Tu	0340	0.9	27	22 W	0416	0.2	6	7 F	0450	0.8	24	22 Sa	0517	1.0	30			
	0847	11.8	360		0928	12.5	381		0902	11.9	363		0946	11.9	363		1017	12.2	372		1040	11.7	357			
	1544	1.2	37		1617	0.2	6		1601	1.7	52		1641	1.2	37		1721	1.6	49		1745	1.7	52			
	2101	12.1	369		2143	12.3	375		2114	11.8	360		2158	11.4	347		2234	11.6	354		2253	11.1	338			
8 M	0402	1.0	30	23 Tu	0439	0.0	0	8 W	0418	1.1	34	23 Th	0459	0.7	21	8 Sa	0538	0.9	27	23 Su	0559	1.4	43			
	0921	11.9	363		1007	12.1	369		0942	11.9	363		1025	11.7	357		1107	12.2	372		1121	11.7	357			
	1617	1.5	46		1702	0.9	27		1642	1.9	58		1726	1.6	49		1813	1.5	46		1829	1.9	58			
	2135	12.1	369		2222	11.8	360		2156	11.7	357		2238	11.2	341		2326	11.5	351		2336	11.0	335			
9 Tu	0432	1.3	40	24 W	0523	0.6	18	9 Th	0457	1.3	40	24 F	0544	1.1	34	9 Su	0632	1.0	30	24 M	0643	1.7	52			
	0957	12.0	366		1048	11.8	360		1026	11.9	363		1106	11.5	351		1201	12.2	372		1204	11.7	357			
	1644	1.8	55		1749	1.4	43		1728	2.0	61		1812	1.9	58		1909	1.4	43		1916	2.0	61			
	2212	12.0	366		2303	11.4	347		2242	11.6	354		2321	10.9	332											
10 W	0454	1.5	46	25 Th	0610	1.1	34	10 F	0545	1.5	46	25 Sa	0630	1.5	46	10 M	0024	11.4	347	25 Tu	0023	10.9	332			
	1038	11.9	363		1132	11.4	347		1116	11.9	363		1151	11.4	347		1258	12.1	369		0731	1.0	30			
	1706	2.1	64		1839	1.9	58		1824	2.1	64		1902	2.1	64		2007	1.2	37		1251	11.6	354			
	2255	11.8	360		2349	10.9	332		2336	11.3	344										2007	2.0	61			
11 Th	0521	1.7	52	26 F	0701	1.6	49	11 Sa	0646	1.6	49	26 Su	0008	10.7	326	11 Tu	0125	11.2	341	26 W	0115	10.7	326			
	1126	11.7	357		1220	11.1	338		1213	11.7	357		0720	1.8	55		0831	1.0	30		0825	2.1	64			
	1808	2.4	73		1932	2.2	67		1927	2.1	64		1240	11.2	341		1359	12.0	366		1343	11.4	347			
	2346	11.4	347										1954	2.2	67		2106	0.9	27		2102	1.9	58			
12 F	0644	2.0	61	27 Sa	0040	10.5	320	12 Su	0037	11.1	338	27 M	0101	10.5	320	12 W	0229	11.2	341	27 Th	0211	10.6	323			
	1223	11.4	347		0755	1.9	58		0752	1.6	49		0814	1.9	58		0931	0.9	27		0922	2.2	67			
	1938	2.6	79		1314	10.8	329		1316	11.6	354		1333	11.2	341		1501	11.9	363		1438	11.3	344			
					2029	2.3	70		2031	1.8	55		2049	2.0	61		2205	0.5	15		2158	1.8	55			
13 Sa	0049	11.0	335	28 Su	0137	10.2	311	13 M	0145	10.9	332	28 Tu	0158	10.4	317	13 Th	0334	11.2	341	28 F	0310	10.5	320			
	0810	2.0	61		0853	2.0	61		0856	1.4	43		0910	2.0	61		1029	0.7	21		1020	2.2	67			
	1331	11.2	341		1412	10.7	326		1422	11.6	354		1429	11.1	338		1603	11.9	363		1535	11.2	341			
	2052	2.4	73		2126	2.1	64		2133	1.3	40		2144	1.8	55		2301	0.1	3		2253	1.6	49			
14 Su	0201	10.7	326	29 M	0239	10.1	308	14 Tu	0254	11.0	335	29 W	0257	10.4	317	14 F	0437	11.4	347	29 Sa	0410	10.6	323			
	0921	1.8	55		0950	1.8	55		0958	1.0	30		1005	1.9	58		1126	0.5	15		1117	2.1	64			
	1443	11.1	338		1513	10.7	326		1529	11.8	360		1525	11.1	338		1702	11.9	363		1633	11.1	338			
	2158	1.8	55		2222	1.8	55		2232	0.7	21		2238	1.5	46		2356	-0.2	-6		2347	1.3	40			
15 M	0315	10.8	329																							

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Times and Heights of High and Low Waters

July				August				September											
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height						
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm					
1 M	0039	1.0	30		16 Tu	0115	-0.1	-3		1 Th	0156	0.1	3						
	0604	11.1	338			0701	11.5	351			0729	12.1	369		16 F	0223	0.0	0	
	1305	1.7	52			1341	0.8	24			1423	0.7	21			0802	11.7	357	
	1822	11.3	344			1914	11.3	344			1947	11.9	363			1447	0.6	18	
				○									2014	11.4		347			
2 Tu	0129	0.7	21		17 W	0203	-0.1	-3		2 F	0243	-0.2	-6		2 M	0354	-0.8	-24	
	0657	11.4	347			0746	11.6	354			0818	12.5	381			0928	13.3	405	
	1355	1.4	43			1428	0.8	24			1510	0.3	9			1619	-0.5	-15	
	1913	11.5	351			1957	11.3	344			2035	12.2	372			2148	12.8	390	
3 W	0217	0.5	15		18 Th	0248	0.0	0		3 Sa	0330	-0.4	-12		3 Tu	0439	-0.5	-15	
	0746	11.8	360			0826	11.7	357			0904	12.9	393			1011	13.1	399	
	1443	1.2	37			1512	0.9	27			1557	0.1	3			1705	-0.2	-6	
	2001	11.7	357			2036	11.3	344			2121	12.4	378			2232	12.6	384	
4 Th	0303	0.3	9		19 F	0330	0.3	9		4 Su	0416	-0.4	-12		4 W	0526	0.1	3	
	0833	12.1	369			0903	11.8	360			0949	13.0	396			1054	12.7	387	
	1530	1.0	30			1555	1.1	34			1643	0.1	3			1753	0.2	6	
	2048	11.8	360			2113	11.3	344			2207	12.5	381			2318	12.1	369	
5 F	0349	0.2	6		20 Sa	0410	0.6	18		5 M	0502	-0.2	-6		5 Th	0616	0.7	21	
	0919	12.4	378			0938	11.8	360			1034	13.0	396			1140	12.2	372	
	1617	0.9	27			1635	1.3	40			1730	0.2	6			1844	0.7	21	
	2135	11.9	363			2149	11.3	344			2254	12.3	375			○			
6 Sa	0435	0.2	6		21 Su	0449	0.9	27		6 Tu	0550	0.1	3		6 W	0007	11.6	354	
	1006	12.6	384			1013	11.9	363			1120	12.8	390			0710	1.3	40	
	1705	0.8	24			1714	1.5	46			1820	0.4	12			1231	11.6	354	
	2223	12.0	366			2225	11.3	344			2343	12.0	366			1940	1.1	34	
7 Su	0523	0.3	9		22 M	0526	1.2	37		7 W	0641	0.5	15		7 Sa	0102	11.1	338	
	1053	12.6	384			1049	12.0	366			1209	12.4	378			0808	1.8	55	
	1754	0.8	24			1753	1.7	52			1913	0.6	18			1326	11.0	335	
	2313	11.9	363			2303	11.3	344			○					2039	1.4	43	
8 M	0613	0.4	12		23 Tu	0603	1.6	49		8 Th	0035	11.6	354		8 Su	0202	10.6	323	
	1143	12.6	384			1127	12.0	366			0737	1.0	30			0909	2.0	61	
	1846	0.8	24			1834	1.9	58			1302	11.9	363			1428	10.5	320	
						2345	11.3	344			2009	0.9	27			2138	1.4	43	
9 Tu	0006	11.7	357		24 W	0642	1.9	58		9 F	0132	11.2	341		9 M	0308	10.4	317	
	0707	0.6	18			1209	11.9	363			0835	1.4	43			1009	1.9	58	
	1236	12.4	378			1920	2.0	61			1359	11.4	347			1534	10.3	314	
	1941	0.8	24			○					2108	1.0	30			2237	1.2	37	
10 W	0102	11.5	351		25 Th	0032	11.1	338		10 Sa	0234	10.8	329		10 Tu	0414	10.5	320	
	0804	0.9	27			0731	2.2	67			0936	1.6	49			1106	1.6	49	
	1331	12.1	369			1257	11.6	354			1500	11.0	335			1638	10.4	317	
	2038	0.8	24			2015	2.1	64			2207	1.0	30			2332	0.9	27	
11 Th	0202	11.2	341		26 F	0125	10.8	329		11 Su	0339	10.6	323		11 W	0516	10.8	329	
	0903	1.0	30			0835	2.5	76			1035	1.6	49			1200	1.1	34	
	1430	11.8	360			1351	11.3	344			1604	10.8	329			1737	10.7	326	
	2136	0.7	21			2116	2.1	64			2304	0.8	24			○			
12 F	0305	11.1	338		27 Sa	0226	10.6	323		12 M	0445	10.7	326		12 Th	0023	0.5	15	
	1002	1.1	34			0942	2.6	79			1133	1.4	43			0609	11.2	341	
	1532	11.5	351			1452	11.0	335			1706	10.8	329			1250	0.7	21	
	2234	0.5	15			2217	2.0	61			2359	0.5	15			1827	11.1	338	
13 Sa	0409	11.0	335		28 Su	0331	10.5	320		13 Tu	0545	11.0	335		13 W	0111	0.2	6	
	1101	1.1	34			1045	2.5	76			1227	1.1	34			0653	11.6	354	
	1633	11.4	347			1556	10.9	332			1803	10.9	332			1336	0.4	12	
	2330	0.3	9			2317	1.6	49								1910	11.4	347	
14 Su	0511	11.1	338		29 M	0436	10.7	326		14 W	0050	0.2	6		14 Sa	0155	0.1	3	
	1157	1.0	30			1145	2.1	64			0638	11.3	344			0732	11.9	363	
	1732	11.3	344			1700	11.0	335			1317	0.8	24			1419	0.4	12	
											1853	11.1	338			1948	11.5	351	
15 M	0024	0.1	3		30 Tu	0013	1.1	34		15 Th	0138	0.1	3		15 Su	0237	0.3	9	
	0609	11.3	344			0539	11.0	335			0723	11.5	351			0808	12.0	366	
	1250	0.8	24			1241	1.6	49			1404	0.7	21			1500	0.5	15	
	1826	11.3	344			1800	11.2	341			○					2023	11.7	357	
				31 W	0106	0.6	18		31 Sa	0221	-0.7	-21							
					0636	11.5	351			0759	13.0	396							
					1333	1.1	34			1448	-0.4	-12							
					1855	11.6	354			2018	12.7	387							

Time meridian 75° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
 Heights are referred to the chart datum of soundings.
 Seasonal variations in sea level have not been included in these predictions.

Guayaquil, Ecuador, 2019

Times and Heights of High and Low Waters

October				November				December																					
Time	Height			Time	Height			Time	Height			Time	Height																
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm		h	m	ft	cm										
1 Tu	0331	-0.8	-24		16 W	0326	1.2	37		1 F	0442	0.6	18		16 Sa	0422	2.0	61		1 Su	0507	1.3	40		16 M	0455	1.7	52	
	0904	13.2	402			0843	11.9	363			1004	12.0	366			0933	11.6	354			1023	11.3	344			1007	11.6	354	
	1555	-0.8	-24			1545	1.0	30			1703	0.3	9			1634	1.4	43			1725	0.8	24			1710	1.0	30	
	2127	12.9	393			2104	11.8	360			2231	12.0	366			2202	11.8	360			2251	11.7	357			2238	12.2	372	
2 W	0417	-0.3	-9		17 Th	0401	1.6	49		2 Sa	0530	1.2	37		17 Su	0503	2.2	67		2 M	0554	1.6	49		17 Tu	0543	1.6	49	
	0946	12.9	393			0916	11.9	363			1046	11.5	351			1015	11.5	351			1105	11.0	335			1055	11.6	354	
	1640	-0.3	-9			1616	1.4	43			1751	0.9	27			1712	1.6	49			1811	1.2	37			1759	1.1	34	
	2210	12.6	384			2138	11.8	360			2315	11.6	354			2248	11.8	360			2334	11.5	351			2328	12.2	372	
3 Th	0503	0.3	9		18 F	0430	2.0	61		3 Su	0620	1.7	52		18 M	0553	2.3	70		3 Tu	0642	1.9	58		18 W	0636	1.6	49	
	1028	12.4	378			0950	11.8	360			1132	11.0	335			1104	11.3	344			1151	10.8	329			1149	11.5	351	
	1727	0.2	6			1636	1.6	49			1841	1.4	43			1807	1.7	52			1900	1.6	49			1855	1.2	37	
	2254	12.1	369			2215	11.8	360								2341	11.7	357											
4 F	0552	1.0	30		19 Sa	0441	2.3	70		4 M	0003	11.2	341		19 Tu	0654	2.3	70		4 W	0021	11.3	344		19 Th	0023	12.1	369	
	1112	11.8	360			1029	11.6	354			0713	2.1	64			1202	11.1	338			0733	2.0	61			0734	1.5	46	
	1817	0.8	24			1644	1.8	55			1222	10.6	323			1915	1.8	55			1241	10.5	320			1249	11.3	344	
	2340	11.5	351			2300	11.6	354			1936	1.7	52								1953	1.8	55			1956	1.3	40	
5 Sa	0645	1.6	49		20 Su	0510	2.5	76		5 Tu	0056	10.9	332		20 W	0041	11.6	354		5 Th	0112	11.2	341		20 F	0122	12.0	366	
	1200	11.2	341			1117	11.3	344			0809	2.2	67			0759	2.1	64			0827	2.0	61			0834	1.2	37	
	1911	1.4	43			1731	2.1	64			1319	10.2	311			1308	10.9	332			1337	10.4	317			1352	11.2	341	
						2353	11.4	347			2032	1.9	58			2023	1.7	52			2048	2.0	61			2058	1.2	37	
6 Su	0032	11.0	335		21 M	0702	2.8	85		6 W	0154	10.7	326		21 Th	0146	11.6	354		6 F	0207	11.1	338		21 Sa	0225	11.9	363	
	0741	2.0	61			1216	10.9	332			0906	2.0	61			0902	1.7	52			0922	1.8	55			0934	0.9	27	
	1254	10.6	323			1933	2.3	70			1420	10.1	308			1417	10.9	332			1435	10.3	314			1458	11.1	338	
	2008	1.7	52								2129	1.8	55			2127	1.4	43			2144	1.9	58			2200	1.1	34	
7 M	0130	10.6	323		22 Tu	0057	11.1	338		7 Th	0254	10.8	329		22 F	0253	11.7	357		7 Sa	0304	11.1	338		22 Su	0329	11.8	360	
	0841	2.2	67			0821	2.6	79			1001	1.7	52			1003	1.0	30			1017	1.6	49			1033	0.5	15	
	1355	10.2	311			1325	10.6	323			1522	10.2	311			1526	11.1	338			1535	10.4	317			1605	11.2	341	
	2107	1.7	52			2049	2.1	64			2224	1.5	46			2228	0.9	27			2239	1.8	55			2259	0.8	24	
8 Tu	0233	10.4	317		23 W	0208	11.1	338		8 F	0352	11.0	335		23 Sa	0359	11.9	363		8 Su	0400	11.1	338		23 M	0432	11.8	360	
	0940	2.0	61			0928	2.1	64			1055	1.3	40			1101	0.3	9			1110	1.2	37			1130	0.0	0	
	1500	10.1	308			1440	10.6	323			1621	10.5	320			1632	11.5	351			1632	10.6	323			1709	11.5	351	
	2205	1.5	46			2155	1.6	49			2317	1.3	40			2325	0.4	12			2332	1.7	52			2356	0.5	15	
9 W	0337	10.5	320		24 Th	0320	11.3	344		9 Sa	0447	11.2	341		24 Su	0500	12.2	372		9 M	0454	11.2	341		24 Tu	0532	11.9	363	
	1036	1.6	49			1030	1.4	43			1146	0.8	24			1155	-0.3	-9			1201	1.0	30			1224	-0.3	-9	
	1604	10.2	311			1552	11.0	335			1716	10.8	329			1733	11.9	363			1727	10.8	329			1808	11.7	357	
	2300	1.2	37			2256	0.9	27																					
10 Th	0437	10.9	332		25 F	0427	11.8	360		10 Su	0007	1.0	30		25 M	0020	0.0	0		10 Tu	0024	1.5	46		25 W	0050	0.3	9	
	1130	1.1	34			1128	0.5	15			0537	11.5	351			0557	12.5	381			0545	11.3	344			0627	11.9	363	
	1703	10.6	323			1658	11.5	351			1234	0.5	15			1248	-0.7	-21			1250	0.8	24			1316	-0.6	-18	
	2352	0.8	24			2352	0.2	6			1804	11.1	338			1829	12.3	375			1817	11.1	338			1902	12.0	366	
11 F	0531	11.3	344		26 Sa	0528	12.3	375		11 M	0055	0.9	27		26 Tu	0112	-0.2	-6		11 W	0113	1.5	46		26 Th	0142	0.3	9	
	1219	0.7	21			1221	-0.3	-9			0623	11.6	354			0649	12.6	384			0632	11.4	347			0717	11.9	363	
	1754	11.0	335			1757	12.1	369			1319	0.4	12			1337	-1.0	-30			1336	0.7	21			1405	-0.6	-18	
											1848	11.4	347			1920	12.5	381			1903	11.3	344			1950	12.1	369	
12 Sa	0040	0.5	15		27 Su	0044	-0.4	-12		12 Tu	0140	1.0	30		27 W	0202	-0.2	-6		12 Th	0159	1.5	46		27 F	0230	0.3	9	
	0618	11.6	354			0623	12.8	390			0704	11.7	357			0737	12.5	381			0717	11.4	347			0803	11.8	360	
	1306	0.4	12			1312	-0.9	-27			1403	0.5	15			1425	-0.9	-27			1421	0.7	21			1451	-0.5	-15	
	1839	11.3	344			1851	12.6	384			1929	11.5	351			2006	12.5	381			1946	11.5	351			2033	12.1	369	
13 Su	0126	0.4	12		28 M	0135	-0.7	-21		13 W	0223	1.2	37		28 Th	0250	0.0	0		13 F	0244	1.5	46		28 Sa	0317	0.5	15	
	0659	11.8	360			0713	13.1	399			0742	11.7	357			0821	12.3	375			0759	11.5	351			0844	11.7	357	
	1350	0.3	9			1400	-1.1	-34			1444	0.6	18			1511	-0.7	-21			1503	0.7	21			1536	-0.2	-6	
	1919	11.6	354			1939	12.9	393			2007	11.6	354			2049	12.4	378			2028	11.7	357			2112	12.0	366	
14 M	0																												

La Libertad, Ecuador, 2019

Times and Heights of High and Low Waters

January				February				March														
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height									
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm								
1 Tu	0626	0.9	27		16 W	0519	1.5	46		1 F	0126	5.8	177									
	1245	5.7	174	1136		5.1	155	0754	1.0		30	0650	1.0	30	1259	5.4	165					
	1845	1.5	46	1732		2.1	64	1421	5.9		180	1319	6.0	183	1904	2.4	73					
				2346	5.8	177	2021	1.9	58	1923	1.8	55				16 Sa	0508	1.4	43			
2 W	0056	6.1	186	0621	1.2	37	0218	5.9	180	0127	6.2	189	0102	5.4	165		1142	5.6	171			
	0724	0.7	21	1244	5.5	168	0841	0.8	24	0752	0.5	15	0728	1.5	46		1751	2.1	64			
	1346	5.9	180	1841	1.9	58	1506	6.2	189	1419	6.6	201	1358	5.7	174	2357	5.6	171				
	1944	1.5	46				2108	1.7	52	2025	1.2	37	2004	2.1	64				17 Su	0626	1.1	34
3 Th	0149	6.2	189	0049	6.0	183	0303	6.0	183	0227	6.7	204	0159	5.5	168	0112	6.0	183				
	0815	0.5	15	0720	0.8	24	0921	0.6	18	0848	0.0	0	0818	1.2	37	0733	0.7	21				
	1437	6.1	186	1438	6.0	183	1545	6.4	195	1511	7.2	219	1443	6.0	183	1359	6.6	201				
	2036	1.4	43	1944	1.6	49	2148	1.5	46	2119	0.6	18	2050	1.8	55	2010	1.0	30				
4 F	0236	6.2	189	0147	6.3	192	0342	6.2	189	0322	7.1	216	0245	5.8	177	0215	6.6	201				
	0859	0.3	9	0814	0.3	9	0957	0.5	15	0939	-0.4	-12	0859	1.0	30	0830	0.1	3				
	1521	6.3	192	1521	6.5	198	1620	6.7	204	1600	7.7	235	1521	6.4	195	1452	7.2	219				
	2121	1.3	40	2040	1.1	34	● 2224	1.3	40	○ 2209	0.1	3	2128	1.5	46	2104	0.4	12				
5 Sa	0318	6.3	192	0242	6.7	204	0419	6.3	192	0413	7.5	229	0324	6.1	186	0309	7.1	216				
	0938	0.2	6	0905	-0.2	-6	1031	0.4	12	1027	-0.7	-21	0935	0.7	21	0921	-0.3	-9				
	1601	6.5	198	1528	7.1	216	1652	6.8	207	1646	8.1	247	1554	6.7	204	1539	7.7	235				
	● 2202	1.2	37	2133	0.7	21	2258	1.1	34	2257	-0.2	-6	2202	1.1	34	○ 2152	-0.2	-6				
6 Su	0357	6.3	192	0334	7.1	216	0454	6.4	195	0502	7.7	235	0400	6.3	192	0359	7.5	229				
	1015	0.1	3	0954	-0.6	-18	1104	0.3	9	1114	-0.8	-24	1008	0.5	15	1009	-0.6	-18				
	1638	6.6	201	1617	7.5	229	1724	6.9	210	1732	8.2	250	1625	6.9	210	1625	8.0	244				
	2240	1.2	37	○ 2223	0.3	9	2332	1.0	30	2344	-0.4	-12	● 2234	0.9	27	2238	-0.5	-15				
7 M	0434	6.3	192	0424	7.3	223	0528	6.4	195	0549	7.7	235	0434	6.5	198	0446	7.7	235				
	1050	0.1	3	1042	-0.8	-24	1137	0.4	12	1200	-0.6	-18	1040	0.4	12	1054	-0.6	-18				
	1713	6.7	204	1704	7.8	238	1756	6.9	210	1817	8.1	247	1656	7.0	213	1708	8.1	247				
	2317	1.1	34	2313	0.1	3						2306	0.7	21	2322	-0.6	-18					
8 Tu	0511	6.2	189	0514	7.4	226	0005	1.0	30	0031	-0.3	-9	0507	6.6	201	0532	7.7	235				
	1125	0.2	6	1129	-0.8	-24	0603	6.3	192	0638	7.4	226	1112	0.4	12	1139	-0.4	-12				
	1748	6.7	204	1751	7.9	241	1209	0.6	18	1246	-0.2	-6	1726	7.1	216	1751	7.9	241				
	2353	1.2	37				1828	6.9	210	1902	7.7	235	2337	0.6	18							
9 W	0547	6.1	186	0002	0.0	0	0039	1.0	30	0118	0.0	0	0540	6.6	201	0006	-0.5	-15				
	1159	0.4	12	0604	7.3	223	0637	6.2	189	0727	7.0	213	1144	0.5	15	0617	7.4	226				
	1822	6.6	201	1217	-0.7	-21	1242	0.8	24	1334	0.3	9	1756	7.0	213	1223	0.0	0				
			1839	7.8	238	1900	6.7	204	1949	7.2	219				1834	7.5	229					
10 Th	0030	1.2	37	0052	0.1	3	0114	1.1	34	0208	0.4	12	0009	0.6	18	0051	-0.2	-6				
	0624	5.9	180	0655	7.1	216	0714	6.0	183	0819	6.5	198	0613	6.5	198	0703	7.0	213				
	1234	0.6	18	1307	-0.3	-9	1317	1.1	34	1424	1.0	30	1216	0.7	21	1308	0.5	15				
	1858	6.5	198	1928	7.6	232	1934	6.5	198	2038	6.7	204	1827	6.9	210	1917	7.0	213				
11 F	0108	1.4	43	0144	0.3	9	0151	1.2	37	0302	0.9	27	0042	0.7	21	0136	0.3	9				
	0702	5.7	174	0749	6.7	204	0754	5.7	174	0918	5.9	180	0648	6.3	192	0752	6.5	198				
	1310	0.9	27	1358	0.3	9	1355	1.4	43	1521	1.6	49	1250	1.0	30	1356	1.1	34				
	1934	6.3	192	2019	7.2	219	2012	6.2	189	● 2134	6.1	186	1900	6.6	201	2003	6.4	195				
12 Sa	0148	1.5	46	0239	0.6	18	0234	1.4	43	0403	1.3	40	0117	0.8	24	0226	0.8	24				
	0743	5.5	168	0847	6.3	192	0840	5.5	168	1026	5.5	168	0727	6.1	186	0846	5.9	180				
	1348	1.2	37	1453	0.9	27	1440	1.8	55	1629	2.2	67	1327	1.3	40	1449	1.8	55				
	2013	6.1	186	● 2114	6.7	204	● 2057	6.0	183	2239	5.6	171	1937	6.3	192	● 2055	5.8	177				
13 Su	0232	1.6	49	0339	0.9	27	0325	1.5	46	0513	1.6	49	0158	1.0	30	0321	1.3	40				
	0829	5.2	158	0951	5.8	177	0939	5.3	162	1144	5.3	162	0812	5.8	177	0949	5.5	168				
	1431	1.5	46	1555	1.4	43	1537	2.1	64	1748	2.4	73	1412	1.7	52	1554	2.3	70				
	2056	5.9	180	2214	6.3	192	2153	5.8	177	2352	5.4	165	2022	6.0	183	2158	5.2	158				
14 M	0321	1.7	52	0444	1.1	34	0428	1.5	46	0428	1.2	37	0248	1.2	37	0428	1.7	52				
	0923	5.1	155	1103	5.6	171	1050	5.3	162	1649	2.2	67	0908	5.6	171	1104	5.2	158				
	1522	1.8	55	1704	1.9	58	1649	2.2	67	2302	5.7	174	1510	2.0	61	1714	2.5	76				
	● 2146	5.8	177	2319	5.9	180						● 2119	5.7	174	2314	5.0	152					
15 Tu	0417	1.7	52	0553	1.2	37	0539	1.4	43	0352	1.4	43	0352	1.4	43	0542	1.8	55				
	1026	5.0	152	1218	5.5	168	1208	5.5	168	1021	5.5	168	1021	5.5	168	1220	5.3	162				
	1623	2.0	61	1817	2.1	64	1810	2.1	64	1625	2.2	67	1625	2.2	67	1834	2.4	73				
	2244	5.7	174						2234	5.5	168											
				31 Th	0025	5.8	177									31 Su	0031	5.0	152			
			0658		1.2	37									0650		1.7	52				
			1326		5.6	171									1321		5.5	168				
			1925	2.1	64									1935	2.1	64						

Time meridian 75° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

La Libertad, Ecuador, 2019

Times and Heights of High and Low Waters

April					May					June																			
Day	Time		Height		Day	Time		Height		Day	Time		Height		Day	Time		Height											
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm		h	m	ft	cm	h	m	ft	cm						
1 M	0132	5.2	158		16 Tu	0059	5.9	180		1 W	0142	5.2	158		16 Th	0144	6.2	189		1 Sa	0227	5.7	174		16 Su	0311	6.4	195	
	0743	1.5	46			0713	0.7	21			0744	1.4	43			0749	0.5	15			0824	1.1	34			0911	0.7	21	
	1408	5.9	180			1336	6.6	201			1401	6.0	183			1404	6.8	207			1432	6.3	192			1515	6.6	201	
	2021	1.7	52			1953	0.7	21			2020	1.1	34			2025	-0.1	-3			2054	0.2	6			2137	-0.4	-12	
2 Tu	0219	5.5	168		17 W	0201	6.4	195		2 Th	0225	5.6	171		17 F	0237	6.5	198		2 Su	0309	6.0	183		17 M	0356	6.5	198	
	0826	1.2	37			0811	0.3	9			0825	1.1	34			0841	0.3	9			0907	0.9	27			0956	0.7	21	
	1446	6.2	189			1429	7.1	216			1438	6.3	192			1452	7.1	216			1511	6.5	198			1557	6.6	201	
	2058	1.3	40			2045	0.1	3			2056	0.7	21			2112	-0.4	-12			2133	-0.1	-3			2218	-0.4	-12	
3 W	0259	5.9	180		18 Th	0254	6.9	210		3 F	0303	5.9	180		18 Sa	0326	6.8	207		3 M	0349	6.4	195		18 Tu	0439	6.5	198	
	0904	0.9	27			0902	-0.1	-3			0903	0.9	27			0929	0.2	6			0949	0.7	21			1039	0.7	21	
	1520	6.5	198			1516	7.5	229			1513	6.5	198			1536	7.2	219			1551	6.6	201			1638	6.4	195	
	2132	0.9	27			2132	-0.4	-12			2130	0.3	9			2155	-0.6	-18			2212	-0.4	-12			2258	-0.3	-9	
4 Th	0335	6.2	189		19 F	0342	7.2	219		4 Sa	0339	6.3	192		19 Su	0411	6.9	210		4 Tu	0431	6.6	201		19 W	0520	6.5	198	
	0938	0.7	21			0949	-0.3	-9			0940	0.7	21			1014	0.2	6			1031	0.6	18			1121	0.8	24	
	1551	6.8	207			1600	7.7	235			1547	6.7	204			1618	7.1	216			1632	6.7	204			1718	6.2	189	
	2204	0.6	18			2217	-0.7	-21			2204	0.0	0			2237	-0.7	-21			2252	-0.5	-15			2336	-0.2	-6	
5 F	0409	6.4	195		20 Sa	0428	7.4	226		5 Su	0415	6.5	198		20 M	0455	6.9	210		5 W	0513	6.7	204		20 Th	0600	6.4	195	
	1012	0.5	15			1034	-0.3	-9			1016	0.6	18			1057	0.3	9			1115	0.6	18			1203	1.0	30	
	1623	6.9	210			1643	7.7	235			1621	6.8	207			1700	6.9	210			1715	6.6	201			1758	6.0	183	
	2236	0.3	9			2259	-0.8	-24			2238	-0.2	-6			2318	-0.5	-15			2335	-0.5	-15						
6 Sa	0442	6.6	201		21 Su	0513	7.4	226		6 M	0452	6.6	201		21 Tu	0537	6.8	207		6 Th	0558	6.8	207		21 F	0615	0.1	3	
	1045	0.5	15			1117	-0.1	-3			1053	0.6	18			1139	0.6	18			1202	0.6	18			0639	6.3	192	
	1654	7.0	213			1725	7.5	229			1656	6.8	207			1740	6.6	201			1801	6.5	198			1244	1.2	37	
	2308	0.2	6			2342	-0.6	-18			2314	-0.2	-6			2359	-0.3	-9								1838	5.7	174	
7 Su	0516	6.7	204		22 M	0557	7.2	219		7 Tu	0530	6.7	204		22 W	0620	6.5	198		7 F	0621	-0.4	-12		22 Sa	0654	0.4	12	
	1118	0.5	15			1200	0.2	6			1131	0.6	18			1222	0.9	27			0646	6.7	204			0720	6.1	186	
	1725	7.0	213			1806	7.1	216			1734	6.7	204			1821	6.2	189			1252	0.7	21			1328	1.3	40	
	2340	0.2	6								2352	-0.2	-6								1851	6.2	189			1921	5.4	165	
8 M	0550	6.6	201		23 Tu	0624	-0.3	-9		8 W	0611	6.6	201		23 Th	0639	0.1	3		8 Sa	0738	6.6	201		23 Su	0802	5.9	180	
	1152	0.7	21			0641	6.8	207			1213	0.8	24			0703	6.2	189			0738	6.6	201			0820	5.9	180	
	1758	6.8	207			1244	0.7	21			1814	6.5	198			1307	1.2	37			1348	0.9	27			1414	1.5	46	
						1847	6.6	201								1903	5.7	174			1947	5.9	180			2007	5.1	155	
9 Tu	0014	0.2	6		24 W	0106	0.1	3		9 Th	0034	0.0	0		24 F	0121	0.5	15		9 Su	0205	0.1	3		24 M	0217	1.0	30	
	0627	6.5	198			0727	6.4	195			0656	6.4	195			0749	5.9	180			0834	6.4	195			0847	5.7	174	
	1228	0.9	27			1330	1.2	37			1259	1.0	30			1356	1.6	49			1450	1.0	30			1505	1.6	49	
	1833	6.6	201			1931	6.0	183			1859	6.2	189			1949	5.3	162			2050	5.7	174			2058	4.8	146	
10 W	0052	0.4	12		25 Th	0152	0.7	21		10 F	0120	0.2	6		25 Sa	0207	0.9	27		10 M	0306	0.5	15		25 Tu	0305	1.3	40	
	0708	6.3	192			0817	5.9	180			0746	6.2	189			0838	5.6	171			0936	6.2	189			0936	5.5	168	
	1309	1.2	37			1421	1.7	52			1353	1.3	40			1450	1.8	55			1557	1.0	30			1559	1.7	52	
	1913	6.3	192			2020	5.5	168			1953	5.8	177			2042	4.9	149			2201	5.5	168			2156	4.7	143	
11 Th	0135	0.6	18		26 F	0242	1.2	37		11 Sa	0215	0.5	15		26 Su	0258	1.3	40		11 Tu	0413	0.7	21		26 W	0358	1.6	49	
	0755	6.0	183			0913	5.5	168			0845	6.0	183			0933	5.4	165			1041	6.2	189			1027	5.4	165	
	1358	1.6	49			1522	2.1	64			1457	1.5	46			1551	2.0	61			1706	0.9	27			1656	1.6	49	
	2001	5.9	180			2118	5.0	152			2057	5.5	168			2144	4.6	140			2314	5.5	168			2259	4.6	140	
12 F	0226	0.9	27		27 Sa	0341	1.6	49		12 Su	0319	0.8	24		27 M	0355	1.6	49		12 W	0522	0.9	27		27 Th	0457	1.7	52	
	0853	5.8	177			1019	5.3	162			0953	5.9	180			1031	5.3	162			1145	6.2	189			1121	5.4	165	
	1459	1.9	58			1636	2.3	70			1611	1.5	46			1657	1.9	58			1812	0.6	18			1752	1.4	43	
	2103	5.6	171			2230	4.7	143			2213	5.3	162			2252	4.6	140											
13 Sa	0331	1.1	34		28 Su	0450	1.8	55		13 M	0431	1.0	30		28 Tu	0457	1.7	52		13 Th	0624	5.6	171		28 F	0001	4.8	146	
	1005	5.7	174			1129	5.2	158			1104	6.0	183			1129	5.4	165			0628	0.9	27			0557	1.7	52	
	1617	2.0	61			1750	2.2	67			1727	1.3	40			1757	1.7	52			1245	6.3	192			1214	5.6	171	
	2221	5.4	165			2346	4.7	143			2332	5.4	165			2358	4.7	143			1912	0.3	9			1845	1.1	34	
14 Su	0448	1.2	37		29 M	0558	1.8	55		14 Tu	0545	0.9	27		29 W	0558	1.7	52		14 F	0126	5.9	180		29 Sa	0059	5.1	155	
	1123	5.8	177			1230	5.4	165			1212	6.2	189			1222	5.5	168			0728	0.8	24			0654	1.6	49	
	1740	1.8	55			1852	1.9	58			1835	0.9	27			1849	1.4	43			1340	6.5	198			1305	5.8	177	
	2345	5.5	168																		2005	0.0	0			1934	0.7	21	
15 M	0606	1.0	30		30 Tu	0051	4.9	149		15 W	0043	5.7	174		30 Th	0055	4.9	149											

La Libertad, Ecuador, 2019

Times and Heights of High and Low Waters

July				August				September																		
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height													
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm												
1 M	0239	5.9	180	16 Tu	0343	6.2	189	1 Th	0352	6.9	210	16 F	0437	6.5	198	1 Su	0504	7.7	235	16 M	0509	6.7	204			
	0837	1.1	34		0943	1.0	30		0957	0.3	9		1042	0.8	24		1115	-0.7	-21		1119	0.3	9			
	1441	6.3	192		1541	6.2	189		1559	6.9	210		1641	6.2	189		1722	7.5	229		1724	6.3	192	1724	6.3	192
	2105	-0.1	-3		2201	-0.1	-3		2218	-0.8	-24		2252	0.1	3		2334	-1.0	-30		2329	0.3	9			
2 Tu	0325	6.3	192	17 W	0423	6.3	192	2 F	0439	7.3	223	17 Sa	0510	6.5	198	2 M	0549	7.7	235	17 Tu	0539	6.6	201			
	0925	0.8	24		1024	0.9	27		1046	0.0	0		1116	0.7	21		1202	-0.7	-21		1151	0.3	9			
	1527	6.5	198		1621	6.2	189		1649	7.1	216		1715	6.2	189		1810	7.3	223		1757	6.2	189			
	2149	-0.5	-15		2239	-0.1	-3		2305	-1.0	-30		2325	0.1	3		1900	7.0	213		1831	6.0	183			
3 W	0411	6.7	204	18 Th	0501	6.4	195	3 Sa	0526	7.5	229	18 Su	0542	6.6	201	3 Tu	0621	-0.7	-21	18 W	0610	0.5	15			
	1013	0.5	15		1103	0.9	27		1135	-0.2	-6		1150	0.6	18		1250	-0.5	-15		0610	6.4	195			
	1614	6.7	204		1700	6.1	186		1738	7.1	216		1749	6.1	186		1900	7.0	213		1223	0.4	12			
	2234	-0.7	-21		2315	0.0	0		2353	-0.9	-27		2358	0.3	9		1900	7.0	213		1831	6.0	183			
4 Th	0457	6.9	210	19 F	0537	6.4	195	4 Su	0613	7.5	229	19 M	0614	6.5	198	4 W	0109	-0.2	-6	19 Th	0034	0.8	24			
	1101	0.3	9		1141	0.9	27		1224	-0.2	-6		1224	0.7	21		1340	-0.1	-3		0642	6.2	189			
	1702	6.8	207		1737	6.0	183		1828	7.0	213		1824	6.0	183		1953	6.5	198		1257	0.6	18			
	2321	-0.8	-24		2351	0.1	3		0041	-0.7	-21		0030	0.5	15		0200	0.4	12		0110	1.1	34			
5 F	0544	7.1	216	20 Sa	0613	6.4	195	5 M	0701	7.3	223	20 Tu	0646	6.3	192	5 Th	0814	6.5	198	20 F	0718	5.9	180			
	1150	0.3	9		1219	1.0	30		1315	-0.1	-3		1258	0.8	24		1435	0.3	9		0718	5.9	180			
	1751	6.7	204		1814	5.8	177		1921	6.7	204		1900	5.7	174		2051	6.0	183		1336	0.8	24			
	0008	-0.7	-21		0026	0.3	9		0132	-0.3	-9		0105	0.8	24		0258	1.0	30		0152	1.4	43			
6 Sa	0632	7.1	216	21 Su	0648	6.3	192	6 Tu	0752	7.0	213	21 W	0720	6.1	186	6 F	0911	6.0	183	21 Sa	0800	5.6	171			
	1241	0.3	9		1257	1.0	30		1408	0.1	3		1335	1.0	30		1536	0.8	24		1422	1.1	34			
	1842	6.6	201		1852	5.6	171		2016	6.3	192		1938	5.5	168		2158	5.5	168		2042	5.3	162			
	0058	-0.5	-15		0102	0.6	18		0225	0.2	6		0141	1.1	34		0405	1.6	49		0245	1.8	55			
7 Su	0723	7.0	213	22 M	0725	6.1	186	7 W	0845	6.6	201	22 Th	0757	5.8	177	7 Sa	1017	5.5	168	22 Su	0854	5.3	162			
	1335	0.4	12		1336	1.2	37		1506	0.4	12		1415	1.2	37		1646	1.1	34		1522	1.3	40			
	1937	6.3	192		1932	5.4	165		2117	5.9	180		2022	5.2	158		2314	5.2	158		2149	5.1	155			
	0151	-0.1	-3		0140	0.9	27		0324	0.8	24		0223	1.5	46		0523	1.9	58		0356	2.0	61			
8 M	0816	6.8	207	23 Tu	0803	5.9	180	8 Th	0944	6.2	189	23 F	0839	5.6	171	8 Su	1131	5.2	158	23 M	1005	5.1	155			
	1433	0.5	15		1418	1.3	40		1610	0.7	21		1503	1.3	40		1801	1.2	37		1636	1.3	40			
	2036	6.0	183		2016	5.1	155		2226	5.5	168		2115	5.0	152		0031	5.3	162		2308	5.2	158			
	0248	0.3	9		0220	1.2	37		0431	1.3	40		0316	1.8	55		0639	1.9	58		0520	1.9	58			
9 Tu	0913	6.5	198	24 W	0844	5.7	174	9 F	1048	5.8	177	24 Sa	0931	5.4	165	9 M	1243	5.2	158	24 Tu	1127	5.2	158			
	1535	0.6	18		1504	1.4	43		1718	0.9	27		1602	1.4	43		1907	1.1	34		1754	1.1	34			
	2141	5.7	174		2105	4.9	149		2340	5.4	165		2221	4.9	149		0031	5.3	162		0520	1.9	58			
	0350	0.7	21		0306	1.5	46		0543	1.6	49		0422	2.0	61		0134	5.5	168		0024	5.5	168			
10 W	1014	6.3	192	25 Th	0930	5.5	168	10 Sa	1156	5.6	171	25 Su	1036	5.3	162	10 Tu	0742	1.7	52	25 W	0637	1.5	46			
	1640	0.7	21		1556	1.5	46		1827	0.9	27		1711	1.3	40		1343	5.4	165		1243	5.6	171			
	2251	5.5	168		2202	4.8	146		0052	5.4	165		0540	1.9	58		2000	0.9	27		1903	0.7	21			
	0457	1.0	30		0401	1.7	52		0654	1.6	49		1149	5.3	162		0223	5.7	174		0127	6.1	186			
11 Th	1117	6.1	186	26 F	1022	5.4	165	11 Su	1300	5.6	171	26 M	1821	1.0	30	11 W	0830	1.4	43	26 Th	0740	0.9	27			
	1747	0.7	21		1654	1.4	43		1928	0.8	24		0540	1.9	58		1430	5.6	171		1346	6.1	186			
	0002	5.5	168		2307	4.8	146		0052	5.4	165		1149	5.3	162		2043	0.7	21		2001	0.1	3			
	0605	1.2	37		0504	1.8	55		0153	5.6	171		0048	5.4	165		0302	6.0	183		0221	6.7	204			
12 F	1220	6.0	183	27 Sa	1121	5.4	165	12 M	1357	5.7	174	27 Tu	1259	5.7	174	12 Th	1510	5.8	177	27 F	0833	0.2	6			
	1849	0.5	15		1755	1.2	37		2020	0.6	18		1925	0.6	18		2120	0.5	15		1440	6.7	204			
	0109	5.6	171		0015	5.0	152		0244	5.8	177		0149	6.0	183		0336	6.3	192		2053	-0.4	-12			
	0709	1.2	37		0611	1.8	55		0846	1.4	43		0756	1.1	34		0944	0.8	24		0922	-0.4	-12			
13 Sa	1318	6.0	183	28 Su	1223	5.6	171	13 Tu	1445	5.8	177	28 W	1400	6.1	186	13 F	1545	6.1	186	28 Sa	1530	7.2	219			
	1946	0.3	9		1855	0.9	27		2104	0.4	12		2021	0.0	0		2154	0.3	9		2141	-0.7	-21			
	0207	5.8	177		0117	5.4	165		0326	6.1	186		0243	6.6	201		0408	6.5	198		0355	7.6	232			
	0807	1.2	37		0715	1.5	46		0929	1.1	34		0850	0.5	15		1017	0.5	15		1008	-0.8	-24			
14 Su	1411	6.1	186	29 M	1322	5.8	177	14 W	1527	6.0	183	29 Th	1455	6.6	201	14 Sa	1619	6.2	189	29 Su	1618	7.5	229			
	2036	0.2	6		1950	0.4	12		2143	0.2	6		2112	-0.5	-15		2226	0.2	6		2227	-0.9	-27			
	0258	6.0	183		0213	5.9	180		0403	6.3	192		0332	7.1	216		0439	6.6	201		0440	7.8	238			
	0857	1.1	34		0813	1.2	37		1007	0.9	27		0940	0.0	0		1048	0.4	12		1053	-1.0	-30			
15 M	1458	6.1	186	30 Tu	1417	6.2	189	15 Th	1605	6.1	186	30 F	1545	7.1	216	15 Su	1651	6.3	192	30 M	1704	7.6	232			
	2121	0.0	0		2041	0.0	0		2218	0.1	3		2200	-0.8	-24		2257	0.2	6		2313	-0.8	-24			
	0304	6.4	195		0304	6.4	195		0418	7.5	229		0418	7.5	229		0418	7.5	229		0418	7.5	229			
	0907	0.7	21		0907	0.7	21		1028	-0.4	-12		1028	-0.4	-12		1028	-0.4	-12		1028	-0.4	-12			

San Cristobal, Galapagos Island, Ecuador, 2019

Times and Heights of High and Low Waters

January				February				March														
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height									
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm								
1 Tu	0611	0.8	24		16 W	0504	1.3	40		1 F	0114	5.1	155									
	1226	5.0	152	1117		4.5	137	0740	0.9		27	16 Sa	0009	5.2	158							
	1827	1.2	37	1716		1.6	49	1402	5.0		152	0638	0.8	24	1 F	0613	1.4	43				
				2335	5.1	155	2003	1.5	46	1302	5.2	158	1846	1.9	58	16 Sa	0459	1.2	37			
2 W	0042	5.5	168		17 Th	0607	1.0	30		2 Sa	0206	5.2	158		2 Sa	0051	4.7	143	17 Su	0615	0.9	27
	0710	0.6	18	1224		4.8	146	0828	0.7		21	17 Su	0741	0.4		12	0715	1.2	37	1241	5.3	162
	1326	5.1	155	1824		1.4	43	1448	5.3		162	2009	0.7	21		1339	4.9	149	1853	1.1	34	
	1926	1.2	37				2050	1.3	40	0216	6.0	183	2031	1.4	43	0147	4.9	149	18 M	0102	5.4	165
3 Th	0135	5.5	168		18 F	0038	5.4	165		3 Su	0250	5.3	162		3 Su	0147	4.9	149	18 M	0721	0.5	15
	0800	0.5	15	0707		0.7	21	0908	0.5		15	18 M	0836	-0.1		-3	0804	1.0	30	1343	5.8	177
	1418	5.3	162	1326		5.2	158	1528	5.5		168	2104	0.2	6		1425	5.2	158	1955	0.6	18	
	2017	1.1	34			1927	1.1	34	2130	1.1	34	2104	0.2	6	2031	1.4	43	0203	5.9	180		
4 F	0223	5.6	171		19 Sa	0136	5.7	174		4 M	0329	5.5	168		4 M	0232	5.1	155	19 Tu	0817	0.0	0
	0845	0.3	9	0801		0.2	6	0945	0.3		9	19 Tu	0926	-0.5		-15	0845	0.8	24	1436	6.3	192
	1503	5.5	168	1421		5.7	174	1604	5.7		174	2154	-0.2	-6		1503	5.5	168	2048	0.1	3	
	2103	1.0	30			2024	0.7	21	● 2207	0.9	27	● 2207	0.9	27	2110	1.1	34	0256	6.3	192		
5 Sa	0305	5.6	171		20 Su	0231	6.0	183		5 Tu	0406	5.6	171		5 Tu	0310	5.4	165	20 W	0908	-0.4	-12
	0925	0.2	6	0853		-0.2	-6	1019	0.2		6	20 W	1014	-0.8		-24	0921	0.5	15	1524	6.8	207
	1544	5.6	171	1513		6.2	189	1637	5.9		180	2242	-0.5	-15		1537	5.7	174	2136	-0.4	-12	
	2144	1.0	30			2118	0.4	12	2242	0.8	24	2242	-0.5	-15	2145	0.8	24	○ 2136	-0.4	-12		
6 Su	0344	5.7	174		21 M	0323	6.4	195		6 W	0441	5.7	174		6 W	0346	5.6	171	21 Th	0955	-0.7	-21
	1002	0.1	3	0942		-0.6	-18	1052	0.2		6	21 Th	1101	-0.9		-27	0955	0.3	9	1609	7.0	213
	1622	5.7	174	1602		6.6	201	1710	6.0		183	2329	-0.5	-15		1609	5.9	180	2222	-0.6	-18	
	2223	0.9	27			2208	0.0	0	2316	0.7	21	2316	0.7	21	● 2217	0.6	18	0345	6.6	201		
7 M	0422	5.6	171		22 Tu	0413	6.6	201		7 Th	0515	5.6	171		7 Th	0419	5.7	174	22 F	1040	-0.7	-21
	1038	0.1	3	1030		-0.8	-24	1125	0.2		6	22 F	1146	-0.7		-21	1027	0.2	6	1654	7.1	216
	1658	5.8	177	1650		6.8	207	1742	6.0		183	1803	7.0	213		1641	6.1	186	2307	-0.7	-21	
	2301	0.9	27			2258	-0.2	-6	2349	0.7	21	2349	0.7	21	2249	0.4	12	0431	6.8	207		
8 Tu	0458	5.6	171		23 W	0503	6.6	201		8 F	0549	5.6	171		8 F	0452	5.8	177	23 Sa	1125	-0.5	-15
	1113	0.2	6	1118		-0.8	-24	1157	0.4		12	23 Sa	1157	0.4		12	1059	0.2	6	1737	6.9	210
	1733	5.8	177	1737		6.9	210	1813	5.9		180	1849	6.7	204		1711	6.1	186	2351	-0.5	-15	
	2338	0.9	27			2348	-0.2	-6							2321	0.4	12	0516	6.8	207		
9 W	0534	5.5	168		24 Th	0552	6.5	198		9 Sa	0023	0.8	24		9 Sa	0525	5.8	177	24 Su	1209	-0.2	-6
	1148	0.3	9	1206		-0.7	-21	0623	5.4		165	24 Su	0712	6.1		186	1130	0.3	9	1820	6.6	201
	1809	5.7	174	1826		6.9	210	1229	0.6		18	1846	5.8	177		1742	6.0	183	2353	0.4	12	
															2353	0.4	12	0602	6.5	198		
10 Th	0015	1.0	30		25 F	0038	-0.1	-3		10 Su	0058	0.9	27		10 Su	0558	5.7	174	25 M	0647	6.1	186
	0611	5.3	162	0643		6.3	192	0658	5.2		158	25 M	0803	5.6		171	1202	0.5	15	1254	0.3	9
	1223	0.5	15	1255		-0.4	-12	1303	0.8		24	2026	5.7	174		1813	5.9	180	1905	6.1	186	
	1844	5.6	171			1915	6.6	201	1920	5.6	171							0122	0.2	6		
11 F	0052	1.1	34		26 Sa	0130	0.1	3		11 M	0135	1.0	30		11 M	0026	0.5	15	26 Tu	0736	5.6	171
	0649	5.1	155	0735		5.9	180	0738	5.0		152	26 Tu	0901	5.1		155	0632	5.5	168	1342	0.8	24
	1258	0.7	21	1346		0.1	3	1341	1.1		34	2123	5.2	158		1236	0.7	21	1951	5.5	168	
	1921	5.5	168			2006	6.3	192	1959	5.4	165	● 2123	5.2	158	1847	5.7	174	0211	0.7	21		
12 Sa	0132	1.3	40		27 Su	0225	0.4	12		12 Tu	0218	1.2	37		12 Tu	0103	0.7	21	27 W	0829	5.2	158
	0729	4.8	146	0832		5.5	168	0824	4.8		146	27 W	1008	4.7		143	0711	5.3	162	1436	1.4	43
	1336	1.0	30	1440		0.6	18	1426	1.4		43	2229	4.8	146		1314	1.0	30	2045	5.0	152	
	2000	5.3	162			2102	5.8	177	2046	5.2	158	● 2046	5.2	158	1926	5.5	168	○ 2045	5.0	152		
13 Su	0216	1.4	43		28 M	0324	0.8	24		13 W	0311	1.3	40		13 W	0144	0.9	27	28 Th	0932	4.8	146
	0813	4.6	140	0934		5.1	155	0922	4.6		140	28 Th	1125	4.6		140	0756	5.0	152	1541	1.8	55
	1419	1.2	37	1541		1.1	34	1524	1.6		49	2343	4.7	143		1400	1.3	40	2149	4.6	140	
	2043	5.1	155			2202	5.5	168	2144	5.0	152							0308	1.2	37		
14 M	0305	1.5	46		29 Tu	0430	1.0	30		14 Th	0415	1.3	40		14 Th	0236	1.1	34	29 F	1047	4.5	137
	0906	4.5	137	1044		4.8	146	1033	4.6		140	29 F	1458	1.5		46	1458	1.5	46	1700	2.0	61
	1509	1.5	46	1648		1.4	43	1636	1.7		52	2255	5.0	152		2113	5.0	152	2305	4.4	134	
	2134	5.0	152			2308	5.2	158	2255	5.0	152	● 2113	5.0	152	2113	5.0	152	0416	1.5	46		
15 Tu	0401	1.4	43		30 W	0539	1.1	34		15 F	0528	1.2	37		15 F	0341	1.2	37	30 Sa	1202	4.6	140
	1008	4.4	134	1158		4.7	143	1151	4.8		146	30 Sa	1614	1.7		52	1005	4.7	143	1816	1.9	58
	1608	1.6	49	1800		1.6	49	1755	1.6		49						1614	1.7	52			0530	1.6	49
	2232	5.0	152											2229	4.9	149			1202	4.6	140	
31 Th					31 Th	0014	5.1	155		31 Su	0019	4.4	134		31 Su	0019	4.4	134	31 Su	0637	1.5	46
				0644		1.1	34	0637	1.5		46	1303										

San Cristobal, Galapagos Island, Ecuador, 2019

Times and Heights of High and Low Waters

July				August				September																		
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height													
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm												
1 M	0222	5.4	165	16 Tu	0326	5.6	171	1 Th	0337	6.2	189	16 F	0422	5.8	177	1 Su	0449	6.9	210	16 M	0454	5.9	180			
	0821	1.0	30		0927	0.9	27		0943	0.2	6		1027	0.6	18		1101	-0.7	-21		1104	0.2	6			
	1428	5.8	177		1528	5.6	171		1548	6.3	192		1627	5.5	168		1709	6.6	201		1709	5.6	171	1709	5.6	171
	2051	0.0	0		2147	0.1	3		2205	-0.6	-18		2238	0.1	3		2320	-0.9	-27		2314	0.2	6			
2 Tu	0309	5.8	177	17 W	0407	5.7	174	2 F	0424	6.6	201	17 Sa	0455	5.8	177	2 M	0535	6.9	210	17 Tu	0524	5.8	177			
	0911	0.7	21		1009	0.9	27		1033	-0.1	-3		1102	0.6	18		1149	-0.7	-21		1136	0.2	6			
	1515	6.0	183		1609	5.6	171		1637	6.4	195		1702	5.5	168		1757	6.5	198		1742	5.4	165	1742	5.4	165
	2136	-0.2	-6		2225	0.1	3		2252	-0.8	-24		2311	0.1	3		2344	0.3	9		2345	0.4	12			
3 W	0356	6.1	186	18 Th	0445	5.8	177	3 Sa	0512	6.8	207	18 Su	0527	5.8	177	3 Tu	0006	-0.7	-21	18 W	0555	5.6	171			
	0959	0.5	15		1049	0.8	24		1122	-0.3	-9		1135	0.5	15		0622	6.7	204		1209	0.3	9			
	1603	6.2	189		1647	5.6	171		1727	6.4	195		1736	5.4	165		1237	-0.5	-15		1816	5.3	162	1816	5.3	162
	2222	-0.4	-12		2302	0.1	3		2340	-0.8	-24		2344	0.3	9		1846	6.1	186							
4 Th	0442	6.3	192	19 F	0522	5.8	177	4 Su	0559	6.8	207	19 M	0559	5.7	174	4 W	0055	-0.2	-6	19 Th	0018	0.6	18			
	1048	0.3	9		1127	0.8	24		1211	-0.3	-9		1209	0.6	18		0710	6.3	192		0628	5.4	165			
	1651	6.2	189		1725	5.5	168		1816	6.3	192		1810	5.3	162		1327	-0.1	-3		1243	0.5	15			
	2309	-0.5	-15		2338	0.2	6																			
5 F	0530	6.5	198	20 Sa	0558	5.8	177	5 M	0028	-0.6	-18	20 Tu	0016	0.5	15	5 Th	0146	0.3	9	20 F	0055	0.9	27			
	1138	0.2	6		1205	0.9	27		0648	6.6	201		0631	5.6	171		0801	5.8	177		0704	5.2	158			
	1741	6.2	189		1802	5.3	162		1302	-0.1	-3		1243	0.7	21		1421	0.3	9		1323	0.7	21			
	2357	-0.5	-15		1840	5.1	155		1908	6.0	183		1845	5.1	155		2036	5.2	158		1935	4.8	146			
6 Sa	0619	6.5	198	21 Su	0013	0.4	12	6 Tu	0119	-0.2	-6	21 W	0050	0.7	21	6 F	0243	0.8	24	21 Sa	0138	1.2	37			
	1229	0.2	6		0634	5.7	174		0738	6.3	192		0705	5.4	165		0858	5.3	162		0748	4.9	149			
	1832	6.0	183		1242	1.0	30		1355	0.1	3		1320	0.9	27		1523	0.7	21		1410	0.9	27			
					1840	5.1	155		2003	5.7	174		1923	4.9	149		2143	4.8	146		2028	4.6	140			
7 Su	0047	-0.3	-9	22 M	0049	0.6	18	7 W	0212	0.2	6	22 Th	0126	1.0	30	7 Sa	0351	1.3	40	22 Su	0232	1.5	46			
	0710	6.4	195		0710	5.5	168		0832	6.0	183		0742	5.2	158		1005	4.8	146		0844	4.7	143			
	1323	0.4	12		1321	1.1	34		1453	0.4	12		1401	1.0	30		1633	1.0	30		1511	1.1	34			
	1927	5.8	177		1919	4.9	149		2103	5.3	162		2007	4.6	140		2259	4.6	140		2136	4.5	137			
8 M	0139	0.0	0	23 Tu	0126	0.9	27	8 Th	0311	0.7	21	23 F	0209	1.3	40	8 Su	0508	1.5	46	23 M	0345	1.6	49			
	0803	6.2	189		0748	5.3	162		0931	5.6	171		0825	5.0	152		1119	4.6	140		0957	4.5	137			
	1420	0.5	15		1403	1.2	37		1556	0.7	21		1449	1.2	37		1747	1.1	34		1626	1.1	34			
	2025	5.5	168		2001	4.7	143		2210	4.9	149		2100	4.4	134						2255	4.6	140			
9 Tu	0236	0.4	12	24 W	0206	1.1	34	9 F	0416	1.1	34	24 Sa	0301	1.5	46	9 M	0014	4.6	140	24 Tu	0507	1.5	46			
	0900	6.0	183		0828	5.2	158		1035	5.3	162		0919	4.8	146		0624	1.5	46		1118	4.6	140			
	1522	0.6	18		1448	1.3	40		1704	0.9	27		1549	1.2	37		1230	4.6	140		1743	0.9	27			
	2129	5.2	158		2050	4.5	137		2323	4.8	146		2206	4.4	134		1852	1.0	30							
10 W	0337	0.7	21	25 Th	0252	1.4	43	10 Sa	0528	1.4	43	25 Su	0409	1.6	49	10 Tu	0117	4.8	146	25 W	0009	4.9	149			
	1001	5.8	177		0914	5.0	152		1143	5.1	155		1026	4.7	143		0725	1.3	40		0623	1.1	34			
	1626	0.7	21		1540	1.4	43		1812	0.9	27		1658	1.2	37		1328	4.8	146		1231	5.0	152			
	2237	5.1	155		2146	4.4	134																			
11 Th	0442	1.0	30	26 F	0346	1.6	49	11 Su	0034	4.8	146	26 M	0526	1.6	49	11 W	0206	5.1	155	26 Th	0112	5.4	165			
	1104	5.6	171		1008	4.9	149		0638	1.4	43		1139	4.8	146		0814	1.1	34		0725	0.5	15			
	1732	0.7	21		1639	1.3	40		1247	5.0	152		1809	0.9	27		1415	5.0	152		1333	5.5	168			
	2346	5.0	152		2250	4.4	134		1914	0.8	24															
12 F	0549	1.1	34	27 Sa	0449	1.6	49	12 M	0136	5.0	152	27 Tu	0032	4.8	146	12 Th	0245	5.3	162	27 F	0205	6.0	183			
	1206	5.5	168		1108	4.9	149		0739	1.3	40		0639	1.3	40		0853	0.8	24		0819	0.0	0			
	1834	0.6	18		1740	1.2	37		1344	5.1	155		1248	5.1	155		1455	5.2	158		1427	6.0	183			
					2357	4.6	140		2006	0.6	18		1912	0.5	15		2104	0.4	12		2038	-0.4	-12			
13 Sa	0051	5.1	155	28 Su	0556	1.6	49	13 Tu	0227	5.2	158	28 W	0134	5.3	162	13 F	0320	5.6	171	28 Sa	0254	6.5	198			
	0653	1.2	37		1210	5.1	155		0830	1.1	34		0741	0.8	24		0928	0.6	18		0907	-0.5	-15			
	1304	5.5	168		1840	0.9	27		1432	5.2	158		1348	5.6	171		1530	5.4	165		1516	6.4	195			
	1931	0.5	15		2050	0.4	12		2050	0.4	12		2007	0.0	0		2138	0.2	6		2126	-0.8	-24			
14 Su	0150	5.3	162	29 M	0100	4.9	149	14 W	0309	5.4	165	29 Th	0227	5.9	180	14 Sa	0352	5.7	174	29 Su	0340	6.8	207			
	0750	1.1	34		0700	1.3	40		0913	0.9	27		0836	0.3	9		1001	0.4	12		0954	-0.9	-27			
	1357	5.5	168		1310	5.3	162		1513	5.4	165		1442	6.0	183		1604	5.5	168		1603	6.6	201			
	2021	0.3	9		1936	0.5	15		2129	0.3	9		2058	-0.5	-15		2211	0.1	3		2212	-0.9	-27			
15 M	0241	5.4	165	30 Tu	0156	5.3	162	15 Th	0347	5.6	171	30 F	0316	6.4	195	15 Su	0423	5.8	177	30 M	0425	6.9	210			
	0841	1.0	30		0759	1.0	30		0952	0.8	24		0926	-0.2	-6		1033	0.2	6		1039	-1.0	-30			
	1445	5.6	171		1405	5.7	174		1551	5.5	168		1533	6.4	195		1637	5.6	171		1650	6.6	201			
	2106	0.2	6		2028	0.0	0		2204	0.1	3		2146	-0.8	-24		2242	0.1	3		2258	-0.8	-24			
			31 W	0248	5.8	177	31 Sa	0403	6.7	204	31 Su	0403	6.7	204												
				0852	0.6	18		1014	-0.6	-18		1014	-0.6	-18												

San Cristobal, Galapagos Island, Ecuador, 2019

Times and Heights of High and Low Waters

October				November				December															
Time	Height			Time	Height			Time	Height			Time	Height										
	h	m	cm	h	m	ft	cm	h	m	ft	cm	h	m	ft	cm								
1 Tu	0510	6.8	207	16 W	0452	5.8	177	1 F	0008	0.2	6	16 Sa	0540	5.6	171	1 Su	0036	0.8	24	16 M	0013	0.6	18
	1124	-0.9	-27		1106	-0.1	-3		0614	5.9	180		1158	0.0	0		0635	5.3	162		0614	5.7	174
	1736	6.5	198		1717	5.6	171		1231	-0.2	-6		1817	5.6	171		1252	0.3	9		1231	0.0	0
	2343	-0.5	-15		2319	0.4	12		1851	5.7	174		1917	5.4	165		1917	5.4	165		1854	5.9	180
2 W	0554	6.5	198	17 Th	0524	5.7	174	2 Sa	0057	0.7	21	17 Su	0021	0.8	24	2 M	0125	1.2	37	17 Tu	0104	0.7	21
	1210	-0.6	-18		1140	0.1	3		0701	5.3	162		0623	5.4	165		0722	4.9	149		0705	5.5	168
	1823	6.1	186		1752	5.4	165		1319	0.3	9		1242	0.2	6		1338	0.7	21		1321	0.2	6
3 Th	0031	-0.1	-3	18 F	0559	5.5	168	3 Su	0151	1.1	34	18 M	0112	1.0	30	3 Tu	0219	1.4	43	18 W	0200	0.8	24
	0641	6.1	186		1216	0.2	6		0753	4.8	146		0713	5.1	155		0815	4.5	137		0802	5.2	158
	1258	-0.2	-6		1831	5.2	158		1412	0.8	24		1332	0.5	15		1429	1.1	34		1416	0.5	15
4 Fr	0121	0.5	15	19 Sa	0033	0.9	27	4 M	0254	1.5	46	19 Tu	0211	1.2	37	4 W	0319	1.6	49	19 Th	0303	0.9	27
	0730	5.5	168		0638	5.2	158		0854	4.4	134		0813	4.8	146		0915	4.3	131		0907	5.0	152
	1349	0.3	9		1257	0.5	15		1514	1.2	37		1432	0.7	21		1525	1.4	43		1519	0.7	21
5 Sa	0217	1.0	30	20 Su	0120	1.1	34	5 Tu	0407	1.7	52	20 W	0321	1.2	37	5 Th	0422	1.7	52	20 F	0411	0.9	27
	0825	5.0	152		0725	4.9	149		1007	4.1	125		0925	4.7	143		1021	4.1	125		1019	4.9	149
	1448	0.8	24		1346	0.7	21		1622	1.4	43		1541	0.9	27		1626	1.5	46		1627	0.9	27
6 Su	0324	1.4	43	21 M	0218	1.4	43	6 W	0520	1.6	49	21 Th	0435	1.1	34	6 F	0524	1.5	46	21 Sa	0519	0.8	24
	0932	4.5	137		0824	4.6	140		1121	4.1	125		1042	4.7	143		1127	4.2	128		1131	5.0	152
	1557	1.1	34		1448	0.9	27		1730	1.4	43		1653	0.8	24		1727	1.6	49		1736	0.9	27
7 M	0443	1.7	52	22 Tu	0332	1.5	46	7 Th	0621	1.4	43	22 F	0545	0.8	24	7 Sa	0618	1.3	40	22 Su	0624	0.5	15
	1049	4.3	131		0939	4.5	137		1224	4.3	131		1154	5.0	152		1225	4.4	134		1237	5.2	158
	1712	1.3	40		1602	1.0	30		1827	1.3	40		1802	0.7	21		1822	1.5	46		1840	0.8	24
8 Tu	0600	1.6	49	23 W	0453	1.3	40	8 F	0048	4.9	149	23 Sa	0023	5.7	174	8 Su	0039	5.1	155	23 M	0056	5.8	177
	1204	4.3	131		1101	4.6	140		0709	1.1	34		0646	0.4	12		0705	1.0	30		0721	0.2	6
	1819	1.2	37		1719	0.9	27		1314	4.6	140		1257	5.3	162		1315	4.7	143		1337	5.5	168
9 W	0045	4.7	143	24 Th	0606	0.9	27	9 Sa	0130	5.2	158	24 Su	0118	6.0	183	9 M	0123	5.3	162	24 Tu	0150	6.0	183
	0701	1.3	40		1214	4.9	149		0749	0.8	24		0740	-0.1	-3		0747	0.7	21		0813	0.0	0
	1303	4.5	137		1827	0.5	15		1356	4.9	149		1352	5.7	174		1359	5.0	152		1430	5.7	174
10 Th	0133	5.0	152	25 F	0048	5.6	171	10 Su	0207	5.4	165	25 M	0209	6.3	192	10 Tu	0204	5.5	168	25 W	0239	6.1	186
	0747	1.0	30		0707	0.4	12		0825	0.5	15		0829	-0.4	-12		0826	0.4	12		0901	-0.2	-6
	1350	4.8	146		1316	5.4	165		1433	5.2	158		1443	6.0	183		1440	5.3	162		1519	6.0	183
11 Fr	0212	5.3	162	26 Sa	0142	6.1	186	11 M	0241	5.6	171	26 Tu	0256	6.4	195	11 W	0243	5.7	174	26 Th	0325	6.1	186
	0825	0.7	21		0800	-0.2	-6		0859	0.2	6		0915	-0.6	-18		0904	0.1	3		0945	-0.3	-9
	1429	5.0	152		1410	5.9	180		1509	5.4	165		1530	6.2	189		1520	5.6	171		1604	6.1	186
12 Sa	0246	5.5	168	27 Su	0231	6.5	198	12 Tu	0315	5.8	177	27 W	0341	6.5	198	12 Th	0323	5.9	180	27 F	0409	6.0	183
	0859	0.4	12		0848	-0.6	-18		0933	0.0	0		1000	-0.7	-21		0943	-0.1	-3		1027	-0.3	-9
	1504	5.3	162		1459	6.3	192		1544	5.6	171		1616	6.3	192		1600	5.8	177		1647	6.1	186
13 Su	0318	5.7	174	28 M	0317	6.7	204	13 W	0350	5.9	180	28 Th	0425	6.3	192	13 F	0403	5.9	180	28 Sa	0451	5.9	180
	0931	0.2	6		0933	-0.9	-27		1007	-0.2	-6		1043	-0.6	-18		1022	-0.3	-9		1108	-0.2	-6
	1537	5.5	168		1546	6.5	198		1620	5.7	174		1701	6.2	189		1640	5.9	180		1728	6.0	183
14 M	0349	5.8	177	29 Tu	0401	6.8	207	14 Th	0424	5.9	180	29 F	0508	6.1	186	14 Sa	0444	5.9	180	29 Su	0532	5.7	174
	1003	0.0	0		1018	-1.0	-30		1042	-0.2	-6		1125	-0.4	-12		1102	-0.3	-9		1147	0.0	0
	1610	5.6	171		1631	6.5	198		1657	5.7	174		1745	6.0	183		1722	6.0	183		1808	5.9	180
15 Tu	0420	5.9	180	30 W	0445	6.6	201	15 F	0501	5.8	177	30 Sa	0551	5.7	174	15 Su	0527	5.9	180	30 M	0015	0.8	24
	1034	-0.1	-3		1102	-0.9	-27		1118	-0.1	-3		1208	-0.1	-3		1145	-0.2	-6		0612	5.4	165
	1643	5.6	171		1717	6.4	195		1735	5.7	174		1830	5.8	177		1806	6.0	183		1226	0.3	9
16 W	2245	0.3	9	31 Th	2322	-0.2	-6	31 Th	2337	0.6	18	31 Tu	0529	6.3	192	31 Tu	0057	1.0	30	31 Tu	0653	5.1	155
					0529	6.3	192		1146	-0.6	-18		1305	0.6	18		1929	5.5	168				
					1803	6.1	186																

Time meridian 75° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Buenaventura, Colombia, 2019

Times and Heights of High and Low Waters

April				May				June																					
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height																
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm															
1 M	0128	9.6	293		16 Tu	0109	11.1	338		1 W	0144	10.0	305		16 Th	0151	11.9	363		1 Sa	0240	11.0	335		16 Su	0317	12.4	378	
	0718	2.6	79			0703	1.0	30			0726	2.7	82			0742	1.0	30			0820	2.2	67			0905	1.4	43	
	1402	10.1	308			1344	11.9	363			1409	10.9	332			1417	13.0	396			1455	12.0	366			1534	13.2	402	
	1952	2.9	88			1940	1.0	30			2001	2.4	73			2018	0.5	15			2052	1.3	40			2137	0.4	12	
2 Tu	0222	10.1	308		17 W	0212	11.9	363		2 Th	0233	10.5	320		17 F	0247	12.5	381		2 Su	0325	11.6	354		17 M	0405	12.7	387	
	0812	2.1	64			0805	0.4	12			0816	2.2	67			0837	0.6	18			0907	1.7	52			0953	1.3	40	
	1449	10.7	326			1440	12.8	390			1453	11.5	351			1508	13.5	411			1537	12.5	381			1619	13.3	405	
	2042	2.2	67			2039	0.1	3			2047	1.7	52			2110	-0.1	-3			2137	0.6	18			2220	0.2	6	
3 W	0308	10.6	323		18 Th	0307	12.7	387		3 F	0317	11.1	338		18 Sa	0337	13.0	396		3 M	0408	12.1	369		18 Tu	0450	12.8	390	
	0857	1.6	49			0901	-0.3	-9			0900	1.6	49			0928	0.3	9			0952	1.3	40			1036	1.3	40	
	1449	11.4	347			1531	13.6	415			1533	12.0	366			1555	13.8	421			1619	12.9	393			1702	13.1	399	
	2123	1.5	46			2131	-0.7	-21			2128	1.0	30			2157	-0.5	-15			2220	0.1	3			2301	0.2	6	
4 Th	0350	11.2	341		19 F	0357	13.4	408		4 Sa	0357	11.6	354		19 Su	0424	13.3	405		4 Tu	0450	12.5	381		19 W	0533	12.7	387	
	0937	1.0	30			0951	-0.7	-21			0941	1.2	37			1014	0.2	6			1036	0.9	27			1118	1.4	43	
	1609	11.9	363			1619	14.1	430			1611	12.4	378			1640	13.9	424			1700	13.2	402			1743	12.8	390	
	2201	0.8	24			2219	-1.2	-37			2207	0.5	15			2241	-0.6	-18			2303	-0.2	-6			2340	0.4	12	
5 F	0428	11.6	354		20 Sa	0444	13.7	418		5 Su	0436	12.0	366		20 M	0509	13.3	405		5 W	0532	12.8	390		20 Th	0614	12.5	381	
	1015	0.6	18			1037	-0.9	-27			1021	0.9	27			1058	0.3	9			1121	0.8	24			1159	1.6	49	
	1645	12.2	372			1704	14.3	436			1648	12.7	387			1723	13.7	418			1743	13.2	402			1823	12.4	378	
	2238	0.3	9			2304	-1.4	-43			2246	0.0	0			2323	-0.5	-15			2346	-0.4	-12			1903	11.9	363	
6 Sa	0504	11.8	360		21 Su	0530	13.7	418		6 M	0513	12.3	375		21 Tu	0553	13.1	399		6 Th	0616	12.9	393		21 F	0019	0.7	21	
	1051	0.4	12			1121	-0.8	-24			1100	0.7	21			1140	0.6	18			1207	0.7	21			0654	12.2	372	
	1718	12.4	378			1747	14.1	430			1724	12.8	390			1805	13.2	402			1827	13.1	399			1239	1.9	58	
	2313	0.0	0			2347	-1.2	-37			2325	-0.2	-6											1903		11.9	363		
7 Su	0538	11.9	363		22 M	0614	13.4	408		7 Tu	0551	12.3	375		22 W	0004	-0.1	-3		7 F	0032	-0.3	-9		22 Sa	0058	1.1	34	
	1126	0.3	9			1204	-0.4	-12			1140	0.6	18			0635	12.7	387			0702	12.9	393			0734	11.8	360	
	1751	12.4	378			1830	13.5	411			1801	12.8	390			1221	1.1	34			1255	0.9	27			1320	2.3	70	
	2349	-0.1	-3								1840	12.5	381			1846	12.6	384			1916	12.8	390			1943	11.3	344	
8 M	0612	11.9	363		23 Tu	0029	-0.8	-24		8 W	0004	-0.2	-6		23 Th	0044	0.4	12		8 Sa	0120	0.0	0		23 Su	0137	1.5	46	
	1202	0.3	9			0657	12.8	390			0630	12.3	375			0718	12.1	369			0752	12.7	387			0815	11.4	347	
	1823	12.3	375			1246	0.3	9			1221	0.8	24			1303	1.7	52			1346	1.1	34			1402	2.6	79	
						1912	12.8	390			1840	12.5	381			1928	11.8	360			2008	12.3	375			2025	10.7	326	
9 Tu	0026	-0.1	-3		24 W	0110	-0.1	-3		9 Th	0046	0.0	0		24 F	0124	1.0	30		9 Su	0211	0.5	15		24 M	0219	2.0	61	
	0647	11.7	357			0742	12.0	366			0712	12.1	369			0801	11.5	351			0846	12.4	378			0858	11.1	338	
	1239	0.6	18			1328	1.1	34			1306	1.0	30			1346	2.3	70			1442	1.5	46			1448	2.9	88	
	1858	12.1	369			1955	11.8	360			1925	12.2	372			2011	11.1	338			2107	11.8	360			2112	10.3	314	
10 W	0104	0.1	3		25 Th	0153	0.8	24		10 F	0132	0.3	9		25 Sa	0207	1.7	52		10 M	0306	1.0	30		25 Tu	0304	2.5	76	
	0725	11.4	347			0828	11.2	341			0800	11.8	360			0847	11.0	335			0946	12.2	372			0946	10.8	329	
	1320	0.9	27			1413	2.0	61			1355	1.4	43			1432	2.9	88			1542	1.8	55			1538	3.2	98	
	1938	11.7	357			2042	10.9	332			2016	11.7	357			2059	10.4	317			2212	11.5	351			2205	9.9	302	
11 Th	0147	0.4	12		26 F	0238	1.6	49		11 Sa	0223	0.8	24		26 Su	0253	2.3	70		11 Tu	0407	1.4	43		26 W	0354	2.9	88	
	0809	11.0	335			0919	10.5	320			0856	11.5	351			0938	10.5	320			1050	12.1	369			1038	10.6	323	
	1406	1.4	43			1502	2.8	85			1452	1.8	55			1523	3.3	101			1647	1.9	58			1632	3.2	98	
	2025	11.2	341			2135	10.1	308			2116	11.2	341			2154	9.9	302			2320	11.3	344			2305	9.7	296	
12 F	0236	0.9	27		27 Sa	0328	2.3	70		12 Su	0321	1.2	37		27 M	0343	2.8	85		12 W	0510	1.7	52		27 Th	0448	3.1	94	
	0904	10.6	323			1017	9.9	302			1000	11.3	344			1034	10.3	314			1154	12.2	372			1135	10.6	323	
	1501	1.8	55			1557	3.4	104			1555	2.1	64			1620	3.5	107			1753	1.8	55			1730	3.1	94	
	2124	10.7	326			2237	9.5	290			2226	10.9	332			2256	9.6	293								1925	2.2	67	
13 Sa	0335	1.3	40		28 Su	0425	2.9	88		13 M	0425	1.6	49		28 Tu	0439	3.1	94		13 Th	0027	11.4	347		28 F	0007	9.8	299	
	1011	10.4	317			1121	9.7	296			1110	11.4	347			1133	10.3	314			0615	1.8	55			0546	3.1	94	
	1606	2.2	67			1701	3.6	110			1705	2.1	64			1720	3.5	107			1255	12.4	378			1231	10.9	332	
	2237	10.4	317			2344	9.3	283			2340	10.9	332			2359	9.6	293			1857	1.5							

Buenaventura, Colombia, 2019

Times and Heights of High and Low Waters

July				August				September																					
Time	Height			Time	Height			Time	Height			Time	Height																
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm		h	m	ft	cm										
1 M	0253	11.4	347		16 Tu	0347	12.0	366		1 Th	0407	13.0	396		16 F	0449	12.2	372		1 Su	0522	14.6	445		16 M	0531	12.6	384	
	0835	2.0	61			0934	2.0	61			0957	0.5	15			1037	1.5	46			1118	-1.2	-37			1122	0.8	24	
	1507	12.4	378			1600	12.5	381			1623	13.6	415			1701	12.2	372			1743	14.4	439			1747	12.2	372	
	2108	0.7	21			2200	0.9	27			2224	-0.7	-21			2254	0.8	24			2340	-1.5	-46			2336	0.7	21	
2 Tu	0341	12.1	369		17 W	0431	12.3	375		2 F	0455	13.7	418		17 Sa	0526	12.4	378		2 M	0608	14.7	448		17 Tu	0603	12.4	378	
	0926	1.4	43			1017	1.8	55			1048	-0.1	-3			1113	1.3	40			1206	-1.3	-40			1156	0.7	21	
	1554	13.0	396			1643	12.6	384			1712	14.0	427			1738	12.2	372			1830	14.2	433			1819	12.0	366	
	2156	0.1	3			2240	0.7	21			2313	-1.1	-34			2329	0.7	21											
3 W	0428	12.7	387		18 Th	0512	12.4	378		3 Sa	0542	14.1	430		18 Su	0601	12.4	378		3 Tu	0627	-1.2	-37		18 W	0610	0.9	27	
	1015	0.9	27			1058	1.7	52			1137	-0.5	-15			1149	1.2	37			0655	14.4	439			0633	12.2	372	
	1641	13.4	408			1723	12.5	381			1800	14.1	430			1813	12.0	366			1253	-0.9	-27			1231	0.9	27	
	2243	-0.4	-12			2318	0.7	21													1918	13.7	418			1851	11.7	357	
4 Th	0514	13.2	402		19 F	0551	12.4	378		4 Su	0600	-1.2	-37		19 M	0604	0.8	24		4 W	0113	-0.6	-18		19 Th	0044	1.2	37	
	1104	0.5	15			1136	1.6	49			0630	14.3	436			0634	12.2	372			0742	13.8	421			0705	11.9	363	
	1727	13.6	415			1801	12.2	372			1226	-0.6	-18			1225	1.3	40			1341	-0.3	-9			1307	1.1	34	
	2330	-0.7	-21			2355	0.7	21			1849	13.9	424			1846	11.7	357			2008	12.9	393			1925	11.3	344	
5 F	0600	13.5	411		20 Sa	0629	12.3	375		5 M	0648	-1.0	-30		20 Tu	0639	1.0	30		5 Th	0201	0.3	9		20 F	0121	1.5	46	
	1153	0.3	9			1215	1.7	52			0718	14.1	430			0706	12.0	366			0833	12.9	393			0739	11.5	351	
	1815	13.6	415			1838	11.9	363			1315	-0.3	-9			1301	1.4	43			1431	0.6	18			1346	1.4	43	
											1939	13.4	408			1919	11.3	344			2102	11.9	363			2004	10.8	329	
6 Sa	0017	-0.7	-21		21 Su	0031	0.9	27		6 Tu	0136	-0.5	-15		21 W	0114	1.3	40		6 F	0252	1.3	40		21 Sa	0202	2.0	61	
	0648	13.6	415			0705	12.1	369			0808	13.6	415			0739	11.7	357			0927	12.0	366			0820	11.1	338	
	1242	0.3	9			1253	1.8	55			1406	0.2	6			1338	1.7	52			1525	1.5	46			1431	1.8	55	
	1905	13.4	408			1914	11.5	351			2032	12.7	387			1955	10.9	332			2202	11.0	335			2052	10.4	317	
7 Su	0105	-0.5	-15		22 M	0108	1.2	37		7 W	0226	0.3	9		22 Th	0151	1.7	52		7 Sa	0347	2.3	70		22 Su	0251	2.5	76	
	0738	13.5	411			0741	11.8	360			0901	13.0	396			0815	11.3	344			1029	11.2	341			0913	10.6	323	
	1333	0.5	15			1332	2.1	64			1459	0.8	24			1418	2.0	61			1624	2.3	70			1526	2.2	67	
	1957	12.9	393			1951	11.1	338			2129	11.9	363			2035	10.5	320			2308	10.4	317			2154	10.1	308	
8 M	0156	0.0	0		23 Tu	0146	1.6	49		8 Th	0319	1.1	34		23 F	0232	2.1	64		8 Su	0450	3.0	91		23 M	0352	2.8	85	
	0830	13.2	402			0818	11.4	347			0958	12.3	375			0856	10.9	332			1135	10.6	323			1022	10.4	317	
	1427	0.8	24			1412	2.3	70			1556	1.5	46			1505	2.3	70			1730	2.7	82			1632	2.4	73	
	2052	12.4	378			2031	10.6	323			2230	11.2	341			2124	10.0	305								2312	10.1	308	
9 Tu	0249	0.6	18		24 W	0226	2.0	61		9 F	0417	2.0	61		24 Sa	0321	2.6	79		9 M	0016	10.2	311		24 Tu	0504	2.9	88	
	0926	12.8	390			0858	11.1	338			1059	11.7	357			0949	10.6	323			0559	3.4	104			1142	10.5	320	
	1523	1.3	40			1457	2.6	79			1658	2.0	61			1600	2.5	76			1241	10.5	320			1744	2.3	70	
	2153	11.8	360			2116	10.2	311			2336	10.7	326			2227	9.8	299			1839	2.8	85						
10 W	0345	1.2	37		25 Th	0310	2.5	76		10 Sa	0520	2.6	79		25 Su	0421	2.9	88		10 Tu	0119	10.4	317		25 W	0029	10.6	323	
	1025	12.4	378			0944	10.8	329			1203	11.4	347			1054	10.4	317			0709	3.3	101			0618	2.5	76	
	1624	1.6	49			1546	2.8	85			1803	2.3	70			1704	2.5	76			1341	10.7	326			1257	11.1	338	
	2257	11.4	347			2210	9.8	299								2341	9.9	302			1942	2.6	79			1854	1.7	52	
11 Th	0445	1.8	55		26 F	0401	2.8	85		11 Su	0642	10.6	323		26 M	0529	2.9	88		11 W	0214	10.8	329		26 Th	0135	11.5	351	
	1128	12.2	372			1038	10.6	323			0626	2.9	88			1208	10.6	323			0808	2.9	88			0726	1.6	49	
	1727	1.9	58			1643	2.8	85			1306	11.3	344			1812	2.2	67			1433	11.1	338			1401	12.0	366	
						2313	9.7	296			1909	2.3	70								2033	2.1	64			1957	0.8	24	
12 F	0003	11.2	341		27 Sa	0500	3.0	91		12 M	0144	10.8	329		27 Tu	0054	10.4	317		12 Th	0302	11.3	344		27 F	0232	12.6	384	
	0548	2.2	67			1140	10.7	326			0731	2.9	88			0640	2.6	79			0856	2.4	73			0827	0.6	18	
	1230	12.0	366			1744	2.7	82			1403	11.4	347			1318	11.2	341			1519	11.5	351			1457	13.0	396	
	1832	1.9	58								2008	2.0	61			1918	1.6	49			2115	1.6	49			2053	-0.1	-3	
13 Sa	0106	11.2	341		28 Su	0021	9.9	302		13 Tu	0238	11.1	338		28 W	0158	11.3	344		13 F	0344	11.8	360		28 Sa	0324	13.7	418	
	0651	2.4	73			0603	3.0	91			0828	2.6	79			0746	1.8	55			0936	1.8	55			0921	-0.4	-12	
	1329	12.1	369			1244	11.0	335			1455	11.7	357			1420	12.0	366			1600	11.9	363			1548	13.9	424	
	1933	1.7	52			1846	2.2	67			2058	1.6	49			2019	0.7	21			2152	1.2	37			2144	-0.8	-24	
																													

Balboa, Panama, 2019

Times and Heights of High and Low Waters

July				August				September							
Day	Time	Height		Day	Time	Height		Day	Time	Height		Day	Time	Height	
		ft	m			ft	m			ft	m			ft	m
1 M	0218	14.2	433	16 Tu	0326	14.7	448	1 Su	0456	18.2	555	16 M	0506	15.8	482
	0837	2.6	79		0929	2.3	70		1108	-1.6	-49		1114	0.9	27
	1431	15.6	475		1537	15.3	466		1718	18.1	552		1722	15.4	469
	2106	0.9	27		2155	0.9	27		2327	-2.0	-61		2329	1.0	30
2 Tu	0306	15.0	457	17 W	0411	15.0	457	2 M	0545	18.4	561	17 Tu	0538	15.8	482
	0925	1.7	52		1011	2.0	61		1153	-1.6	-49		1148	1.1	34
	1519	16.3	497		1620	15.3	466		1808	18.0	549		1754	15.2	463
	2151	0.0	0		2234	0.6	18		2323	0.8	24				
3 W	0355	15.7	479	18 Th	0454	15.2	463	3 Tu	0013	-1.5	-46	18 W	0003	1.4	43
	1011	1.0	30		1050	1.8	55		0633	18.1	552		0610	15.6	475
	1608	16.7	509		1702	15.3	466		1241	-1.1	-34		1222	1.4	43
	2235	-0.7	-21		2311	0.6	18		1856	17.3	527		1827	14.9	454
4 Th	0445	16.4	500	19 F	0533	15.3	466	4 W	0100	-0.6	-18	19 Th	0037	2.0	61
	1056	0.4	12		1128	1.9	58		0720	17.4	530		0642	15.3	466
	1659	17.0	518		1741	15.1	460		1331	-0.1	-3		1259	1.9	58
	2319	-1.0	-30		2348	0.9	27		1946	16.3	497		1900	14.4	439
5 F	0535	16.8	512	20 Sa	0611	15.2	463	5 Th	0151	0.7	21	20 F	0114	2.7	82
	1143	0.2	6		1206	2.1	64		0809	16.3	497		0716	14.8	451
	1751	17.1	521		1818	14.8	451		1425	1.1	34		1339	2.6	79
									2038	15.1	460		1938	13.8	421
6 Sa	0005	-0.9	-27	21 Su	0025	1.3	40	6 Tu	0246	2.0	61	21 Sa	0157	3.5	107
	0625	17.0	518		0646	15.1	460		0903	15.1	460		0756	14.3	436
	1231	0.3	9		1245	2.4	73		1524	2.2	67		1427	3.2	98
	1842	16.9	515		1854	14.4	439		2138	13.9	424		2023	13.3	405
7 Su	0054	-0.5	-15	22 M	0103	1.9	58	7 W	0346	3.3	101	22 Su	0250	4.1	125
	0715	16.9	515		0721	14.8	451		1006	14.0	427		0845	13.7	418
	1324	0.7	21		1326	2.9	88		1628	3.1	94		1525	3.7	113
	1934	16.4	500		1929	13.9	424		2251	13.0	396		2123	12.8	390
8 M	0146	0.2	6	23 Tu	0144	2.5	76	8 Th	0452	4.1	125	23 M	0354	4.5	137
	0806	16.5	503		0756	14.4	439		1120	13.3	405		0953	13.2	402
	1420	1.2	37		1410	3.4	104		1735	3.6	110		1632	3.8	116
	2028	15.7	479		2007	13.3	405						2242	12.7	387
9 Tu	0242	1.0	30	24 W	0227	3.2	98	9 F	0007	12.8	390	24 Tu	0506	4.4	134
	0901	16.0	488		0834	13.9	424		0602	4.5	137		1115	13.3	405
	1520	1.7	52		1457	3.8	116		1233	13.1	399		1744	3.5	107
	2128	14.9	454		2049	12.8	390		1842	3.6	110				
10 W	0341	1.8	55	25 Th	0314	3.8	116	10 Sa	0422	4.5	137	10 Tu	0113	13.1	399
	1001	15.4	469		0918	13.6	415		1026	13.2	402		0709	4.3	131
	1622	2.1	64		1548	4.0	122		1703	3.9	119		1333	13.4	408
	2234	14.2	433		2140	12.3	375		2312	12.3	375		1943	3.2	98
11 Th	0442	2.4	73	26 F	0405	4.2	128	11 Su	0530	4.4	134	11 W	0205	13.6	415
	1107	15.0	457		1011	13.3	405		1141	13.4	408		0806	3.7	113
	1725	2.4	73		1644	4.1	125		1812	3.4	104		1421	13.9	424
	2344	13.9	424		2244	12.1	369		1908	2.9	88		2032	2.6	79
12 F	0544	2.9	88	27 Sa	0502	4.4	134	12 M	0026	13.0	396	12 Th	0248	14.2	433
	1212	14.9	454		1113	13.4	408		0641	3.8	116		0852	2.9	88
	1829	2.4	73		1744	3.8	116		1249	14.2	433		1502	14.4	439
					2353	12.4	378		1918	2.5	76		2113	1.9	58
13 Sa	0049	13.9	424	28 Su	0605	4.3	131	13 Tu	0129	14.1	430	13 F	0325	14.8	451
	0648	3.1	94		1216	13.8	421		0747	2.7	82		0931	2.2	67
	1311	14.9	454		1846	3.2	98		1349	15.2	463		1539	14.8	451
	1930	2.1	64		2055	2.0	61		2018	1.2	37		2149	1.4	43
14 Su	0147	14.1	430	29 M	0055	13.1	399	14 W	0224	15.3	466	14 Sa	0400	15.3	466
	0748	3.0	91		0710	3.7	113		0844	1.3	40		1007	1.5	46
	1403	15.1	460		1313	14.5	442		1443	16.3	497		1614	15.1	460
	2025	1.7	52		1946	2.3	70		2110	-0.1	-3		2223	1.0	30
15 M	0239	14.4	439	30 Tu	0151	14.0	427	15 Su	0434	15.6	475	15 M	0433	18.6	567
	0842	2.7	82		0810	2.8	85		1041	1.1	34		1047	-2.0	-61
	1452	15.2	463		1407	15.4	469		1536	17.2	524		1658	18.3	558
	2113	1.2	37		2041	1.1	34		2157	-1.2	-37		2306	-1.7	-52
			31 W	0243	15.1	460	31 Sa	0406	17.5	533					
				0904	1.6	49		1022	-1.1	-34					
				1459	16.2	494		1627	17.9	546					
				2130	-0.1	-3		2243	-1.9	-58					

Time meridian 75° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Puntarenas, Costa Rica, 2019

Times and Heights of High and Low Waters

April				May				June			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
<small>h m</small>	<small>ft cm</small>	<small>h m</small>	<small>ft cm</small>	<small>h m</small>	<small>ft cm</small>	<small>h m</small>	<small>ft cm</small>	<small>h m</small>	<small>ft cm</small>	<small>h m</small>	<small>ft cm</small>
1 M	0009 7.0 213 0624 1.6 49 1245 7.2 219 1851 1.8 55	16 Tu	0545 0.7 21 1210 8.3 253 1821 0.5 15	1 W	0022 7.1 216 0624 1.6 49 1246 7.7 235 1857 1.4 43	16 Th	0019 8.2 250 0621 0.5 15 1245 9.2 280 1901 0.1 3	1 Sa	0111 7.6 232 0703 1.4 43 1324 8.7 265 1939 0.6 18	16 Su	0148 8.5 259 0745 0.8 24 1404 9.4 287 2022 0.1 3
2 Tu	0101 7.3 223 0711 1.2 37 1329 7.6 232 1936 1.3 40	17 W	0039 8.3 253 0645 0.2 6 1307 9.0 274 1919 -0.1 -3	2 Th	0108 7.4 226 0707 1.3 40 1327 8.2 250 1938 0.9 27	17 F	0115 8.6 262 0716 0.2 6 1336 9.6 293 1952 -0.3 -9	2 Su	0155 8.0 244 0746 1.1 34 1406 9.1 277 2021 0.2 6	17 M	0237 8.6 262 0834 0.8 24 1450 9.4 287 2107 0.0 0
3 W	0145 7.6 232 0751 0.9 27 1408 8.0 244 2014 0.8 24	18 Th	0134 8.8 268 0739 -0.3 -9 1359 9.6 293 2011 -0.7 -21	3 F	0150 7.8 238 0747 0.9 27 1405 8.6 262 2016 0.4 12	18 Sa	0206 8.9 271 0806 0.0 0 1424 9.8 299 2040 -0.5 -15	3 M	0237 8.3 253 0829 0.8 24 1448 9.4 287 2103 -0.1 -3	18 Tu	0323 8.7 265 0920 0.8 24 1535 9.4 287 2150 0.0 0
4 Th	0225 8.0 244 0827 0.6 18 1444 8.5 259 2050 0.4 12	19 F	0225 9.3 283 0828 -0.7 -21 1447 10.0 305 2059 -1.1 -34	4 Sa	0229 8.1 247 0824 0.7 21 1442 8.9 271 2053 0.0 0	19 Su	0254 9.1 277 0853 0.0 0 1510 9.9 302 2125 -0.6 -18	4 Tu	0319 8.6 262 0913 0.5 15 1531 9.6 293 2145 -0.3 -9	19 W	0408 8.8 268 1004 0.9 27 1617 9.2 280 2231 0.1 3
5 F	0302 8.3 253 0902 0.3 9 1518 8.8 268 2125 0.0 0	20 Sa	0313 9.5 290 0915 -0.8 -24 1533 10.2 311 2146 -1.2 -37	5 Su	0308 8.4 256 0902 0.4 12 1519 9.2 280 2130 -0.2 -6	20 M	0340 9.1 277 0938 0.0 0 1555 9.7 296 2209 -0.5 -15	5 W	0403 8.9 271 0958 0.4 12 1615 9.6 293 2229 -0.4 -12	20 Th	0451 8.7 265 1047 1.1 34 1700 8.9 271 2312 0.3 9
6 Sa	0338 8.5 259 0935 0.1 3 1552 9.0 274 2200 -0.2 -6	21 Su	0400 9.5 290 1000 -0.8 -24 1618 10.1 308 2230 -1.1 -34	6 M	0346 8.6 262 0939 0.3 9 1556 9.3 283 2209 -0.4 -12	21 Tu	0425 9.0 274 1023 0.3 9 1638 9.5 290 2252 -0.3 -9	6 Th	0448 9.0 274 1045 0.4 12 1701 9.5 290 2315 -0.3 -9	21 F	0534 8.6 262 1130 1.3 40 1742 8.6 262 2352 0.6 18
7 Su	0413 8.5 259 1009 0.1 3 1626 9.1 277 2235 -0.3 -9	22 M	0445 9.3 283 1045 -0.5 -15 1702 9.8 299 2315 -0.7 -21	7 Tu	0424 8.6 262 1019 0.3 9 1636 9.3 283 2249 -0.3 -9	22 W	0510 8.8 268 1107 0.6 18 1722 9.0 274 2335 0.1 3	7 F	0535 9.0 274 1134 0.4 12 1751 9.3 283	22 Sa	0617 8.4 256 1213 1.5 46 1825 8.2 250
8 M	0448 8.5 259 1044 0.1 3 1701 9.0 274 2311 -0.2 -6	23 Tu	0531 8.9 271 1129 0.0 0 1747 9.2 280 2359 -0.2 -6	8 W	0505 8.6 262 1100 0.4 12 1717 9.2 280 2331 -0.2 -6	23 Th	0556 8.4 256 1152 1.1 34 1807 8.5 259	8 Sa	0003 -0.1 -3 0626 9.0 274 1228 0.6 18 1844 8.9 271	23 Su	0034 0.9 27 0700 8.2 250 1259 1.8 55 1911 7.8 238
9 Tu	0525 8.3 253 1121 0.3 9 1739 8.9 271 2350 0.0 0	24 W	0618 8.4 256 1215 0.6 18 1833 8.6 262	9 Th	0549 8.4 256 1145 0.6 18 1803 8.9 271	24 F	0019 0.5 15 0643 8.1 247 1239 1.5 46 1854 8.0 244	9 Su	0055 0.1 3 0721 8.9 271 1325 0.8 24 1942 8.5 259	24 M	0116 1.3 40 0745 8.0 244 1346 2.0 61 1959 7.4 226
10 W	0605 8.0 244 1201 0.5 15 1820 8.6 262	25 Th	0046 0.4 12 0708 7.9 241 1304 1.3 40 1923 7.9 241	10 F	0017 0.1 3 0637 8.3 253 1236 0.8 24 1854 8.5 259	25 Sa	0105 1.0 30 0732 7.7 235 1329 1.9 58 1944 7.5 229	10 M	0151 0.5 15 0819 8.8 268 1428 1.0 30 2044 8.2 250	25 Tu	0201 1.6 49 0833 7.8 238 1437 2.1 64 2051 7.1 216
11 Th	0033 0.3 9 0650 7.7 235 1247 0.9 27 1907 8.2 250	26 F	0136 1.0 30 0802 7.4 226 1358 1.8 55 2018 7.3 223	11 Sa	0108 0.4 12 0732 8.1 247 1333 1.1 34 1953 8.1 247	26 Su	0153 1.4 43 0825 7.5 229 1425 2.2 67 2040 7.1 216	11 Tu	0251 0.8 24 0921 8.7 265 1534 1.1 34 2150 8.0 244	26 W	0249 1.9 58 0922 7.8 238 1531 2.1 64 2146 7.0 213
12 F	0122 0.6 18 0742 7.5 229 1341 1.2 37 2004 7.8 238	27 Sa	0231 1.5 46 0902 7.0 213 1501 2.2 67 2121 6.9 210	12 Su	0205 0.7 21 0834 8.0 244 1438 1.3 40 2059 7.8 238	27 M	0246 1.8 55 0920 7.3 223 1524 2.3 70 2139 6.9 210	12 W	0353 0.9 27 1024 8.8 268 1640 1.0 30 2256 8.0 244	27 Th	0340 2.0 61 1013 7.8 238 1626 2.0 61 2242 7.0 213
13 Sa	0220 0.9 27 0845 7.3 223 1445 1.4 43 2111 7.6 232	28 Su	0333 1.8 55 1006 6.9 210 1609 2.4 73 2226 6.7 204	13 M	0309 0.9 27 0940 8.1 247 1549 1.2 37 2209 7.8 238	28 Tu	0342 2.0 61 1016 7.4 226 1624 2.2 67 2239 6.9 210	13 Th	0457 1.0 30 1125 9.0 274 1743 0.8 24 2358 8.1 247	28 F	0433 2.1 64 1105 8.0 244 1721 1.7 52 2338 7.1 216
14 Su	0326 1.1 34 0955 7.4 226 1559 1.4 43 2225 7.6 232	29 M	0436 1.9 58 1107 7.0 213 1714 2.2 67 2328 6.8 207	14 Tu	0416 0.9 27 1046 8.3 253 1659 1.0 30 2317 7.9 241	29 W	0437 2.0 61 1108 7.6 232 1720 2.0 61 2334 7.0 213	14 F	0557 1.0 30 1222 9.1 277 1841 0.5 15	29 Sa	0527 2.0 61 1155 8.3 253 1813 1.4 43
15 M	0437 1.0 30 1106 7.7 235 1714 1.1 34 2336 7.9 241	30 Tu	0534 1.8 55 1200 7.3 223 1810 1.8 55	15 W	0521 0.8 24 1148 8.7 265 1803 0.6 18	30 Th	0529 1.9 58 1157 7.9 241 1810 1.6 49	15 Sa	0055 8.3 253 0653 0.9 27 1315 9.3 283 1934 0.3 9	30 Su	0030 7.5 229 0619 1.7 52 1245 8.6 262 1903 0.9 27
						31 F	0025 7.3 223 0617 1.7 52 1242 8.3 253 1856 1.1 34				

Time meridian 90° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

La Union, El Salvador, 2019

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	h m	ft	h m	ft	h m	ft	h m	ft	h m	ft
1 M	0122 8.2 250 0716 1.4 43 1348 9.9 302 1958 0.7 21	16 Tu	0243 8.4 256 0822 1.4 43 1456 9.7 296 2055 0.8 24	1 Th	0250 9.4 287 0840 0.2 6 1511 10.7 326 2112 -0.5 -15	16 F	0348 8.8 268 0931 1.2 37 1553 9.5 290 2152 0.8 24	1 Su	0415 11.0 335 1007 -1.1 -34 1635 11.1 338 2228 -1.2 -37	16 M	0425 9.4 287 1018 0.6 18 1637 9.4 287 2231 0.7 21
2 Tu	0217 8.7 265 0808 0.9 27 1439 10.3 314 2046 0.1 3	17 W	0329 8.6 262 0908 1.3 40 1537 9.7 296 2137 0.7 21	2 F	0344 10.0 305 0933 -0.3 -9 1603 11.0 335 2201 -0.9 -27	17 Sa	0423 9.0 274 1008 1.1 34 1629 9.5 290 2227 0.7 21	2 M	0505 11.2 341 1056 -1.2 -37 1724 11.0 335 2315 -1.1 -34	17 Tu	0458 9.5 290 1052 0.6 18 1711 9.3 283 2304 0.7 21
3 W	0311 9.1 277 0859 0.5 15 1530 10.7 326 2133 -0.4 -12	18 Th	0410 8.8 268 0950 1.2 37 1616 9.7 296 2216 0.6 18	3 Sa	0436 10.5 320 1024 -0.6 -18 1653 11.1 338 2249 -1.1 -34	18 Su	0457 9.2 280 1044 1.0 30 1703 9.5 290 2300 0.7 21	3 Tu	0553 11.2 341 1144 -0.9 -27 1812 10.6 323	18 W	0532 9.5 290 1127 0.6 18 1746 9.1 277 2338 0.8 24
4 Th	0402 9.6 293 0949 0.1 3 1620 10.9 332 2220 -0.7 -21	19 F	0448 8.9 271 1030 1.2 37 1653 9.6 293 2253 0.6 18	4 Su	0526 10.8 329 1114 -0.7 -21 1743 11.0 335 2336 -1.0 -30	19 M	0530 9.3 283 1120 1.0 30 1738 9.3 283 2334 0.8 24	4 W	0002 -0.7 -21 0642 10.9 332 1233 -0.4 -12 1901 10.0 305	19 Th	0607 9.4 287 1204 0.8 24 1822 8.8 268
5 F	0453 9.9 302 1039 -0.1 -3 1709 10.9 332 2307 -0.8 -24	20 Sa	0525 9.0 274 1109 1.3 40 1729 9.5 290 2329 0.8 24	5 M	0617 10.8 329 1204 -0.5 -15 1833 10.6 323	20 Tu	0605 9.2 280 1156 1.1 34 1814 9.1 277	5 Th	0050 -0.1 -3 0731 10.3 314 1324 0.3 9 1951 9.2 280	20 F	0014 1.0 30 0645 9.2 280 1244 1.0 30 1902 8.4 256
6 Sa	0544 10.1 308 1129 -0.1 -3 1800 10.7 326 2355 -0.7 -21	21 Su	0601 9.0 274 1147 1.4 43 1806 9.3 283	6 Tu	0025 -0.7 -21 0707 10.7 326 1256 -0.1 -3 1923 10.0 305	21 W	0008 1.0 30 0641 9.2 280 1233 1.3 40 1851 8.7 265	6 F	0141 0.6 18 0824 9.7 296 1417 1.0 30 2045 8.5 259	21 Sa	0055 1.3 40 0728 9.0 274 1328 1.3 40 1946 8.1 247
7 Su	0636 10.2 311 1221 0.1 3 1851 10.4 317	22 M	0005 1.0 30 0638 8.9 271 1226 1.6 49 1844 9.0 274	7 W	0114 -0.1 -3 0759 10.3 314 1349 0.5 15 2016 9.4 287	22 Th	0044 1.2 37 0719 9.0 274 1314 1.5 46 1931 8.4 256	7 Sa	0236 1.4 43 0920 9.1 277 1517 1.7 52 2146 7.9 241	22 Su	0141 1.6 49 0817 8.8 268 1419 1.6 49 2040 7.9 241
8 M	0044 -0.4 -12 0728 10.2 311 1314 0.4 12 1943 9.9 302	23 Tu	0041 1.2 37 0716 8.8 268 1306 1.8 55 1924 8.6 262	8 Th	0207 0.5 15 0853 9.9 302 1447 1.1 34 2112 8.7 265	23 F	0124 1.5 46 0801 8.9 271 1359 1.8 55 2016 8.0 244	8 Su	0339 2.1 64 1021 8.6 262 1624 2.2 67 2255 7.6 232	23 M	0237 1.8 55 0914 8.7 265 1518 1.7 52 2143 7.9 241
9 Tu	0136 0.0 0 0822 10.0 305 1411 0.8 24 2038 9.3 283	24 W	0119 1.5 46 0757 8.7 265 1349 2.0 61 2006 8.3 253	9 F	0303 1.2 37 0951 9.4 287 1549 1.6 49 2213 8.2 250	24 Sa	0209 1.8 55 0849 8.8 268 1450 1.9 58 2107 7.8 238	9 M	0450 2.4 73 1127 8.3 253 1734 2.3 70	24 Tu	0343 1.9 58 1020 8.7 265 1625 1.7 52 2253 8.1 247
10 W	0230 0.5 15 0919 9.8 299 1512 1.1 34 2136 8.8 268	25 Th	0200 1.8 55 0841 8.7 265 1437 2.2 67 2053 8.0 244	10 Sa	0406 1.7 52 1052 9.1 277 1656 1.9 58 2321 7.8 238	25 Su	0303 2.0 61 0944 8.7 265 1550 2.0 61 2208 7.7 235	10 Tu	0008 7.5 229 0600 2.4 73 1231 8.3 253 1837 2.2 67	25 W	0456 1.7 52 1129 8.9 271 1734 1.3 40
11 Th	0329 1.0 30 1018 9.6 293 1617 1.4 43 2238 8.4 256	26 F	0247 2.0 61 0929 8.7 265 1531 2.3 70 2145 7.8 238	11 Su	0513 2.0 61 1156 8.9 271 1802 1.9 58	26 M	0407 2.0 61 1046 8.8 268 1655 1.8 55 2315 7.9 241	11 W	0112 7.8 238 0700 2.2 67 1326 8.5 259 1929 1.9 58	26 Th	0005 8.6 262 0607 1.1 34 1236 9.3 283 1838 0.7 21
12 F	0432 1.4 43 1119 9.5 290 1722 1.5 46 2344 8.2 250	27 Sa	0340 2.1 64 1023 8.8 268 1630 2.2 67 2243 7.7 235	12 M	0031 7.8 238 0619 2.1 64 1256 8.9 271 1901 1.8 55	27 Tu	0516 1.8 55 1152 9.1 277 1802 1.4 43	12 Th	0202 8.1 247 0749 1.8 55 1412 8.7 265 2012 1.5 46	27 F	0111 9.3 283 0710 0.4 12 1338 9.9 302 1936 0.0 0
13 Sa	0536 1.6 49 1220 9.4 287 1825 1.4 43	28 Su	0441 2.1 64 1120 9.0 274 1732 1.9 58 2345 7.9 241	13 Tu	0134 7.9 241 0717 2.0 61 1350 9.0 274 1952 1.5 46	28 W	0025 8.3 253 0625 1.3 40 1256 9.6 293 1903 0.8 24	13 F	0243 8.5 259 0831 1.4 43 1451 9.0 274 2050 1.2 37	28 Sa	0210 10.1 308 0807 -0.4 -12 1434 10.4 317 2029 -0.6 -18
14 Su	0049 8.1 247 0637 1.6 49 1317 9.5 290 1921 1.3 40	29 M	0545 1.9 58 1220 9.3 283 1833 1.4 43	14 W	0227 8.2 250 0807 1.7 52 1436 9.2 280 2036 1.2 37	29 Th	0130 9.0 274 0727 0.6 18 1356 10.1 308 1959 0.0 0	14 Sa	0319 8.9 271 0908 1.1 34 1528 9.2 280 2124 0.9 27	29 Su	0303 10.8 329 0859 -1.0 -30 1526 10.7 326 2118 -1.0 -30
15 M	0150 8.2 250 0732 1.5 46 1409 9.6 293 2011 1.0 30	30 Tu	0050 8.2 250 0647 1.4 43 1319 9.8 299 1929 0.8 24	15 Th	0310 8.5 259 0851 1.5 46 1517 9.4 287 2115 1.0 30	30 F	0230 9.8 299 0824 -0.1 -3 1452 10.7 326 2051 -0.6 -18	15 Su	0352 9.2 280 0944 0.8 24 1602 9.4 287 2158 0.7 21	30 M	0353 11.2 341 0948 -1.4 -43 1615 10.9 332 2206 -1.2 -37
		31 W	0152 8.8 268 0746 0.8 24 1416 10.3 314 2022 0.1 3			31 Sa	0324 10.5 320 0916 -0.7 -21 1545 11.0 335 2140 -1.1 -34				

Time meridian 90° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Salina Cruz, Mexico, 2019

Times and Heights of High and Low Waters

January				February				March																				
Time	Height			Time	Height			Time	Height			Time	Height															
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm														
1 Tu	0448	0.1	3		16 W	0401	0.4	12		1 F	0626	0.2	6		16 Sa	0519	0.3	9		1 F	0449	0.3	9		16 Sa	0348	0.3	9
	1037	2.6	79			0940	2.4	73			1213	2.4	73			1100	2.5	76			1041	2.6	79			0935	2.7	82
	1641	-0.3	-9			1541	0.0	0			1806	0.2	6			1700	-0.1	-3			1638	0.3	9			1536	0.1	3
	2322	3.6	110			2226	3.5	107						2345		3.7	113		2314		3.4	104		2215		3.7	113	
2 W	0553	0.1	3		17 Th	0459	0.4	12		2 Sa	0045	3.5	107		17 Su	0619	0.2	6		2 Sa	0548	0.4	12		17 Su	0445	0.3	9
	1140	2.5	76			1035	2.3	70			0722	0.2	6			1208	2.6	79			1142	2.5	76			1039	2.8	85
	1738	-0.1	-3			1632	0.0	0			1313	2.4	73			1807	-0.1	-3			1736	0.4	12			1642	0.1	3
						2321	3.6	110			1902	0.2	6										2317	3.6		110		
3 Th	0019	3.6	110		18 F	0558	0.3	9		3 Su	0137	3.4	104		18 M	0046	3.8	116		3 Su	0011	3.3	101		18 M	0546	0.2	6
	0654	0.1	3			1135	2.3	70			0813	0.1	3			0718	0.0	0			0646	0.4	12			1147	3.0	91
	1242	2.4	73			1729	-0.1	-3			1408	2.5	76			1315	2.9	88			1242	2.5	76			1642	0.1	3
	1834	-0.1	-3				1956	0.2	6			1956	0.2	6			1916	-0.2	-6			1836	0.5	15			1754	0.1	3
4 F	0113	3.7	113		19 Sa	0017	3.8	116		4 M	0225	3.5	107		19 Tu	0147	3.9	119		4 M	0105	3.2	98		19 Tu	0022	3.6	110
	0750	0.0	0			0656	0.1	3			0858	0.0	0			0815	-0.3	-9			0738	0.4	12			0647	0.1	3
	1340	2.5	76			1238	2.4	73			1457	2.6	79			1418	3.2	98			1338	2.6	79			1256	3.3	101
	1928	0.0	0			1831	-0.2	-6			2046	0.2	6			2022	-0.4	-12			1933	0.5	15			1906	0.0	0

Time meridian 90° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Salina Cruz, Mexico, 2019

Times and Heights of High and Low Waters

July				August				September															
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height										
	h m	ft cm		h m	ft cm		h m	ft cm		h m	ft cm		h m	ft cm									
1 M	0050 0641 1326 2003	3.2 0.8 4.7 0.9	98 24 143 27	16 Tu ○	0202 0754 1429 2102	3.4 0.8 4.7 0.8	104 24 143 24	1 Th	0209 0807 1440 2109	3.6 0.5 4.9 0.5	110 15 149 15	16 F	0320 0916 1537 2201	3.6 0.9 4.3 0.7	110 27 131 21	1 Su	0342 0954 1606 2220	4.5 0.0 4.6 -0.1	137 0 140 -3	16 M	0413 1025 1633 2239	3.8 0.4 3.8 0.5	116 12 116 15
2 Tu ●	0145 0735 1416 2052	3.3 0.7 4.8 0.7	101 21 146 21	17 W	0255 0845 1515 2147	3.5 0.8 4.6 0.7	107 24 140 21	2 F	0306 0907 1533 2158	3.9 0.4 4.9 0.3	119 12 149 9	17 Sa	0403 1001 1618 2239	3.7 0.8 4.3 0.6	113 24 131 18	2 M	0436 1050 1658 2309	4.7 -0.1 4.5 -0.3	143 -3 137 -9	17 Tu	0451 1106 1711 2313	4.0 0.4 3.7 0.4	122 12 113 12
3 W	0239 0829 1505 2139	3.5 0.5 5.0 0.5	107 15 152 15	18 Th	0343 0934 1559 2229	3.6 0.8 4.6 0.6	110 24 140 18	3 Sa	0402 1005 1625 2246	4.2 0.3 4.9 0.1	128 9 149 3	18 Su	0444 1045 1658 2315	3.8 0.8 4.2 0.6	116 24 128 18	3 Tu	0529 1145 1749 2358	4.9 -0.1 4.4 -0.3	149 -3 134 -9	18 W	0529 1146 1747 2347	4.1 0.4 3.6 0.4	125 12 110 12
4 Th	0331 0923 1554 2226	3.7 0.4 5.1 0.3	113 12 155 9	19 F	0429 1020 1641 2309	3.7 0.9 4.5 0.6	113 27 137 18	4 Su	0456 1102 1716 2334	4.5 0.2 4.8 0.0	137 6 146 0	19 M	0523 1127 1736 2349	3.9 0.8 4.1 0.6	119 24 125 18	4 W	0621 1238 1839	4.9 0.0 4.2	149 0 128	19 Th	0606 1226 1822	4.1 0.4 3.4	125 12 104
5 F	0423 1018 1644 2312	3.9 0.4 5.0 0.2	119 12 152 6	20 Sa	0512 1105 1721 2347	3.8 0.9 4.4 0.6	116 27 134 18	5 M	0550 1159 1807	4.7 0.3 4.7	143 9 143	20 Tu	0602 1209 1813	4.0 0.8 3.9	122 24 119	5 Th ○	0047 0713 1332 1930	-0.2 4.8 0.2 4.0	-6 146 6 122	20 F	0020 0644 1306 1858	0.4 4.1 0.5 3.3	12 125 15 101
6 Sa	0515 1113 1733 2358	4.2 0.4 4.9 0.1	128 12 149 3	21 Su	0553 1149 1801	3.9 0.9 4.3	119 27 131	6 Tu	0023 0643 1255 1858	-0.1 4.8 0.4 4.5	-3 146 12 137	21 W	0023 0640 1250 1849	0.6 4.1 0.8 3.8	18 125 24 116	6 F	0137 0806 1427 2023	0.0 4.7 0.4 3.7	0 143 12 113	21 Sa ○	0055 0723 1347 1936	0.4 4.1 0.6 3.2	12 125 18 98
7 Su	0608 1209 1823	4.3 0.4 4.8	131 12 146	22 M	0023 0634 1232 1840	0.6 3.9 1.0 4.1	18 119 30 125	7 W ○	0111 0737 1352 1950	0.0 4.9 0.5 4.2	0 149 15 128	22 Th	0056 0718 1333 1926	0.7 4.1 0.9 3.6	21 125 27 110	7 Sa	0228 0900 1524 2118	0.2 4.4 0.6 3.5	6 134 18 107	22 Su	0134 0806 1431 2019	0.4 4.0 0.7 3.1	12 122 21 94
8 M	0045 0701 1307 1914	0.1 4.5 0.5 4.5	3 137 15 137	23 Tu	0059 0714 1316 1918	0.7 4.0 1.1 3.9	21 122 34 119	8 Th	0201 0832 1451 2044	0.1 4.8 0.7 3.9	3 146 21 119	23 F ○	0130 0758 1417 2004	0.7 4.2 1.0 3.4	21 128 30 104	8 Su	0322 0956 1622 2216	0.4 4.2 0.8 3.3	12 128 24 101	23 M	0219 0854 1520 2109	0.4 4.0 0.7 3.1	12 122 21 94
9 Tu ○	0133 0756 1406 2007	0.1 4.6 0.7 4.2	3 140 21 128	24 W ○	0134 0755 1402 1957	0.8 4.0 1.2 3.7	24 122 37 113	9 F	0253 0928 1551 2140	0.3 4.7 0.9 3.7	9 143 27 113	24 Sa	0206 0841 1504 2046	0.7 4.2 1.1 3.3	21 128 34 101	9 M	0419 1054 1723 2317	0.7 4.0 0.9 3.2	21 122 27 98	24 Tu	0313 0948 1614 2208	0.5 3.9 0.8 3.1	15 119 24 94
10 W	0223 0853 1508 2102	0.2 4.6 0.8 4.0	6 140 24 122	25 Th	0209 0837 1450 2038	0.8 4.1 1.3 3.5	24 125 40 107	10 Sa	0347 1026 1653 2240	0.5 4.6 1.0 3.5	15 140 30 107	25 Su	0248 0929 1556 2135	0.7 4.2 1.1 3.2	21 128 34 98	10 Tu	0520 1153 1822	0.8 3.8 0.9	24 116 27	25 W	0415 1049 1713 2314	0.5 3.8 0.7 3.3	15 116 21 101
11 Th	0315 0951 1612 2201	0.3 4.6 0.9 3.7	9 140 27 113	26 F	0246 0921 1542 2123	0.9 4.1 1.3 3.3	27 125 40 101	11 Su	0443 1124 1755 2342	0.7 4.4 1.1 3.3	21 134 34 101	26 M	0338 1022 1651 2232	0.7 4.2 1.1 3.2	21 128 34 98	11 W	0019 0620 1250 1916	3.1 0.9 3.7 0.9	94 27 113 27	26 Th	0525 1153 1813	0.4 3.8 0.5	12 116 15
12 F	0410 1050 1717 2302	0.5 4.6 1.0 3.5	15 140 30 107	27 Sa	0327 1010 1637 2212	0.9 4.2 1.3 3.2	27 128 40 98	12 M	0541 1222 1854	0.8 4.3 1.1	24 131 34	27 Tu	0435 1120 1750 2336	0.7 4.2 1.0 3.3	21 128 30 101	12 Th	0116 0718 1342 2005	3.2 0.9 3.7 0.8	98 27 113 24	27 F	0021 0636 1256 1912	3.5 0.3 3.8 0.3	107 9 116 9
13 Sa	0506 1149 1820	0.6 4.6 1.0	18 140 30	28 Su	0414 1101 1734 2308	0.9 4.4 1.3 3.2	27 134 40 98	13 Tu	0043 0640 1316 1949	3.3 0.9 4.3 1.0	101 27 131 30	28 W	0540 1220 1848	0.6 4.3 0.8	18 131 24	13 F ○	0207 0810 1430 2048	3.3 0.8 3.8 0.7	101 24 116 21	28 Sa ●	0126 0743 1357 2009	3.8 0.1 3.9 0.0	116 3 119 0
14 Su	0004 0603 1246 1919	3.4 0.7 4.6 1.0	104 21 140 30	29 M	0507 1156 1831	0.8 4.5 1.2	24 37 37	14 W	0141 0736 1407 2037	3.3 0.9 4.3 0.9	101 27 131 27	29 Th	0042 0647 1320 1945	3.5 0.5 4.4 0.6	107 15 134 18	14 Sa	0252 0858 1513 2127	3.5 0.7 3.8 0.6	107 21 116 18	29 Su	0226 0844 1454 2102	4.2 -0.1 4.0 -0.2	128 -3 122 -6
15 M	0105 0700 1339 2013	3.4 0.7 4.7 0.9	104 21 143 27	30 Tu	0008 0605 1251 1926	3.2 0.7 4.6 1.0	98 21 140 30	15 Th ○	0233 0828 1454 2121	3.4 0.9 4.3 0.8	104 27 131 24	30 F ●	0145 0752 1418 2038	3.8 0.3 4.5 0.3	116 9 137 9	15 Su	0334 0943 1554 2204	3.6 0.5 3.8 0.5	110 15 116 15	30 M	0322 0942 1548 2153	4.5 -0.3 4.0 -0.4	137 -9 122 -12
				31 W ●	0109 0706 1346 2018	3.4 0.6 4.8 0.8	104 18 146 24					31 Sa	0245 0855 1513 2130	4.1 0.2 4.5 0.1	125 6 137 3								

Time meridian 90° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Salina Cruz, Mexico, 2019

Times and Heights of High and Low Waters

October				November				December																					
Time	Height			Time	Height			Time	Height			Time	Height																
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm		h	m	ft	cm										
1 Tu	0415	4.7	143		16 W	0418	3.9	119		1 F	0531	4.5	137		16 Sa	0507	4.0	122		1 Su	0553	3.9	119		16 M	0527	3.9	119	
	1036	-0.4	-12			1043	0.0	0			1158	-0.6	-18			1138	-0.4	-12			1220	-0.6	-18			1155	-0.6	-18	
	1639	4.0	122			1644	3.2	98			1759	3.5	107			1734	2.9	88			1827	3.1	94			1759	3.1	94	
	2244	-0.5	-15			2236	0.2	6			2357	-0.4	-12			2323	-0.2	-6								2355	-0.3	-9	
2 W	0506	4.8	146		17 Th	0456	4.0	122		2 Sa	0619	4.3	131		17 Su	0548	4.0	122		2 M	0022	-0.2	-6		17 Tu	0612	3.8	116	
	1128	-0.4	-12			1123	-0.1	-3			1245	-0.5	-15			1218	-0.3	-9			0638	3.7	113			1237	-0.6	-18	
	1730	4.0	122			1720	3.2	98			1848	3.3	101			1816	2.9	88			1304	-0.4	-12			1847	3.2	98	
	2333	-0.5	-15			2312	0.1	3								1914	3.0	91			1914	3.0	91						
3 Th	0556	4.8	146		18 F	0534	4.1	125		3 Su	0046	-0.2	-6		18 M	0008	-0.1	-3		3 Tu	0110	0.0	0		18 W	0048	-0.2	-6	
	1219	-0.4	-12			1202	0.0	0			0706	4.0	122			0631	3.8	116			0722	3.4	104			0700	3.6	110	
	1819	3.8	116			1757	3.1	94			1332	-0.3	-9			1258	-0.3	-9			1347	-0.3	-9			1321	-0.6	-18	
						2348	0.1	3			1938	3.2	98			1900	3.0	91			2001	3.0	91			1939	3.4	104	
4 F	0022	-0.4	-12		19 Sa	0613	4.0	122		4 M	0136	0.0	0		19 Tu	0056	-0.1	-3		4 W	0200	0.2	6		19 Th	0145	-0.1	-3	
	0646	4.6	140			1241	0.0	0			0754	3.6	110			0716	3.6	110			0808	3.1	94			0750	3.3	101	
	1309	-0.2	-6			1835	3.0	91			1420	-0.1	-3			1341	-0.2	-6			1431	-0.1	-3			1408	-0.5	-15	
	1909	3.7	113								2029	3.0	91			1949	3.1	94			2050	2.9	88			2033	3.5	107	
5 Sa	0112	-0.2	-6		20 Su	0027	0.1	3		5 Tu	0228	0.3	9		20 W	0151	0.0	0		5 Th	0253	0.4	12		20 F	0246	0.0	0	
	0736	4.3	131			0654	4.0	122			0844	3.3	101			0806	3.4	104			0856	2.8	85			0844	3.0	91	
	1400	0.0	0			1321	0.1	3			1509	0.1	3			1428	-0.2	-6			1515	0.1	3			1458	-0.5	-15	
	2001	3.4	104			1915	3.0	91			2122	2.9	88			2044	3.2	98			2139	2.9	88			2131	3.6	110	
6 Su	0203	0.1	3		21 M	0111	0.1	3		6 W	0324	0.5	15		21 Th	0251	0.1	3		6 F	0349	0.5	15		21 Sa	0351	0.0	0	
	0828	4.0	122			0738	3.8	116			0937	3.0	91			0901	3.2	98			0947	2.6	79			0943	2.8	85	
	1453	0.3	9			1404	0.2	6			1600	0.3	9			1519	-0.2	-6			1601	0.2	6			1553	-0.4	-12	
	2054	3.2	98			2001	3.0	91			2217	2.8	85			2143	3.3	101			2230	2.9	88			2231	3.7	113	
7 M	0256	0.4	12		22 Tu	0200	0.2	6		7 Th	0425	0.6	18		22 F	0359	0.1	3		7 Sa	0448	0.5	15		22 Su	0458	0.0	0	
	0921	3.7	113			0826	3.6	110			1033	2.8	85			1002	3.0	91			1041	2.4	73			1046	2.6	79	
	1547	0.5	15			1451	0.3	9			1652	0.4	12			1616	-0.2	-6			1648	0.3	9			1651	-0.4	-12	
	2150	3.1	94			2054	3.0	91			2313	2.9	88			2247	3.5	107			2321	3.0	91			2332	3.8	116	
8 Tu	0354	0.6	18		23 W	0258	0.3	9		8 F	0527	0.6	18		23 Sa	0510	0.1	3		8 Su	0548	0.4	12		23 M	0605	0.0	0	
	1018	3.4	104			0921	3.5	107			1132	2.7	82			1107	2.8	85			1138	2.3	70			1152	2.6	79	
	1644	0.6	18			1544	0.3	9			1743	0.5	15			1715	-0.2	-6			1735	0.3	9			1750	-0.3	-9	
	2250	3.0	91			2154	3.1	94								2350	3.7	113											
9 W	0455	0.7	21		24 Th	0405	0.3	9		9 Sa	0006	3.0	91		24 Su	0619	0.0	0		9 M	0011	3.2	98		24 Tu	0032	3.9	119	
	1117	3.3	101			1023	3.3	101			0627	0.5	15			1213	2.8	85			0645	0.3	9			0708	-0.1	-3	
	1740	0.7	21			1642	0.2	6			1229	2.6	79			1815	-0.3	-9			1233	2.3	70			1256	2.6	79	
	2350	3.0	91			2300	3.3	101			1832	0.4	12								1823	0.2	6			1850	-0.3	-9	
10 Th	0557	0.7	21		25 F	0517	0.2	6		10 Su	0056	3.1	94		25 M	0051	3.9	119		10 Tu	0059	3.4	104		25 W	0129	4.0	122	
	1215	3.2	98			1129	3.2	98			0721	0.4	12			0722	-0.2	-6			0737	0.1	3			0805	-0.3	-9	
	1834	0.7	21			1742	0.1	3			1321	2.6	79			1316	2.8	85			1325	2.3	70			1356	2.7	82	
											1918	0.4	12			1914	-0.4	-12			1911	0.1	3			1948	-0.3	-9	
11 F	0045	3.0	91		26 Sa	0006	3.6	110		11 M	0142	3.3	101		26 Tu	0148	4.1	125		11 W	0146	3.6	110		26 Th	0223	4.0	122	
	0656	0.7	21			0628	0.1	3			0810	0.2	6			0820	-0.4	-12			0824	0.0	0			0857	-0.4	-12	
	1310	3.1	94			1234	3.2	98			1409	2.7	82			1415	2.9	88			1414	2.4	73			1452	2.8	85	
	1923	0.6	18			1842	-0.1	-3			2000	0.3	9			2010	-0.5	-15			1957	0.0	0			2043	-0.4	-12	
12 Sa	0135	3.2	98		27 Su	0108	3.9	119		12 Tu	0224	3.5	107		27 W	0242	4.3	131		12 Th	0231	3.8	116		27 F	0313	4.0	122	
	0749	0.5	15			0734	-0.1	-3			0855	0.0	0			0914	-0.6	-18			0909	-0.2	-6			0946	-0.5	-15	
	1400	3.2	98			1337	3.3	101			1453	2.7	82			1510	3.0	91			1500	2.5	76			1544	2.9	88	
	2007	0.5	15			1940	-0.3	-9			2041	0.1	3			2104	-0.5	-15			2043	-0.1	-3			2135	-0.3	-9	
13 Su	0220	3.4	104		28 M	0207	4.2	128		13 W	0306	3.8	116		28 Th	0332	4.3	131		13 F	0315	3.9	119		28 Sa	0400	4.0	122	
	0837	0.4	12			0833	-0.4	-12			0938	-0.2	-6			1003	-0.7	-21			0951	-0.4	-12			1031	-0.6	-18	
	1445	3.2	98			1434	3.4	104			1535	2.8	85			1602	3.1	94			1544	2.6	79			1633	3.0	91	
	2047	0.4	12			2035	-0.4	-12			2121	0.0	0			2155	-0.5	-15			2129	-0.2	-6			2225	-0.3	-9	
14 M	0301	3.6	110		29 Tu	0302	4.4	134		14 Th	0346	3.9	119		29 F	0421	4.3	131		14 Sa	0359	4.0	122		29 Su	0446	3.9	119	
	09																												

Guaymas, Mexico, 2019

Times and Heights of High and Low Waters

July				August				September																						
Time	Height			Time	Height			Time	Height			Time	Height																	
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm		h	m	ft	cm											
1 M	0322	-0.4	-12		16 Tu	0405	-0.1	-3		1 Th	0430	-0.4	-12		16 F	0429	0.5	15		1 Su	0513	0.9	27		16 M	0430	1.3	40		
	1137	3.0	91			1234	3.1	94			1229	3.4	104			1207	3.0	91			1212	3.1	94			1047	2.8	85		
	1425	2.8	85			1428	3.0	91			1606	2.9	88			1556	2.5	76			1731	1.8	55			1650	1.4	43		
	1941	3.6	110			2000	3.5	107			2115	3.7	113			2125	3.4	104			2345	2.9	88			2257	2.7	82		
2 Tu	0401	-0.6	-18		17 W	0431	0.0	0		2 F	0509	-0.2	-6		17 Sa	0451	0.7	21		2 M	0536	1.5	46		17 Tu	0447	1.6	49		
	1229	3.2	98			1303	3.0	91			1307	3.3	101			1227	2.9	88			1225	3.0	91			1032	2.9	88		
	1509	3.0	91			1508	2.9	88			1654	2.8	85			1630	2.4	73			1824	1.6	49			1725	1.3	40		
	2008	3.6	110			2020	3.5	107			2155	3.5	107			2145	3.2	98			1932	1.5	46			2337	2.4	73		
3 W	0442	-0.7	-21		18 Th	0458	0.1	3		3 Sa	0545	0.3	9		18 Su	0512	1.0	30		3 Tu	0118	2.5	76		18 W	0456	1.9	58		
	1324	3.2	98			1337	3.0	91			1344	3.2	98			1242	2.9	88			0543	2.0	61			1024	3.0	91		
	1553	3.1	94			1545	2.9	88			1750	2.7	82			1706	2.3	70			1208	2.9	88			1808	1.2	37		
	2032	3.6	110			2039	3.4	104			2233	3.1	94			2205	3.0	91			1932	1.5	46							
4 Th	0524	-0.6	-18		19 F	0524	0.3	9		4 Su	0617	0.8	24		19 M	0531	1.3	40		4 W	1048	3.0	91		19 Th	1027	3.1	94		
	1421	3.2	98			1413	2.9	88			1418	3.1	94			1243	2.8	85			2245	1.4	43			1907	1.2	37		
	1642	3.1	94			1625	2.8	85			1902	2.5	76			1748	2.2	67												
	2052	3.5	107			2057	3.3	101			2259	2.6	79			2227	2.7	82												
5 F	0607	-0.3	-9		20 Sa	0550	0.5	15		5 M	0642	1.4	43		20 Tu	0546	1.6	49		5 Th	1022	3.2	98		20 F	1034	3.1	94		
	1516	3.2	98			1449	2.9	88			1450	3.0	91			1218	2.8	85								2039	1.1	34		
	1748	3.1	94			1711	2.8	85			1520	3.0	91			1842	2.1	64												
	2100	3.2	98			2116	3.1	94			1520	3.0	91			2254	2.5	76												
6 Sa	0648	0.1	3		21 Su	0613	0.8	24		6 Tu	0033	2.0	61		21 W	0549	1.9	58		6 F	0029	1.1	34		21 Sa	1035	3.2	98		
	1600	3.2	98			1521	2.8	85			0245	2.1	64			1158	2.9	88			1021	3.4	104			2249	0.9	27		
						1813	2.7	82			0644	1.9	58			1958	1.9	58												
						2134	2.9	88			1520	3.0	91			2329	2.1	64												
7 Su	0727	0.6	18		22 M	0635	1.1	34		7 W	0047	1.6	49		22 Th	0212	2.0	61		7 Sa	0116	0.8	24		22 Su	0924	3.2	98		
	1635	3.1	94			1546	2.8	85			1548	3.0	91			1201	3.0	91			1022	3.4	104							
						1945	2.5	76								2207	1.7	52												
						2145	2.6	79																						
8 M	0801	1.2	37		23 Tu	0653	1.5	46		8 Th	0117	1.2	37		23 F	1217	3.1	94		8 Su	0151	0.6	18		23 M	0013	0.6	18		
	1702	3.1	94			1604	2.8	85			1200	3.1	94				1012	3.3	101			1605	2.7	82			0847	3.3	101	
																	1812	2.8	85											
9 Tu	0204	1.6	49		24 W	0652	1.8	55		9 F	0148	0.8	24		24 Sa	0009	1.2	37		9 M	0218	0.6	18		24 Tu	0104	0.3	9		
	0524	1.8	55			1616	2.9	88			1157	3.3	101			1237	3.2	98			1000	3.2	98			0857	3.3	101		
	0824	1.7	52														1544	2.7	82			1544	2.7	82			1437	2.6	79	
	1725	3.1	94														1904	3.0	91			1904	3.0	91			1836	2.9	88	
10 W	0157	1.2	37		25 Th	0217	1.7	52		10 Sa	0216	0.6	18		25 Su	0054	0.8	24		10 Tu	0239	0.5	15		25 W	0147	0.1	3		
	1746	3.1	94			1629	3.0	91			1159	3.3	101			0936	3.2	98			1000	3.2	98			0916	3.4	104		
											1553	3.1	94								1508	2.6	79			1428	2.3	70		
											1801	3.2	98								1945	3.1	94			1936	3.1	94		
11 Th	0210	0.8	24		26 F	0123	1.3	40		11 Su	0241	0.4	12		26 M	0134	0.4	12		11 W	0257	0.5	15		26 Th	0226	0.1	3		
	1806	3.2	98			1657	3.1	94			1121	3.3	101			0941	3.4	104			1008	3.1	94			0937	3.3	101		
											1526	3.2	98			1344	3.1	94			1449	2.4	73			1449	1.9	58		
											1847	3.3	101			1823	3.3	101			2020	3.2	98			2030	3.2	98		
12 F	0230	0.4	12		27 Sa	0128	0.8	24		12 M	0303	0.3	9		27 Tu	0214	0.0	0		12 Th	0314	0.6	18		27 F	0303	0.2	6		
	1826	3.3	101			1738	3.3	101			1105	3.2	98			1003	3.5	107			1020	3.0	91			0957	3.2	98		
											1417	3.1	94			1414	2.9	88			1500	2.2	67			1519	1.5	46		
											1927	3.4	104			1921	3.6	110			2054	3.2	98			2123	3.2	98		
13 Sa	0252	0.1	3		28 Su	0157	0.4	12		13 Tu	0325	0.3	9		28 W	0253	-0.1	-3		13 F	0332	0.7	21		28 Sa	0337	0.6	18		
	1848	3.4	104			1009	3.1	94			1112	3.2	98			1029	3.5	107			1033	3.0	91			1016	3.1	94		
						1243	3.0	91			1428	3.0	91			1448	2.7	82			1522	1.9	58			1554	1.1	34		
						1823	3.5	107			2003	3.5	107			2012	3.7	113			2125	3.2	98			2218	3.1	94		
14 Su	0315	0.0	0		29 M	0232	0.0	0		14 W	0346	0.3	9		29 Th	0331	-0.1	-3		14 Sa	0352	0.9	27		29 Su	0407	1.0	30		
	1912	3.5	107			1039	3.3	101			1127	3.1	94			1057	3.4	104			1046	2.9	88			1031	3.0	91		
						1347	3.1	94			1454	2.8	85			1525	2.5	76			1549	1.7	52			1631	0.8	24		
						1907	3.7	113			2034	3.5	107			2102	3.7	113			2155	3.1	94							

Guaymas, Mexico, 2019

Times and Heights of High and Low Waters

October				November				December																					
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height																
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm															
1 Tu	0031	2.6	79		16 W	0405	1.9	58		1 F	0831	3.0	91		16 Sa	0847	2.8	85		1 Su	0813	2.5	76		16 M	0831	2.3	70	
	0444	2.0	61			0917	2.9	88			1902	0.0	0			1837	-0.6	-18			1910	-0.3	-9			1917	-0.8	-24	
	1020	2.9	88			1710	0.3	9																					
	1754	0.6	18																										
2 W	0940	3.0	91		17 Th	0133	2.2	67		2 Sa	0833	3.0	91		17 Su	0845	2.7	82		2 M	0800	2.4	73		17 Tu	0527	2.2	67	
	1844	0.6	18			0405	2.1	64			2010	0.3	9			1940	-0.4	-12			1957	0.0	0			2009	-0.4	-12	
						0920	3.0	91																					
						1751	0.2	6																					
3 Th	0919	3.2	98		18 F	0926	3.0	91		3 Su	0830	2.9	88		18 M	0728	2.7	82		3 Tu	0706	2.2	67		18 W	0545	2.2	67	
	1954	0.7	21			1845	0.3	9			2218	0.4	12			2059	-0.2	-6			2056	0.3	9			2108	0.1	3	
4 F	0917	3.3	101		19 Sa	0930	3.0	91		4 M	0811	2.8	85		19 Tu	0656	2.7	82		4 W	0652	2.2	67		19 Th	0603	2.1	64	
	2301	0.8	24			2002	0.3	9			2350	0.5	15			2223	0.0	0			1537	0.7	21			1423	0.5	15	
5 Sa	0918	3.3	101		20 Su	0907	3.0	91		5 Tu	0756	2.6	79		20 W	0704	2.6	79		5 Th	0654	2.1	64		20 F	0620	2.1	64	
						2149	0.3	9			1535	1.3	40			1502	1.1	34			1502	0.6	18			1410	0.0	0	
											1807	1.4	43			1742	0.8	24			1912	1.0	30			2007	1.2	37	
																2334	0.2	6			2304	0.7	21			2321	1.0	30	
6 Su	0026	0.7	21		21 M	0800	3.0	91		6 W	0029	0.6	18		21 Th	0717	2.6	79		6 F	0700	2.1	64		21 Sa	0636	2.2	67	
	0913	3.2	98			2323	0.2	6			0754	2.6	79			1426	0.8	24			1438	0.3	9			1418	-0.5	-15	
											1512	1.2	37			1914	1.5	46			2008	1.2	37			2117	1.5	46	
											1908	1.6	49								2353	0.9	27						
7 M	0109	0.6	18		22 Tu	0757	3.1	94		7 Th	0054	0.7	21		22 F	0028	0.5	15		7 Sa	0708	2.1	64		22 Su	0019	1.3	40	
	0900	3.1	94								0759	2.5	76			0732	2.6	79			1421	0.0	0			0653	2.2	67	
	1547	2.1	64								1450	1.0	30			1423	0.2	6			2055	1.4	43			1437	-1.0	-30	
	1818	2.2	67								1954	1.8	55			2021	1.8	55								2213	1.8	55	
8 Tu	0138	0.6	18		23 W	0025	0.2	6		8 F	0115	0.8	24		23 Sa	0111	0.8	24		8 Su	0034	1.1	34		23 M	0103	1.6	49	
	0855	3.0	91			0809	3.0	91			0806	2.5	76			0746	2.6	79			0716	2.2	67			0708	2.3	70	
	1528	2.0	61			1438	1.7	52			1436	0.7	21			1440	-0.3	-9			1427	-0.4	-12			1502	-1.3	-40	
	1910	2.4	73			1851	2.2	67			2036	1.9	58			2121	2.0	61			2139	1.6	49			2302	1.9	58	
9 W	0158	0.6	18		24 Th	0112	0.2	6		9 Sa	0136	0.9	27		24 Su	0147	1.2	37		9 M	0112	1.3	40		24 Tu	0139	1.8	55	
	0858	2.9	88			0825	3.0	91			0814	2.5	76			0759	2.6	79			0724	2.3	70			0723	2.4	73	
	1503	1.8	55			1428	1.3	40			1441	0.3	9			1505	-0.7	-21			1447	-0.8	-24			1530	-1.5	-46	
	1951	2.5	76			1953	2.4	73			2117	2.0	61			2219	2.1	64			2223	1.8	55			2348	2.0	61	
10 Th	0214	0.7	21		25 F	0152	0.4	12		10 Su	0200	1.1	34		25 M	0216	1.5	46		10 Tu	0148	1.4	43		25 W	0209	1.9	58	
	0906	2.8	85			0841	3.0	91			0821	2.5	76			0809	2.6	79			0733	2.4	73			0737	2.5	76	
	1447	1.6	49			1445	0.8	24			1459	0.0	0			1535	-1.0	-30			1515	-1.1	-34			1600	-1.6	-49	
	2028	2.6	79			2050	2.6	79			2200	2.1	64			2318	2.2	67			2310	1.9	58						
11 F	0230	0.8	24		26 Sa	0228	0.7	21		11 M	0225	1.3	40		26 Tu	0240	1.8	55		11 W	0223	1.6	49		26 Th	0035	2.0	61	
	0915	2.8	85			0857	2.9	88			0824	2.6	79			0814	2.7	82			0744	2.5	76			0237	1.9	58	
	1453	1.3	40			1511	0.3	9			1524	-0.3	-9			1607	-1.2	-37			1547	-1.3	-40			0748	2.5	76	
	2104	2.7	82			2146	2.6	79			2246	2.1	64													1631	-1.5	-46	
12 Sa	0249	0.9	27		27 Su	0259	1.1	34		12 Tu	0250	1.5	46		27 W	0024	2.2	67		12 Th	0004	2.0	61		27 F	0758	2.4	73	
	0924	2.8	85			0910	2.9	88			0825	2.6	79			0257	2.0	61			0256	1.8	55			1701	-1.4	-43	
	1512	1.0	30			1543	-0.1	-3			1553	-0.5	-15			0811	2.7	82			0758	2.6	79						
	2141	2.6	79			2245	2.6	79			2340	2.1	64			1641	-1.2	-37			1623	-1.4	-43						
13 Su	0309	1.1	34		28 M	0324	1.5	46		13 W	0314	1.7	52		28 Th	0804	2.7	82		13 F	0106	2.0	61		28 Sa	0809	2.3	70	
	0930	2.8	85			0916	2.9	88			0826	2.7	82			1716	-1.1	-34			0326	1.9	58			1731	-1.1	-34	
	1536	0.7	21			1618	-0.3	-9			1627	-0.7	-21									0813	2.6	79					
	2220	2.6	79			2350	2.5	76														1702	-1.4	-43					
14 M	0329	1.3	40		29 Tu	0343	1.9	58		14 Th	0051	2.1	64		29 F	0804	2.7	82		14 Sa	0828	2.6	79		29 Su	0822	2.2	67	
	0929																												

San Diego, California, 2019

Times and Heights of High and Low Waters

April					May					June																			
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height																
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm															
1 M	0057	1.6	49		16 Tu	0039	0.9	27		1 W	0106	1.0	30		16 Th	0121	-0.1	-3		1 Sa	0154	-0.2	-6		16 Su	0242	-1.0	-30	
	0652	5.1	155			0637	5.7	174			0700	4.6	140			0720	4.9	149			0803	4.1	125			0901	4.1	125	
	1327	-0.1	-3			1305	-0.7	-21			1305	0.4	12			1307	0.4	12			1318	1.4	43			1355	1.8	55	
	1946	4.6	140			1927	5.6	171			1922	5.3	162			1928	6.5	198			1935	6.4	195			2013	6.7	204	
2 Tu	0127	1.2	37		17 W	0126	0.2	6		2 Th	0138	0.5	15		17 F	0205	-0.7	-21		2 Su	0231	-0.7	-21		17 M	0321	-1.0	-30	
	0726	5.2	158			0727	5.8	177			0738	4.7	143			0811	4.7	143			0847	4.1	125			0946	4.1	125	
	1352	-0.1	-3			1342	-0.6	-18			1332	0.6	18			1344	0.7	21			1351	1.6	49			1433	2.1	64	
	2006	4.9	149			1959	6.0	183			1946	5.6	171			2002	6.7	204			2008	6.6	201			2048	6.6	201	
3 W	0157	0.8	24		18 Th	0211	-0.4	-12		3 F	0211	0.1	3		18 Sa	0248	-1.0	-30		3 M	0311	-1.0	-30		18 Tu	0400	-1.0	-30	
	0759	5.3	162			0815	5.7	174			0815	4.6	140			0859	4.6	140			0932	4.1	125			1029	4.0	122	
	1417	-0.1	-3			1418	-0.3	-9			1358	0.7	21			1420	1.1	34			1427	1.8	55			1510	2.3	70	
	2028	5.1	155			2032	6.3	192			2010	5.9	180			2035	6.7	204			2043	6.8	207			2123	6.3	192	
4 Th	0227	0.5	15		19 F	0255	-0.8	-24		4 Sa	0245	-0.3	-9		19 Su	0330	-1.1	-34		4 Tu	0353	-1.2	-37		19 W	0438	-0.7	-21	
	0831	5.2	158			0902	5.4	165			0853	4.5	137			0947	4.3	131			1020	4.0	122			1112	3.9	119	
	1441	0.1	3			1452	0.1	3			1425	1.0	30			1454	1.5	46			1505	2.0	61			1547	2.5	76	
	2050	5.3	162			2106	6.4	195			2037	6.1	186			2109	6.6	201			2121	6.7	204			2158	6.0	183	
5 F	0259	0.2	6		20 Sa	0339	-0.9	-27		5 Su	0321	-0.5	-15		20 M	0412	-1.0	-30		5 W	0438	-1.2	-37		20 Th	0518	-0.5	-15	
	0904	5.0	152			0949	4.9	149			0934	4.3	131			1036	4.0	122			1113	3.9	119			1158	3.9	119	
	1505	0.3	9			1526	0.7	21			1453	1.3	40			1529	1.9	58			1548	2.3	70			1628	2.7	82	
	2114	5.5	168			2140	6.3	192			2106	6.2	189			2144	6.3	192			2205	6.5	198			2235	5.6	171	
6 Sa	0332	0.1	3		21 Su	0424	-0.8	-24		6 M	0400	-0.7	-21		21 Tu	0456	-0.8	-24		6 Th	0528	-1.0	-30		21 F	0558	-0.1	-3	
	0938	4.7	143			1038	4.4	134			1018	4.0	122			1128	3.8	116			1212	3.9	119			1247	3.8	116	
	1529	0.7	21			1600	1.3	40			1522	1.6	49			1605	2.3	70			1640	2.5	76			1717	2.9	88	
	2139	5.6	171			2214	6.1	186			2137	6.2	189			2219	5.8	177			2254	6.2	189			2315	5.1	155	
7 Su	0409	0.0	0		22 M	0512	-0.6	-18		7 Tu	0444	-0.7	-21		22 W	0543	-0.4	-12		7 F	0622	-0.8	-24		22 Sa	0642	0.2	6	
	1016	4.3	131			1133	3.9	119			1110	3.7	113			1228	3.6	110			1317	3.9	119			1340	3.9	119	
	1552	1.1	34			1634	1.9	58			1553	2.0	61			1645	2.7	82			1750	2.7	82			1819	3.0	91	
	2206	5.6	171			2251	5.7	174			2213	6.0	183			2258	5.4	165			2353	5.7	174			1942	3.0	91	
8 M	0450	0.0	0		23 Tu	0606	-0.2	-6		8 W	0535	-0.5	-15		23 Th	0634	-0.1	-3		8 Sa	0721	-0.5	-15		23 Su	0001	4.6	140	
	1100	3.9	119			1240	3.4	104			1214	3.5	107			1340	3.5	107			1425	4.2	128			0727	0.6	18	
	1616	1.5	46			1710	2.4	73			1631	2.4	73			1739	3.0	91			1920	2.8	85			1434	4.0	122	
	2236	5.5	168			2332	5.2	158			2257	5.8	177			2344	4.8	146								1942	3.0	91	
9 Tu	0539	0.1	3		24 W	0708	0.2	6		9 Th	0636	-0.4	-12		24 F	0731	0.3	9		9 Su	0105	5.1	155		24 M	0101	4.1	125	
	1158	3.4	104			1416	3.2	98			1336	3.4	104			1504	3.6	110			0822	-0.2	-6			0815	0.9	27	
	1641	2.0	61			1802	2.9	88			1729	2.8	85			1905	3.2	98			1527	4.6	140			1523	4.3	131	
	2314	5.3	162								2355	5.4	165								2057	2.5	76			2113	2.8	85	
10 W	0643	0.3	9		25 Th	0025	4.6	140		10 F	0746	-0.2	-6		25 Sa	0046	4.4	134		10 M	0229	4.6	140		25 Tu	0221	3.7	113	
	1323	3.0	91			0824	0.5	15			1508	3.6	110			0832	0.6	18			0922	0.2	6			0904	1.2	37	
	1713	2.4	73			1635	3.4	104			1913	3.0	91			1610	3.9	119			1620	5.0	152			1606	4.6	140	
						1950	3.2	98								2054	3.1	94			2223	1.9	58			2232	2.3	70	
11 Th	0006	5.1	155		26 F	0146	4.2	128		11 Sa	0115	5.0	152		26 Su	0209	4.0	122		11 Tu	0356	4.3	131		26 W	0349	3.5	107	
	0805	0.3	9			0943	0.5	15			0859	-0.1	-3			0931	0.7	21			1017	0.5	15			0952	1.4	43	
	1529	3.0	91			1733	3.7	113			1619	4.0	122			1650	4.2	128			1705	5.5	168			1644	5.0	152	
	1831	2.9	88			2200	3.0	91			2109	2.8	85			2224	2.7	82			2332	1.1	34			2330	1.6	49	
12 F	0129	4.8	146		27 Sa	0322	4.1	125		12 Su	0249	4.7	143		27 M	0334	3.8	116		12 W	0515	4.2	128		27 Th	0507	3.5	107	
	0933	0.2	6			1046	0.5	15			1005	-0.1	-3			1021	0.8	24			1108	0.8	24			1039	1.6	49	
	1707	3.4	104			1800	4.0	122			1706	4.5	137			1719	4.5	137			1746	6.0	183			1719	5.4	165	
	2108	2.9	88			2316	2.6	79			2236	2.2	67			2322	2.2	67											
13 Sa	0310	4.8	146		28 Su	0440	4.1	125		13 M	0414	4.7	143		28 Tu	0446	3.8	116		13 Th	0029	0.3	9		28 F	0017	1.0	30	
	1045	-0.2	-6			1132	0.4	12			1100	-0.1	-3			1103	0.9	27			0623	4.1	125			0612	3.6	110	
	1749	4.0	122			1821	4.3	131			1745	5.1	155			1745	4.9	149			1154	1.1	34			1123	1.8	55	
	2243	2.4	73								2341	1.4	43								1825	6.4	195			1755	5.9	180	
14 Su	0434	5.1	155		29 M	0000	2.0	61		14 Tu	0526	4.8	146		29														

San Diego, California, 2019

Times and Heights of High and Low Waters

July				August				September															
Time	Height			Time	Height			Time	Height			Time	Height										
	h	m	ft	h	m	ft	cm	h	m	ft	cm	h	m	ft	cm								
1 M	0218	-0.9	-27	16 Tu	0308	-0.8	-24	1 Th	0322	-1.5	-46	16 F	0341	-0.2	-6	1 Su	0412	-0.5	-15	16 M	0350	0.8	24
	0840	4.1	125		0934	4.2	128		0945	4.8	146		0957	4.7	143		1028	5.9	180		1000	5.4	165
	1329	2.0	61		1421	2.2	67		1453	1.6	49		1518	1.8	55		1626	0.6	18		1607	1.1	34
	1948	7.0	213		2034	6.5	198		2105	7.4	226		2124	6.1	186		2232	6.1	186		2210	5.0	152
2 Tu	0259	-1.2	-37	17 W	0341	-0.7	-21	2 F	0403	-1.4	-43	17 Sa	0408	0.0	0	2 M	0450	0.2	6	17 Tu	0412	1.2	37
	0925	4.2	128		1007	4.2	128		1026	5.0	152		1024	4.7	143		1110	5.9	180		1025	5.4	165
	1412	2.0	61		1458	2.2	67		1544	1.5	46		1551	1.8	55		1723	0.7	21		1645	1.2	37
	2029	7.2	219		2108	6.4	195		2153	7.1	216		2155	5.7	174		2327	5.3	162		2247	4.5	137
3 W	0341	-1.4	-43	18 Th	0414	-0.5	-15	3 Sa	0445	-1.0	-30	18 Su	0435	0.3	9	3 Tu	0531	0.9	27	18 W	0434	1.7	52
	1010	4.3	131		1040	4.2	128		1110	5.1	155		1053	4.8	146		1155	5.8	177		1053	5.3	162
	1458	2.0	61		1533	2.3	70		1638	1.5	46		1628	1.9	58		1829	0.9	27		1731	1.3	40
	2113	7.2	219		2141	6.1	186		2242	6.5	198		2227	5.3	162		2227	5.3	162		2333	4.0	122
4 Th	0426	-1.4	-43	19 F	0446	-0.3	-9	4 Su	0528	-0.5	-15	19 M	0502	0.7	21	4 W	0032	4.4	134	19 Th	0455	2.1	64
	1057	4.4	134		1114	4.2	128		1156	5.3	162		1123	4.8	146		0615	1.7	52		1125	5.2	158
	1548	2.1	64		1611	2.4	73		1739	1.5	46		1708	1.9	58		1248	5.6	171		1832	1.4	43
	2200	6.9	210		2215	5.8	177		2337	5.7	174		2302	4.8	146		1948	1.0	30		1948	1.0	30
5 F	0511	-1.2	-37	20 Sa	0519	0.0	0	5 M	0612	0.1	3	20 Tu	0528	1.2	37	5 Th	0201	3.8	116	20 F	0045	3.5	107
	1147	4.4	134		1150	4.2	128		1246	5.3	162		1155	4.8	146		0711	2.4	73		0517	2.6	79
	1644	2.2	67		1652	2.5	76		1850	1.6	49		1759	2.0	61		1353	5.4	165		1211	5.1	155
	2250	6.5	198		2249	5.3	162		2344	4.2	128		2344	4.2	128		2123	1.0	30		1957	1.4	43
6 Sa	0559	-0.9	-27	21 Su	0552	0.4	12	6 Tu	0041	4.8	146	21 W	0555	1.6	49	6 F	0408	3.6	110	21 Sa	0249	3.2	98
	1240	4.6	140		1228	4.3	131		0700	0.8	24		1234	4.8	146		0833	2.9	88		0554	3.0	91
	1750	2.3	70		1740	2.6	79		1342	5.4	165		1511	5.3	162		1511	5.3	162		1325	5.0	152
	2347	5.8	177		2327	4.8	146		2014	1.5	46		1906	2.1	64		2251	0.7	21		2133	1.1	34
7 Su	0649	-0.4	-12	22 M	0626	0.8	24	7 W	0202	4.0	122	22 Th	0047	3.6	110	7 Sa	0553	3.9	119	22 Su	0509	3.5	107
	1337	4.8	146		1310	4.3	131		0754	1.5	46		0626	2.1	64		1012	3.0	91		0830	3.3	101
	1908	2.2	67		1842	2.6	79		1444	5.5	168		1323	4.8	146		1627	5.4	165		1501	5.1	155
									2148	1.2	37		2037	1.9	58		2355	0.4	12		2249	0.6	18
8 M	0053	5.1	155	23 Tu	0013	4.3	131	8 Th	0346	3.6	110	23 F	0236	3.2	98	8 Su	0646	4.2	128	23 M	0556	4.0	122
	0742	0.2	6		0703	1.2	37		0900	2.1	64		0714	2.6	79		1128	2.8	85		1019	3.1	94
	1435	5.1	155		1356	4.5	137		1549	5.7	174		1429	5.0	152		1730	5.6	171		1623	5.5	168
	2037	2.0	61		2002	2.5	76		2312	0.7	21		2211	1.5	46		2211	1.5	46		2343	0.1	3
9 Tu	0213	4.3	131	24 W	0120	3.7	113	9 F	0534	3.6	110	24 Sa	0446	3.2	98	9 M	0041	0.1	3	24 Tu	0627	4.4	134
	0838	0.7	21		0745	1.6	49		1014	2.4	73		0850	2.9	88		0720	4.5	137		1126	2.5	76
	1532	5.4	165		1447	4.7	143		1651	5.9	180		1542	5.3	162		1219	2.5	76		1727	6.0	183
	2207	1.5	46		2132	2.2	67						2321	0.8	24		1819	5.8	177				
10 W	0344	3.9	119	25 Th	0259	3.3	101	10 Sa	0015	0.3	9	25 Su	0606	3.6	110	10 Tu	0116	0.0	0	25 W	0027	-0.4	-12
	0936	1.2	37		0837	2.0	61		0649	3.9	119		1022	2.9	88		0745	4.7	143		0658	4.9	149
	1626	5.8	177		1538	5.0	152		1122	2.5	76		1647	5.7	174		1258	2.2	67		1218	1.9	58
	2324	0.9	27		2251	1.6	49		1745	6.1	186						1858	6.0	183		1821	6.5	198
11 Th	0516	3.7	113	26 F	0443	3.2	98	11 Su	0103	-0.1	-3	26 M	0013	0.2	6	11 W	0146	-0.1	-3	26 Th	0107	-0.7	-21
	1034	1.6	49		0939	2.3	70		0737	4.1	125		0650	4.0	122		0807	4.8	146		0730	5.4	165
	1716	6.1	186		1629	5.4	165		1217	2.5	76		1129	2.6	79		1330	1.8	55		1306	1.2	37
					2350	1.0	30		1831	6.2	189		1744	6.3	192		1933	6.1	186		1910	6.8	207
12 F	0024	0.2	6	27 Sa	0604	3.4	104	12 M	0142	-0.3	-9	27 Tu	0057	-0.4	-12	12 Th	0213	0.0	0	27 F	0145	-0.7	-21
	0633	3.8	116		1042	2.4	73		0812	4.3	131		0726	4.4	134		0828	5.0	152		0802	5.9	180
	1129	1.9	58		1717	5.9	180		1301	2.3	70		1223	2.2	67		1400	1.6	49		1351	0.6	18
	1801	6.4	195						1912	6.4	195		1834	6.8	207		2005	6.1	186		1958	6.8	207
13 Sa	0113	-0.3	-9	28 Su	0037	0.2	6	13 Tu	0216	-0.4	-12	28 W	0137	-0.9	-27	13 F	0238	0.1	3	28 Sa	0222	-0.6	-18
	0733	3.9	119		0700	3.7	113		0841	4.4	134		0801	4.8	146		0850	5.1	155		0836	6.2	189
	1219	2.1	64		1139	2.3	70		1339	2.1	64		1312	1.7	52		1430	1.4	43		1437	0.1	3
	1843	6.5	198		1804	6.4	195		1948	6.4	195		1922	7.2	219		2035	6.0	183		2045	6.6	201
14 Su	0155	-0.6	-18	29 M	0119	-0.4	-12	14 W	0246	-0.4	-12	29 Th	0216	-1.2	-37	14 Sa	0302	0.2	6	29 Su	0259	-0.2	-6
	0820	4.0	122		0745	4.0	122		0906	4.5	137		0836	5.2	158		0912	5.3	162		0911	6.5	198
	1303	2.2	67		1230	2.2	67		1413	2.0	61		1359	1.2	37		1501	1.2	37		1524	-0.2	-6
	1922	6.6	201		1849	6.9	210		2021	6.4	195		2009	7.4	226		2106	5.8	177		2133	6.1	186
15 M	0233	-0.8	-24	30 Tu	0200	-0.9	-27	15 Th	0314	-0.4	-12	30 F	0255	-1.2	-37	15 Su	0326	0.5	15	30 M	0335	0.3	9
	0859	4.1	125		0826	4.3	131		0932	4.6	140		0912	5.5	168		0936	5.3	162		0948	6.6	201
	1344	2.2	67		1318	2.0	61		1445	1.9	58		1446	0.9	27		1533	1.1	34		1614	-0.2	-6
	1959	6.6	201		1934	7.3	223		2053	6.3	192		2055	7.2	219		2055	7.2	219		2223	5.5	168
			31 W	0241	-1.3	-40				31 Sa	0333	-0.9	-27										
				0905	4.6	140					0949	5.7	174										
				1405	1.8	55																	
				2019	7.5	229																	

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Los Angeles (Outer Harbor), California, 2019

Times and Heights of High and Low Waters

January				February				March															
Time	Height			Time	Height			Time	Height			Time	Height										
	h	m	ft	h	m	ft	h	m	ft	h	m	ft	h	m	ft	h	m	ft	h	m	ft		
1 Tu	0551	5.8	177	16 W	0457	5.2	158	1 F	0039	2.2	67	16 Sa	0608	6.0	183	1 F	0555	4.9	149	16 Sa	0452	5.2	158
	1256	0.0	0		1219	0.4	12		0652	5.6	171		1326	-1.1	-34		1309	-0.3	-9		1218	-0.6	-18
	1907	3.6	110		1835	3.2	98		1406	-0.6	-18		1958	3.9	119		1950	3.7	113		1901	3.8	116
2 W	0001	1.8	55	17 Th	0540	5.7	174	2 Sa	0118	2.1	64	17 Su	0045	1.8	55	2 Sa	0040	2.2	67	17 Su	0554	5.6	171
	0629	6.0	183		1302	-0.3	-9		0728	5.7	174		0658	6.4	195		0639	5.1	155		1301	-1.0	-30
	1339	-0.4	-12		1928	3.5	107		1438	-0.7	-21		1407	-1.5	-46		1343	-0.4	-12		1932	4.2	128
3 Th	0043	2.0	61	18 F	0000	2.0	61	3 Su	0153	2.0	61	18 M	0135	1.4	43	3 Su	0116	1.9	58	18 M	0044	1.4	43
	0704	6.1	186		0624	6.2	189		0801	5.8	177		0746	6.7	204		0716	5.3	162		0648	6.0	183
	1417	-0.7	-21		1344	-1.0	-30		1507	-0.7	-21		1446	-1.7	-52		1412	-0.5	-15		1418	-1.2	-37
4 F	0120	2.1	64	19 Sa	0049	1.9	58	4 M	0224	1.9	58	19 Tu	0223	1.0	30	4 M	0147	1.6	49	19 Tu	0133	0.8	24
	0738	6.1	186		0709	6.7	204		0832	5.8	177		0833	6.8	207		0749	5.4	165		0737	6.2	189
	1452	-0.8	-24		1425	-1.5	-46		1534	-0.7	-21		1525	-1.6	-49		1438	-0.5	-15		1418	-1.2	-37
5 Sa	0155	2.2	67	20 Su	0138	1.8	55	5 Tu	0256	1.8	55	20 W	0312	0.7	21	5 Tu	0216	1.4	43	20 W	0219	0.3	9
	0810	6.1	186		0754	6.9	210		0902	5.7	174		0919	6.5	198		0819	5.4	165		0825	6.1	186
	1525	-0.8	-24		1506	-1.8	-55		1601	-0.5	-15		1603	-1.3	-40		1502	-0.4	-12		1454	-1.0	-30
6 Su	0228	2.2	67	21 M	0226	1.6	49	6 W	0328	1.7	52	21 Th	0402	0.6	18	6 W	0246	1.2	37	21 Th	0305	-0.1	-3
	0841	6.0	183		0840	7.0	213		0933	5.4	165		1007	6.0	183		0849	5.3	162		0912	5.8	177
	1557	-0.7	-21		1549	-1.8	-55		1628	-0.3	-9		1642	-0.8	-24		1526	-0.3	-9		1530	-0.6	-18
7 M	0301	2.3	70	22 Tu	0316	1.5	46	7 Th	0403	1.7	52	22 F	0455	0.6	18	7 Th	0317	1.0	30	22 F	0353	-0.2	-6
	0912	5.8	177		0926	6.8	207		1004	5.1	155		1057	5.3	162		0920	5.1	155		0959	5.3	162
	1630	-0.6	-18		1631	-1.6	-49		1655	0.0	0		1720	-0.2	-6		1549	0.0	0		1605	-0.1	-3
8 Tu	0336	2.3	70	23 W	0408	1.5	46	8 F	0441	1.8	55	23 Sa	0555	0.7	21	8 F	0350	1.0	30	23 Sa	0442	-0.2	-6
	0944	5.6	171		1015	6.4	195		1036	4.7	143		1152	4.4	134		0951	4.8	146		1049	4.7	143
	1702	-0.3	-9		1715	-1.2	-37		1721	0.3	9		1759	0.6	18		1613	0.3	9		1640	0.6	18
9 W	0413	2.4	73	24 Th	0507	1.5	46	9 Sa	0526	1.8	55	24 Su	0031	5.0	152	9 Sa	0426	0.9	27	24 Su	0536	0.0	0
	1017	5.2	158		1106	5.7	174		1113	4.2	128		0706	0.8	24		1026	4.4	134		1145	4.0	122
	1736	-0.1	-3		1759	-0.7	-21		1748	0.7	21		1301	3.6	110		1636	0.7	21		1715	1.2	37
10 Th	0020	3.7	113	25 F	0036	4.6	140	10 Su	0025	4.2	128	25 M	0125	4.8	146	10 Su	0508	0.9	27	25 M	0638	0.2	6
	0457	2.5	76		0614	1.6	49		0624	1.9	58		0834	0.9	27		1105	3.9	119		1256	3.3	101
	1052	4.8	146		1204	4.9	149		1159	3.6	110		1441	3.0	91		1700	1.1	34		1753	1.9	58
11 F	0103	3.8	116	26 Sa	0130	4.7	143	11 M	0107	4.2	128	26 Tu	0231	4.7	143	11 M	0559	1.0	30	26 Tu	0023	4.8	146
	0553	2.6	79		0735	1.6	49		0744	1.8	55		1012	0.7	21		1155	3.3	101		0754	0.5	15
	1132	4.3	131		1314	4.0	122		1310	3.0	91		1658	2.9	88		1724	1.6	49		1444	3.0	91
12 Sa	0150	3.9	119	27 Su	0230	4.8	146	12 Tu	0200	4.4	134	27 W	0348	4.6	140	12 Tu	0001	4.6	140	27 W	0124	4.4	134
	0710	2.6	79		0911	1.4	43		0927	1.5	46		1131	0.3	9		0708	1.0	30		0927	0.5	15
	1224	3.7	113		1448	3.3	101		1520	2.6	79		1831	3.2	98		1314	2.8	85		1707	3.1	94
13 Su	0239	4.1	125	28 M	0332	5.0	152	13 W	0305	4.6	140	28 Th	0459	4.7	143	13 W	0052	4.6	140	28 Th	0252	4.2	128
	0851	2.4	73		1043	0.9	27		1056	0.9	27		1227	0.0	0		0843	0.9	27		1050	0.4	12
	1346	3.2	98		1642	3.1	94		1733	2.8	85		1918	3.5	107		1543	2.6	79		1817	3.4	104
14 M	0327	4.4	134	29 Tu	0431	5.2	158	14 Th	0412	5.0	152	29 F	0207	4.6	140	14 Th	0207	4.6	140	29 F	0422	4.2	128
	1026	1.9	58		1154	0.4	12		1156	0.2	6		1227	0.0	0		1019	0.5	15		1149	0.2	6
	1542	2.9	88		1817	3.2	98		1840	3.1	94		1831	3.2	98		1744	2.9	88		1851	3.7	113
15 Tu	0413	4.8	146	30 W	0525	5.3	162	15 F	0513	5.5	168	30 Sa	0335	4.8	146	15 F	0335	4.8	146	30 Sa	0528	4.4	134
	1130	1.2	37		1248	-0.1	-3		1244	-0.5	-15		1127	-0.1	-3		1127	-0.1	-3		1232	0.0	0
	1724	2.9	88		1921	3.4	104		1922	3.5	107		1828	3.4	104		1828	3.4	104		1915	3.9	119
31 Th	2209	1.9	58	31 Th	0612	5.5	168	31 Su	2351	2.1	64	31 Su	2243	2.5	76	31 Su	0031	2.1	64				
					1330	-0.4	-12		2005	3.6	110		1936	4.1	125		1936	4.1	125				

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Port San Luis, California, 2019

Times and Heights of High and Low Waters

January				February				March										
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height					
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm				
1 Tu	0626	5.8	177		16 W	0530	5.4	165		1 F	0022	2.6	79					
	1339	0.0	0			1256	0.4	12			0622	5.0	152		16 Sa	0520	5.2	158
	1956	3.5	107			1916	3.3	101			1344	-0.2	-6			1250	-0.6	-18
				2337	2.3	70		2044	3.9	119		1939	3.8	116				
2 W	0037	2.0	61		17 Th	0613	5.8	177		2 Sa	0113	2.4	73		17 Su	0022	2.3	70
	0705	6.0	183			1341	-0.3	-9			0709	5.1	155			0624	5.6	171
	1423	-0.4	-12			2014	3.5	107			1421	-0.3	-9			1337	-0.9	-27
	2053	3.7	113							2100	3.9	119		2014	4.2	128		
3 Th	0122	2.3	70		18 F	0031	2.3	70		3 Su	0212	1.9	58		18 M	0119	1.8	55
	0741	6.0	183			0657	6.2	189			0821	6.6	201			0721	5.8	177
	1503	-0.6	-18			1424	-0.9	-27			1529	-1.5	-46			1420	-1.1	-34
	2141	3.7	113		2102	3.8	116		2159	4.4	134		2048	4.5	137			
4 F	0203	2.4	73		19 Sa	0123	2.3	70		4 M	0304	1.5	46		19 Tu	0212	1.2	37
	0816	6.0	183			0743	6.6	201			0911	6.5	198			0815	5.9	180
	1539	-0.8	-24			1508	-1.4	-43			1610	-1.4	-43			1500	-1.0	-30
	2222	3.8	116		2146	4.0	122		2237	4.7	143		2123	4.8	146			
5 Sa	0241	2.6	79		20 Su	0215	2.2	67		20 W	0357	1.3	40		20 W	0302	0.7	21
	0849	6.0	183			0830	6.8	207			1002	6.3	192			0906	5.8	177
	1613	-0.8	-24			1551	-1.6	-49			1651	-1.1	-34			1539	-0.8	-24
	2259	3.8	116		2229	4.2	128		2316	4.9	149		2158	5.1	155			
6 Su	0317	2.6	79		21 M	0307	2.1	64		21 Th	0451	1.1	34		21 Th	0352	0.3	9
	0922	5.8	177			0918	6.8	207			1053	5.8	177			0958	5.5	168
	1647	-0.7	-21			1635	-1.7	-52			1731	-0.6	-18			1617	-0.4	-12
	2335	3.8	116		2313	4.3	131		2357	5.0	152		2233	5.3	162			
7 M	0354	2.7	82		22 Tu	0400	2.0	61		22 F	0549	0.9	27		22 F	0443	0.1	3
	0956	5.7	174			1007	6.6	201			1148	5.1	155			1050	5.0	152
	1720	-0.5	-15			1719	-1.5	-46			1812	0.1	3			1655	0.2	6
				2357	4.5	137						2258	4.4	134				
8 Tu	0012	3.8	116		23 W	0457	2.0	61		23 Sa	0040	5.1	155		23 Sa	0537	0.0	0
	0432	2.7	82			1058	6.2	189			0653	0.9	27			1146	4.5	137
	1030	5.4	165			1803	-1.1	-34			1250	4.4	134			1734	0.8	24
	1754	-0.3	-9						1854	0.8	24		2350	5.3	162			
9 W	0049	3.8	116		24 Th	0044	4.6	140		24 Su	0126	5.1	155		24 Su	0634	0.0	0
	0514	2.8	85			0600	1.9	58			0805	0.9	27			1250	3.9	119
	1105	5.1	155			1153	5.5	168			1405	3.7	113			1814	1.5	46
	1828	-0.1	-3		1849	-0.6	-18		1941	1.5	46							
10 Th	0128	3.9	119		25 F	0132	4.8	146		25 M	0218	5.0	152		25 M	0032	5.2	158
	0604	2.8	85			0712	1.8	55			0928	0.8	24			0737	0.1	3
	1143	4.7	143			1255	4.8	146			1544	3.2	98			1407	3.5	107
	1903	0.2	6		1935	0.1	3		2037	2.1	64		1900	2.1	64			
11 F	0209	4.0	122		26 Sa	0223	5.0	152		26 Tu	0318	5.0	152		11 M	0120	4.9	149
	0705	2.8	85			0833	1.7	52			1051	0.6	18			0705	1.0	30
	1228	4.2	128			1409	4.0	122			1736	3.2	98			1306	3.4	104
	1940	0.6	18		2025	0.8	24		2152	2.5	76		1827	1.8	55			
12 Sa	0249	4.1	125		27 Su	0317	5.1	155		27 W	0423	4.9	149		12 Tu	0100	4.7	143
	0822	2.7	82			1002	1.3	40			1203	0.3	9			0813	0.9	27
	1325	3.7	113			1543	3.4	104			1900	3.4	104			1431	3.0	91
	2018	1.0	30		2119	1.4	43		2315	2.7	82		1905	2.2	67			
13 Su	0330	4.3	131		28 M	0412	5.3	162		28 Th	0527	5.0	152		13 W	0149	4.7	143
	0948	2.3	70			1124	0.9	27			1259	0.0	0			0933	0.7	21
	1445	3.3	101			1728	3.2	98			1954	3.6	110			1626	2.9	88
	2100	1.4	43		2221	1.9	58					2004	2.6	79				
14 M	0409	4.6	140		29 Tu	0506	5.4	165		14 Th	0445	5.2	158		14 Th	0254	4.8	146
	1106	1.8	55			1231	0.4	12			1228	0.1	3			1051	0.3	9
	1627	3.0	91			1859	3.3	101			1915	3.3	101			1804	3.2	98
	2148	1.8	55		2325	2.3	70		2313	2.6	79		2140	2.8	85			
15 Tu	0449	5.0	152		30 W	0557	5.5	168		15 F	0543	5.6	171		15 F	0408	5.0	152
	1206	1.1	34			1325	-0.1	-3			1319	-0.5	-15			1157	-0.2	-6
	1802	3.1	94			2005	3.5	107			2003	3.6	110			1900	3.5	107
	2241	2.1	64									2312	2.6	79				
31 Th					31 Th	0024	2.5	76		31 Su	0103	2.2	67		31 Su	0103	2.2	67
						0643	5.6	171			0645	4.5	137			0645	4.5	137
						1410	-0.3	-9			1340	0.0	0			1340	0.0	0
				2053	3.7	113						2017	4.0	122				

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Port San Luis, California, 2019

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
<small>h m</small>	<small>ft cm</small>	<small>h m</small>	<small>ft cm</small>	<small>h m</small>	<small>ft cm</small>	<small>h m</small>	<small>ft cm</small>	<small>h m</small>	<small>ft cm</small>	<small>h m</small>	<small>ft cm</small>
1 Tu	0507 1.3 40 1119 5.9 180 1807 0.0 0	16 W	0426 2.0 61 1035 5.3 162 1736 0.4 12	1 F	0149 3.9 119 0607 2.9 88 1207 5.3 162 1948 -0.2 -6	16 Sa	0115 3.6 110 0506 2.9 88 1118 5.5 168 1905 -0.4 -12	1 Su	0239 3.9 119 0646 3.2 98 1221 4.8 146 2007 -0.1 -3	16 M	0154 3.9 119 0610 2.9 88 1202 5.4 165 1937 -0.6 -18
2 W	0030 4.4 134 0550 1.9 58 1203 5.7 174 1910 0.1 3	17 Th	0003 3.8 116 0454 2.4 73 1106 5.3 162 1825 0.4 12	2 Sa	0314 3.8 116 0718 3.2 98 1303 4.9 149 2054 0.1 3	17 Su	0229 3.7 113 0606 3.2 98 1210 5.2 158 2005 -0.3 -9	2 M	0342 4.0 122 0812 3.2 98 1321 4.3 131 2101 0.3 9	17 Tu	0251 4.2 128 0734 2.9 88 1306 4.8 146 2030 -0.3 -9
3 Th	0147 4.0 122 0639 2.5 76 1253 5.4 165 2021 0.2 6	18 F	0108 3.6 110 0527 2.7 82 1143 5.2 158 1923 0.4 12	3 Su	0433 4.0 122 0858 3.3 101 1416 4.4 134 2200 0.3 9	18 M	0340 3.8 116 0735 3.3 101 1317 4.9 149 2107 -0.2 -6	3 Tu	0435 4.1 125 0948 3.0 91 1435 3.9 119 2153 0.6 18	18 W	0343 4.5 137 0909 2.6 79 1425 4.3 131 2125 0.1 3
4 F	0322 3.8 116 0746 2.9 88 1253 5.1 155 2137 0.3 9	19 Sa	0234 3.5 107 0612 3.0 91 1232 5.0 152 2031 0.3 9	4 M	0530 4.2 128 1035 3.0 91 1539 4.2 128 2258 0.4 12	19 Tu	0436 4.1 125 0921 3.0 91 1441 4.5 137 2207 -0.1 -3	4 W	0515 4.3 131 1107 2.6 79 1558 3.6 110 2241 0.8 24	19 Th	0431 4.9 149 1038 2.0 61 1556 3.9 119 2219 0.6 18
5 Sa	0458 3.9 119 0919 3.1 94 1508 4.8 146 2249 0.3 9	20 Su	0410 3.6 110 0730 3.3 101 1340 4.9 149 2142 0.2 6	5 Tu	0611 4.3 131 1143 2.6 79 1655 4.1 125 2346 0.5 15	20 W	0519 4.5 137 1049 2.5 76 1609 4.4 134 2301 0.1 3	5 Th	0548 4.6 140 1204 2.1 64 1715 3.5 107 2323 1.1 34	20 F	0515 5.3 162 1151 1.3 40 1727 3.7 113 2311 1.0 30
6 Su	0607 4.1 125 1053 3.0 91 1627 4.7 143 2350 0.3 9	21 M	0518 3.8 116 0921 3.2 98 1504 4.8 146 2247 0.0 0	6 W	0642 4.5 137 1233 2.2 67 1758 4.1 125	21 Th	0556 4.9 149 1157 1.8 55 1729 4.3 131 2351 0.3 9	6 F	0615 4.8 146 1249 1.5 46 1821 3.5 107	21 Sa	0556 5.7 174 1251 0.5 15 1847 3.7 113
7 M	0653 4.3 131 1201 2.7 82 1735 4.7 143	22 Tu	0601 4.1 125 1052 2.9 88 1628 4.8 146 2342 -0.1 -3	7 Th	0026 0.7 21 0707 4.7 143 1312 1.7 52 1850 4.1 125	22 F	0632 5.4 165 1253 1.0 30 1840 4.3 131	7 Sa	0000 1.4 43 0640 5.1 155 1327 1.0 30 1918 3.5 107	22 Su	0001 1.4 43 0636 6.1 186 1342 -0.2 -6 1956 3.7 113
8 Tu	0039 0.3 9 0727 4.4 134 1250 2.4 73 1830 4.8 146	23 W	0636 4.5 137 1159 2.3 70 1741 5.0 152	8 F	0059 0.9 27 0730 4.9 149 1347 1.2 37 1936 4.1 125	23 Sa	0036 0.6 18 0706 5.8 177 1344 0.2 6 1944 4.3 131	8 Su	0035 1.6 49 0705 5.4 165 1403 0.5 15 2008 3.6 110	23 M	0049 1.7 52 0716 6.3 192 1429 -0.8 -24 2056 3.9 119
9 W	0118 0.3 9 0754 4.5 137 1329 2.0 61 1916 4.8 146	24 Th	0030 -0.1 -3 0708 4.9 149 1254 1.5 46 1844 5.1 155	9 Sa	0129 1.1 34 0751 5.1 155 1420 0.8 24 2018 4.1 125	24 Su	0118 1.0 30 0741 6.2 189 1431 -0.4 -12 2043 4.3 131	9 M	0107 1.8 55 0731 5.6 171 1437 0.0 0 2055 3.7 113	24 Tu	0135 2.0 61 0755 6.5 198 1513 -1.1 -34 2149 3.9 119
10 Th	0151 0.4 12 0817 4.7 143 1403 1.6 49 1955 4.8 146	25 F	0113 -0.1 -3 0741 5.3 162 1345 0.8 24 1942 5.2 158	10 Su	0156 1.3 40 0813 5.3 162 1453 0.4 12 2100 4.1 125	25 M	0159 1.3 40 0817 6.4 195 1517 -0.9 -27 2140 4.2 128	10 Tu	0140 2.0 61 0759 5.9 180 1513 -0.4 -12 2140 3.7 113	25 W	0220 2.3 70 0833 6.5 198 1555 -1.2 -37 2238 4.0 122
11 F	0219 0.6 18 0839 4.8 146 1435 1.3 40 2032 4.8 146	26 Sa	0154 0.2 6 0814 5.7 174 1433 0.2 6 2038 5.1 155	11 M	0223 1.6 49 0836 5.5 168 1527 0.1 3 2142 4.0 122	26 Tu	0240 1.7 52 0853 6.5 198 1603 -1.1 -34 2236 4.1 125	11 W	0214 2.2 67 0830 6.1 186 1550 -0.7 -21 2226 3.8 116	26 Th	0303 2.5 76 0912 6.3 192 1636 -1.2 -37 2325 4.0 122
12 Sa	0245 0.8 24 0900 4.9 149 1507 1.0 30 2109 4.7 143	27 Su	0233 0.5 15 0848 6.1 186 1521 -0.3 -9 2133 4.9 149	12 Tu	0250 1.8 55 0902 5.7 174 1602 -0.2 -6 2227 3.9 119	27 W	0320 2.1 64 0931 6.4 195 1649 -1.2 -37 2332 4.0 122	12 Th	0249 2.4 73 0904 6.2 189 1629 -0.9 -27 2313 3.8 116	27 F	0346 2.6 79 0951 6.1 186 1717 -1.0 -30
13 Su	0310 1.0 30 0921 5.1 155 1541 0.8 24 2146 4.5 137	28 M	0311 1.0 30 0923 6.2 189 1610 -0.7 -21 2229 4.6 140	13 W	0318 2.1 64 0929 5.8 177 1641 -0.3 -9 2315 3.8 116	28 Th	0402 2.5 76 1009 6.2 189 1735 -1.0 -30	13 F	0328 2.6 79 0941 6.2 189 1711 -1.0 -30	28 Sa	0010 4.0 122 0430 2.7 82 1029 5.8 177 1757 -0.8 -24
14 M	0334 1.3 40 0944 5.2 158 1616 0.6 18 2226 4.3 131	29 Tu	0350 1.5 46 1000 6.3 192 1659 -0.8 -24 2329 4.3 131	14 Th	0349 2.4 73 1000 5.8 177 1724 -0.4 -12	29 F	0031 3.9 119 0448 2.8 85 1049 5.8 177 1823 -0.8 -24	14 Sa	0004 3.8 116 0412 2.7 82 1022 6.1 186 1757 -1.0 -30	29 Su	0057 3.9 119 0518 2.8 85 1109 5.3 162 1837 -0.4 -12
15 Tu	0359 1.6 49 1008 5.3 162 1653 0.5 15 2311 4.1 125	30 W	0430 2.0 61 1039 6.1 186 1751 -0.7 -21	15 F	0011 3.7 113 0424 2.7 82 1036 5.7 174 1811 -0.4 -12	30 Sa	0134 3.9 119 0540 3.0 91 1133 5.3 162 1914 -0.4 -12	15 Su	0058 3.8 116 0504 2.8 85 1108 5.8 177 1845 -0.9 -27	30 M	0144 3.9 119 0612 2.9 88 1150 4.9 149 1918 0.0 0
		31 Th	0034 4.1 125 0514 2.5 76 1120 5.8 177 1847 -0.5 -15							31 Tu	0232 4.0 122 0717 2.9 88 1237 4.4 134 2000 0.4 12

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Monterey, California, 2019

Times and Heights of High and Low Waters

April				May				June																
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height											
	h	m	ft	cm	h	m	ft	cm	h	m	ft	cm	h	m	ft	cm								
1 M	0206	1.9	58		16 Tu	0145	1.3	40	1 W	0223	1.2	37	16 Th	0236	0.1	3	1 Sa	0316	-0.1	-3	16 Su	0403	-0.9	-27
	0751	4.5	137			0735	4.9	149		0812	3.9	119		0837	4.1	125		0935	3.6	110		1042	3.8	116
	1436	0.1	3			1410	-0.4	-12		1413	0.7	21		1414	0.8	24		1425	1.9	58		1507	2.4	73
	2106	4.1	125			2037	4.9	149		2036	4.6	140		2035	5.7	174		2041	5.7	174		2119	6.1	186
2 Tu	0241	1.6	49		17 W	0237	0.6	18	2 Th	0259	0.8	24	17 F	0324	-0.5	-15	2 Sa	0355	-0.5	-15	17 M	0444	-1.0	-30
	0832	4.5	137			0834	4.8	146		0857	3.9	119		0936	4.0	122		1025	3.6	110		1132	3.8	116
	1506	0.2	6			1452	-0.1	-3		1443	1.0	30		1455	1.3	40		1502	2.1	64		1549	2.6	79
	2128	4.2	128			2111	5.2	158		2059	4.9	149		2110	5.9	180		2114	5.9	180		2155	5.9	180
3 W	0315	1.3	40		18 Th	0327	0.1	3	3 F	0334	0.3	9	18 Sa	0410	-0.8	-24	3 M	0435	-0.9	-27	18 Tu	0525	-1.0	-30
	0911	4.5	137			0930	4.7	143		0941	3.9	119		1033	3.9	119		1116	3.7	113		1221	3.8	116
	1534	0.3	9			1531	0.3	9		1513	1.2	37		1535	1.7	52		1541	2.4	73		1632	2.8	85
	2150	4.4	134			2145	5.5	168		2124	5.1	155		2145	5.9	180		2150	6.0	183		2232	5.7	174

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

San Francisco (Golden Gate), California, 2019

Times and Heights of High and Low Waters

January				February				March															
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height										
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm									
1 Tu	0111	1.9	58	16 W	0017	2.4	73	1 F	0247	2.9	88	16 Sa	0157	2.9	88	1 F	0145	2.9	88	16 Sa	0046	2.9	88
	0753	6.4	195		0655	5.9	180		0852	6.1	186		0808	6.4	195		0740	5.6	171		0647	5.7	174
	1441	0.1	3		1355	0.5	15		1551	-0.3	-9		1506	-0.8	-24		1441	0.1	3		1347	-0.3	-9
	2128	4.4	134		2055	4.0	122		2303	4.8	146		2223	4.9	149		2156	4.7	143		2111	4.7	143
2 W	0205	2.3	70	17 Th	0115	2.7	82	2 Sa	0335	2.9	88	17 Su	0254	2.7	82	2 Sa	0240	2.8	85	17 Su	0152	2.6	79
	0834	6.4	195		0742	6.3	192		0934	6.1	186		0904	6.7	204		0832	5.6	171		0754	6.0	183
	1526	-0.3	-9		1442	-0.2	-6		1627	-0.4	-12		1554	-1.1	-34		1524	0.0	0		1441	-0.6	-18
	2226	4.6	140		2154	4.4	134		2340	4.9	149		2304	5.2	158		2233	4.9	149		2152	5.1	155
3 Th	0256	2.6	79	18 F	0211	2.8	85	3 Su	0417	2.8	85	18 M	0347	2.3	70	3 Su	0325	2.6	79	18 M	0248	2.1	64
	0914	6.4	195		0829	6.6	201		1013	6.1	186		0958	6.9	210		0918	5.7	174		0855	6.2	189
	1607	-0.5	-15		1528	-0.8	-24		1700	-0.4	-12		1639	-1.2	-37		1600	0.0	0		1529	-0.8	-24
	2316	4.7	143		2245	4.7	143		1700	-0.4	-12		2343	5.5	168		2304	4.9	149		2230	5.4	165
4 F	0342	2.8	85	19 Sa	0305	2.8	85	4 M	0012	4.9	149	19 Tu	0438	1.9	58	4 M	0404	2.4	73	19 Tu	0340	1.6	49
	0951	6.4	195		0918	6.9	210		0455	2.7	82		1051	6.9	210		0959	5.7	174		0953	6.3	192
	1644	-0.7	-21		1614	-1.2	-37		1050	6.1	186		1723	-1.1	-34		1633	0.0	0		1614	-0.7	-21
					2330	5.0	152		1732	-0.3	-9						2331	5.0	152		2307	5.7	174

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

San Francisco (Golden Gate), California, 2019

Times and Heights of High and Low Waters

April				May				June			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft cm	h m	ft cm	h m	ft cm	h m	ft cm	h m	ft cm	h m	ft cm
1 M	0308 2.1 64 0858 5.1 155 1521 0.3 9 2216 5.0 152	16 Tu	0242 1.4 43 0850 5.4 165 1458 -0.2 -6 2152 5.7 174	1 W	0321 1.2 37 0924 4.4 134 1507 0.9 27 2146 5.3 162	16 Th	0324 0.0 0 0953 4.7 143 1512 0.9 27 2150 6.2 189	1 Sa	0402 -0.2 -6 1052 4.2 128 1535 2.0 61 2154 6.0 183	16 Su	0442 -1.1 -34 1152 4.6 140 1620 2.5 76 2232 6.3 192
2 Tu	0345 1.7 52 0943 5.1 155 1554 0.4 12 2241 5.1 155	17 W	0333 0.7 21 0950 5.5 168 1544 0.0 0 2227 5.9 180	2 Th	0355 0.7 21 1012 4.5 137 1541 1.1 34 2211 5.5 168	17 F	0410 -0.6 -18 1052 4.8 146 1557 1.3 40 2225 6.3 192	2 Su	0438 -0.7 -21 1142 4.4 134 1615 2.3 70 2229 6.2 189	17 M	0522 -1.2 -37 1241 4.7 143 1705 2.7 82 ○ 2310 6.2 189
3 W	0419 1.4 43 1025 5.1 155 1625 0.5 15 2304 5.2 158	18 Th	0420 0.1 3 1047 5.5 168 1626 0.4 12 2303 6.1 186	3 F	0428 0.3 9 1058 4.5 137 1615 1.4 43 2238 5.6 171	18 Sa	0454 -1.0 -30 1148 4.8 146 1641 1.8 55 ○ 2301 6.3 192	3 M	0516 -1.1 -34 1231 4.5 137 1656 2.5 76 ● 2307 6.3 192	18 Tu	0602 -1.1 -34 1327 4.7 143 1751 2.9 88 2347 6.0 183
4 Th	0451 1.1 34 1105 5.1 155 1655 0.7 21 2327 5.3 162	19 F	0506 -0.4 -12 1142 5.3 162 1708 0.8 24 ○ 2337 6.2 189	4 Sa	0500 -0.1 -3 1144 4.5 137 1648 1.7 52 ● 2307 5.8 177	19 Su	0537 -1.2 -37 1242 4.7 143 1725 2.1 64 2336 6.1 186	4 Tu	0557 -1.3 -40 1320 4.6 140 1741 2.7 82 2349 6.3 192	19 W	0640 -1.0 -30 1411 4.7 143 1838 3.0 91
5 F	0523 0.8 24 1146 5.0 152 1725 1.0 30 ● 2352 5.4 165	20 Sa	0552 -0.7 -21 1237 5.1 155 1751 1.3 40	5 Su	0535 -0.5 -15 1231 4.5 137 1723 2.0 61 2338 5.8 177	20 M	0619 -1.2 -37 1335 4.6 140 1810 2.5 76	5 W	0641 -1.5 -46 1411 4.6 140 1831 2.8 85	20 Th	0026 5.7 174 0720 -0.7 -21 1454 4.6 140 1928 3.1 94
6 Sa	0556 0.5 15 1229 4.8 146 1755 1.3 40	21 Su	0013 6.1 186 0637 -0.8 -24 1333 4.8 146 1835 1.9 58	6 M	0613 -0.8 -24 1321 4.5 137 1801 2.3 70	21 Tu	0013 5.9 180 0701 -1.1 -34 1428 4.5 137 1859 2.8 85	6 Th	0035 6.1 186 0729 -1.4 -43 1503 4.7 143 1929 2.9 88	21 F	0106 5.4 165 0800 -0.5 -15 1535 4.6 140 2024 3.1 94
7 Su	0019 5.5 168 0632 0.2 6 1316 4.6 140 1828 1.7 52	22 M	0049 5.9 180 0724 -0.8 -24 1432 4.6 140 1922 2.3 70	7 Tu	0013 5.8 177 0655 -0.9 -27 1416 4.4 134 1844 2.6 79	22 W	0052 5.6 171 0746 -0.8 -24 1522 4.5 137 1955 3.0 91	7 F	0126 5.9 180 0820 -1.2 -37 1556 4.9 149 2038 2.9 88	22 Sa	0150 5.0 152 0842 -0.1 -3 1616 4.7 143 2127 3.0 91
8 M	0049 5.6 171 0712 0.0 0 1408 4.4 134 1905 2.1 64	23 Tu	0129 5.7 174 0813 -0.6 -18 1537 4.4 134 2018 2.7 82	8 W	0053 5.8 177 0742 -1.0 -30 1515 4.4 134 1936 2.8 85	23 Th	0134 5.2 158 0832 -0.5 -15 1618 4.4 134 2100 3.1 94	8 Sa	0224 5.5 168 0915 -0.9 -27 1649 5.0 152 2155 2.7 82	23 Su	0240 4.6 140 0926 0.2 6 1655 4.8 146 2235 2.8 85
9 Tu	0124 5.5 168 0759 -0.1 -3 1509 4.2 128 1948 2.5 76	24 W	0212 5.3 162 0907 -0.3 -9 1647 4.3 131 2127 3.0 91	9 Th	0140 5.6 171 0835 -0.9 -27 1618 4.4 134 2042 3.0 91	24 F	0222 4.9 149 0922 -0.2 -6 1713 4.5 137 2215 3.0 91	9 Su	0331 5.1 155 1012 -0.5 -15 1740 5.3 162 ○ 2314 2.2 67	24 M	0338 4.2 128 1012 0.6 18 1733 4.9 149 2341 2.4 73
10 W	0205 5.5 168 0853 -0.1 -3 1622 4.0 122 2045 2.9 88	25 Th	0302 4.9 149 1006 0.0 0 1759 4.3 131 2248 3.0 91	10 F	0235 5.4 165 0935 -0.7 -21 1722 4.5 137 2202 3.0 91	25 Sa	0317 4.5 137 1015 0.1 3 1802 4.6 140 2328 2.8 85	10 M	0447 4.6 140 1110 0.0 0 1828 5.6 171	25 Tu	0447 3.8 116 1100 1.0 30 1810 5.1 155 ○
11 Th	0256 5.4 165 0955 -0.2 -6 1742 4.1 125 2201 3.0 91	26 F	0403 4.6 140 1108 0.2 6 1900 4.4 134 ○	11 Sa	0341 5.1 155 1038 -0.5 -15 1820 4.8 146 ○ 2325 2.7 82	26 Su	0422 4.1 125 1109 0.4 12 1844 4.7 143 ○	11 Tu	0026 1.6 49 0611 4.3 131 1207 0.5 15 1913 5.9 180	26 W	0040 1.9 58 0608 3.6 110 1149 1.4 43 1846 5.4 165
12 F	0359 5.2 158 1105 -0.2 -6 1854 4.3 131 ○ 2328 3.0 91	27 Sa	0006 2.8 85 0513 4.4 134 1209 0.4 12 1947 4.6 140	12 Su	0458 4.8 146 1142 -0.3 -9 1910 5.1 155	27 M	0033 2.4 73 0535 3.9 119 1201 0.7 21 1920 4.9 149	12 W	0129 0.9 27 0735 4.2 128 1302 1.0 30 1956 6.1 186	27 Th	0130 1.4 43 0732 3.6 110 1239 1.8 55 1923 5.6 171
13 Sa	0513 5.2 158 1213 -0.3 -9 1949 4.6 140	28 Su	0110 2.5 76 0626 4.3 131 1303 0.5 15 2024 4.7 143	13 M	0039 2.1 64 0619 4.7 143 1241 -0.1 -3 1955 5.4 165	28 Tu	0126 1.9 58 0651 3.8 116 1250 1.0 30 1952 5.1 155	13 Th	0225 0.2 6 0852 4.2 128 1354 1.4 43 2037 6.3 192	28 F	0215 0.8 24 0847 3.7 113 1328 2.1 64 2000 5.9 180
14 Su	0044 2.6 79 0631 5.2 158 1315 -0.3 -9 2035 5.0 152	29 M	0201 2.1 64 0733 4.3 131 1350 0.6 18 2055 4.9 149	14 Tu	0141 1.4 43 0737 4.6 140 1335 0.2 6 2035 5.7 174	29 W	0211 1.4 43 0801 3.8 116 1335 1.2 37 2021 5.3 162	14 F	0315 -0.4 -12 0959 4.4 134 1445 1.8 55 2117 6.4 195	29 Sa	0256 0.1 3 0950 4.0 122 1415 2.4 73 2039 6.2 189
15 M	0148 2.0 61 0744 5.3 162 1410 -0.3 -9 2115 5.4 165	30 Tu	0244 1.6 49 0831 4.4 134 1431 0.7 21 2121 5.1 155	15 W	0235 0.7 21 0848 4.7 143 1425 0.5 15 2113 6.0 183	30 Th	0251 0.9 27 0904 3.9 119 1416 1.5 46 2051 5.6 171	15 Sa	0400 -0.8 -24 1058 4.5 137 1533 2.2 67 2155 6.4 195	30 Su	0336 -0.4 -12 1044 4.3 131 1502 2.6 79 2120 6.4 195
						31 F	0327 0.3 9 1000 4.1 125 1456 1.8 55 2122 5.8 177				

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Port Chicago, Suisun Bay, California, 2019

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	h m	ft	h m	ft	h m	ft	h m	ft	h m	ft
1 Tu	0332 4.5 137 0924 0.9 27 1518 5.0 152 2235 0.1 3	16 W	0329 3.7 113 0845 1.3 40 1425 5.0 152 2152 0.3 9	1 F	0533 4.0 122 1027 1.9 58 1551 4.8 146	16 Sa	0521 3.7 113 0954 2.0 61 1519 5.2 158 2312 -0.1 -3	1 Su	0608 4.1 125 1104 2.1 64 1608 4.4 134	16 M	0551 3.9 119 1048 1.9 58 1604 4.9 149 2345 -0.2 -6
2 W	0434 4.2 128 1005 1.2 37 1555 5.0 152 2334 0.2 6	17 Th	0421 3.6 110 0923 1.5 46 1500 5.1 155 2230 0.3 9	2 Sa	0010 -0.1 -3 0635 3.9 119 1127 2.0 61 1641 4.5 137	17 Su	0618 3.7 113 1052 2.1 64 1612 4.9 149	2 M	0021 -0.1 -3 0701 4.0 122 1208 2.0 61 1706 4.0 122	17 Tu	0640 4.0 122 1156 1.7 52 1709 4.5 137
3 Th	0541 4.0 122 1053 1.5 46 1638 4.8 146	18 F	0521 3.5 107 1008 1.7 52 1542 5.1 155 2320 0.3 9	3 Su	0107 0.0 0 0736 3.9 119 1236 2.0 61 1746 4.1 125	18 M	0008 -0.1 -3 0716 3.7 113 1202 2.0 61 1715 4.6 140	3 Tu	0108 0.0 0 0751 4.0 122 1318 1.8 55 1822 3.6 110	18 W	0034 -0.1 -3 0729 4.1 125 1313 1.5 46 1827 4.0 122
4 F	0038 0.2 6 0651 3.9 119 1149 1.8 55 1730 4.6 140	19 Sa	0630 3.5 107 1101 1.9 58 1631 4.9 149	4 M	0205 0.1 3 0833 4.0 122 1351 1.9 58 1911 3.7 113	19 Tu	0109 0.0 0 0810 3.8 116 1321 1.8 55 1831 4.2 128	4 W	0154 0.2 6 0838 4.1 125 1429 1.5 46 1950 3.3 101	19 Th	0127 0.1 3 0818 4.3 131 1431 1.1 34 1957 3.7 113
5 Sa	0145 0.2 6 0800 3.9 119 1257 2.0 61 1837 4.4 134	20 Su	0026 0.3 9 0739 3.5 107 1206 2.0 61 1730 4.7 143	5 Tu	0259 0.1 3 0925 4.1 125 1502 1.6 49 2036 3.6 110	20 W	0210 0.0 0 0901 4.0 122 1440 1.4 43 2000 4.0 122	5 Th	0238 0.3 9 0921 4.2 128 1534 1.1 34 2109 3.2 98	20 F	0220 0.3 9 0905 4.6 140 1543 0.7 21 2120 3.6 110
6 Su	0250 0.2 6 0904 4.0 122 1412 2.0 61 1958 4.2 128	21 M	0144 0.3 9 0842 3.6 110 1323 2.0 61 1842 4.5 137	6 W	0347 0.1 3 1011 4.2 128 1604 1.2 37 2145 3.6 110	21 Th	0306 0.1 3 0946 4.3 131 1551 1.0 30 2125 3.9 119	6 F	0320 0.5 15 0958 4.3 131 1633 0.8 24 2216 3.2 98	21 Sa	0313 0.6 18 0949 4.8 146 1648 0.3 9 2233 3.6 110
7 M	0349 0.1 3 1001 4.1 125 1524 1.8 55 2114 4.1 125	22 Tu	0254 0.2 6 0937 3.8 116 1444 1.8 55 2006 4.4 134	7 Th	0429 0.2 6 1050 4.3 131 1659 0.9 27 2243 3.6 110	22 F	0357 0.2 6 1028 4.6 140 1655 0.5 15 2236 3.9 119	7 Sa	0359 0.7 21 1030 4.5 137 1725 0.4 12 2315 3.3 101	22 Su	0404 0.9 27 1031 5.1 155 1747 -0.1 -3 2338 3.8 116
8 Tu	0439 0.0 0 1050 4.3 131 1626 1.6 49 2216 4.1 125	23 W	0352 0.1 3 1024 4.0 122 1556 1.4 43 2129 4.4 134	8 F	0505 0.4 12 1124 4.4 134 1748 0.6 18 2335 3.6 110	23 Sa	0443 0.4 12 1106 4.8 146 1753 0.1 3 2340 4.0 122	8 Su	0435 1.0 30 1056 4.6 140 1813 0.2 6	23 M	0454 1.3 40 1110 5.3 162 1842 -0.3 -9
9 W	0523 0.0 0 1133 4.4 134 1719 1.3 40 2308 4.1 125	24 Th	0442 0.0 0 1106 4.3 131 1659 0.9 27 2240 4.4 134	9 Sa	0537 0.6 18 1152 4.5 137 1833 0.4 12	24 Su	0527 0.7 21 1141 5.1 155 1847 -0.2 -6	9 M	0009 3.4 104 0511 1.3 40 1118 4.9 149 1858 0.0 0	24 Tu	0037 3.9 119 0543 1.6 49 1147 5.4 165 1932 -0.4 -12
10 Th	0601 0.1 3 1210 4.4 134 1807 1.0 30 2353 4.1 125	25 F	0527 0.1 3 1144 4.5 137 1757 0.5 15 2342 4.5 137	10 Su	0023 3.6 110 0606 0.8 24 1213 4.6 140 1915 0.2 6	25 M	0039 4.0 122 0609 1.0 30 1215 5.3 162 1939 -0.4 -12	10 Tu	0101 3.6 110 0549 1.6 49 1142 5.1 155 1940 -0.1 -3	25 W	0132 4.1 125 0632 1.9 58 1223 5.5 168 2020 -0.4 -12
11 F	0634 0.3 9 1242 4.4 134 1851 0.8 24	26 Sa	0608 0.3 9 1219 4.8 146 1852 0.2 6	11 M	0110 3.7 113 0633 1.1 34 1230 4.8 146 1955 0.1 3	26 Tu	0135 4.1 125 0653 1.4 43 1248 5.4 165 2030 -0.4 -12	11 W	0151 3.7 113 0630 1.9 58 1212 5.4 165 2020 -0.1 -3	26 Th	0224 4.2 128 0722 2.1 64 1300 5.4 165 2104 -0.4 -12
12 Sa	0036 4.1 125 0701 0.5 15 1307 4.4 134 1932 0.7 21	27 Su	0040 4.5 137 0648 0.5 15 1252 5.0 152 1945 -0.1 -3	12 Tu	0157 3.7 113 0703 1.4 43 1249 5.0 152 2033 0.1 3	27 W	0231 4.1 125 0737 1.7 52 1321 5.4 165 2118 -0.4 -12	12 Th	0240 3.8 116 0714 2.1 64 1249 5.5 168 2100 -0.2 -6	27 F	0314 4.2 128 0811 2.2 67 1337 5.3 162 2144 -0.3 -9
13 Su	0117 4.0 122 0725 0.7 21 1326 4.5 137 2010 0.6 18	28 M	0136 4.4 134 0727 0.8 24 1324 5.1 155 2037 -0.2 -6	13 W	0244 3.7 113 0738 1.6 49 1316 5.2 158 2109 0.0 0	28 Th	0326 4.1 125 0824 1.9 58 1357 5.3 162 2205 -0.4 -12	13 F	0328 3.9 119 0802 2.2 67 1330 5.6 171 2138 -0.3 -9	28 Sa	0401 4.3 131 0859 2.2 67 1416 5.1 155 2222 -0.2 -6
14 M	0159 3.9 119 0747 0.9 27 1340 4.6 140 2045 0.5 15	29 Tu	0233 4.3 131 0807 1.1 34 1357 5.2 158 2129 -0.3 -9	14 Th	0334 3.7 113 0817 1.8 55 1351 5.3 162 2146 0.0 0	29 F	0421 4.1 125 0914 2.1 64 1436 5.1 155 2251 -0.3 -9	14 Sa	0416 3.9 119 0853 2.1 64 1417 5.5 168 2217 -0.3 -9	29 Su	0447 4.2 128 0948 2.1 64 1459 4.8 146 2256 -0.1 -3
15 Tu	0242 3.8 116 0813 1.1 34 1358 4.8 146 2118 0.4 12	30 W	0331 4.2 128 0849 1.4 43 1431 5.2 158 2221 -0.2 -6	15 F	0426 3.7 113 0903 2.0 61 1432 5.3 162 2226 -0.1 -3	30 Sa	0515 4.1 125 1007 2.1 64 1519 4.8 146 2336 -0.2 -6	15 Su	0503 3.9 119 0948 2.1 64 1508 5.3 162 2259 -0.3 -9	30 M	0530 4.1 125 1039 2.0 61 1545 4.4 134 2329 0.0 0
		31 Th	0431 4.1 125 0935 1.7 52 1509 5.0 152 2314 -0.2 -6							31 Tu	0612 4.1 125 1133 1.8 55 1637 4.0 122

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Arena Cove, California, 2019

Times and Heights of High and Low Waters

October				November				December													
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height								
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm							
1 Tu	0028	5.6	171			1 F	0234	4.8	146	16 Sa	0209	4.6	140	1 Su	0315	4.8	146	16 M	0243	5.0	152
	0615	1.3	40				0722	3.1	94		0637	3.3	101		0758	3.4	104		0728	3.3	101
	1222	6.4	195				1311	5.9	180		1226	6.1	186		1327	5.5	168		1306	6.0	183
	1905	-0.2	-6				2033	-0.3	-9		1957	-0.4	-12		2051	0.0	0		2027	-0.5	-15
2 W	0130	5.1	155			2 Sa	0343	4.7	143	17 Su	0309	4.6	140	2 M	0410	4.8	146	17 Tu	0334	5.2	158
	0659	1.9	58				0826	3.3	101		0733	3.4	104		0910	3.5	107		0840	3.1	94
	1305	6.3	192				1405	5.5	168		1418	5.5	168		1424	5.0	152		1409	5.5	168
	2002	-0.1	-3				2132	0.1	3		2051	-0.2	-6		2142	0.5	15		2119	-0.1	-3
3 Th	0238	4.7	143			3 Su	0452	4.7	143	18 M	0410	4.7	143	3 Tu	0501	4.9	149	18 W	0424	5.4	165
	0749	2.5	76				0946	3.4	104		0846	3.5	107		1031	3.3	101		1002	2.8	85
	1353	6.0	183				1509	5.0	152		1418	5.5	168		1531	4.5	137		1523	5.0	152
	2105	0.1	3				2235	0.4	12		2150	0.0	0		2233	0.9	27		2212	0.4	12
4 F	0356	4.5	137			4 M	0555	4.7	143	19 Tu	0506	4.9	149	4 W	0546	5.1	155	19 Th	0512	5.7	174
	0849	3.0	91				1113	3.3	101		1102	3.2	101		1147	2.9	88		1123	2.3	70
	1449	5.6	171				1623	4.7	143		1534	5.2	158		1647	4.2	128		1648	4.6	140
	2213	0.3	9				2335	0.7	21		2249	0.2	6		2323	1.2	37		2307	0.9	27
5 Sa	0519	4.4	134			5 Tu	0645	4.9	149	20 W	0556	5.2	158	5 Th	0625	5.2	158	20 F	0558	6.1	186
	1007	3.2	98				1226	2.9	88		1135	2.8	85		1249	2.4	73		1235	1.5	46
	1554	5.3	162				1739	4.6	140		1658	4.9	149		1805	4.1	125		1817	4.3	131
	2322	0.4	12								2347	0.4	12								
6 Su	0634	4.5	137			6 W	0028	0.9	27	21 Th	0639	5.6	171	6 F	0009	1.6	49	21 Sa	0002	1.4	43
	1133	3.2	98				0723	5.1	155		1245	2.1	64		0658	5.5	168		0642	6.4	195
	1708	5.1	155				1321	2.5	76		1820	4.8	146		1338	1.9	58		1337	0.7	21
							1848	4.5	137						1916	4.0	122		1940	4.3	131
7 M	0027	0.5	15			7 Th	0113	1.1	34	22 F	0040	0.7	21	7 Sa	0052	1.9	58	22 Su	0056	1.9	58
	0730	4.7	143				0755	5.2	158		0719	6.0	183		0728	5.7	174		0725	6.7	204
	1246	3.0	91				1406	2.0	61		1344	1.2	37		1419	1.3	40		1431	0.0	0
	1819	5.1	155				1946	4.6	140		1935	4.8	146		2017	4.1	125		2052	4.4	134
8 Tu	0121	0.5	15			8 F	0152	1.3	40	23 Sa	0130	1.1	34	8 Su	0132	2.1	64	23 M	0148	2.3	70
	0812	4.8	146				0822	5.4	165		0758	6.4	195		0757	5.9	180		0807	6.9	210
	1341	2.7	82				1444	1.5	46		1437	0.4	12		1457	0.8	24		1520	-0.6	-18
	1920	5.1	155				2037	4.6	140		2043	4.9	149		2110	4.3	131		2153	4.6	140
9 W	0206	0.6	18			9 Sa	0227	1.5	46	24 Su	0217	1.4	43	9 M	0210	2.4	73	24 Tu	0239	2.6	79
	0845	5.0	152				0847	5.7	174		0836	6.8	207		0827	6.2	189		0849	7.0	213
	1425	2.3	70				1520	1.1	34		1526	-0.3	-9		1533	0.2	6		1606	-0.9	-27
	2011	5.2	158				2123	4.7	143		2144	5.0	152		2159	4.4	134		2247	4.8	146
10 Th	0245	0.7	21			10 Su	0300	1.7	52	25 M	0303	1.8	55	10 Tu	0248	2.6	79	25 W	0328	2.8	85
	0913	5.1	155				0913	5.9	180		0914	7.0	213		0858	6.4	195		0931	7.0	213
	1504	1.9	58				1554	0.6	18		1613	-0.8	-24		1610	-0.2	-6		1649	-1.1	-34
	2056	5.2	158				2207	4.7	143		2241	5.0	152		2245	4.5	137		2336	4.9	149
11 F	0318	0.9	27			11 M	0332	2.0	61	26 Tu	0348	2.2	67	11 W	0327	2.8	85	26 Th	0416	3.0	91
	0937	5.3	162				0938	6.0	183		0953	7.1	216		0931	6.6	201		1012	6.9	210
	1539	1.6	49				1629	0.2	6		1659	-1.1	-34		1648	-0.6	-18		1731	-1.1	-34
	2137	5.2	158				2251	4.7	143		2336	5.0	152		2330	4.7	143				
12 Sa	0348	1.1	34			12 Tu	0404	2.3	70	27 W	0433	2.5	76	12 Th	0408	2.9	88	27 F	0022	4.9	149
	1001	5.4	165				1006	6.2	189		1032	7.0	213		1006	6.7	204		0502	3.1	94
	1613	1.2	37				1705	-0.1	-3		1744	-1.2	-37		1727	-0.8	-24		1053	6.7	204
	2217	5.2	158				2336	4.7	143								1811		-0.9	-27	
13 Su	0417	1.3	40			13 W	0437	2.5	76	28 Th	0030	5.0	152	13 F	0016	4.7	143	28 Sa	0106	4.9	149
	1025	5.6	171				1035	6.2	189		0519	2.8	85		0450	3.1	94		0549	3.2	98
	1647	0.9	27				1743	-0.3	-9		1112	6.7	204		1045	6.7	204		1133	6.4	195
	2256	5.1	155								1830	-1.0	-30		1808	-1.0	-30		1851	-0.7	-21
14 M	0446	1.6	49			14 Th	0022	4.7	143	29 F	0124	4.9	149	14 Sa	0104	4.8	146	29 Su	0149	4.9	149
	1050	5.7	174				0513	2.8	85		0607	3.1	94		0536	3.2	98		0636	3.2	98
	1722	0.6	18				1107	6.3	192		1154	6.4	195		1127	6.6	201		1215	6.0	183
	2338	4.9	149				1823	-0.4	-12		1915	-0.8	-24		1852	-0.9	-27		1931	-0.3	-9
15 Tu	0515	1.9	58			15 F	0113	4.6	140	30 Sa	0219	4.9	149	15 Su	0153	4.9	149	30 M	0232	4.9	149
	1116	5.7	174				0552	3.0	91		0659	3.3	101		0628	3.2	98		0728	3.2	98
	1759	0.4	12				1144	6.2	189		1239	6.0	183		1213	6.4	195		1259	5.5	168
							1908	-0.5	-15		2002	-0.4	-12		1938	-0.8	-24		2010	0.1	3
					31 Th	0130	5.0	152							31 Tu	0314	5.0	152			
						0630	2.7	82									0827	3.2	98		
						1225	6.3	192								1347	5.0	152			
						1938	-0.6	-18								2050	0.6	18			

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Humboldt Bay, California, 2019

Times and Heights of High and Low Waters

January				February				March							
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height		
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm	
1 Tu	0121	2.4	73		16 W	0019	2.9	88		1 F	0253	3.5	107		
	0757	7.6	232			0703	7.1	216			0901	7.3	223		
	1456	0.5	15			1412	0.9	27			1609	-0.1	-3		
	2123	5.1	155			2037	4.8	146			2305	5.5	168		
2 W	0216	2.8	85		17 Th	0122	3.2	98		2 Sa	0343	3.4	104		
	0841	7.7	235			0752	7.5	229			0945	7.3	223		
	1544	0.0	0			1504	0.1	3			1648	-0.2	-6		
	2226	5.3	162			2143	5.1	155			2341	5.6	171		
3 Th	0308	3.1	94		18 F	0223	3.3	101		3 Su	0428	3.3	101		
	0923	7.7	235			0841	7.9	241			1026	7.3	223		
	1627	-0.4	-12			1552	-0.6	-18			1723	-0.3	-9		
	2317	5.5	168			2238	5.5	168			18	0406	2.6	79	
4 F	0356	3.3	101		19 Sa	0321	3.2	98		4 M	0012	5.8	177		
	1002	7.7	235			0931	8.3	253			0508	3.1	94		
	1706	-0.6	-18			1639	-1.2	-37			1104	7.3	223		
	2359	5.7	174			2327	5.9	180			1757	-0.3	-9		
5 Sa	0440	3.4	104		20 Su	0415	3.1	94		5 Tu	0041	5.9	180		
	1040	7.7	235			1021	8.6	262			0547	3.0	91		
	1743	-0.6	-18			1725	-1.6	-49			1829	-0.2	-6		
6 Su	0037	5.8	177		21 M	0013	6.2	189		6 W	0111	5.9	180		
	0522	3.4	104			0508	2.9	88			0624	2.8	85		
	1117	7.5	229			1112	8.6	262			1217	7.0	213		
	1819	-0.6	-18			1810	-1.8	-55			1900	0.0	0		
7 M	0112	5.8	177		22 Tu	0057	6.4	195		7 Th	0140	6.0	183		
	0602	3.4	104			0601	2.6	79			0703	2.7	82		
	1153	7.3	223			1203	8.5	259			1254	6.7	204		
	1854	-0.5	-15			1855	-1.6	-49			1930	0.3	9		
8 Tu	0147	5.8	177		23 W	0141	6.7	204		8 F	0210	6.1	186		
	0642	3.4	104			0655	2.4	73			0744	2.6	79		
	1230	7.1	216			1255	8.1	247			1332	6.3	192		
	1928	-0.2	-6			1940	-1.3	-40			2000	0.7	21		
9 W	0222	5.8	177		24 Th	0225	6.8	207		9 Sa	0241	6.2	189		
	0724	3.4	104			0752	2.2	67			0828	2.4	73		
	1307	6.7	204			1349	7.5	229			1415	5.8	177		
	2003	0.0	0			2024	-0.6	-18			2031	1.1	34		
10 Th	0257	5.9	180		25 F	0310	7.0	213		10 Su	0314	6.3	192		
	0809	3.4	104			0853	2.0	61			0918	2.3	70		
	1346	6.3	192			1447	6.7	204			1505	5.3	162		
	2037	0.4	12			2110	0.1	3			2104	1.7	52		
11 F	0334	5.9	180		26 Sa	0357	7.1	216		11 M	0349	6.4	195		
	0859	3.3	101			0959	1.9	58			1016	2.1	64		
	1430	5.8	177			1552	5.9	180			1609	4.9	149		
	2112	0.9	27			2157	1.0	30			2142	2.3	70		
12 Sa	0412	6.0	183		27 Su	0445	7.2	219		12 Tu	0430	6.6	201		
	0957	3.2	98			1110	1.7	52			1122	1.7	52		
	1524	5.3	162			1706	5.2	158			1728	4.5	137		
	2150	1.4	43			2249	1.8	55			2230	2.8	85		
13 Su	0452	6.2	189		28 M	0536	7.2	219		13 W	0519	6.7	204		
	1103	2.9	88			1224	1.3	40			1231	1.2	37		
	1632	4.9	149			1831	4.8	146			1857	4.5	137		
	2232	1.9	58			2347	2.5	76			2336	3.2	98		
14 M	0533	6.5	198		29 Tu	0628	7.2	219		14 Th	0616	7.0	213		
	1211	2.4	73			1333	0.9	27			1337	0.6	18		
	1753	4.6	140			2002	4.8	146			2020	4.7	143		
	2321	2.4	73		30 W	0050	3.1	94		15 F	0052	3.4	104		
	0617	6.8	207			0721	7.2	219			0718	7.3	223		
	1315	1.7	52			1434	0.5	15			1436	0.0	0		
	1918	4.5	137			2122	5.0	152			2126	5.1	155		
15 Tu					31 Th	0154	3.4	104							
						0813	7.3	223							
						1525	0.2	6							
						2221	5.2	158							

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Humboldt Bay, California, 2019

Times and Heights of High and Low Waters

April				May				June			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	h m	ft	h m	ft	h m	ft	h m	ft	h m	ft
1 M	0314 2.5 76 0905 5.9 180 1541 0.5 15 2218 5.6 171	16 Tu	0256 1.6 49 0857 6.4 195 1521 -0.3 -9 2154 6.5 198	1 W	0331 1.4 43 0927 5.2 158 1528 1.0 30 2154 6.1 186	16 Th	0341 0.0 0 0954 5.6 171 1534 0.9 27 2157 7.3 223	1 Sa	0422 -0.2 -6 1047 5.0 152 1557 2.2 67 2209 7.1 216	16 Su	0502 -1.2 -37 1147 5.3 162 1639 2.5 76 2244 7.5 229
2 Tu	0356 2.0 61 0951 6.0 183 1616 0.4 12 2246 5.8 177	17 W	0351 0.7 21 0957 6.5 198 1607 -0.1 -3 2233 6.9 210	2 Th	0410 0.8 24 1015 5.3 162 1604 1.2 37 2223 6.4 195	17 F	0430 -0.7 -21 1052 5.6 171 1619 1.3 40 2235 7.5 229	2 Su	0502 -0.8 -24 1136 5.2 158 1637 2.4 73 2244 7.3 223	17 M	0544 -1.3 -40 1234 5.4 165 1724 2.8 85 2323 7.3 223
3 W	0433 1.6 49 1034 6.0 183 1649 0.5 15 2313 6.1 186	18 Th	0441 0.0 0 1054 6.5 198 1650 0.2 6 2311 7.2 219	3 F	0447 0.3 9 1101 5.4 165 1638 1.4 43 2252 6.6 201	18 Sa	0516 -1.2 -37 1147 5.7 174 1703 1.7 52 2312 7.5 229	3 M	0542 -1.3 -40 1225 5.3 162 1719 2.6 79 2322 7.4 226	18 Tu	0625 -1.3 -40 1318 5.4 165 1808 2.9 88
4 Th	0510 1.1 34 1115 6.0 183 1720 0.7 21 2339 6.3 192	19 F	0529 -0.6 -18 1147 6.4 195 1732 0.7 21 2348 7.4 226	4 Sa	0524 -0.2 -6 1146 5.5 168 1712 1.7 52 2322 6.8 207	19 Su	0600 -1.4 -43 1238 5.6 171 1746 2.1 64 2350 7.4 226	4 Tu	0624 -1.6 -49 1313 5.4 165 1803 2.7 82	19 W	0002 7.1 216 0704 -1.1 -34 1401 5.4 165 1852 3.1 94
5 F	0546 0.7 21 1155 6.0 183 1750 1.0 30	20 Sa	0615 -0.9 -27 1240 6.2 189 1814 1.2 37	5 Su	0602 -0.6 -18 1231 5.5 168 1747 2.0 61 2353 7.0 213	20 M	0643 -1.4 -43 1328 5.5 168 1829 2.5 76	5 W	0002 7.5 229 0709 -1.7 -52 1403 5.4 165 1850 2.9 88	20 Th	0041 6.8 207 0744 -0.9 -27 1443 5.4 165 1937 3.1 94
6 Sa	0007 6.5 198 0622 0.4 12 1237 5.8 177 1821 1.3 40	21 Su	0025 7.4 226 0701 -1.1 -34 1332 5.9 180 1855 1.8 55	6 M	0641 -0.9 -27 1318 5.4 165 1824 2.3 70	21 Tu	0028 7.1 216 0726 -1.3 -40 1417 5.4 165 1914 2.8 85	6 Th	0047 7.3 223 0755 -1.6 -49 1454 5.5 168 1944 2.9 88	21 F	0122 6.4 195 0824 -0.5 -15 1525 5.3 162 2027 3.2 98
7 Su	0034 6.6 201 0700 0.2 6 1320 5.6 171 1852 1.7 52	22 M	0103 7.2 219 0748 -0.9 -27 1426 5.5 168 1939 2.3 70	7 Tu	0026 7.0 213 0724 -1.1 -34 1409 5.3 162 1904 2.6 79	22 W	0107 6.8 207 0809 -0.9 -27 1508 5.2 158 2001 3.1 94	7 F	0137 7.0 213 0845 -1.4 -43 1547 5.5 168 2045 2.9 88	22 Sa	0205 6.0 183 0904 -0.1 -3 1607 5.3 162 2122 3.2 98
8 M	0103 6.7 204 0741 0.0 0 1408 5.4 165 1926 2.2 67	23 Tu	0142 6.9 210 0835 -0.7 -21 1522 5.2 158 2026 2.8 85	8 W	0104 7.0 213 0810 -1.1 -34 1503 5.2 158 1951 2.9 88	23 Th	0148 6.3 192 0855 -0.6 -18 1559 5.1 155 2054 3.3 101	8 Sa	0234 6.6 201 0937 -1.0 -30 1641 5.7 174 2156 2.8 85	23 Su	0253 5.5 168 0945 0.3 9 1649 5.4 165 2224 3.0 91
9 Tu	0135 6.7 204 0826 -0.1 -3 1502 5.1 155 2004 2.6 79	24 W	0224 6.4 195 0926 -0.3 -9 1623 5.0 152 2120 3.2 98	9 Th	0148 6.8 207 0901 -1.0 -30 1602 5.1 155 2047 3.1 94	24 F	0235 5.8 177 0942 -0.2 -6 1652 5.0 152 2157 3.3 101	9 Su	0340 6.1 186 1031 -0.6 -18 1734 5.9 180 2313 2.4 73	24 M	0349 5.0 152 1028 0.8 24 1732 5.6 171 2332 2.7 82
10 W	0212 6.6 201 0918 -0.1 -3 1604 4.8 146 2051 3.0 91	25 Th	0313 6.0 183 1022 0.1 3 1730 4.8 146 2226 3.4 104	10 F	0242 6.5 198 0957 -0.8 -24 1705 5.1 155 2158 3.2 98	25 Sa	0328 5.4 165 1033 0.2 6 1745 5.1 155 2308 3.2 98	10 M	0454 5.5 168 1127 0.0 0 1825 6.3 192	25 Tu	0454 4.6 140 1113 1.2 37 1813 5.8 177
11 Th	0300 6.5 198 1017 -0.1 -3 1716 4.7 143 2155 3.2 98	26 F	0411 5.5 168 1121 0.4 12 1836 4.9 149 2344 3.3 101	11 Sa	0347 6.1 186 1058 -0.5 -15 1806 5.3 162 2319 2.9 88	26 Su	0431 5.0 152 1125 0.6 18 1833 5.2 158	11 Tu	0029 1.8 55 0613 5.1 155 1224 0.5 15 1914 6.6 201	26 W	0037 2.3 70 0608 4.3 131 1201 1.6 49 1853 6.1 186
12 F	0402 6.3 192 1124 -0.1 -3 1829 4.8 146 2317 3.3 101	27 Sa	0518 5.2 158 1222 0.6 18 1933 5.0 152	12 Su	0504 5.8 177 1200 -0.3 -9 1902 5.6 171	27 M	0020 2.9 88 0541 4.7 143 1216 0.9 27 1915 5.5 168	12 W	0138 1.1 34 0732 4.9 149 1319 1.0 30 1959 7.0 213	27 Th	0135 1.7 52 0723 4.3 131 1251 2.0 61 1933 6.4 195
13 Sa	0518 6.2 189 1232 -0.2 -6 1935 5.1 155	28 Su	0059 3.0 91 0629 5.0 152 1319 0.7 21 2017 5.2 158	13 M	0039 2.4 73 0624 5.6 171 1300 -0.1 -3 1952 6.0 183	28 Tu	0123 2.4 73 0652 4.5 137 1306 1.2 37 1953 5.8 177	13 Th	0238 0.3 9 0847 4.9 149 1412 1.5 46 2043 7.3 223	28 F	0226 1.0 30 0834 4.4 134 1342 2.4 73 2012 6.8 207
14 Su	0042 3.0 91 0637 6.1 186 1335 -0.3 -9 2028 5.5 168	29 M	0200 2.6 79 0736 5.0 152 1408 0.8 24 2053 5.5 168	14 Tu	0149 1.7 52 0740 5.5 168 1355 0.2 6 2036 6.5 198	29 W	0216 1.8 55 0759 4.5 137 1352 1.4 43 2028 6.1 186	14 F	0330 -0.4 -12 0955 5.0 152 1503 1.9 58 2124 7.5 229	29 Sa	0312 0.2 6 0937 4.6 140 1432 2.6 79 2052 7.1 216
15 M	0154 2.3 70 0750 6.2 189 1431 -0.3 -9 2113 6.0 183	30 Tu	0249 2.0 61 0835 5.1 155 1450 0.9 27 2124 5.8 177	15 W	0249 0.8 24 0850 5.5 168 1446 0.5 15 2117 6.9 210	30 Th	0301 1.1 34 0900 4.6 140 1435 1.7 52 2102 6.4 195	15 Sa	0418 -0.9 -27 1054 5.2 158 1552 2.3 70 2205 7.6 232	30 Su	0356 -0.4 -12 1033 4.9 149 1521 2.8 85 2134 7.5 229
						31 F	0343 0.4 12 0956 4.8 146 1516 1.9 58 2135 6.8 207				

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Crescent City, California, 2019

Times and Heights of High and Low Waters

January				February				March															
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height										
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm									
1 Tu	0118	2.5	76	16 W	0012	3.0	91	1 F	0254	3.6	110	16 Sa	0159	3.4	104	1 F	0144	3.6	110				
	0746	7.6	232		0649	7.1	216		0852	7.2	219		0806	7.6	232		0739	6.4	195				
	1452	0.4	12		1405	0.9	27		1606	0.0	0		1523	-0.6	-18		1455	0.5	15				
	2116	5.3	162		2031	4.9	149		2251	5.7	174		2205	5.8	177		2144	5.4	165				
2 W	0215	2.9	88	17 Th	0115	3.2	98	2 Sa	0344	3.5	107	17 Su	0303	3.1	94	2 Sa	0245	3.4	104	17 Su	0154	3.0	91
	0830	7.7	235		0738	7.5	229		0936	7.3	223		0904	8.0	244		0834	6.5	198		0751	7.0	213
	1540	0.0	0		1457	0.1	3		1644	-0.2	-6		1611	-1.1	-34		1540	0.3	9		1457	-0.6	-18
	2214	5.5	168		2133	5.4	165		2327	5.9	180		2249	6.2	189		2222	5.6	171		2136	5.9	180
3 Th	0307	3.2	98	18 F	0216	3.4	104	3 Su	0427	3.3	101	18 M	0400	2.6	79	3 Su	0333	3.1	94	18 M	0257	2.4	73
	0912	7.7	235		0828	7.9	241		1017	7.3	223		0959	8.3	253		0922	6.6	201		0855	7.3	223
	1623	-0.3	-9		1545	-0.6	-18		1719	-0.3	-9		1657	-1.4	-43		1618	0.1	3		1546	-0.9	-27
	2303	5.8	177		2225	5.8	177		2359	6.0	183		2330	6.6	201		2254	5.8	177		2217	6.4	195
4 F	0355	3.4	104	19 Sa	0314	3.3	101	4 M	0506	3.2	98	19 Tu	0453	2.1	64	4 M	0414	2.8	85	19 Tu	0353	1.7	52
	0952	7.7	235		0918	8.3	253		1054	7.3	223		1052	8.3	253		1004	6.7	204		0952	7.5	229
	1701	-0.5	-15		1631	-1.2	-37		1752	-0.3	-9		1741	-1.4	-43		1652	0.1	3		1546	-0.9	-27
	2345	5.9	180		2312	6.2	189		●	●	●		●	2322	5.9		180	2256	6.8		207		

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Charleston, Oregon, 2019

Times and Heights of High and Low Waters

October				November				December																		
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height													
	h	m	ft	cm	h	m	ft	cm	h	m	ft	cm	h	m	ft	cm										
1 Tu	0135	7.6	232	16 W	0125	6.7	204	1 F	0317	6.8	207	16 Sa	0251	6.6	201	1 Su	0351	6.7	204	16 M	0327	7.0	213			
	0723	0.9	27		0657	2.2	67		0830	3.3	101		0750	3.6	110		0901	3.8	116		0837	3.5	107			
	1336	8.5	259		1302	7.7	235		1425	7.9	241		1343	8.0	244		1442	7.3	223		1424	7.9	241	1424	7.9	241
	2005	-0.8	-24		1939	0.0	0		2122	-0.3	-9		2048	-0.5	-15		2141	0.2	6		2121	-0.5	-15	2121	-0.5	-15
2 W	0230	7.1	216	17 Th	0208	6.5	198	2 Sa	0417	6.4	195	17 Su	0345	6.4	195	2 M	0443	6.6	201	17 Tu	0418	7.1	216			
	0807	1.7	52		0729	2.7	82		0926	3.7	113		0841	3.8	116		1002	3.9	119		0941	3.4	104			
	1417	8.3	253		1332	7.6	232		1515	7.2	219		1431	7.6	232		1535	6.6	201		1524	7.3	223	1524	7.3	223
	2057	-0.5	-15		2019	0.0	0		2217	0.3	9		2140	-0.2	-6		2230	0.8	24		2212	0.0	0	2212	0.0	0
3 Th	0329	6.6	201	18 F	0256	6.2	189	3 Su	0521	6.2	189	18 M	0444	6.4	195	3 Tu	0536	6.5	198	18 W	0511	7.3	223			
	0854	2.4	73		0806	3.1	94		1034	3.9	119		0946	3.9	119		1112	3.8	116		1055	3.2	98			
	1503	7.8	238		1407	7.5	229		1614	6.6	201		1531	7.2	219		1637	6.1	186		1635	6.7	204	1635	6.7	204
	2152	-0.2	-6		2106	0.1	3		2317	0.8	24		2238	0.1	3		2323	1.3	40		2308	0.6	18	2308	0.6	18

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Astoria (Tongue Pt.), Oregon, 2019

Times and Heights of High and Low Waters

January				February				March															
	Time		Height			Time		Height			Time		Height										
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm									
1 Tu	0312	2.5	76	16 W	0207	3.2	98	1 F	0440	3.6	110	16 Sa	0359	3.6	110	1 F	0319	3.7	113	16 Sa	0231	3.7	113
	0931	9.4	287		0828	8.8	268		1037	9.0	274		0954	9.3	283		0916	8.0	244		0823	8.4	256
	1631	0.5	15		1550	1.2	37		1751	0.1	3		1718	-0.4	-12		1636	0.7	21		1554	0.2	6
	2241	7.2	219		2208	6.6	201		2346	7.6	232		2301	7.2	219		2227	7.1	216				
2 W	0408	2.9	88	17 Th	0315	3.5	107	2 Sa	0013	7.7	235	17 Su	0504	3.2	98	2 Sa	0421	3.5	107	17 Su	0348	3.2	98
	1018	9.5	290		0923	9.2	280		0532	3.5	107		1057	9.7	296		1015	8.2	250		0940	8.7	265
	1723	0.0	0		1647	0.4	12		1124	9.0	274		1810	-0.9	-27		1724	0.4	12		1653	-0.3	-9
	2338	7.5	229		2312	7.1	216		1833	-0.1	-3		1857	-1.3	-40		2347	7.6	232		2318	7.7	235
3 Th	0500	3.1	94	18 F	0418	3.6	110	3 Su	0055	7.9	241	18 M	0034	8.1	247	3 Su	0514	3.1	94	18 M	0453	2.5	76
	1101	9.6	293		1017	9.7	296		0619	3.3	101		0602	2.6	79		1106	8.3	253		1047	9.1	277
	1809	-0.3	-9		1740	-0.3	-9		1206	9.1	277		1154	10.0	305		1805	0.2	6		1744	-0.7	-21
									1910	-0.2	-6		1857	-1.3	-40								

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Astoria (Tongue Pt.), Oregon, 2019

Times and Heights of High and Low Waters

April				May				June			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft cm	h m	ft cm	h m	ft cm	h m	ft cm	h m	ft cm	h m	ft cm
1 M	0452 2.6 79 1043 7.6 232 1725 0.6 18 2347 7.8 238	16 Tu	0442 1.6 49 1037 8.3 253 1712 -0.2 -6 2329 8.7 265	1 W	0510 1.5 46 1105 7.1 216 1714 1.1 34 2332 8.2 250	16 Th	0525 0.0 0 1128 7.8 238 1725 0.9 27 2335 9.4 287	1 Sa	0607 -0.2 -6 1221 7.1 216 1749 2.3 70 2347 9.0 274	16 Su	0648 -1.2 -37 1307 7.5 229 1832 2.4 73
2 Tu	0538 2.0 61 1131 7.8 238 1802 0.5 15	17 W	0538 0.7 21 1137 8.5 259 1759 -0.1 -3	2 Th	0553 0.9 27 1153 7.3 223 1751 1.3 40	17 F	0615 -0.7 -21 1223 7.9 241 1811 1.2 37	2 Su	0649 -0.6 -18 1309 7.3 223 1832 2.5 76	17 M	0025 9.3 283 0732 -1.2 -37 1355 7.5 229 1918 2.7 82
3 W	0020 8.1 247 0620 1.5 46 1214 7.9 241 1835 0.6 18	18 Th	0010 9.1 277 0630 -0.1 -3 1232 8.6 262 1843 0.2 6	3 F	0002 8.4 256 0634 0.3 9 1238 7.5 229 1828 1.5 46	18 Sa	0014 9.5 290 0703 -1.1 -34 1315 7.9 241 1856 1.7 52	3 M	0022 9.2 280 0731 -1.0 -30 1356 7.4 226 1916 2.7 82	18 Tu	0104 9.1 277 0814 -1.1 -34 1441 7.5 229 2002 2.9 88
4 Th	0050 8.2 250 0659 1.0 30 1255 8.0 244 1907 0.7 21	19 F	0049 9.4 287 0718 -0.6 -18 1324 8.5 259 1925 0.6 18	4 Sa	0030 8.7 265 0713 -0.1 -3 1322 7.6 232 1904 1.8 55	19 Su	0053 9.5 290 0748 -1.2 -37 1406 7.8 238 1939 2.1 64	4 Tu	0100 9.4 287 0814 -1.3 -40 1443 7.5 229 2001 2.8 85	19 W	0142 8.8 268 0852 -0.9 -27 1524 7.5 229 2045 3.0 91
5 F	0117 8.4 256 0736 0.7 21 1335 7.9 241 1938 0.9 27	20 Sa	0127 9.6 293 0805 -0.9 -27 1414 8.3 253 2006 1.1 34	5 Su	0059 8.9 271 0751 -0.5 -15 1406 7.6 232 1940 2.1 64	20 M	0130 9.4 287 0831 -1.2 -37 1455 7.7 235 2022 2.5 76	5 W	0141 9.5 290 0857 -1.4 -43 1531 7.5 229 2048 2.9 88	20 Th	0220 8.5 259 0929 -0.6 -18 1606 7.4 226 2128 3.0 91
6 Sa	0142 8.6 262 0812 0.3 9 1415 7.8 238 2009 1.3 40	21 Su	0204 9.5 290 0850 -0.9 -27 1505 8.0 244 2046 1.7 52	6 M	0129 9.1 277 0829 -0.7 -21 1451 7.5 229 2018 2.4 73	21 Tu	0207 9.1 277 0913 -0.9 -27 1543 7.5 229 2105 2.9 88	6 Th	0226 9.4 287 0941 -1.3 -40 1620 7.5 229 2138 2.9 88	21 F	0300 8.1 247 1004 -0.3 -9 1647 7.2 219 2212 3.0 91
7 Su	0207 8.7 265 0846 0.1 3 1456 7.6 232 2040 1.7 52	22 M	0240 9.3 283 0933 -0.7 -21 1556 7.7 235 2127 2.3 70	7 Tu	0202 9.2 280 0908 -0.8 -24 1538 7.4 226 2058 2.7 82	22 W	0244 8.7 265 0953 -0.5 -15 1631 7.3 223 2149 3.2 98	7 F	0316 9.1 277 1029 -1.1 -34 1710 7.5 229 2234 2.9 88	22 Sa	0341 7.7 235 1039 0.1 3 1727 7.2 219 2300 3.0 91
8 M	0234 8.9 271 0922 0.0 0 1540 7.4 226 2113 2.1 64	23 Tu	0317 8.9 271 1018 -0.4 -12 1648 7.3 223 2211 2.8 85	8 W	0240 9.2 280 0951 -0.7 -21 1629 7.2 219 2142 3.0 91	23 Th	0324 8.3 253 1034 -0.1 -3 1719 7.1 216 2236 3.4 104	8 Sa	0412 8.6 262 1119 -0.7 -21 1802 7.6 232 2339 2.7 82	23 Su	0428 7.1 216 1116 0.5 15 1808 7.1 216 2354 2.9 88
9 Tu	0305 9.0 274 1001 0.0 0 1630 7.1 216 2151 2.6 79	24 W	0357 8.4 256 1104 0.1 3 1744 7.0 213 2300 3.3 101	9 Th	0324 9.0 274 1038 -0.5 -15 1724 7.1 216 2235 3.2 98	24 F	0407 7.8 238 1117 0.3 9 1810 7.0 213 2331 3.5 107	9 Su	0517 7.9 241 1215 -0.3 -9 1856 7.8 238	24 M	0523 6.6 201 1158 0.9 27 1850 7.2 219
10 W	0343 8.9 271 1048 0.1 3 1728 6.8 207 2237 3.0 91	25 Th	0441 7.9 241 1157 0.6 18 1844 6.8 207 2359 3.6 110	10 F	0416 8.7 265 1134 -0.3 -9 1824 7.0 213 2341 3.3 101	25 Sa	0458 7.2 219 1205 0.8 24 1901 7.0 213	10 M	0051 2.4 73 0631 7.3 223 1313 0.2 6 1951 8.1 247	25 Tu	0057 6.7 82 0630 6.1 186 1246 1.3 40 1934 7.3 223
11 Th	0430 8.7 265 1146 0.3 9 1836 6.5 198 2338 3.4 104	26 F	0536 7.3 223 1257 1.0 30 1947 6.7 204	11 Sa	0520 8.2 250 1238 0.0 0 1926 7.2 219	26 Su	0035 3.4 104 0602 6.7 204 1258 1.1 34 1952 7.0 213	11 Tu	0205 1.8 55 0751 6.9 210 1413 0.7 21 2043 8.4 256	26 W	0202 2.2 67 0745 5.8 177 1340 1.7 52 2018 7.6 232
12 F	0529 8.4 256 1259 0.5 15 1949 6.6 201	27 Sa	0111 3.7 113 0645 6.9 210 1400 1.2 37 2047 6.9 210	12 Su	0059 3.2 98 0638 7.7 235 1346 0.2 6 2026 7.5 229	27 M	0144 3.1 94 0715 6.3 192 1353 1.3 40 2040 7.3 223	12 W	0314 1.1 34 0908 6.8 207 1510 1.0 30 2133 8.8 268	27 Th	0305 1.6 49 0900 5.8 177 1436 2.1 64 2102 7.9 241
13 Sa	0100 3.6 110 0645 8.0 244 1416 0.4 12 2057 6.9 210	28 Su	0224 3.4 104 0801 6.7 204 1459 1.2 37 2138 7.2 219	13 M	0218 2.6 79 0801 7.4 226 1449 0.3 9 2121 8.0 244	28 Tu	0250 2.6 79 0829 6.2 189 1447 1.5 46 2124 7.6 232	13 Th	0415 0.3 9 1018 6.9 210 1604 1.4 43 2219 9.1 277	28 F	0401 0.9 27 1008 6.0 183 1531 2.4 73 2145 8.3 253
14 Su	0226 3.3 101 0811 7.9 241 1524 0.2 6 2156 7.5 229	29 M	0328 2.9 88 0912 6.7 204 1550 1.2 37 2222 7.5 229	14 Tu	0329 1.8 55 0919 7.4 226 1546 0.4 12 2209 8.6 262	29 W	0347 1.9 58 0937 6.3 192 1536 1.6 49 2203 7.9 241	14 F	0511 -0.4 -12 1119 7.1 216 1655 1.8 55 2303 9.3 283	29 Sa	0452 0.2 6 1109 6.4 195 1624 2.6 79 2228 8.7 265
15 M	0340 2.5 76 0929 8.1 247 1621 -0.1 -3 2245 8.1 247	30 Tu	0423 2.2 67 1013 6.9 210 1634 1.1 34 2259 7.9 241	15 W	0430 0.8 24 1027 7.6 232 1638 0.6 18 2254 9.0 274	30 Th	0437 1.1 34 1037 6.5 198 1621 1.8 55 2239 8.3 253	15 Sa	0601 -0.9 -27 1215 7.3 223 1744 2.1 64 2345 9.4 287	30 Su	0541 -0.4 -12 1203 6.8 207 1715 2.7 82 2311 9.1 277
						31 F	0523 0.5 15 1131 6.8 207 1705 2.0 61 2313 8.6 262				

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Astoria (Tongue Pt.), Oregon, 2019

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	h m	ft	h m	ft	h m	ft	h m	ft	h m	ft
1 Tu	0252 8.3 253 0850 0.4 12 1451 9.1 277 2131 -1.0 -30	16 W	0241 7.4 226 0820 1.8 55 1410 8.6 262 2101 -0.3 -9	1 F	0429 7.6 232 0953 2.8 85 1536 8.7 265 2245 -0.2 -6	16 Sa	0405 7.4 226 0917 3.3 101 1454 9.2 280 2208 -0.4 -12	1 Su	0500 7.8 238 1021 3.6 110 1552 8.3 253 2259 0.5 15	16 M	0439 8.1 247 1004 3.4 104 1539 9.1 277 2244 -0.3 -9
2 W	0345 7.8 238 0932 1.1 34 1531 8.9 271 2220 -0.7 -21	17 Th	0323 7.2 219 0853 2.2 67 1439 8.7 265 2137 -0.2 -6	2 Sa	0525 7.3 223 1044 3.3 101 1623 8.0 244 2337 0.4 12	17 Su	0456 7.3 223 1006 3.5 107 1542 8.8 268 2258 -0.1 -3	2 M	0550 7.6 232 1116 3.8 116 1643 7.6 232 2345 1.0 30	17 Tu	0528 8.1 247 1103 3.3 101 1638 8.5 259 2335 0.2 6
3 Th	0442 7.2 219 1017 1.9 58 1613 8.5 259 2314 -0.2 -6	18 F	0410 6.9 210 0929 2.6 79 1514 8.6 262 2219 -0.1 -3	3 Su	0625 7.0 213 1145 3.6 110 1719 7.4 226	18 M	0552 7.3 223 1107 3.6 110 1641 8.3 253 2357 0.3 9	3 Tu	0640 7.5 229 1219 3.7 113 1745 7.0 213	18 W	0619 8.3 253 1212 3.0 91 1749 7.8 238
4 F	0544 6.8 207 1108 2.6 79 1702 7.9 241	19 Sa	0504 6.6 201 1012 3.1 94 1557 8.4 256 2311 0.2 6	4 M	0036 0.9 27 0727 7.0 213 1257 3.7 113 1829 6.9 210	19 Tu	0652 7.4 226 1223 3.5 107 1756 7.8 238	4 W	0036 1.5 46 0731 7.6 232 1328 3.5 107 1859 6.6 201	19 Th	0031 0.8 24 0713 8.5 259 1328 2.6 79 1910 7.3 223
5 Sa	0015 0.2 6 0652 6.5 198 1211 3.1 94 1800 7.4 226	20 Su	0608 6.4 195 1109 3.4 104 1653 8.0 244	5 Tu	0140 1.2 37 0827 7.2 219 1411 3.4 104 1947 6.6 201	20 W	0104 0.6 18 0752 7.7 235 1344 3.1 94 1922 7.4 226	5 Th	0131 1.8 55 0820 7.8 238 1436 3.0 91 2016 6.4 195	20 F	0132 1.3 40 0807 8.9 271 1441 1.8 55 2033 7.1 216
6 Su	0124 0.6 18 0803 6.5 198 1326 3.4 104 1912 7.0 213	21 M	0019 0.4 12 0718 6.5 198 1228 3.6 110 1806 7.6 232	6 W	0240 1.3 40 0919 7.4 226 1517 2.8 85 2100 6.6 201	21 Th	0211 0.8 24 0847 8.2 250 1459 2.2 67 2046 7.4 226	6 F	0226 2.1 64 0905 8.1 247 1535 2.3 70 2126 6.5 198	21 Sa	0234 1.8 55 0859 9.3 283 1547 1.0 30 2149 7.2 219
7 M	0233 0.7 21 0909 6.7 204 1441 3.2 98 2027 6.9 210	22 Tu	0137 0.5 15 0826 6.8 207 1356 3.3 101 1934 7.5 229	7 Th	0332 1.3 40 1003 7.8 238 1611 2.1 64 2202 6.9 210	22 F	0311 0.9 27 0938 8.7 265 1602 1.2 37 2159 7.6 232	7 Sa	0317 2.3 70 0946 8.4 256 1626 1.5 46 2227 6.8 207	22 Su	0332 2.2 67 0949 9.7 296 1646 0.2 6 2256 7.5 229
8 Tu	0334 0.6 18 1004 7.1 216 1545 2.7 82 2134 7.0 213	23 W	0248 0.3 9 0925 7.3 223 1512 2.5 76 2058 7.6 232	8 F	0416 1.4 43 1040 8.1 247 1658 1.4 43 2255 7.1 216	23 Sa	0406 1.1 34 1023 9.3 283 1659 0.2 6 2303 7.9 241	8 Su	0405 2.5 76 1022 8.7 265 1712 0.8 24 2321 7.1 216	23 M	0428 2.5 76 1036 10.0 305 1739 -0.5 -15 2354 7.9 241
9 W	0424 0.5 15 1048 7.4 226 1638 2.0 61 2230 7.3 223	24 Th	0348 0.1 3 1015 7.9 241 1615 1.6 49 2209 8.0 244	9 Sa	0456 1.4 43 1113 8.4 256 1740 0.7 21 2342 7.4 226	24 Su	0456 1.3 40 1106 9.8 299 1750 -0.5 -15	9 M	0449 2.7 82 1057 9.1 277 1754 0.3 9	24 Tu	0521 2.8 85 1121 10.1 308 1828 -0.8 -24
10 Th	0506 0.4 12 1126 7.7 235 1724 1.4 43 2319 7.5 229	25 F	0441 0.0 0 1059 8.6 262 1711 0.6 18 2311 8.3 253	10 Su	0533 1.6 49 1143 8.7 265 1819 0.2 6	25 M	0000 8.1 247 0544 1.6 49 1148 10.1 308 1839 -1.0 -30	10 Tu	0010 7.4 226 0533 2.9 88 1130 9.3 283 1835 -0.2 -6	25 W	0047 8.1 247 0611 3.0 91 1205 10.1 308 1913 -1.0 -30
11 F	0542 0.4 12 1159 8.0 244 1805 0.9 27	26 Sa	0528 0.0 0 1140 9.1 277 1803 -0.3 -9	11 M	0026 7.5 229 0610 1.9 58 1212 8.9 271 1857 -0.1 -3	26 Tu	0054 8.3 253 0631 2.0 61 1228 10.2 311 1926 -1.3 -40	11 W	0056 7.7 235 0615 3.2 98 1205 9.6 293 1915 -0.5 -15	26 Th	0136 8.3 253 0659 3.1 94 1247 10.0 305 1956 -0.9 -27
12 Sa	0002 7.6 232 0616 0.5 15 1229 8.1 247 1843 0.5 15	27 Su	0007 8.5 259 0613 0.3 9 1220 9.5 290 1852 -0.9 -27	12 Tu	0109 7.6 232 0645 2.2 67 1239 9.1 277 1933 -0.4 -12	27 W	0145 8.3 253 0716 2.4 73 1307 10.1 308 2010 -1.2 -37	12 Th	0141 7.9 241 0658 3.3 101 1241 9.8 299 1954 -0.7 -21	27 F	0222 8.4 256 0746 3.3 101 1327 9.7 296 2036 -0.7 -21
13 Su	0043 7.7 235 0648 0.7 21 1256 8.3 253 1920 0.2 6	28 M	0100 8.5 259 0657 0.6 18 1258 9.7 296 1940 -1.3 -40	13 W	0152 7.7 235 0721 2.5 76 1307 9.2 280 2009 -0.6 -18	28 Th	0234 8.3 253 0802 2.8 85 1347 9.8 299 2053 -1.0 -30	13 F	0225 8.0 244 0741 3.4 104 1319 9.8 299 2034 -0.9 -27	28 Sa	0306 8.3 253 0830 3.3 101 1408 9.4 287 2113 -0.4 -12
14 M	0122 7.6 232 0719 1.0 30 1320 8.4 256 1954 -0.1 -3	29 Tu	0152 8.4 256 0740 1.1 34 1336 9.8 299 2026 -1.4 -43	14 Th	0234 7.7 235 0757 2.8 85 1338 9.3 283 2046 -0.6 -18	29 F	0323 8.1 247 0847 3.1 94 1426 9.4 287 2135 -0.6 -18	14 Sa	0309 8.0 244 0825 3.4 104 1401 9.8 299 2115 -0.8 -24	29 Su	0347 8.2 250 0913 3.4 104 1448 8.9 271 2148 0.0 0
15 Tu	0201 7.5 229 0750 1.4 43 1344 8.5 259 2028 -0.2 -6	30 W	0243 8.2 250 0823 1.7 52 1415 9.6 293 2111 -1.2 -37	15 F	0318 7.6 232 0835 3.1 94 1413 9.3 283 2125 -0.5 -15	30 Sa	0411 8.0 244 0933 3.4 104 1508 8.9 271 2216 -0.1 -3	15 Su	0353 8.1 247 0912 3.4 104 1447 9.6 293 2158 -0.6 -18	30 M	0427 8.1 247 0957 3.4 104 1529 8.4 256 2222 0.4 12
		31 Th	0335 7.9 241 0907 2.3 70 1454 9.2 280 2157 -0.8 -24							31 Tu	0506 8.0 244 1043 3.4 104 1614 7.8 238 2257 0.9 27

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Toke Point, Willapa Bay, Washington, 2019

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	h m	ft	h m	ft	h m	ft	h m	ft	h m	ft
1 Tu	0230 8.9 271 0828 0.7 21 1432 9.9 302 2108 -1.0 -30	16 W	0221 7.9 241 0804 2.3 70 1358 9.1 277 2044 0.0 0	1 F	0406 8.0 244 0933 3.5 107 1521 9.3 283 2223 -0.3 -9	16 Sa	0342 7.8 238 0859 3.9 119 1439 9.5 290 2152 -0.4 -12	1 Su	0438 8.0 244 1001 4.2 128 1539 8.6 262 2240 0.4 12	16 M	0418 8.3 253 0943 3.9 119 1522 9.4 287 2225 -0.4 -12
2 W	0324 8.4 256 0911 1.6 49 1513 9.6 293 2159 -0.7 -21	17 Th	0303 7.7 235 0837 2.8 85 1427 9.1 277 2124 0.0 0	2 Sa	0503 7.6 232 1025 4.0 122 1610 8.5 259 2316 0.4 12	17 Su	0434 7.6 232 0949 4.2 128 1527 9.1 277 2243 -0.1 -3	2 M	0529 7.8 238 1057 4.4 134 1631 7.9 241 2328 1.0 30	17 Tu	0510 8.3 253 1045 3.8 116 1622 8.7 265 2316 0.1 3
3 Th	0420 7.8 238 0958 2.5 76 1558 9.2 280 2253 -0.2 -6	18 F	0349 7.4 226 0914 3.3 101 1501 8.9 271 2209 0.2 6	3 Su	0605 7.4 226 1127 4.3 131 1709 7.8 238	18 M	0533 7.6 232 1052 4.3 131 1627 8.5 259 2341 0.3 9	3 Tu	0622 7.7 235 1202 4.4 134 1734 7.3 223	18 W	0603 8.5 259 1155 3.5 107 1733 8.0 244
4 F	0523 7.2 219 1050 3.3 101 1649 8.5 259 2352 0.3 9	19 Sa	0442 7.1 216 0958 3.8 116 1544 8.6 262 2302 0.4 12	4 M	0014 1.0 30 0710 7.3 223 1241 4.4 134 1820 7.3 223	19 Tu	0634 7.7 235 1207 4.2 128 1743 8.0 244	4 W	0019 1.5 46 0715 7.8 238 1313 4.1 125 1845 6.9 210	19 Th	0012 0.8 24 0658 8.8 268 1310 3.0 91 1853 7.5 229
5 Sa	0632 6.9 210 1153 3.8 116 1750 8.0 244	20 Su	0546 6.9 210 1056 4.1 125 1641 8.3 253	5 Tu	0116 1.4 43 0811 7.4 226 1359 4.1 125 1935 7.0 213	20 W	0043 0.6 18 0735 8.0 244 1327 3.6 110 1907 7.7 235	5 Th	0113 2.0 61 0804 8.0 244 1422 3.5 107 1959 6.7 204	20 F	0111 1.5 46 0751 9.3 283 1424 2.2 67 2015 7.2 219
6 Su	0058 0.8 24 0747 6.8 207 1309 4.1 125 1901 7.5 229	21 M	0004 0.6 18 0657 6.9 210 1212 4.3 131 1757 8.0 244	6 W	0217 1.6 49 0903 7.7 235 1507 3.5 107 2045 7.0 213	21 Th	0147 0.9 27 0830 8.6 262 1442 2.7 82 2028 7.6 232	6 F	0207 2.4 73 0848 8.4 256 1521 2.8 85 2107 6.7 204	21 Sa	0212 2.1 64 0843 9.7 296 1531 1.2 37 2132 7.3 223
7 M	0208 1.0 30 0857 6.9 210 1429 3.9 119 2015 7.4 226	22 Tu	0113 0.6 18 0805 7.2 219 1336 4.0 122 1922 7.9 241	7 Th	0312 1.7 52 0945 8.0 244 1600 2.7 82 2146 7.2 219	22 F	0248 1.2 37 0920 9.2 280 1546 1.6 49 2141 7.8 238	7 Sa	0259 2.7 82 0928 8.8 268 1610 2.0 61 2208 7.0 213	22 Su	0312 2.6 79 0933 10.2 311 1628 0.3 9 2241 7.6 232
8 Tu	0311 1.0 30 0952 7.2 219 1536 3.4 104 2121 7.5 229	23 W	0221 0.5 15 0905 7.7 235 1453 3.2 98 2041 8.0 244	8 F	0358 1.8 55 1021 8.4 256 1644 1.9 58 2239 7.5 229	23 Sa	0344 1.4 43 1005 9.8 299 1641 0.5 15 2245 8.1 247	8 Su	0347 3.0 91 1005 9.2 280 1653 1.2 37 2302 7.3 223	23 M	0409 3.0 91 1020 10.5 320 1719 -0.5 -15 2341 7.9 241
9 W	0404 0.9 27 1034 7.6 232 1628 2.8 85 2216 7.7 235	24 Th	0323 0.3 9 0955 8.4 256 1558 2.1 64 2151 8.4 256	9 Sa	0439 1.9 58 1054 8.8 268 1723 1.2 37 2325 7.7 235	24 Su	0436 1.7 52 1048 10.4 317 1731 -0.5 -15 2343 8.4 256	9 M	0432 3.2 98 1041 9.6 293 1733 0.4 12 2351 7.6 232	24 Tu	0503 3.2 98 1105 10.7 326 1806 -1.0 -30
10 Th	0448 0.8 24 1110 7.9 241 1711 2.1 64 2304 7.9 241	25 F	0417 0.2 6 1039 9.1 277 1653 1.0 30 2252 8.7 265	10 Su	0516 2.1 64 1125 9.2 280 1800 0.6 18	25 M	0524 2.0 61 1129 10.7 326 1818 -1.1 -34	10 Tu	0515 3.4 104 1116 9.9 302 1812 -0.2 -6	25 W	0033 8.2 250 0553 3.4 104 1148 10.7 326 1850 -1.2 -37
11 F	0525 0.8 24 1141 8.2 250 1749 1.5 46 2346 8.1 247	26 Sa	0506 0.3 9 1120 9.7 296 1743 0.0 0 2348 9.0 274	11 M	0009 7.9 241 0552 2.3 70 1155 9.5 290 1835 0.1 3	26 Tu	0036 8.6 262 0611 2.4 73 1209 10.9 332 1903 -1.5 -46	11 W	0035 7.9 241 0556 3.5 107 1151 10.2 311 1850 -0.7 -21	26 Th	0120 8.4 256 0640 3.5 107 1230 10.6 323 1931 -1.2 -37
12 Sa	0559 0.9 27 1210 8.5 259 1824 1.0 30	27 Su	0552 0.5 15 1200 10.2 311 1831 -0.9 -27	12 Tu	0050 8.0 244 0627 2.6 79 1224 9.7 296 1911 -0.3 -9	27 W	0126 8.7 265 0656 2.8 85 1249 10.8 329 1946 -1.5 -46	12 Th	0119 8.1 247 0637 3.6 110 1226 10.3 314 1929 -1.0 -30	27 F	0204 8.5 259 0724 3.6 110 1311 10.3 314 2010 -1.0 -30
13 Su	0026 8.2 250 0630 1.1 34 1238 8.8 268 1859 0.5 15	28 M	0041 9.1 277 0635 0.9 27 1239 10.5 320 1917 -1.4 -43	13 W	0131 8.1 247 0702 2.9 88 1254 9.8 299 1947 -0.6 -18	28 Th	0214 8.6 262 0740 3.2 98 1329 10.5 320 2028 -1.3 -40	13 F	0201 8.2 250 0719 3.7 113 1304 10.4 317 2010 -1.1 -34	28 Sa	0245 8.5 259 0808 3.7 113 1352 9.9 302 2049 -0.6 -18
14 M	0104 8.2 250 0701 1.4 43 1304 9.0 274 1933 0.2 6	29 Tu	0132 9.0 274 0718 1.5 46 1317 10.6 323 2002 -1.5 -46	14 Th	0212 8.1 247 0738 3.3 101 1325 9.8 299 2025 -0.7 -21	29 F	0301 8.5 259 0825 3.6 110 1410 10.0 305 2111 -0.8 -24	14 Sa	0245 8.3 253 0802 3.8 116 1345 10.3 314 2052 -1.1 -34	29 Su	0325 8.4 256 0851 3.8 116 1432 9.4 287 2127 -0.2 -6
15 Tu	0142 8.1 247 0732 1.8 55 1331 9.1 277 2008 0.1 3	30 W	0222 8.8 268 0801 2.1 64 1357 10.4 317 2047 -1.3 -40	15 F	0255 8.0 244 0816 3.6 110 1359 9.7 296 2107 -0.6 -18	30 Sa	0349 8.2 250 0911 3.9 119 1453 9.3 283 2154 -0.3 -9	15 Su	0330 8.3 253 0850 3.9 119 1430 9.9 302 2137 -0.9 -27	30 M	0406 8.3 253 0936 3.9 119 1514 8.8 268 2205 0.4 12
		31 Th	0313 8.4 256 0846 2.8 85 1437 9.9 302 2134 -0.9 -27							31 Tu	0447 8.2 250 1024 4.0 122 1600 8.1 247 2244 1.0 30

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Aberdeen, Washington, 2019

Times and Heights of High and Low Waters

January					February					March													
Time	Height			Time	Height			Time	Height			Time	Height										
	h	m	ft		h	m	ft		h	m	ft		h	m	ft								
1 Tu	0244	2.8	85	16 W	0204	3.6	110	1 F	0412	4.2	128	16 Sa	0344	4.0	122								
	0918	10.6	323		0825	10.2	311		1025	10.1	308		0948	10.7	326								
	1550	0.8	24		1518	1.4	43		1707	0.4	12		1642	-0.4	-12								
	2221	8.1	247		2141	7.8	238		2328	8.8	268		2241	7.8	238								
2 W	0341	3.3	101	17 Th	0307	3.9	119	2 Sa	0000	8.5	259	17 Su	0445	3.4	104	2 Sa	0350	4.2	128				
	1006	10.8	329		0919	10.6	323		0504	4.0	122		1050	11.2	341		1001	9.2	280				
	1642	0.2	6		1614	0.5	15		1113	10.2	311		1734	-1.1	-34		1638	0.9	27				
	2323	8.4	256		2248	8.3	253		1750	0.1	3		2329	8.3	253								
3 Th	0434	3.6	110	18 F	0407	3.9	119	3 Su	0042	8.8	268	18 M	0021	9.5	290	3 Su	0445	3.8	116	18 M	0429	2.7	82
	1051	10.9	332		1013	11.2	341		0552	3.8	116		0541	2.7	82		1053	9.5	290		1038	10.6	323
	1729	-0.2	-6		1706	-0.4	-12		1157	10.3	314		1148	11.6	354		1723	0.5	15		1709	-0.8	-24
					2349	8.9	271		1830	-0.1	-3		1823	-1.6	-49						2352	9.7	296

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Aberdeen, Washington, 2019

Times and Heights of High and Low Waters

April				May				June			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	h m	ft	h m	ft	h m	ft	h m	ft	h m	ft
1 M	0421 3.2 98 1027 8.8 268 1646 1.0 30 2325 8.8 268	16 Tu	0414 1.8 55 1026 9.7 296 1641 -0.2 -6 2318 10.1 308	1 W	0439 1.8 55 1048 8.5 259 1647 1.4 43 2314 9.6 293	16 Th	0453 -0.2 -6 1115 9.1 277 1701 0.9 27 2326 10.9 332	1 Sa	0538 -0.3 -9 1205 8.6 262 1736 2.5 76 2343 10.6 323	16 Su	0612 -1.5 -46 1257 8.8 268 1811 2.7 82
2 Tu	0508 2.5 76 1117 9.2 280 1728 0.8 24	17 W	0510 0.6 18 1127 10.1 308 1730 -0.3 -9	2 Th	0524 1.0 30 1138 8.9 271 1730 1.5 46 2351 10.0 305	17 F	0544 -1.0 -30 1213 9.3 283 1749 1.2 37	2 Su	0622 -0.9 -27 1256 8.9 271 1821 2.6 79	17 M	0019 10.8 329 0656 -1.6 -49 1345 8.9 271 1857 3.0 91
3 W	0002 9.3 283 0551 1.8 55 1202 9.5 290 1807 0.7 21	18 Th	0002 10.7 326 0601 -0.4 -12 1223 10.2 311 1817 0.0 0	3 F	0606 0.3 9 1226 9.1 277 1810 1.6 49	18 Sa	0008 11.1 338 0631 -1.5 -46 1306 9.4 287 1835 1.7 52	3 M	0021 10.8 329 0704 -1.4 -43 1345 9.1 277 1904 2.8 85	18 Tu	0059 10.5 320 0737 -1.5 -46 1430 8.9 271 1941 3.2 98
4 Th	0036 9.7 296 0632 1.1 34 1246 9.7 296 1844 0.8 24	19 F	0044 11.1 338 0650 -1.1 -34 1316 10.2 311 1901 0.4 12	4 Sa	0025 10.3 314 0646 -0.3 -9 1312 9.3 283 1850 1.9 58	19 Su	0048 11.1 338 0716 -1.8 -55 1357 9.3 283 1919 2.2 67	4 Tu	0059 10.9 332 0747 -1.7 -52 1433 9.2 280 1948 2.9 88	19 W	0138 10.1 308 0818 -1.2 -37 1510 8.8 268 2024 3.4 104
5 F	0109 10.0 305 0711 0.6 18 1328 9.7 296 1921 1.0 30	20 Sa	0124 11.2 341 0736 -1.4 -43 1407 10.0 305 1945 1.0 30	5 Su	0058 10.5 320 0727 -0.8 -24 1357 9.3 283 1929 2.2 67	20 M	0127 10.8 329 0759 -1.7 -52 1444 9.2 280 2003 2.7 82	5 W	0139 10.9 332 0830 -1.9 -58 1520 9.1 277 2034 3.0 91	20 Th	0217 9.7 296 0857 -0.8 -24 1549 8.6 262 2107 3.6 110
6 Sa	0140 10.2 311 0750 0.2 6 1409 9.6 293 1956 1.4 43	21 Su	0202 11.1 338 0821 -1.5 -46 1455 9.6 293 2027 1.7 52	6 M	0130 10.6 323 0807 -1.0 -30 1442 9.2 280 2008 2.5 76	21 Tu	0204 10.4 317 0841 -1.3 -40 1528 8.9 271 2046 3.2 98	6 Th	0223 10.7 326 0915 -1.8 -55 1608 9.0 274 2123 3.1 94	21 F	0256 9.2 280 0936 -0.4 -12 1626 8.4 256 2151 3.6 110
7 Su	0208 10.2 311 0828 0.0 0 1450 9.3 283 2031 1.8 55	22 M	0239 10.7 326 0905 -1.2 -37 1542 9.2 280 2110 2.5 76	7 Tu	0202 10.6 323 0848 -1.1 -34 1528 9.0 274 2049 2.9 88	22 W	0242 9.9 302 0923 -0.8 -24 1612 8.6 262 2130 3.6 110	7 F	0311 10.3 314 1003 -1.5 -46 1656 8.9 271 2216 3.1 94	22 Sa	0337 8.7 265 1016 0.1 3 1705 8.3 253 2239 3.7 113
8 M	0235 10.2 311 0908 -0.1 -3 1532 9.0 274 2107 2.4 73	23 Tu	0316 10.2 311 0949 -0.6 -18 1629 8.6 262 2154 3.2 98	8 W	0236 10.4 317 0932 -1.0 -30 1615 8.7 265 2133 3.3 101	23 Th	0320 9.3 283 1005 -0.2 -6 1655 8.2 250 2217 4.0 122	8 Sa	0406 9.8 299 1053 -1.0 -30 1747 8.9 271 2317 3.0 91	23 Su	0424 8.2 250 1058 0.7 21 1745 8.3 253 2333 3.6 110
9 Tu	0303 10.2 311 0950 0.0 0 1618 8.5 259 2146 2.9 88	24 W	0354 9.5 290 1035 0.0 0 1718 8.1 247 2242 3.9 119	9 Th	0317 10.2 311 1019 -0.8 -24 1707 8.4 256 2225 3.6 110	24 F	0403 8.6 262 1050 0.4 12 1740 8.0 244 2309 4.1 125	9 Su	0509 9.1 277 1148 -0.4 -12 1841 9.0 274	24 M	0518 7.6 232 1144 1.2 37 1830 8.4 256
10 W	0336 10.0 305 1037 0.1 3 1710 8.1 247 2232 3.5 107	25 Th	0437 8.8 268 1125 0.7 21 1811 7.7 235 2338 4.3 131	10 F	0407 9.7 296 1113 -0.4 -12 1804 8.2 250 2327 3.7 113	25 Sa	0454 8.1 247 1138 0.9 27 1829 7.9 241	10 M	0024 2.7 82 0620 8.5 259 1246 0.2 6 1935 9.3 283	25 Tu	0033 3.3 101 0620 7.2 219 1235 1.8 55 1916 8.6 262
11 Th	0419 9.8 299 1132 0.4 12 1811 7.7 235 2333 3.9 119	26 F	0529 8.2 250 1220 1.2 37 1909 7.5 229	11 Sa	0512 9.2 280 1212 -0.1 -3 1905 8.3 253	26 Su	0010 4.1 125 0554 7.6 232 1231 1.4 43 1920 8.0 244	11 Tu	0132 2.1 64 0735 8.1 247 1345 0.7 21 2029 9.7 296	26 W	0135 2.8 85 0729 7.0 213 1329 2.2 67 2005 9.0 274
12 F	0519 9.4 287 1236 0.5 15 1922 7.7 235	27 Sa	0043 4.4 134 0634 7.7 235 1319 1.6 49 2009 7.6 232	12 Su	0037 3.5 107 0628 8.7 265 1315 0.2 6 2007 8.6 262	27 M	0114 3.8 116 0702 7.3 223 1327 1.7 52 2012 8.3 253	12 W	0238 1.3 40 0850 7.9 241 1443 1.2 37 2120 10.2 311	27 Th	0235 2.1 64 0838 7.1 216 1426 2.6 79 2052 9.4 287
13 Sa	0048 4.1 125 0638 9.1 277 1343 0.5 15 2033 8.0 244	28 Su	0151 4.2 128 0745 7.6 232 1418 1.6 49 2105 8.0 244	13 M	0149 3.0 91 0749 8.5 259 1417 0.4 12 2104 9.2 280	28 Tu	0217 3.2 98 0811 7.3 223 1422 1.9 58 2100 8.7 265	13 Th	0340 0.3 9 1001 8.1 247 1539 1.6 49 2209 10.6 323	28 F	0330 1.2 37 0945 7.4 226 1521 2.9 88 2139 9.9 302
14 Su	0203 3.7 113 0801 9.1 277 1447 0.3 9 2137 8.6 262	29 M	0255 3.5 107 0853 7.7 235 1513 1.6 49 2154 8.5 259	14 Tu	0257 2.0 61 0905 8.6 262 1515 0.5 15 2156 9.8 299	29 W	0315 2.3 70 0917 7.5 229 1514 2.0 61 2145 9.3 283	14 F	0435 -0.5 -15 1105 8.3 253 1633 2.0 61 2254 10.8 329	29 Sa	0422 0.4 12 1047 7.8 238 1614 3.0 91 2224 10.4 317
15 M	0312 2.9 88 0918 9.3 283 1547 0.0 0 2231 9.3 283	30 Tu	0351 2.7 82 0954 8.1 247 1602 1.5 46 2236 9.0 274	15 W	0358 0.9 27 1013 8.8 268 1610 0.6 18 2243 10.5 320	30 Th	0406 1.4 43 1017 7.9 241 1604 2.1 64 2226 9.8 299	15 Sa	0525 -1.1 -34 1203 8.6 262 1723 2.4 73 2337 10.9 332	30 Su	0510 -0.5 -15 1144 8.3 253 1706 3.1 94 2308 10.8 329
						31 F	0454 0.5 15 1112 8.3 253 1651 2.3 70 2305 10.3 314				

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
 Heights are referred to mean lower low water which is the chart datum of soundings.

Aberdeen, Washington, 2019

Times and Heights of High and Low Waters

October					November					December																			
Time		Height			Time		Height			Time		Height			Time		Height												
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm		h	m	ft	cm										
1 Tu	0243	10.4	317		16 W	0233	9.3	283		1 F	0414	9.2	280		16 Sa	0355	9.0	274		1 Su	0442	9.0	274						
	0829	0.6	18			0811	2.3	70			0935	3.4	104			0910	3.9	119			1001	4.3	131		16 M	0430	9.5	290	
	1449	11.2	341			1410	10.3	314			1535	10.1	308			1447	10.5	320			1550	9.4	287			0949	3.7	113	
	2105	-1.1	-34			2047	0.0	0			2216	-0.2	-6			2154	-0.4	-12			2233	0.5	15			1534	10.4	317	
																					2224	-0.5	-15						
2 W	0335	9.8	299		17 Th	0315	9.0	274		2 Sa	0505	8.7	265		17 Su	0443	8.8	268		2 M	0526	8.7	265		17 Tu	0517	9.5	290	
	0913	1.5	46			0846	2.9	88			1025	4.1	125			0958	4.1	125			1053	4.5	137			1045	3.6	110	
	1529	10.8	329			1437	10.2	311			1621	9.3	283			1533	10.1	308			1639	8.7	265			1632	9.8	299	
	2154	-0.7	-21			2128	0.1	3			2306	0.6	18			2243	0.0	0			2320	1.2	37			2315	0.0	0	
3 Th	0427	9.1	277		18 F	0359	8.6	262		3 Su	0559	8.3	253		18 M	0537	8.6	262		3 Tu	0613	8.6	262		18 W	0607	9.6	293	
	0959	2.5	76			0923	3.4	104			1122	4.5	137			1056	4.3	131			1152	4.5	137			1149	3.4	104	
	1611	10.2	311			1506	10.0	305			1715	8.6	262			1633	9.5	290			1736	8.1	247			1739	9.1	277	
	2245	-0.1	-3			2212	0.3	9								2339	0.4	12											

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Neah Bay, Washington, 2019

Times and Heights of High and Low Waters

January				February				March							
Time	Height			Time	Height			Time	Height			Time	Height		
	h	m	ft		h	m	ft		h	m	ft		h	m	ft
1 Tu	0225	3.3	101	16 W	0100	3.6	110	1 F	0254	4.5	137	16 Sa	0119	4.5	137
	0901	8.8	268		0756	8.3	253		0914	8.9	271		0743	7.9	241
	1619	0.6	18		1535	1.2	37		1650	-0.7	-21		1528	0.0	0
	2231	5.8	177		2148	5.5	168		2324	6.5	198		2210	6.2	189
2 W	0324	3.9	119	17 Th	0204	4.1	125	2 Sa	0411	4.1	125	2 Su	0302	4.2	128
	0944	8.9	271		0846	8.8	268		1014	9.4	287		0900	8.2	250
	1706	0.0	0		1625	0.2	6		1738	-1.3	-40		1712	-0.5	-15
	2330	6.2	189		2252	6.0	183		1808	-0.3	-9		2255	6.7	204
3 Th	0418	4.2	128	18 F	0312	4.3	131	3 Su	0006	7.1	216	3 M	0416	3.5	107
	1025	9.0	274		0937	9.3	283		0515	3.6	110		1007	8.6	262
	1748	-0.5	-15		1712	-0.8	-24		1110	9.7	296		1712	-0.8	-24
					2343	6.5	198		1822	-1.6	-49		2335	7.3	223
4 F	0018	6.4	195	19 Sa	0417	4.3	131	4 M	0046	7.6	232	4 M	0416	3.5	107
	0506	4.4	134		1027	9.8	299		0611	2.9	88		1007	8.6	262
	1103	9.1	277		1758	-1.5	-46		1203	9.8	299		1712	-0.8	-24
	1826	-0.7	-21						1905	-1.6	-49		2335	7.3	223
5 Sa	0059	6.7	204	20 Su	0029	7.0	213	5 Tu	0125	8.0	244	5 Tu	0515	2.6	79
	0548	4.5	137		0517	4.1	125		0704	2.3	70		1106	8.9	271
	1140	9.0	274		1118	10.1	308		1255	9.6	293		1756	-0.9	-27
	1902	-0.8	-24		1842	-2.0	-61		1946	-1.3	-40		1837	-0.7	-21
6 Su	0137	6.8	207	21 M	0113	7.3	223	6 W	0204	8.3	253	6 W	0012	7.9	241
	0626	4.5	137		0612	3.8	116		0756	1.8	55		0607	1.7	52
	1215	8.9	271		1208	10.3	314		1346	9.1	277		1200	8.9	271
	1936	-0.7	-21		1926	-2.1	-64		2025	-0.7	-21		1837	-0.7	-21
7 M	0213	6.9	210	22 Tu	0155	7.6	232	7 Th	0204	8.3	253	7 Th	0049	8.4	256
	0704	4.4	134		0707	3.5	107		0756	1.8	55		0657	0.9	27
	1249	8.7	265		1258	10.1	308		1346	9.1	277		1252	8.7	265
	2009	-0.5	-15		2009	-2.0	-61		2103	0.2	6		1916	-0.2	-6
8 Tu	0248	6.9	210	23 W	0238	7.9	241	8 F	0243	8.5	259	8 F	0125	8.7	265
	0741	4.4	134		0802	3.2	98		0849	1.5	46		0745	0.3	9
	1324	8.4	256		1349	9.6	293		1349	8.4	256		1343	8.3	253
	2041	-0.3	-9		2052	-1.4	-43		2103	0.2	6		1954	0.5	15
9 W	0323	6.9	210	24 Th	0322	8.1	247	9 Sa	0243	8.5	259	9 Sa	0125	8.7	265
	0822	4.3	131		0901	2.9	88		0849	1.5	46		0745	0.3	9
	1359	8.0	244		1442	8.8	268		1349	8.4	256		1343	8.3	253
	2112	0.1	3		2134	-0.7	-21		2103	0.2	6		1954	0.5	15
10 Th	0358	6.9	210	25 F	0406	8.2	250	10 Su	0403	7.4	226	10 Su	0241	7.7	235
	0906	4.3	131		1003	2.7	82		1023	2.9	88		0910	1.6	49
	1436	7.5	229		1539	7.8	238		1555	6.3	192		1501	6.8	207
	2142	0.6	18		2216	0.3	9		2200	2.1	64		2054	2.1	64
11 F	0433	7.0	213	26 Sa	0453	8.3	253	11 M	0448	8.3	253	11 M	0241	7.7	235
	0958	4.2	128		1113	2.5	76		1151	1.3	40		0910	1.6	49
	1519	6.9	210		1644	6.8	207		1751	5.8	177		1501	6.8	207
	2213	1.1	34		2258	1.4	43		2258	3.3	101		2054	2.1	64
12 Sa	0509	7.0	213	27 Su	0541	8.3	253	12 Tu	0537	8.0	244	12 Tu	0308	7.8	238
	1059	4.0	122		1229	2.2	67		1304	1.3	40		0956	1.5	46
	1610	6.2	189		1804	5.9	180		1923	5.4	165		1550	6.2	189
	2246	1.7	52		2342	2.5	76		2345	4.1	125		2123	2.7	82
13 Su	0545	7.2	219	28 M	0633	8.3	253	13 W	0637	7.7	235	13 W	0340	7.9	241
	1212	3.6	110		1346	1.7	52		1418	1.2	37		1048	1.4	43
	1716	5.6	171		1938	5.4	165		2058	5.4	165		1650	5.7	174
	2323	2.4	73										2157	3.3	101
14 M	0625	7.5	229	29 Tu	0033	3.4	104	14 Th	0104	4.7	143	14 Th	0441	7.5	229
	1329	3.0	91		0728	8.3	253		0745	7.5	229		1218	0.9	27
	1845	5.2	158		1456	1.2	37		1524	0.9	27		1902	5.5	168
					2112	5.4	165		2213	5.7	174		2313	4.5	137
15 Tu	0006	3.0	91	30 W	0140	4.2	128	15 F	0104	4.7	143	15 F	0356	8.1	247
	0709	7.8	238		0824	8.3	253		0745	7.5	229		1113	0.5	15
	1438	2.1	64		1556	0.7	21		1524	0.9	27		1738	5.8	177
	2025	5.2	158		2229	5.7	174		2213	5.7	174		2222	3.9	119
				31 Th	0259	4.6	140						2222	3.9	119
					0917	8.4	256						2222	3.9	119
					1646	0.3	9						2222	3.9	119
					2325	6.0	183						2222	3.9	119

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Neah Bay, Washington, 2019

Times and Heights of High and Low Waters

October				November				December											
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height						
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm					
1 Tu	0213	7.7	235		16 W	0204	6.8	207		1 F	0402	6.7	204						
	0805	1.3	40			0731	2.7	82			0856	4.1	125		16 Sa	0334	6.6	201	
	1407	8.8	268			1329	8.1	247			1448	8.3	253			1407	8.6	262	
	2057	-0.7	-21			2031	0.0	0			2216	-0.4	-12			2142	-0.6	-18	
2 W	0308	7.1	216		17 Th	0246	6.5	198		2 Sa	0506	6.4	195		17 Su	0430	6.5	198	
	0843	2.2	67			0800	3.2	98			0946	4.5	137			0904	4.6	140	
	1447	8.6	262			1358	8.1	247			1533	7.6	232			1453	8.2	250	
	2150	-0.5	-15			2112	0.0	0			2311	0.2	6			2233	-0.3	-9	
3 Th	0409	6.5	198		18 F	0335	6.2	189		3 Su	0617	6.3	192		18 M	0533	6.5	198	
	0924	3.1	94			0833	3.7	113			1057	4.9	149			1009	4.8	146	
	1528	8.1	247			1431	8.0	244			1628	6.8	207			1550	7.7	235	
	2247	-0.2	-6			2159	0.1	3								2330	0.1	3	

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Port Townsend, Washington, 2019

Times and Heights of High and Low Waters

July				August				September															
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height												
	<small>h m ft cm</small>		<small>h m ft cm</small>		<small>h m ft cm</small>		<small>h m ft cm</small>		<small>h m ft cm</small>		<small>h m ft cm</small>												
1 M	0115 0836 1702 2051	8.3 -2.1 8.3 6.6	253 -64 253 201	16 Tu	0208 0921 1747 2212	7.7 -1.7 8.8 6.4	235 -52 268 195	1 Th	0235 0943 1746 2213	8.3 -2.8 8.8 5.7	253 -85 268 174	16 F	0337 1015 1801 2301	7.1 -0.3 8.2 4.8	216 -9 250 146	1 Su	0452 1056 1803 2335	7.9 -0.1 8.7 2.2	241 -3 265 67	16 M	0517 1059 1738 2330	7.1 2.3 7.9 2.1	216 70 241 64
2 Tu	0153 0917 1740 2141	8.3 -2.8 8.7 6.7	253 -85 265 204	17 W	0249 0958 1820 2257	7.5 -1.6 8.7 6.2	229 -49 265 189	2 F	0335 1030 1821 2307	8.1 -2.6 8.9 5.0	247 -79 271 152	17 Sa	0422 1050 1821 2338	6.9 0.1 8.1 4.3	210 3 247 131	2 M	0557 1143 1837	7.5 1.1 8.7	229 34 265	17 Tu	0606 1135 1803	7.0 3.1 7.8	213 94 238
3 W	0237 1000 1820 2234	8.3 -3.1 8.9 6.6	253 -94 271 201	18 Th	0332 1035 1851 2342	7.3 -1.4 8.6 5.9	223 -43 262 180	3 Sa	0437 1116 1856	7.8 -1.9 8.9	238 -58 271	18 Su	0508 1126 1842	6.7 0.7 8.1	204 21 247	3 Tu	0028 0707 1232 1912	1.4 7.2 2.4 8.5	43 219 73 259	18 W	0007 0659 1214 1830	1.6 7.0 3.9 7.7	49 213 119 235
4 Th	0327 1046 1900 2330	8.1 -3.1 9.1 6.3	247 -94 277 192	19 F	0416 1113 1918	7.0 -1.0 8.5	213 -30 259	4 Su	0004 0542 1203 1931	4.2 7.3 -0.9 8.9	128 223 -27 271	19 M	0017 0559 1202 1906	3.8 6.4 1.4 8.1	116 195 43 247	4 W	0124 0825 1325 1948	0.8 6.9 3.8 8.3	24 210 116 253	19 Th	0047 0759 1257 1859	1.1 6.9 4.8 7.5	34 210 146 229
5 F	0424 1133 1940	7.7 -2.7 9.1	235 -82 277	20 Sa	0029 0504 1151 1944	5.5 6.6 -0.4 8.4	168 201 -12 256	5 M	0106 0652 1251 2007	3.4 6.6 0.4 8.9	104 201 12 271	20 Tu	0059 0654 1238 1933	3.2 6.2 2.3 8.0	98 189 70 244	5 Th	0223 1001 1430 2028	0.5 6.8 4.9 7.9	15 207 149 241	20 F	0132 0910 1349 1929	0.7 6.9 5.6 7.3	21 210 171 223
6 Sa	0034 0527 1221 2019	5.8 7.2 -2.0 9.1	177 219 -61 277	21 Su	0119 0556 1230 2009	5.0 6.1 0.3 8.4	152 186 9 256	6 Tu	0210 0812 1341 2044	2.5 6.0 1.9 8.8	76 183 58 268	21 W	0143 0756 1317 2002	2.6 5.9 3.3 7.9	79 180 101 241	6 F	0325 1146 1556 2113	0.3 7.1 5.8 7.5	9 216 177 229	21 Sa	0224 1040 1459 2004	0.5 7.0 6.2 7.1	15 213 189 216
7 Su	0144 0638 1311 2059	5.0 6.5 -0.9 9.1	152 198 -27 277	22 M	0211 0653 1308 2035	4.5 5.7 1.2 8.3	137 174 37 253	7 W	0315 0950 1437 2122	1.6 5.7 3.4 8.5	49 174 104 259	22 Th	0230 0911 1401 2032	2.0 5.8 4.3 7.7	61 177 131 235	7 Sa	0429 1307 1746 2208	0.2 7.6 6.1 7.1	6 232 186 216	22 Su	0323 1217 1627 2053	0.2 7.3 6.4 7.0	6 223 195 213
8 M	0258 0757 1402 2137	4.0 5.7 0.4 9.0	122 174 12 274	23 Tu	0301 0759 1348 2103	3.8 5.2 2.2 8.2	116 158 67 250	8 Th	0419 1153 1544 2203	0.8 6.0 4.8 8.3	24 183 146 253	23 F	0321 1055 1458 2105	1.4 5.9 5.3 7.6	43 180 162 232	8 Su	0533 1405 1916 2314	0.3 8.1 5.9 6.8	9 247 180 207	23 M	0427 1319 1747 2205	0.0 7.7 6.3 6.9	0 235 192 210
9 Tu	0408 0932 1457 2215	2.9 5.2 1.9 8.9	88 158 58 271	24 W	0350 0919 1431 2133	3.0 4.9 3.3 8.1	91 149 101 247	9 F	0519 1330 1706 2247	0.2 6.8 5.7 8.0	6 207 174 244	24 Sa	0415 1305 1614 2144	0.7 6.4 6.0 7.5	21 195 183 229	9 M	0631 1451 2012	0.3 8.3 5.6	9 253 171	24 Tu	0531 1401 1843 2327	-0.3 8.0 5.8 7.0	-9 244 177 213
10 W	0509 1135 1558 2253	1.7 5.2 3.4 8.8	52 158 104 268	25 Th	0435 1111 1523 2204	2.1 5.0 4.3 8.0	64 152 131 244	10 Sa	0614 1436 1833 2336	-0.3 7.6 6.2 7.7	-9 232 189 235	25 Su	0511 1410 1733 2232	0.1 2.1 6.4 7.6	3 216 195 232	10 Tu	0025 0722 1528 2047	6.7 0.3 8.3 5.2	204 9 253 158	25 W	0630 1435 1927	-0.5 8.3 5.1	-15 253 155
11 Th	0601 1329 1706 2332	0.6 5.9 4.7 8.6	18 180 143 262	26 F	0518 1337 1629 2238	1.2 5.7 5.3 8.0	37 174 162 244	11 Su	0703 1525 1950	-0.6 8.1 6.3	-18 247 192	26 M	0606 1451 1839 2333	-0.6 7.6 6.4 7.7	-18 232 195 235	11 W	0127 0805 1558 2111	6.8 0.4 8.3 4.8	207 12 253 146	26 Th	0046 0725 1506 2009	7.2 -0.5 8.4 4.1	219 -15 256 125
12 F	0647 1445 1817	-0.3 6.9 5.6	-9 210 171	27 Sa	0601 1444 1740 2315	0.3 6.6 6.0 8.0	9 201 183 244	12 M	0028 0747 1606 2046	7.5 -0.8 8.4 6.1	229 -24 256 186	27 Tu	0659 1525 1932	-1.2 8.0 6.1	-37 244 186	12 Th	0219 0843 1622 2132	6.9 0.6 8.1 4.3	210 18 247 131	27 F	0157 0815 1535 2052	7.6 -0.3 8.5 3.0	232 -9 259 91
13 Sa	0010 0729 1542 1926	8.4 -1.0 7.8 6.2	256 -30 238 189	28 Su	0644 1527 1845 2357	-0.7 7.3 6.4 8.1	-21 223 195 247	13 Tu	0120 0827 1642 2125	7.4 -0.8 8.5 5.9	226 -24 259 180	28 W	0038 0750 1556 2020	7.8 -1.7 8.3 5.6	238 -52 253 171	13 F	0305 0918 1641 2157	7.0 0.8 8.0 3.8	213 24 244 116	28 Sa	0303 0902 1605 2135	7.8 0.3 8.6 1.9	238 9 262 58
14 Su	0049 0807 1629 2029	8.2 -1.5 8.3 6.5	250 -46 253 198	29 M	0728 1603 1942	-1.5 7.9 6.6	-46 241 201	14 W	0208 0905 1712 2156	7.3 -0.8 8.4 5.6	223 -24 256 171	29 Th	0143 0838 1627 2106	8.0 -1.8 8.5 4.8	244 -55 259 146	14 Sa	0348 0951 1657 2225	7.1 1.2 7.9 3.2	216 37 241 98	29 Su	0406 0948 1635 2220	8.0 1.2 8.7 0.9	244 37 265 27
15 M	0128 0844 1710 2124	8.0 -1.7 8.6 6.5	244 -52 262 198	30 Tu	0045 0812 1637 2033	8.2 -2.2 8.3 6.5	250 -67 253 198	15 Th	0254 0940 1739 2228	7.2 -0.6 8.3 5.2	219 -18 253 158	30 F	0246 0925 1659 2154	8.1 -1.7 8.6 4.0	247 -52 262 122	15 Su	0431 1025 1716 2256	7.1 1.7 7.9 2.7	216 52 241 82	30 M	0509 1035 1706 2306	8.1 2.2 8.6 0.1	247 67 262 3
				31 W	0139 0858 1711 2122	8.3 -2.7 8.6 6.1	253 -82 262 186						31 Sa	0349 1011 1731 2243	8.1 -1.1 8.7 3.1	247 -34 265 94							

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Seattle, Washington, 2019

Times and Heights of High and Low Waters

April				May				June																					
	Time		Height			Time		Height			Time		Height			Time		Height											
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm		h	m	ft	cm										
1 M	0324	10.8	329		16 Tu	0236	11.5	351		1 W	0238	10.7	326		16 Th	0223	11.8	360		1 Sa	0231	10.9	332		16 Su	0256	11.2	341	
	0932	4.9	149			0847	3.8	116			0916	2.8	85			0907	0.4	12			0927	-0.5	-15			1001	-2.2	-67	
	1434	8.8	268			1415	9.7	296			1511	8.8	268			1533	9.9	302			1634	10.2	311			1734	11.4	347	
	2047	1.6	49			2030	0.7	21			2050	3.4	104			2102	3.7	113			2143	6.2	189			2242	6.8	207	
2 Tu	0348	10.8	329		17 W	0311	11.8	360		2 Th	0303	10.8	329		17 F	0258	11.8	360		2 Su	0301	10.9	332		17 M	0333	10.8	329	
	0957	4.2	128			0928	2.4	73			0939	1.9	58			0945	-0.8	-24			1001	-1.5	-46			1038	-2.4	-73	
	1520	9.2	280			1518	10.3	314			1556	9.4	287			1631	10.6	323			1716	10.8	329			1816	11.7	357	
	2127	1.7	52			2122	1.3	40			2130	3.9	119			2155	4.6	140			2228	6.7	204			2333	7.0	213	
3 W	0407	10.9	332		18 Th	0344	11.9	363		3 F	0327	10.8	329		18 Sa	0332	11.7	357		3 M	0334	10.9	332		18 Tu	0412	10.4	317	
	1019	3.5	107			1007	1.0	30			1004	0.9	27			1023	-1.7	-52			1037	-2.3	-70			1116	-2.3	-70	
	1601	9.6	293			1616	10.8	329			1637	9.9	302			1724	11.2	341			1759	11.4	347			1855	11.8	360	
	2203	2.1	64			2211	2.1	64			2210	4.4	134			2246	5.4	165			2315	7.0	213			2422	8.3	254	

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Seattle, Washington, 2019

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	h m	ft	h m	ft	h m	ft	h m	ft	h m	ft
1 M	0221 10.9 332 0933 -2.2 -67 1708 11.1 338 2210 7.4 226	16 Tu	0317 10.3 314 1019 -1.9 -58 1804 11.6 354 2326 6.9 210	1 Th	0338 11.1 338 1041 -3.1 -94 1800 12.0 366 2328 6.1 186	16 F	0436 9.7 296 1112 -0.4 -12 1815 11.1 338	1 Su	0532 11.1 338 1156 -0.5 -15 1829 12.1 369	16 M	0553 9.9 302 1156 2.4 73 1809 10.8 329
2 Tu	0302 11.0 335 1014 -3.0 -91 1749 11.6 354 2259 7.4 226	17 W	0358 10.0 305 1056 -1.7 -52 1834 11.6 354	2 F	0432 11.1 338 1128 -2.9 -88 1838 12.2 372	17 Sa	0005 5.1 155 0516 9.6 293 1147 0.0 0 1838 11.2 341	2 M	0038 2.1 64 0631 10.8 329 1243 0.9 27 1907 12.0 366	17 Tu	0026 2.0 61 0635 9.9 302 1232 3.3 101 1837 10.7 326
3 W	0346 11.0 335 1058 -3.4 -104 1830 12.0 366 2349 7.2 219	18 Th	0005 6.7 204 0440 9.7 296 1133 -1.4 -43 1900 11.5 351	3 Sa	0017 5.3 162 0529 10.8 329 1214 -2.2 -67 1916 12.3 375	18 Su	0035 4.6 140 0558 9.4 287 1221 0.7 21 1905 11.2 341	3 Tu	0128 1.3 40 0734 10.3 314 1332 2.4 73 1946 11.7 357	18 W	0101 1.5 46 0721 9.8 299 1310 4.2 128 1906 10.4 317
4 Th	0435 10.8 329 1144 -3.4 -104 1911 12.2 372	19 F	0042 6.4 195 0523 9.4 287 1210 -1.0 -30 1927 11.5 351	4 Su	0108 4.4 134 0629 10.3 314 1302 -1.1 -34 1955 12.3 375	19 M	0109 4.0 122 0643 9.2 280 1257 1.6 49 1933 11.1 338	4 W	0219 0.7 21 0844 9.9 302 1426 4.1 125 2029 11.2 341	19 Th	0141 1.0 30 0813 9.7 296 1352 5.3 162 1938 10.1 308
5 F	0040 6.7 204 0528 10.5 320 1231 -3.0 -91 1954 12.4 378	20 Sa	0119 6.0 183 0607 9.0 274 1247 -0.4 -12 1956 11.5 351	5 M	0202 3.5 107 0734 9.7 296 1350 0.5 15 2035 12.2 372	20 Tu	0146 3.4 104 0732 8.9 271 1333 2.6 79 2004 10.9 332	5 Th	0314 0.5 15 1005 9.5 290 1530 5.5 168 2117 10.5 320	20 F	0225 0.8 24 0913 9.6 293 1442 6.2 189 2014 9.7 296
6 Sa	0135 6.1 186 0627 10.0 305 1319 -2.2 -67 2037 12.4 378	21 Su	0159 5.5 168 0655 8.6 262 1325 0.5 15 2028 11.4 347	6 Tu	0259 2.6 79 0846 9.1 277 1442 2.3 70 2118 11.9 363	21 W	0228 2.8 85 0827 8.6 262 1413 3.9 119 2037 10.7 326	6 F	0414 0.4 12 1142 9.6 293 1657 6.6 201 2214 9.8 299	21 Sa	0315 0.6 18 1024 9.5 290 1547 7.0 213 2101 9.3 283
7 Su	0234 5.3 162 0733 9.3 283 1409 -0.9 -27 2120 12.4 378	22 M	0241 4.9 149 0748 8.2 250 1403 1.5 46 2101 11.3 344	7 W	0359 1.7 52 1010 8.6 262 1540 4.1 125 2203 11.5 351	22 Th	0313 2.2 67 0931 8.4 256 1458 5.1 155 2113 10.3 314	7 Sa	0519 0.5 15 1317 10.0 305 1843 6.8 207 2321 9.3 283	22 Su	0414 0.5 15 1148 9.7 296 1716 7.4 226 2206 9.0 274
8 M	0337 4.4 134 0847 8.6 262 1502 0.7 21 2204 12.3 375	23 Tu	0327 4.3 131 0849 7.7 235 1444 2.8 85 2136 11.1 338	8 Th	0501 1.0 30 1152 8.7 265 1653 5.6 171 2253 11.0 335	23 F	0404 1.7 52 1049 8.4 256 1555 6.3 192 2155 10.0 305	8 Su	0624 0.5 15 1426 10.5 320 2004 6.5 198	23 M	0519 0.3 9 1308 10.1 308 1846 7.2 219 2323 9.0 274
9 Tu	0442 3.2 98 1013 8.0 244 1600 2.5 76 2249 12.1 369	24 W	0415 3.5 107 1000 7.5 229 1529 4.1 125 2213 10.9 332	9 F	0603 0.4 12 1336 9.3 283 1824 6.6 201 2348 10.6 323	24 Sa	0500 1.1 34 1221 8.8 268 1714 7.2 219 2246 9.8 299	9 M	0032 9.0 274 0725 0.4 12 1515 10.8 329 2059 5.9 180	24 Tu	0626 -0.1 -3 1406 10.6 323 1949 6.4 195
10 W	0545 2.0 61 1151 8.0 244 1706 4.2 128 2335 11.8 360	25 Th	0506 2.6 79 1124 7.6 232 1625 5.4 165 2253 10.7 326	10 Sa	0702 -0.2 -6 1453 10.1 308 1953 6.9 210	25 Su	0600 0.4 12 1350 9.4 287 1843 7.5 229 2345 9.8 299	10 Tu	0137 9.1 277 0817 0.3 9 1553 11.0 335 2139 5.4 165	25 W	0038 9.4 287 0728 -0.4 -12 1448 11.0 335 2036 5.4 165
11 Th	0642 0.8 24 1335 8.6 262 1822 5.6 171	26 F	0557 1.7 52 1258 8.1 247 1735 6.5 198 2335 10.5 320	11 Su	0044 10.2 311 0755 -0.6 -18 1548 10.8 329 2102 6.8 207	26 M	0659 -0.4 -12 1450 10.1 308 1956 7.3 223	11 W	0231 9.2 280 0902 0.3 9 1621 11.0 335 2211 4.9 149	26 Th	0145 9.9 302 0824 -0.6 -18 1524 11.4 347 2119 4.2 128
12 F	0021 11.5 351 0734 -0.3 -9 1458 9.6 293 1941 6.5 198	27 Sa	0647 0.6 18 1423 8.9 271 1854 7.2 219	12 M	0139 10.0 305 0842 -0.8 -24 1631 11.1 338 2153 6.5 198	27 Tu	0047 10.0 305 0755 -1.2 -37 1533 10.7 326 2050 6.8 207	12 Th	0316 9.4 287 0941 0.4 12 1643 10.9 332 2237 4.4 134	27 F	0246 10.5 320 0915 -0.6 -18 1557 11.7 357 2200 2.9 88
13 Sa	0107 11.2 341 0820 -1.1 -34 1600 10.5 320 2052 6.9 210	28 Su	0020 10.5 320 0735 -0.5 -15 1523 9.8 299 2005 7.5 229	13 Tu	0229 9.8 299 0924 -0.9 -27 1705 11.3 344 2233 6.2 189	28 W	0146 10.4 317 0847 -1.8 -55 1610 11.2 341 2136 6.0 183	13 F	0356 9.6 293 1016 0.7 21 1701 10.9 332 2301 3.9 119	28 Sa	0343 11.0 335 1003 -0.1 -3 1630 11.9 363 2241 1.7 52
14 Su	0151 10.9 332 0902 -1.6 -49 1649 11.1 338 2152 7.1 216	29 M	0107 10.6 323 0822 -1.5 -46 1608 10.6 323 2103 7.5 229	14 W	0315 9.8 299 1002 -0.9 -27 1732 11.2 341 2306 5.9 180	29 Th	0243 10.8 329 0936 -2.1 -64 1644 11.6 354 2220 5.1 155	14 Sa	0435 9.7 296 1049 1.1 34 1721 10.9 332 2326 3.3 101	29 Su	0439 11.3 344 1050 0.8 24 1704 12.0 366 2324 0.6 18
15 M	0235 10.6 323 0942 -1.8 -55 1730 11.5 351 2242 7.0 213	30 Tu	0156 10.8 329 0909 -2.3 -70 1646 11.2 341 2153 7.2 219	15 Th	0356 9.7 296 1038 -0.7 -21 1754 11.2 341 2336 5.5 168	30 F	0339 11.1 338 1023 -2.1 -64 1718 11.9 363 2305 4.1 125	15 Su	0513 9.8 299 1123 1.7 52 1744 10.9 332 2354 2.7 82	30 M	0536 11.4 347 1137 1.9 58 1740 11.9 363
		31 W	0247 11.0 335 0955 -2.9 -88 1723 11.7 357 2240 6.7 204			31 Sa	0435 11.2 341 1110 -1.5 -46 1753 12.1 369 2351 3.0 91				

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Cherry Point, Washington, 2019

Times and Heights of High and Low Waters

April				May				June			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
	h m ft cm		h m ft cm		h m ft cm		h m ft cm		h m ft cm		h m ft cm
1 M	0353 8.6 262 0955 4.7 143 1433 6.4 195 2106 1.4 43	16 Tu	0310 9.1 277 0917 3.8 116 1432 7.0 213 2049 0.9 27	1 W	0304 8.4 256 0943 2.7 82 1534 6.4 195 2103 3.2 98	16 Th	0245 9.2 280 0937 0.6 18 1611 7.4 226 2118 3.9 119	1 Sa	0236 8.4 256 0957 -0.4 -12 1721 7.9 241 2158 5.8 177	16 Su	0253 8.7 265 1029 -2.0 -61 1819 9.2 280 2304 6.7 204
2 Tu	0418 8.6 262 1021 4.1 125 1529 6.7 204 2146 1.7 52	17 W	0342 9.2 280 0957 2.5 76 1545 7.5 229 2142 1.6 49	2 Th	0326 8.3 253 1008 1.8 55 1627 6.9 210 2146 3.7 113	17 F	0315 9.1 277 1015 -0.5 -15 1714 8.1 247 2213 4.7 143	2 Su	0300 8.4 256 1028 -1.3 -40 1806 8.6 262 2249 6.3 192	17 M	0324 8.4 256 1105 -2.1 -64 1902 9.6 293
3 W	0439 8.5 259 1046 3.5 107 1619 7.0 213 2222 2.0 61	18 Th	0413 9.2 280 1037 1.3 40 1650 8.0 244 2232 2.5 76	3 F	0347 8.2 250 1034 0.9 27 1715 7.5 229 2228 4.3 131	18 Sa	0344 8.9 271 1052 -1.3 -40 1809 8.8 268 2308 5.5 168	3 M	0327 8.4 256 1102 -2.0 -61 1850 9.1 277 2341 6.6 201	18 Tu	0001 6.9 210 0355 8.0 244 1140 -2.0 -61 1941 9.7 296
4 Th	0458 8.5 259 1111 2.7 82 1706 7.3 223 2257 2.5 76	19 F	0442 9.1 277 1116 0.3 9 1751 8.4 256 2321 3.4 104	4 Sa	0408 8.2 250 1101 0.1 3 1802 8.0 244 2310 4.8 146	19 Su	0413 8.6 262 1128 -1.8 -55 1901 9.2 280	4 Tu	0358 8.3 253 1141 -2.4 -73 1935 9.5 290	19 W	0057 6.8 207 0428 7.7 235 1216 -1.8 -55 2019 9.8 299
5 F	0517 8.4 256 1138 2.0 61 1752 7.6 232 2332 3.1 94	20 Sa	0510 8.9 271 1155 -0.5 -15 1849 8.7 265	5 Su	0429 8.1 247 1131 -0.6 -18 1848 8.5 259 2354 5.4 165	20 M	0003 6.0 183 0440 8.3 253 1205 -1.9 -58 1949 9.5 290	5 W	0034 6.8 207 0435 8.2 250 1222 -2.6 -79 2021 9.8 299	20 Th	0152 6.7 204 0505 7.3 223 1253 -1.3 -40 2056 9.7 296
6 Sa	0537 8.3 253 1207 1.3 40 1839 7.8 238	21 Su	0010 4.3 131 0538 8.6 262 1234 -1.0 -30 1946 8.9 271	6 M	0451 8.1 247 1205 -1.2 -37 1936 8.8 268	21 Tu	0100 6.4 195 0508 7.9 241 1242 -1.8 -55 2037 9.6 293	6 Th	0132 6.9 210 0517 8.0 244 1307 -2.5 -76 2109 9.9 302	21 F	0248 6.4 195 0545 6.9 210 1330 -0.7 -21 2132 9.5 290
7 Su	0009 3.7 113 0557 8.2 250 1238 0.6 18 1929 8.0 244	22 M	0102 5.1 155 0606 8.3 253 1314 -1.1 -34 2044 9.0 274	7 Tu	0041 5.9 180 0517 8.0 244 1243 -1.6 -49 2027 9.1 277	22 W	0201 6.5 198 0537 7.4 226 1320 -1.4 -43 2124 9.5 290	7 F	0236 6.7 204 0606 7.6 232 1355 -2.1 -64 2156 9.9 302	22 Sa	0346 6.0 183 0632 6.3 192 1409 0.0 0 2207 9.3 283
8 M	0048 4.4 134 0617 8.1 247 1313 0.1 3 2022 8.1 247	23 Tu	0159 5.8 177 0633 7.8 238 1356 -0.9 -27 2143 9.0 274	8 W	0133 6.3 192 0546 7.9 241 1325 -1.7 -52 2121 9.2 280	23 Th	0309 6.5 198 0607 7.0 213 1401 -0.8 -24 2211 9.4 287	8 Sa	0347 6.3 192 0706 7.0 213 1445 -1.3 -40 2242 9.8 299	23 Su	0445 5.4 165 0733 5.8 177 1448 0.8 24 2240 9.2 280
9 Tu	0132 5.2 158 0639 8.0 244 1353 -0.3 -9 2122 8.2 250	24 W	0304 6.2 189 0700 7.3 223 1439 -0.5 -15 2244 8.9 271	9 Th	0233 6.6 201 0621 7.7 235 1412 -1.6 -49 2218 9.2 280	24 F	0425 6.2 189 0639 6.4 195 1443 -0.1 -3 2257 9.2 280	9 Su	0500 5.5 168 0828 6.2 189 1539 -0.2 -6 2325 9.8 299	24 M	0540 4.7 143 0901 5.2 158 1529 1.8 55 2311 9.0 274
10 W	0222 5.8 177 0705 7.9 241 1438 -0.5 -15 2229 8.3 253	25 Th	0425 6.3 192 0728 6.8 207 1527 0.1 3 2346 8.8 268	10 F	0346 6.6 201 0704 7.3 223 1505 -1.2 -37 2316 9.2 280	25 Sa	1530 0.7 21 2341 9.0 274	10 M	0608 4.4 134 1018 5.6 171 1636 1.1 34	25 Tu	0627 3.8 116 1050 4.9 149 1614 2.9 88 2341 8.8 268
11 Th	0324 6.4 195 0737 7.6 232 1531 -0.6 -18 2342 8.4 256	26 F	0610 6.1 186 0800 6.2 189 1622 0.7 21	11 Sa	0511 6.3 192 0805 6.7 204 1603 -0.6 -18	26 Su	0658 5.1 155 0906 5.2 158 1620 1.5 46	11 Tu	0006 9.7 296 0704 3.0 91 1213 5.4 165 1738 2.5 76	26 W	0706 2.9 88 1241 5.0 152 1707 3.9 119
12 F	0446 6.6 201 0821 7.3 223 1633 -0.4 -12	27 Sa	0044 8.7 265 1722 1.3 40	12 Su	0010 9.3 283 0631 5.5 168 0947 6.1 186 1707 0.2 6	27 M	0020 8.9 271 0736 4.3 131 1115 4.9 149 1716 2.4 73	12 W	0043 9.5 290 0753 1.6 49 1400 6.0 183 1845 3.8 116	27 Th	0009 8.7 265 0741 1.8 55 1421 5.7 174 1812 4.9 149
13 Sa	0052 8.6 262 0623 6.5 198 0933 6.9 210 1741 -0.2 -6	28 Su	0132 8.6 262 0826 4.9 149 1140 5.3 162 1826 1.8 55	13 M	0057 9.3 283 0731 4.5 137 1148 5.8 177 1813 1.1 34	28 Tu	0054 8.7 265 0807 3.4 104 1302 5.0 152 1815 3.2 98	13 Th	0118 9.4 287 0835 0.3 9 1528 6.9 210 1954 4.9 149	28 F	0036 8.6 262 0814 0.8 24 1537 6.6 201 1922 5.7 174
14 Su	0148 8.8 268 0740 5.8 177 1123 6.6 201 1849 0.0 0	29 M	0210 8.6 262 0853 4.2 128 1318 5.5 168 1925 2.3 70	14 Tu	0137 9.3 283 0818 3.2 98 1332 6.0 183 1919 2.0 61	29 W	0123 8.6 262 0834 2.5 76 1430 5.6 171 1915 3.9 119	14 F	0151 9.2 280 0915 -0.7 -21 1636 7.8 238 2100 5.8 177	29 Sa	0103 8.5 259 0847 -0.3 -9 1632 7.5 229 2030 6.4 195
15 M	0233 9.0 274 0833 4.9 149 1307 6.7 204 1952 0.4 12	30 Tu	0240 8.5 259 0918 3.5 107 1433 5.9 180 2017 2.7 82	15 W	0213 9.3 283 0859 1.8 55 1459 6.6 201 2020 3.0 91	30 Th	0149 8.5 259 0901 1.5 46 1538 6.3 192 2012 4.6 140	15 Sa	0222 9.0 274 0953 -1.5 -46 1731 8.6 262 2204 6.4 195	30 Su	0133 8.5 259 0922 -1.2 -37 1717 8.3 253 2132 6.8 207
						31 F	0213 8.4 256 0928 0.5 15 1633 7.1 216 2106 5.3 162				

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
 Heights are referred to mean lower low water which is the chart datum of soundings.

Cherry Point, Washington, 2019

Times and Heights of High and Low Waters

October				November				December											
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height						
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm					
1 Tu	0036	0.3	9		16 W	0014	0.5	15		1 F	0130	-1.2	-37						
	0715	8.7	265			0717	8.3	253			0920	9.6	293		16 Sa	0057	-1.3	-40	
	1251	3.6	110			1238	4.9	149			1452	6.4	195			0856	9.6	293	
	1836	8.7	265			1748	7.9	241			1839	7.5	229			1417	6.9	210	
													1748	7.8		238			
2 W	0122	-0.2	-6		17 Th	0047	0.1	3		2 Sa	0216	-0.7	-21		17 Su	0141	-1.2	-37	
	0820	8.7	265			0807	8.5	259			1020	9.5	290			0948	9.6	293	
	1344	4.6	140			1322	5.5	168			1615	6.5	198			1526	6.9	210	
	1908	8.4	256			1809	7.7	235			1912	6.9	210			1829	7.4	226	
3 Th	0209	-0.4	-12		18 F	0124	-0.2	-6		3 Su	0304	0.0	0		18 M	0230	-0.8	-24	
	0929	8.6	262			0901	8.6	262			1120	9.4	287			1041	9.6	293	
	1445	5.5	168			1412	6.1	186			1756	6.1	186			1646	6.6	201	
	1941	7.9	241			1834	7.6	232			1957	6.2	189			1925	6.9	210	

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Vancouver, British Columbia, 2019

Times and Heights of High and Low Waters

April				May				June			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	h m	ft	h m	ft	h m	ft	h m	ft	h m	ft
1 M	0355 14.1 430 1009 8.5 260 1518 11.5 350 2139 5.6 170	16 Tu	0322 15.1 460 0942 7.2 220 1508 12.5 380 2126 4.9 150	1 W	0324 13.8 420 1005 6.6 200 1604 11.8 360 2141 7.2 220	16 Th	0310 15.1 460 1003 3.9 120 1627 13.1 400 2156 7.9 240	1 Sa	0314 13.8 420 1030 3.3 100 1728 13.5 410 2232 9.8 300	16 Su	0337 14.1 430 1102 1.6 50 1819 14.8 450 2327 10.5 320
2 Tu	0427 14.1 430 1040 7.9 240 1608 12.1 370 2221 5.6 170	17 W	0359 15.1 460 1025 5.9 180 1615 13.1 400 2218 5.2 160	2 Th	0352 13.8 420 1035 5.6 170 1649 12.5 380 2223 7.9 240	17 F	0346 14.8 450 1044 3.0 90 1725 13.8 420 2248 8.5 260	2 Su	0345 13.8 420 1106 2.6 80 1813 14.1 430 2316 10.2 310	17 M	0415 13.8 420 1142 1.6 50 1902 14.8 450
3 W	0455 14.1 430 1110 7.2 220 1651 12.5 380 2258 5.9 180	18 Th	0435 15.1 460 1108 4.6 140 1714 13.8 420 2307 6.2 190	3 F	0418 13.8 420 1105 4.6 140 1732 13.1 400 2302 8.2 250	18 Sa	0420 14.8 450 1125 2.3 70 1818 14.4 440 2337 9.5 290	3 M	0417 14.1 430 1143 1.6 50 1857 14.8 450	18 Tu	0016 10.8 330 0451 13.5 410 1221 1.6 50 1943 15.1 460
4 Th	0519 14.1 430 1139 6.6 200 1732 13.1 400 2332 6.2 190	19 F	0509 15.1 460 1149 3.6 110 1810 14.1 430 2353 7.2 220	4 Sa	0443 13.8 420 1137 3.9 120 1815 13.8 420 2341 8.9 270	19 Su	0454 14.4 440 1204 1.6 50 1908 14.8 450	4 Tu	0002 10.5 320 0451 14.1 430 1223 1.3 40 1943 15.1 460	19 W	0103 10.8 330 0528 13.1 400 1259 2.0 60 2022 15.1 460
5 F	0542 14.1 430 1210 5.9 180 1813 13.5 410	20 Sa	0541 15.1 460 1230 3.0 90 1904 14.4 440	5 Su	0509 13.8 420 1210 3.0 90 1859 14.1 430	20 M	0026 9.8 300 0527 13.8 420 1244 1.6 50 1956 15.1 460	5 W	0050 10.8 330 0529 13.8 420 1304 1.0 30 2029 15.1 460	20 Th	0153 10.8 330 0605 12.8 390 1334 2.3 70 2101 15.1 460
6 Sa	0006 6.9 210 0605 14.1 430 1242 4.9 150 1856 13.5 410	21 Su	0039 8.2 250 0613 14.4 440 1311 2.3 70 1959 14.4 440	6 M	0020 9.5 290 0536 13.8 420 1246 2.6 80 1946 14.4 440	21 Tu	0115 10.5 320 0600 13.5 410 1322 2.0 60 2043 15.1 460	6 Th	0144 10.8 330 0613 13.5 410 1348 1.3 40 2116 15.4 470	21 F	0246 10.5 320 0646 12.1 370 1409 3.0 90 2138 14.8 450
7 Su	0041 7.5 230 0629 13.8 420 1315 4.3 130 1942 13.8 420	22 M	0126 9.2 280 0645 14.1 430 1352 2.3 70 2056 14.4 440	7 Tu	0103 9.8 300 0605 13.8 420 1323 2.0 60 2035 14.8 450	22 W	0209 10.5 320 0633 12.8 390 1401 2.3 70 2130 14.8 450	7 F	0246 10.8 330 0705 12.8 390 1435 1.6 50 2203 15.4 470	22 Sa	0345 10.2 310 0733 11.5 350 1444 3.9 120 2215 14.8 450
8 M	0118 8.5 260 0654 13.8 420 1351 3.9 120 2033 13.8 420	23 Tu	0218 9.8 300 0716 13.5 410 1433 2.6 80 2153 14.4 440	8 W	0151 10.5 320 0636 13.5 410 1405 2.0 60 2128 14.8 450	23 Th	0311 10.8 330 0708 12.1 370 1439 3.0 90 2216 14.8 450	8 Sa	0357 10.2 310 0809 12.1 370 1524 2.6 80 2251 15.4 470	23 Su	0446 9.8 300 0831 10.8 330 1520 4.9 150 2249 14.4 440
9 Tu	0159 9.2 280 0720 13.5 410 1429 3.6 110 2130 13.8 420	24 W	0321 10.5 320 0749 12.5 380 1515 3.3 100 2251 14.4 440	9 Th	0249 10.8 330 0714 12.8 390 1450 2.3 70 2224 14.8 450	24 F	0424 10.5 320 0750 11.5 350 1518 3.9 120 2302 14.8 450	9 Su	0510 9.5 290 0927 11.5 350 1617 3.9 120 2337 15.4 470	24 M	0545 8.9 270 0944 10.2 310 1559 6.2 190 2323 14.4 440
10 W	0248 10.2 310 0750 13.1 400 1513 3.3 100 2235 14.1 430	25 Th	0442 10.5 320 0825 11.8 360 1600 3.9 120 2348 14.4 440	10 F	0402 10.8 330 0804 12.1 370 1540 2.6 80 2320 15.1 460	25 Sa	0542 10.2 310 0846 10.5 320 1600 4.9 150 2347 14.4 440	10 M	0618 8.2 250 1059 10.8 330 1716 5.2 160	25 Tu	0636 7.9 240 1116 9.8 300 1646 7.2 220 2356 14.1 430
11 Th	0351 10.5 320 0826 12.8 390 1603 3.3 100 2343 14.1 430	26 F	0617 10.5 320 0915 10.8 330 1651 4.9 150	11 Sa	0526 10.5 320 0914 11.5 350 1638 3.6 110	26 Su	0649 9.2 280 1006 9.8 300 1647 5.9 180	11 Tu	0021 15.4 470 0716 6.9 210 1242 10.8 330 1820 6.6 200	26 W	0720 6.9 210 1308 10.2 310 1743 8.5 260
12 F	0516 10.8 330 0919 12.1 370 1702 3.6 110	27 Sa	0043 14.1 430 0735 9.8 300 1033 10.2 310 1748 5.6 170	12 Su	0015 15.1 460 0644 9.5 290 1046 10.8 330 1741 4.3 130	27 M	0029 14.1 430 0738 8.5 260 1153 9.8 300 1743 6.9 210	12 W	0103 15.1 460 0807 5.2 160 1418 11.5 350 1930 7.9 240	27 Th	0030 14.1 430 0759 5.9 180 1436 11.2 340 1853 9.5 290
13 Sa	0050 14.4 440 0651 10.5 320 1038 11.5 350 1809 3.9 120	28 Su	0132 14.1 430 0826 8.9 270 1225 10.2 310 1852 6.2 190	13 M	0105 15.1 460 0745 8.2 250 1228 10.8 330 1849 5.2 160	28 Tu	0107 14.1 430 0817 7.5 230 1343 10.2 310 1848 7.5 230	13 Th	0143 14.8 450 0854 3.9 120 1535 12.5 380 2038 9.2 280	28 F	0104 13.8 420 0838 4.9 150 1540 12.1 370 2005 10.2 310
14 Su	0149 14.4 440 0803 9.8 300 1212 11.5 350 1920 4.3 130	29 M	0216 14.1 430 0902 8.2 250 1406 10.5 320 1956 6.6 200	14 Tu	0151 15.1 460 0835 6.9 210 1404 11.2 340 1957 6.2 190	29 W	0142 14.1 430 0851 6.6 200 1458 10.8 330 1954 8.5 260	14 F	0222 14.8 450 0938 3.0 90 1638 13.5 410 2140 9.8 300	29 Sa	0139 13.8 420 0917 3.9 120 1632 13.1 400 2109 10.5 320
15 M	0239 14.8 450 0856 8.5 260 1347 11.8 360 2026 4.3 130	30 Tu	0253 14.1 430 0934 7.2 220 1513 11.2 340 2052 6.9 210	15 W	0232 15.1 460 0920 5.6 170 1523 12.1 370 2059 6.9 210	30 Th	0214 13.8 420 0924 5.6 170 1554 11.8 360 2053 8.9 270	15 Sa	0259 14.4 440 1021 2.3 70 1732 14.1 430 2236 10.5 320	30 Su	0216 13.8 420 0957 2.6 80 1719 13.8 420 2205 10.8 330
						31 F	0244 13.8 420 0956 4.6 140 1643 12.8 390 2145 9.5 290				

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
 Heights are referred to the Canadian chart datum of soundings. Subtract 3.8 feet (116 centimeters) to refer these levels to the datum of N.O.S. charts.

Ketchikan, Alaska, 2019

Times and Heights of High and Low Waters

January				February				March																					
	Time		Height			Time		Height			Time		Height																
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm	h	m	ft	cm											
1 Tu	0239	3.9	119		16 W	0131	5.1	155		1 F	0416	5.2	158		16 Sa	0324	5.0	152		1 F	0259	6.0	183		16 Sa	0150	5.7	174	
	0903	15.8	482			0806	14.5	442			1023	15.2	463			0940	15.8	482			0906	13.3	405			0810	13.9	424	
	1547	1.2	37			1457	2.3	70			1707	0.4	12			1626	-0.8	-24			1559	1.9	58			1504	0.8	24	
	2206	12.9	393			2112	11.7	357			2336	13.4	408			2253	13.8	421			2233	12.2	372			2136	12.5	381	
2 W	0338	4.2	128		17 Th	0241	5.1	155		2 Sa	0504	4.7	143		17 Su	0427	3.8	116		2 Sa	0403	5.3	162		17 Su	0313	4.6	140	
	0954	16.2	494			0905	15.4	469			1108	15.6	475			1038	17.1	521			1006	13.9	424			0925	15.0	457	
	1637	0.2	6			1554	0.7	21			1746	-0.2	-6			1716	-2.3	-70			1647	1.1	34			1604	-0.6	-18	
	2301	13.5	411			2216	12.8	390								2341	15.2	463			2315	13.0	396			2232	14.0	427	
3 Th	0430	4.2	128		18 F	0344	4.7	143		3 Su	0014	14.0	427		18 M	0521	2.3	70		3 Su	0451	4.4	134		18 M	0417	2.9	88	
	1039	16.5	503			1000	16.5	503			0545	4.1	125			1131	18.2	555			1052	14.6	445			1027	16.3	497	
	1721	-0.4	-12			1645	-0.9	-27			1223	16.0	488			1802	-3.4	-104			1725	0.4	12			1655	-1.9	-58	
	2347	14.0	427			2310	14.0	427			1821	-0.7	-21								2350	13.8	421			2318	15.5	472	

Time meridian 135° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Ketchikan, Alaska, 2019

Times and Heights of High and Low Waters

April				May				June			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	h m	ft	h m	ft	h m	ft	h m	ft	h m	ft
1 M	0428 3.9 119 1027 13.5 411 1651 1.1 34 2314 13.7 418	16 Tu	0404 1.9 58 1013 15.3 466 1628 -1.0 -30 2250 16.0 488	1 W	0434 2.2 67 1036 13.2 402 1641 1.6 49 2259 14.6 445	16 Th	0440 -0.6 -18 1053 14.8 451 1646 0.3 9 2302 17.2 524	1 Sa	0515 -0.5 -15 1130 13.5 411 1710 2.5 76 2323 16.2 494	16 Su	0554 -2.3 -70 1220 14.3 436 1753 2.5 76 ○
2 Tu	0506 2.7 82 1108 14.3 436 1724 0.6 18 2343 14.5 442	17 W	0456 0.0 0 1107 16.2 494 1714 -1.4 -43 2331 17.2 524	2 Th	0510 1.0 30 1116 13.9 424 1714 1.4 43 2330 15.4 469	17 F	0526 -1.9 -58 1144 15.3 466 1730 0.5 15 2343 17.7 539	2 Su	0553 -1.6 -49 1212 14.1 430 1749 2.4 73	17 M	0000 17.0 518 0635 -2.5 -76 1304 14.4 439 1834 2.7 82
3 W	0540 1.6 49 1144 14.9 454 1754 0.2 6	18 Th	0542 -1.5 -46 1156 16.8 512 1756 -1.5 -46	3 F	0544 -0.2 -6 1154 14.4 439 1746 1.3 40	18 Sa	0609 -2.7 -82 1230 15.5 472 1812 0.9 27 ○	3 M	0000 16.8 512 0632 -2.4 -73 1255 14.5 442 1828 2.4 73	18 Tu	0039 16.7 509 0714 -2.4 -73 1345 14.3 436 1915 3.0 91
4 Th	0612 15.2 463 0612 0.6 18 1219 15.3 466 1823 0.1 3	19 F	0011 18.0 549 0625 -2.6 -79 1242 16.9 515 1837 -1.1 -34	4 Sa	0000 16.1 491 0618 -1.1 -34 1232 14.8 451 1819 1.4 43	19 Su	0022 17.8 543 0650 -3.0 -91 1315 15.4 469 1853 1.5 46	4 Tu	0038 17.2 524 0712 -2.9 -88 1338 14.7 448 1910 2.6 79	19 W	0118 16.3 497 0752 -2.0 -61 1424 14.0 427 1955 3.4 104
5 F	0039 15.8 482 0644 -0.1 -3 1252 15.4 469 1851 0.2 6	20 Sa	0050 18.3 558 0708 -3.0 -91 1327 16.6 506 1916 -0.3 -9	5 Su	0031 16.5 503 0653 -1.7 -52 1310 14.9 454 1852 1.7 52	20 M	0100 17.5 533 0730 -2.8 -85 1358 15.0 457 1933 2.3 70	5 W	0119 17.2 524 0755 -3.0 -91 1423 14.6 445 1954 2.8 85	20 Th	0156 15.7 479 0830 -1.3 -40 1503 13.7 418 2036 3.8 116
6 Sa	0107 16.1 491 0716 -0.6 -18 1327 15.4 469 1920 0.6 18	21 Su	0127 18.1 552 0749 -2.9 -88 1411 15.9 485 1956 0.8 24	6 M	0103 16.8 512 0729 -2.1 -64 1349 14.8 451 1927 2.1 64	21 Tu	0138 16.9 515 0811 -2.2 -67 1440 14.3 436 2014 3.1 94	6 Th	0202 16.9 515 0840 -2.8 -85 1510 14.4 439 2042 3.2 98	21 F	0234 14.9 454 0908 -0.5 -15 1543 13.2 402 2119 4.2 128
7 Su	0135 16.3 497 0749 -0.9 -27 1402 15.0 457 1950 1.3 40	22 M	0205 17.4 530 0831 -2.2 -67 1455 14.9 454 2036 2.2 67	7 Tu	0137 16.7 509 0808 -2.0 -61 1431 14.4 439 2005 2.7 82	22 W	0216 15.9 485 0851 -1.2 -37 1524 13.6 415 2056 4.0 122	7 F	0250 16.2 494 0929 -2.1 -64 1601 14.1 430 2137 3.6 110	22 Sa	0314 13.9 424 0948 0.3 9 1625 12.8 390 2207 4.6 140
8 M	0204 16.2 494 0824 -0.8 -24 1440 14.4 439 2023 2.1 64	23 Tu	0243 16.4 500 0914 -1.1 -34 1542 13.7 418 2118 3.5 107	8 W	0215 16.4 500 0850 -1.7 -52 1517 13.8 421 2048 3.5 107	23 Th	0256 14.8 451 0935 -0.2 -6 1611 12.8 390 2143 4.8 146	8 Sa	0344 15.2 463 1022 -1.3 -40 1657 13.9 424 2242 3.8 116	23 Su	0358 12.9 393 1030 1.2 37 1711 12.5 381 2302 4.8 146
9 Tu	0236 15.9 485 0904 -0.4 -12 1522 13.6 415 2100 3.1 94	24 W	0323 15.1 460 1001 0.2 6 1634 12.5 381 2207 4.8 146	9 Th	0257 15.7 479 0939 -1.1 -34 1609 13.1 399 2139 4.3 131	24 F	0339 13.7 418 1022 0.9 27 1703 12.1 369 2239 5.5 168	9 Su	0446 14.1 430 1121 -0.3 -9 1759 13.8 421 2357 3.7 113	24 M	0449 11.9 363 1116 2.1 64 1800 12.3 375
10 W	0313 15.4 469 0951 0.1 3 1613 12.6 384 2145 4.2 128	25 Th	0408 13.7 418 1056 1.5 46 1736 11.5 351 2308 5.9 180	10 F	0348 14.8 451 1036 -0.3 -9 1711 12.6 384 2244 4.9 149	25 Sa	0430 12.5 381 1115 1.9 58 1802 11.7 357 2348 5.8 177	10 M	0559 13.1 399 1224 0.5 15 1902 14.1 430	25 Tu	0005 4.8 146 0550 11.1 338 1207 2.9 88 1852 12.5 381
11 Th	0359 14.6 445 1048 0.8 24 1717 11.8 360 2244 5.2 158	26 F	0505 12.4 378 1202 2.6 79 1852 11.1 338 ○	11 Sa	0453 13.8 421 1142 0.4 12 1823 12.6 384	26 Su	0532 11.5 351 1215 2.6 79 1905 11.7 357	11 Tu	0115 3.1 94 0718 12.5 381 1329 1.2 37 2003 14.7 448	26 W	0113 4.3 131 0701 10.6 323 1303 3.5 107 1945 12.9 393
12 F	0501 13.7 418 1200 1.4 43 1838 11.5 351 ○	27 Sa	0030 6.3 192 0621 11.5 351 1318 3.0 91 2009 11.3 344	12 Su	0007 5.0 152 0612 13.1 399 1254 0.8 24 1935 13.1 399	27 M	0104 5.5 168 0647 11.0 335 1318 3.0 91 2003 12.2 372	12 W	0228 1.9 58 0835 12.6 384 1431 1.7 52 2059 15.4 469	27 Th	0217 3.4 104 0813 10.7 326 1402 3.9 119 2035 13.6 415
13 Sa	0007 5.7 174 0624 13.2 402 1321 1.3 40 2002 12.0 366	28 Su	0157 5.9 180 0745 11.3 344 1427 2.9 88 2107 12.0 366	13 M	0134 4.2 128 0738 13.0 396 1404 0.8 24 2038 14.1 430	28 Tu	0213 4.6 140 0801 11.0 335 1416 3.1 94 2051 12.9 393	13 Th	0330 0.6 18 0943 12.9 393 1529 1.9 58 2149 16.1 491	28 F	0313 2.2 67 0919 11.2 341 1458 3.9 119 2122 14.4 439
14 Su	0143 5.2 158 0754 13.4 408 1436 0.7 21 2110 13.2 402	29 M	0304 4.9 149 0856 11.7 357 1521 2.5 76 2151 12.8 390	14 Tu	0248 2.7 82 0854 13.4 408 1505 0.6 18 2132 15.2 463	29 W	0310 3.4 104 0905 11.4 347 1506 3.0 91 2133 13.7 418	14 F	0424 -0.7 -21 1042 13.5 411 1621 2.1 64 2235 16.6 506	29 Sa	0403 0.8 24 1016 12.0 366 1550 3.8 116 2207 15.3 466
15 M	0303 3.8 116 0911 14.2 433 1537 -0.2 -6 2204 14.6 445	30 Tu	0354 3.6 110 0951 12.4 378 1604 2.0 61 2227 13.8 421	15 W	0348 1.0 30 0958 14.1 430 1558 0.4 12 2219 16.3 497	30 Th	0356 2.1 64 0958 12.1 369 1550 2.8 85 2210 14.6 445	15 Sa	0511 -1.7 -52 1134 13.9 424 1708 2.3 70 2319 16.9 515	30 Su	0448 -0.6 -18 1107 12.8 390 1639 3.4 104 2251 16.2 494
						31 F	0437 0.7 21 1046 12.8 390 1631 2.7 82 2246 15.5 472				

Time meridian 135° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Juneau, Alaska, 2019

Times and Heights of High and Low Waters

January				February				March						
	Time		Height			Time		Height			Time		Height	
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm
1	0309	3.9	119		16	0202	5.3	162		1	0332	6.2	189	
Tu	0930	16.4	500		W	0831	15.1	460		F	0930	14.0	427	
	1609	1.0	30			1518	2.3	70			1621	2.2	67	
	2235	13.5	411			2141	12.2	372			2306	12.9	393	
2	0409	4.1	125		17	0315	5.3	162		2	0434	5.4	165	
W	1020	16.8	512		Th	0930	16.1	491		Sa	1029	14.6	445	
	1700	0.1	3			1617	0.7	21			1710	1.3	40	
	2330	14.1	430			2246	13.3	405			2348	13.8	421	
3	0501	4.0	122		18	0419	4.7	143		3	0521	4.3	131	
Th	1104	17.2	524		F	1025	17.3	527		Su	1116	15.3	466	
	1744	-0.6	-18			1709	-1.0	-30			1749	0.5	15	
						2340	14.6	445						
4	0017	14.6	445		19	0515	3.8	116		4	0021	14.6	445	
F	0547	3.9	119		Sa	1117	18.4	561		M	0600	3.3	101	
	1145	17.4	530			1757	-2.6	-79			1156	16.0	488	
	1823	-1.1	-34								1822	-0.2	-6	
5	0058	15.0	457		20	0029	15.8	482		5	0050	15.3	466	
Sa	0629	3.7	113		Su	0606	2.8	85		Tu	0635	2.3	70	
●	1224	17.5	533			1207	19.4	591		W	1232	16.6	506	
	1859	-1.4	-43		○	1842	-3.8	-116			1853	-0.6	-18	
6	0135	15.3	466		21	0114	16.8	512		6	0117	15.8	482	
Su	0707	3.6	110		M	0654	1.8	55		W	0707	1.6	49	
	1301	17.5	533			1256	20.0	610			1306	16.9	515	
	1933	-1.4	-43			1927	-4.4	-134		●	1921	-0.8	-24	
7	0209	15.3	466		22	0158	17.5	533		7	0144	16.3	497	
M	0744	3.6	110		Tu	0741	1.1	34		Th	0737	1.0	30	
	1336	17.3	527			1344	20.1	613			1338	16.9	515	
	2007	-1.2	-37			2011	-4.4	-134			1950	-0.7	-21	
8	0242	15.3	466		23	0242	17.9	546		8	0209	16.5	503	
Tu	0819	3.7	113		W	0828	0.7	21		F	0808	0.7	21	
	1411	16.9	515			1432	19.5	594			1410	16.6	506	
	2039	-0.8	-24			2055	-3.8	-116			2018	-0.2	-6	
9	0314	15.1	460		24	0325	18.0	549		9	0234	16.6	506	
W	0855	3.9	119		Th	0917	0.7	21		Sa	0839	0.5	15	
	1446	16.2	494			1521	18.4	561			1442	16.0	488	
	2112	-0.1	-3			2140	-2.6	-79			2046	0.5	15	
10	0346	14.8	451		25	0409	17.6	536		10	0301	16.5	503	
Th	0931	4.2	128		F	1009	1.1	34		Su	0912	0.6	18	
	1521	15.4	469			1612	16.8	512			1516	15.2	463	
	2145	0.7	21			2227	-0.9	-27			2117	1.5	46	
11	0420	14.5	442		26	0456	17.1	521		11	0330	16.2	494	
F	1012	4.5	137		Sa	1105	1.7	52		M	0949	1.0	30	
	1600	14.4	439			1709	15.0	457			1553	14.2	433	
	2221	1.6	49			2317	1.1	34			2151	2.7	82	
12	0457	14.2	433		27	0547	16.4	500		12	0403	15.8	482	
Sa	1058	4.7	143		Su	1208	2.3	70		Tu	1032	1.5	46	
	1645	13.3	405		○	1816	13.3	405			1639	13.1	399	
	2301	2.7	82								2232	4.1	125	
13	0540	14.1	430		28	0015	3.0	91		13	0446	15.2	463	
Su	1154	4.8	146		M	0645	15.7	479		W	1128	2.1	64	
○	1742	12.3	375			1320	2.7	82			1742	11.9	363	
	2349	3.8	116			1939	12.2	372			2327	5.4	165	
14	0632	14.1	430		29	0123	4.5	137		14	0545	14.6	445	
M	1300	4.5	137		Tu	0749	15.2	463		Th	1240	2.4	73	
	1856	11.6	354			1436	2.5	76		○	1915	11.3	344	
						2109	12.0	366						
15	0050	4.7	143		30	0238	5.3	162		15	0049	6.2	189	
Tu	0730	14.4	439		W	0854	15.1	460		F	0707	14.2	433	
	1411	3.7	113			1546	2.0	61			1405	2.1	64	
	2022	11.5	351			2225	12.5	381			2058	11.9	363	
					31	0349	5.5	168		31	0411	5.2	158	
					Th	0955	15.4	469		Su	1002	13.5	411	
						1643	1.2	37			1636	2.1	64	
						2323	13.3	405			2311	13.7	418	

Time meridian 135° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Juneau, Alaska, 2019

Times and Heights of High and Low Waters

April				May				June			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	h m	ft	h m	ft	h m	ft	h m	ft	h m	ft
1 M	0458 3.9 119 1052 14.3 436 1716 1.3 40 2343 14.6 445	16 Tu	0434 1.7 52 1039 16.2 494 1654 -0.9 -27 2319 17.0 518	1 W	0503 2.2 67 1102 14.0 427 1708 1.8 55 2325 15.5 472	16 Th	0506 -1.0 -30 1120 15.7 479 1715 0.3 9 2328 18.2 555	1 Sa	0541 -0.7 -21 1157 14.3 436 1742 2.6 79 2347 17.2 524	16 Su	0618 -2.5 -76 1250 15.1 460 1825 2.4 73 ○
2 Tu	0535 2.6 79 1133 15.2 463 1750 0.7 21	17 W	0524 -0.3 -9 1133 17.2 524 1741 -1.5 -46 2359 18.2 555	2 Th	0538 0.8 24 1143 14.7 448 1743 1.4 43 2355 16.4 500	17 F	0551 -2.3 -70 1211 16.2 494 1800 0.3 9	2 Su	0618 -1.8 -55 1240 14.9 454 1822 2.4 73	17 M	0024 17.9 546 0659 -2.7 -82 1333 15.2 463 1907 2.6 79
3 W	0012 15.4 469 0609 1.4 43 1210 15.8 482 1821 0.2 6	18 Th	0609 -2.0 -61 1222 17.8 543 1824 -1.7 -52	3 F	0611 -0.4 -12 1221 15.3 466 1816 1.3 40	18 Sa	0008 18.7 570 0634 -3.2 -98 1258 16.4 500 1843 0.7 21	3 M	0024 17.8 543 0656 -2.7 -82 1322 15.3 466 1902 2.4 73	18 Tu	0104 17.7 539 0738 -2.5 -76 1414 15.1 460 1948 3.0 91
4 Th	0039 16.1 491 0641 0.4 12 1245 16.2 494 1850 0.0 0	19 F	0038 19.0 579 0652 -3.1 -94 1309 17.9 546 1905 -1.3 -40	4 Sa	0025 17.0 518 0644 -1.3 -40 1258 15.6 475 1849 1.3 40	19 Su	0047 18.8 573 0715 -3.4 -104 1342 16.2 494 1924 1.3 40	4 Tu	0102 18.1 552 0736 -3.2 -98 1405 15.4 469 1943 2.5 76	19 W	0142 17.2 524 0815 -2.1 -64 1453 14.8 451 2028 3.4 104
5 F	0105 16.7 509 0711 -0.4 -12 1319 16.4 500 1920 0.1 3	20 Sa	0116 19.3 588 0734 -3.5 -107 1353 17.6 536 1946 -0.5 -15	5 Su	0055 17.5 533 0718 -2.0 -61 1336 15.7 479 1923 1.6 49	20 M	0125 18.5 564 0754 -3.1 -94 1425 15.8 482 2005 2.1 64	5 W	0143 18.2 555 0817 -3.3 -101 1449 15.4 469 2027 2.8 85	20 Th	0220 16.6 506 0852 -1.4 -43 1531 14.4 439 2109 3.9 119
6 Sa	0132 17.1 521 0742 -0.9 -27 1352 16.3 497 1949 0.6 18	21 Su	0153 19.1 582 0814 -3.3 -101 1437 16.8 512 2026 0.7 21	6 M	0127 17.7 539 0753 -2.4 -73 1414 15.6 475 1959 2.1 64	21 Tu	0202 17.8 543 0834 -2.4 -73 1507 15.1 460 2046 3.1 94	6 Th	0226 17.8 543 0902 -3.0 -91 1537 15.1 460 2115 3.2 98	21 F	0259 15.7 479 0930 -0.9 -15 1610 13.9 424 2151 4.4 134
7 Su	0158 17.3 527 0814 -1.1 -34 1426 15.9 485 2020 1.3 40	22 M	0229 18.4 561 0855 -2.5 -76 1521 15.7 479 2107 2.1 64	7 Tu	0201 17.7 539 0831 -2.3 -70 1454 15.1 460 2037 2.8 85	22 W	0240 16.8 512 0913 -1.4 -43 1551 14.2 433 2129 4.1 125	7 F	0314 17.1 521 0950 -2.3 -70 1628 14.8 451 2210 3.6 110	22 Sa	0339 14.7 448 1009 0.5 15 1651 13.5 411 2238 4.8 146
8 M	0227 17.2 524 0848 -1.0 -30 1502 15.2 463 2053 2.2 67	23 Tu	0307 17.3 527 0937 -1.2 -37 1607 14.4 439 2150 3.7 113	8 W	0238 17.3 527 0912 -1.9 -58 1539 14.5 442 2121 3.6 110	23 Th	0320 15.7 479 0955 -0.1 -3 1637 13.4 408 2217 5.0 152	8 Sa	0407 16.0 488 1043 -1.3 -40 1725 14.5 442 2314 3.9 119	23 Su	0423 13.7 418 1050 1.5 46 1736 13.2 402 2331 5.1 155
9 Tu	0258 16.9 515 0927 -0.6 -18 1542 14.3 436 2131 3.3 101	24 W	0347 15.9 485 1022 0.3 9 1659 13.1 399 2240 5.1 155	9 Th	0320 16.6 506 1000 -1.2 -37 1632 13.7 418 2213 4.5 137	24 F	0403 14.4 439 1041 1.1 34 1730 12.7 387 2313 5.7 174	9 Su	0510 14.8 451 1142 -0.2 -6 1828 14.6 445 ○	24 M	0514 12.6 384 1136 2.4 73 1826 13.1 399
10 W	0335 16.3 497 1012 0.0 0 1631 13.2 402 2216 4.5 137	25 Th	0432 14.4 439 1114 1.7 52 1804 12.1 369 2343 6.2 189	10 F	0411 15.6 475 1055 -0.3 -9 1737 13.2 402 2319 5.1 155	25 Sa	0455 13.2 402 1133 2.2 67 1831 12.3 375	10 M	0027 3.8 116 0624 13.8 421 1246 0.7 21 1932 14.9 454	25 Tu	0032 5.0 152 0615 11.7 357 1229 3.3 101 1918 13.2 402
11 Th	0421 15.4 469 1107 0.9 27 1736 12.3 375 2318 5.6 171	26 F	0530 13.0 396 1218 2.9 88 1926 11.6 354 ○	11 Sa	0516 14.5 442 1201 0.6 18 1853 13.1 399	26 Su	0021 6.0 183 0558 12.2 372 1233 3.0 91 1935 12.4 378	11 Tu	0143 3.1 94 0745 13.2 402 1354 1.5 46 2032 15.6 475	26 W	0138 4.5 137 0728 11.3 344 1328 3.9 119 2010 13.7 418
12 F	0523 14.5 442 1217 1.5 46 1907 12.0 366 ○	27 Sa	0106 6.6 201 0646 12.1 369 1336 3.5 107 2043 12.0 366	12 Su	0040 5.1 155 0638 13.7 418 1314 1.0 30 2008 13.8 421	27 M	0135 5.7 174 0714 11.6 354 1339 3.4 104 2032 12.9 393	12 W	0253 1.9 58 0903 13.3 405 1458 1.9 58 2126 16.3 497	27 Th	0241 3.6 110 0841 11.4 347 1431 4.3 131 2100 14.4 439
13 Sa	0044 6.0 183 0648 13.9 424 1339 1.6 49 2037 12.6 384	28 Su	0230 6.1 186 0811 12.0 366 1449 3.4 104 2139 12.7 387	13 M	0204 4.3 131 0804 13.7 418 1427 1.0 30 2110 14.9 454	28 Tu	0243 4.8 146 0828 11.6 354 1441 3.5 107 2119 13.6 415	13 Th	0354 0.4 12 1011 13.7 418 1558 2.1 64 2215 17.0 518	28 F	0337 2.4 73 0947 11.9 363 1530 4.3 131 2146 15.3 466
14 Su	0219 5.4 165 0820 14.1 430 1457 1.0 30 2143 14.0 427	29 M	0334 5.0 152 0921 12.4 378 1546 2.9 88 2220 13.6 415	14 Tu	0316 2.7 82 0921 14.2 433 1530 0.7 21 2201 16.1 491	29 W	0337 3.5 107 0932 12.1 369 1534 3.3 101 2159 14.5 442	14 F	0448 -0.9 -27 1110 14.3 436 1651 2.2 67 2301 17.6 536	29 Sa	0426 0.9 27 1045 12.7 387 1624 4.0 122 2231 16.3 497
15 M	0335 3.8 116 0937 15.0 457 1601 0.0 0 2235 15.5 472	30 Tu	0423 3.6 110 1016 13.2 402 1631 2.3 70 2254 14.6 445	15 W	0415 0.8 24 1025 15.0 457 1625 0.4 12 2247 17.3 527	30 Th	0423 2.1 64 1026 12.9 393 1620 3.0 91 2236 15.5 472	15 Sa	0535 -1.9 -58 1202 14.8 451 1740 2.3 70 2343 17.9 546	30 Su	0512 -0.5 -15 1136 13.6 415 1713 3.6 110 2316 17.2 524
						31 F	0503 0.7 21 1113 13.6 415 1702 2.8 85 2311 16.4 500				

Time meridian 135° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Juneau, Alaska, 2019

Times and Heights of High and Low Waters

July				August				September															
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height												
h m	ft cm	h m	ft cm	h m	ft cm	h m	ft cm	h m	ft cm	h m	ft cm												
1 M	0555 1224 1800	-1.9 14.5 3.1	-58 442 94	16 Tu	0009 0645 1322 1854	17.1 -1.7 14.8 3.1	521 -52 451 94	1 Th	0033 0705 1335 1918	19.0 -4.0 16.7 1.0	579 -122 509 30	16 F	0111 0734 1401 1947	16.9 -1.2 15.6 1.9	515 -37 475 58	1 Su	0156 0809 1429 2032	19.4 -3.5 19.0 -1.8	591 -107 579 -55	16 M	0156 0802 1415 2023	16.5 0.3 16.6 0.4	503 9 506 12
2 Tu	0001 0638 1309 1845	18.0 -3.0 15.3 2.6	549 -91 466 79	17 W	0049 0722 1358 1932	17.1 -1.8 15.0 2.9	521 -55 457 88	2 F	0121 0748 1417 2004	19.4 -4.3 17.3 0.3	591 -131 527 9	17 Sa	0145 0804 1429 2020	16.8 -1.0 15.7 1.8	512 -30 479 55	2 M	0243 0851 1509 2119	18.6 -2.3 18.8 -1.5	567 -70 573 -46	17 Tu	0228 0830 1441 2054	15.9 1.0 16.4 0.6	485 30 500 18
3 W	0046 0721 1354 1931	18.6 -3.7 15.8 2.2	567 -113 482 67	18 Th	0127 0757 1432 2010	17.0 -1.7 15.0 2.9	518 -52 457 88	3 Sa	0209 0831 1459 2052	19.2 -4.0 17.7 0.0	585 -122 539 0	18 Su	0218 0833 1456 2052	16.4 -0.5 15.6 1.8	500 -15 475 55	3 Tu	0331 0935 1551 2208	17.2 -0.6 18.1 -0.7	524 -18 552 -21	18 W	0301 0859 1509 2129	15.2 2.0 16.1 1.0	463 61 491 30
4 Th	0132 0805 1438 2018	18.8 -4.0 16.1 1.9	573 -122 491 58	19 F	0203 0830 1504 2046	16.6 -1.3 14.9 3.0	506 -40 454 91	4 Su	0257 0916 1542 2142	18.4 -3.1 17.6 0.1	561 -94 536 3	19 M	0250 0902 1523 2126	15.7 0.3 15.5 2.0	479 9 472 61	4 W	0423 1021 1636 2303	15.6 1.3 17.0 0.4	475 40 518 12	19 Th	0336 0931 1541 2209	14.2 3.2 15.6 1.5	433 98 475 46
5 F	0219 0849 1523 2107	18.5 -3.8 16.3 1.9	564 -116 497 58	20 Sa	0239 0903 1536 2123	16.0 -0.7 14.7 3.3	488 -21 448 101	5 M	0347 1001 1627 2235	17.1 -1.6 17.3 0.6	521 -49 527 18	20 Tu	0324 0932 1553 2202	14.8 1.3 15.2 2.4	451 40 463 73	5 Th	0523 1115 1728	13.8 3.4 15.7	421 104 479	20 F	0419 1010 1620 2300	13.1 4.5 15.0 2.2	399 137 457 67
6 Sa	0308 0936 1610 2200	17.8 -3.0 16.2 2.0	543 -91 494 61	21 Su	0315 0936 1608 2201	15.3 0.1 14.4 3.5	466 3 439 107	6 Tu	0442 1050 1716 2335	15.5 0.2 16.6 1.2	472 6 506 37	21 W	0401 1005 1626 2245	13.8 2.5 14.8 2.8	421 76 451 85	6 F	0006 0640 1221 1832	1.6 12.4 5.1 14.6	49 378 155 445	21 Sa	0516 1101 1714	12.1 5.7 14.3	369 174 436
7 Su	0400 1025 1700 2259	16.6 -1.9 16.0 2.2	506 -58 488 67	22 M	0352 1010 1643 2244	14.3 1.1 14.2 3.8	436 34 433 116	7 W	0545 1145 1810	13.8 2.1 15.9	421 64 485	22 Th	0445 1044 1706 2338	12.7 3.7 14.4 3.1	387 113 439 94	7 Sa	0123 0815 1344 1951	2.5 11.9 6.0 14.0	76 363 183 427	22 Su	0006 0642 1217 1832	2.7 11.4 6.6 13.8	82 347 201 421
8 M	0458 1118 1754	15.2 -0.4 15.8	463 -12 482	23 Tu	0434 1047 1721 2333	13.2 2.2 13.9 4.0	402 67 424 122	8 Th	0042 0702 1249 1913	1.7 12.5 3.7 15.3	52 381 113 466	23 F	0543 1133 1800	11.7 5.0 14.1	357 152 430	8 Su	0245 0940 1508 2108	2.6 12.3 5.9 14.0	79 375 180 427	23 M	0129 0826 1356 2003	2.7 11.8 6.5 14.1	82 360 198 430
9 Tu	0004 0606 1216 1852	2.3 13.8 1.1 15.7	70 421 34 479	24 W	0525 1130 1807	12.2 3.3 13.8	372 101 421	9 F	0156 0830 1404 2021	1.9 12.0 4.8 15.0	58 366 146 457	24 Sa	0045 0707 1244 1910	3.3 11.0 5.9 14.0	101 335 180 427	9 M	0355 1041 1614 2210	2.1 13.2 5.1 14.6	64 402 155 445	24 Tu	0251 0941 1520 2121	1.8 13.0 5.2 15.2	55 396 158 463
10 W	0114 0724 1320 1953	2.2 12.8 2.4 15.7	67 390 73 479	25 Th	0032 0629 1223 1901	4.0 11.3 4.4 13.9	122 344 134 424	10 Sa	0311 0952 1519 2127	1.6 12.3 5.1 15.2	49 375 155 463	25 Su	0205 0845 1413 2028	2.8 11.3 6.2 14.5	85 344 189 442	10 Tu	0448 1126 1703 2300	1.3 14.0 4.0 15.3	40 427 122 466	25 W	0357 1034 1622 2224	0.4 14.6 3.3 16.6	12 445 101 506
11 Th	0226 0845 1428 2052	1.6 12.5 3.3 15.9	49 381 101 485	26 F	0140 0750 1330 2002	3.6 11.0 5.1 14.2	110 335 155 433	11 Su	0415 1057 1624 2225	1.0 13.0 4.7 15.5	30 396 143 472	26 M	0320 1002 1534 2138	1.7 12.4 5.4 15.6	52 378 165 475	11 W	0530 1201 1744 2341	0.6 14.8 3.0 16.0	18 451 91 488	26 Th	0450 1119 1714 2319	-1.0 16.3 1.3 17.9	-30 497 40 546
12 F	0333 1000 1535 2148	0.8 12.8 3.7 16.3	24 390 113 497	27 Sa	0249 0912 1445 2103	2.7 11.3 5.4 15.0	82 344 165 457	12 M	0507 1147 1716 2314	0.3 13.8 4.1 16.0	9 421 125 488	27 Tu	0422 1059 1637 2238	0.1 13.8 4.0 16.9	3 421 122 515	12 Th	0605 1231 1819	0.0 15.4 2.0	0 469 61	27 F	0537 1200 1800	-2.1 17.8 -0.7	-64 543 -21
13 Sa	0431 1103 1634 2239	-0.1 13.4 3.8 16.6	-3 408 116 506	28 Su	0351 1021 1553 2200	1.3 12.3 5.0 16.0	40 375 152 488	13 Tu	0551 1227 1800 2357	-0.4 14.5 3.4 16.5	-12 442 104 503	28 W	0514 1146 1729 2332	-1.5 15.3 2.3 18.2	-46 466 70 555	13 F	0018 0636 1259 1851	16.5 -0.3 16.0 1.3	503 -9 488 40	28 Sa	0009 0621 1239 1845	18.9 -2.7 19.0 -2.2	576 -82 579 -67
14 Su	0521 1156 1726 2326	-0.9 14.0 3.6 16.9	-27 427 110 515	29 M	0446 1118 1652 2254	-0.2 13.4 4.1 17.1	-6 408 125 521	14 W	0628 1302 1839	-0.9 15.0 2.8	-27 457 85	29 Th	0601 1228 1817	-2.8 16.7 0.7	-85 509 21	14 Sa	0052 0705 1325 1922	16.7 -0.4 16.3 0.7	509 -12 497 21	29 Su	0056 0703 1318 1928	19.3 -2.7 19.7 -3.0	588 -82 600 -91
15 M	0605 1242 1812	-1.4 14.5 3.3	-43 442 101	30 Tu	0535 1207 1743 2344	-1.8 14.6 3.0 18.2	-55 445 91 555	15 Th	0035 0702 1333 1914	16.8 -1.1 15.4 2.3	512 -34 469 70	30 F	0021 0644 1309 1902	19.2 -3.7 17.9 -0.6	585 -113 546 -18	15 Su	0124 0734 1350 1952	16.7 -0.2 16.6 0.4	509 -6 506 12	30 M	0142 0744 1357 2011	19.1 -2.1 19.8 -3.2	582 -64 604 -98
				31 W	0620 1252 1831	-3.1 15.8 1.9	-94 482 58						31 Sa	0109 0727 1349 1947	19.6 -3.9 18.6 -1.5	597 -119 567 -46							

Time meridian 135° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Sitka, Alaska, 2019

Times and Heights of High and Low Waters

January				February				March			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	h m	ft	h m	ft	h m	ft	h m	ft	h m	ft
1 Tu	0239 3.3 101 0904 10.5 320 1602 0.7 21 2224 7.9 241	16 W	0127 4.0 122 0802 9.8 299 1511 1.5 46 2135 7.2 219	1 F	0420 4.5 137 1018 10.0 305 1719 0.2 6 2356 8.4 256	16 Sa	0325 4.4 134 0931 10.5 320 1637 -0.6 -18 2313 8.6 262	1 F	0304 4.9 149 0901 8.8 268 1610 1.1 34 2254 7.8 238	16 Sa	0152 4.7 143 0759 9.3 283 1514 0.4 12 2158 7.9 241
2 W	0339 3.8 116 0952 10.7 326 1651 0.1 3 2320 8.3 253	17 Th	0238 4.3 131 0858 10.4 317 1607 0.4 12 2239 7.9 241	2 Sa	0510 4.3 131 1103 10.2 311 1758 -0.2 -6	17 Su	0430 3.7 113 1031 11.2 341 1727 -1.4 -43 2358 9.5 290	2 Sa	0411 4.5 137 1001 9.1 277 1657 0.7 21 2333 8.3 253	17 Su	0318 4.0 122 0916 9.8 299 1613 -0.4 -12 2248 8.8 268
3 Th	0433 4.0 122 1036 10.9 332 1734 -0.4 -12	18 F	0343 4.2 128 0952 11.0 335 1657 -0.7 -21 2331 8.7 265	3 Su	0031 8.8 268 0552 3.9 119 1143 10.4 317 1832 -0.4 -12	18 M	0526 2.9 88 1126 11.8 360 1812 -2.0 -61	3 Su	0459 3.9 119 1050 9.4 287 1735 0.3 9	18 M	0423 3.0 91 1021 10.5 320 1704 -1.0 -30 2331 9.7 296
4 F	0006 8.7 265 0519 4.0 122 1117 11.0 335 1812 -0.7 -21	19 Sa	0441 3.9 119 1044 11.7 357 1744 -1.6 -49	4 M	0102 9.1 277 0628 3.6 110 1220 10.5 320 1904 -0.5 -15	19 Tu	0039 10.2 311 0617 2.0 61 1217 12.1 369 1855 -2.3 -70	4 M	0004 8.7 265 0538 3.3 101 1130 9.8 299 1808 0.0 0	19 Tu	0517 1.8 55 1118 11.0 335 1749 -1.4 -43
5 Sa	0045 9.0 274 0601 4.0 122 1155 11.0 335 1848 -0.8 -24	20 Su	0017 9.4 287 0535 3.5 107 1134 12.2 372 1829 -2.2 -67	5 Tu	0132 9.3 283 0703 3.2 98 1254 10.5 320 1934 -0.5 -15	20 W	0119 10.8 329 0705 1.2 37 1306 12.0 366 1937 -2.1 -64	5 Tu	0032 9.0 274 0612 2.7 82 1207 10.0 305 1837 -0.1 -3	20 W	0010 10.5 320 0606 0.7 21 1209 11.3 344 1831 -1.4 -43
6 Su	0122 9.2 280 0640 4.0 122 1231 10.9 332 1922 -0.8 -24	21 M	0101 10.0 305 0625 3.0 91 1224 12.5 381 1914 -2.6 -79	6 W	0200 9.4 287 0737 3.0 91 1328 10.3 314 2003 -0.3 -9	21 Th	0158 11.1 338 0753 0.7 21 1354 11.6 354 2017 -1.5 -46	6 W	0058 9.4 287 0645 2.2 67 1241 10.1 308 1906 -0.1 -3	21 Th	0048 11.1 338 0652 -0.2 -6 1258 11.3 344 1911 -1.1 -34
7 M	0156 9.2 280 0717 3.9 119 1306 10.7 326 1955 -0.6 -18	22 Tu	0144 10.4 317 0715 2.5 76 1313 12.4 378 1957 -2.5 -76	7 Th	0228 9.5 290 0811 2.8 85 1402 9.9 302 2032 0.1 3	22 F	0238 11.3 344 0842 0.4 12 1443 10.8 329 2058 -0.5 -15	7 Th	0124 9.6 293 0717 1.8 55 1314 10.0 305 1933 0.1 3	22 F	0125 11.4 347 0737 -0.7 -21 1345 10.9 332 1951 -0.4 -12
8 Tu	0229 9.2 280 0753 3.9 119 1341 10.4 317 2028 -0.3 -9	23 W	0227 10.6 323 0806 2.2 67 1402 11.9 363 2041 -2.0 -61	8 F	0257 9.5 290 0846 2.7 82 1437 9.5 290 2100 0.6 18	23 Sa	0318 11.1 338 0932 0.5 15 1534 9.8 299 2139 0.7 21	8 F	0149 9.8 299 0749 1.4 43 1348 9.8 299 2001 0.5 15	23 Sa	0203 11.5 351 0822 -0.9 -27 1432 10.3 314 2030 0.5 15
9 W	0302 9.1 277 0831 3.9 119 1416 9.9 302 2101 0.1 3	24 Th	0310 10.7 326 0858 2.0 61 1453 11.1 338 2125 -1.1 -34	9 Sa	0326 9.5 290 0924 2.6 79 1515 8.8 268 2130 1.3 40	24 Su	0359 10.8 329 1025 0.8 24 1630 8.7 265 2222 1.9 58	9 Sa	0215 9.9 302 0822 1.2 37 1423 9.4 287 2028 1.0 30	24 Su	0240 11.2 341 0908 -0.7 -21 1521 9.4 287 2109 1.6 49
10 Th	0336 9.0 274 0910 3.9 119 1453 9.3 283 2134 0.6 18	25 F	0355 10.7 326 0954 1.9 58 1547 10.0 305 2209 0.0 0	10 Su	0356 9.5 290 1007 2.6 79 1558 8.2 250 2202 2.1 64	25 M	0444 10.3 314 1125 1.2 37 1736 7.7 235 2310 3.2 98	10 Su	0242 10.0 305 0858 1.1 34 1501 8.9 271 2057 1.7 52	25 M	0318 10.7 326 0955 -0.2 -6 1614 8.5 259 2151 2.7 82
11 F	0412 9.0 274 0955 3.9 119 1534 8.6 262 2208 1.2 37	26 Sa	0441 10.5 320 1055 2.0 61 1648 8.8 268 2257 1.2 37	11 M	0431 9.4 287 1059 2.5 76 1652 7.4 226 2240 2.9 88	26 Tu	0534 9.7 296 1235 1.6 49 1900 7.0 213	11 M	0311 9.9 302 0938 1.1 34 1544 8.2 250 2129 2.5 76	26 Tu	0359 10.0 305 1048 0.5 15 1715 7.7 235 2238 3.8 116
12 Sa	0449 8.9 271 1046 3.9 119 1622 7.9 241 2245 1.9 58	27 Su	0531 10.3 314 1203 2.0 61 1759 7.8 238 2349 2.5 76	12 Tu	0513 9.4 287 1202 2.4 73 1804 6.9 210 2328 3.7 113	27 W	0012 4.2 128 0636 9.1 277 1354 1.7 52 2039 6.9 210	12 Tu	0345 9.8 299 1025 1.3 40 1637 7.6 232 2207 3.3 101	27 W	0446 9.2 280 1150 1.2 37 1832 7.1 216 2341 4.6 140
13 Su	0530 8.9 271 1147 3.7 113 1723 7.2 219 2329 2.7 82	28 M	0626 10.0 305 1318 1.9 58 1926 7.1 216	13 W	0605 9.4 287 1317 2.1 64 1939 6.7 204	28 Th	0136 4.9 149 0748 8.8 268 1509 1.5 46 2200 7.3 223	13 W	0426 9.6 293 1124 1.4 43 1746 7.0 213 2258 4.1 125	28 Th	0546 8.4 256 1305 1.7 52 2005 6.9 210
14 M	0615 9.1 277 1257 3.2 98 1843 6.8 207	29 Tu	0052 3.6 110 0725 9.8 299 1434 1.6 49 2059 7.1 216	14 Th	0038 4.4 134 0711 9.6 293 1434 1.4 43 2112 7.0 213	14 Th	0521 9.3 283 1238 1.4 43 1919 6.8 207	14 Th	0521 9.3 283 1238 1.4 43 1919 6.8 207	29 F	0111 5.0 152 0705 7.9 241 1424 1.8 55 2124 7.2 219
15 Tu	0022 3.4 104 0707 9.4 287 1408 2.5 76 2014 6.8 207	30 W	0205 4.3 131 0827 9.8 299 1540 1.1 34 2217 7.5 229	15 F	0204 4.7 143 0823 9.9 302 1541 0.4 12 2221 7.8 238	15 F	0014 4.6 140 0634 9.2 280 1400 1.0 30 2051 7.2 219	15 F	0014 4.6 140 0634 9.2 280 1400 1.0 30 2051 7.2 219	30 Sa	0245 4.8 146 0829 7.9 241 1530 1.5 46 2217 7.7 235
		31 Th	0319 4.6 140 0926 9.9 302 1634 0.6 18 2313 8.0 244							31 Su	0352 4.1 125 0937 8.1 247 1620 1.2 37 2254 8.1 247

Time meridian 135° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Sitka, Alaska, 2019

Times and Heights of High and Low Waters

April				May				June			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	h m	ft	h m	ft	h m	ft	h m	ft	h m	ft
1 M	0438 3.3 101 1028 8.5 259 1659 0.9 27 2324 8.6 262	16 Tu	0414 1.9 58 1012 9.5 290 1635 -0.3 -9 2258 10.0 305	1 W	0446 1.8 55 1044 8.0 244 1646 1.4 43 2302 9.2 280	16 Th	0452 -0.3 -9 1101 8.8 268 1651 0.9 27 2304 10.8 329	1 Sa	0527 -0.5 -15 1146 8.0 244 1713 2.4 73 2318 10.3 314	16 Su	0607 -1.8 -55 1236 8.5 259 1757 2.7 82 2356 10.7 326
2 Tu	0516 2.5 76 1111 8.9 271 1732 0.6 18 2351 9.1 277	17 W	0506 0.6 18 1109 9.9 302 1721 -0.4 -12 2337 10.7 326	2 Th	0521 1.0 30 1126 8.3 253 1720 1.4 43 2330 9.7 296	17 F	0538 -1.3 -40 1154 9.1 277 1735 1.2 37 2343 11.1 338	2 Su	0605 -1.2 -37 1229 8.4 256 1753 2.5 76 2354 10.7 326	17 M	0648 -2.0 -61 1320 8.6 262 1840 2.9 88
3 W	0549 1.8 55 1148 9.2 280 1802 0.5 15	18 Th	0552 -0.5 -15 1201 10.2 311 1803 -0.2 -6	3 F	0555 0.1 3 1205 8.7 265 1752 1.5 46 2359 10.1 308	18 Sa	0621 -1.9 -58 1242 9.2 280 1818 1.6 49	3 M	0643 -1.8 -55 1311 8.6 262 1833 2.7 82	18 Tu	0034 10.6 323 0727 -1.9 -58 1401 8.6 262 1921 3.1 94
4 Th	0017 9.5 290 0622 1.1 34 1224 9.4 287 1831 0.6 18	19 F	0015 11.2 341 0637 -1.3 -40 1249 10.2 311 1844 0.2 6	4 Sa	0629 -0.5 -15 1244 8.9 271 1825 1.7 52	19 Su	0020 11.2 341 0703 -2.1 -64 1328 9.2 280 1859 2.1 64	4 Tu	0032 10.9 332 0724 -2.2 -67 1355 8.7 265 1915 2.8 85	19 W	0113 10.3 314 0805 -1.7 -52 1441 8.5 259 2002 3.3 101
5 F	0042 9.9 302 0653 0.5 15 1259 9.5 290 1900 0.8 24	20 Sa	0052 11.5 351 0719 -1.7 -52 1336 10.0 305 1923 0.9 27	5 Su	0028 10.4 317 0703 -1.1 -34 1323 8.9 271 1859 2.0 61	20 M	0057 11.0 335 0743 -2.1 -64 1412 9.0 274 1939 2.6 79	5 W	0112 11.0 335 0806 -2.3 -70 1441 8.7 265 2000 3.0 91	20 Th	0150 9.8 299 0843 -1.3 -40 1521 8.3 253 2043 3.4 104
6 Sa	0108 10.1 308 0726 0.1 3 1335 9.4 287 1929 1.2 37	21 Su	0128 11.4 347 0802 -1.8 -55 1422 9.6 293 2002 1.7 52	6 M	0059 10.6 323 0740 -1.4 -43 1404 8.9 271 1934 2.4 73	21 Tu	0135 10.6 323 0823 -1.7 -52 1457 8.6 262 2020 3.1 94	6 Th	0155 10.8 329 0852 -2.2 -67 1530 8.6 262 2051 3.1 94	21 F	0229 9.2 280 0921 -0.7 -21 1602 8.0 244 2128 3.6 110
7 Su	0135 10.3 314 0759 -0.2 -6 1412 9.1 277 1959 1.7 52	22 M	0204 11.0 335 0844 -1.4 -43 1509 9.0 274 2042 2.5 76	7 Tu	0133 10.7 326 0819 -1.5 -46 1448 8.6 262 2012 2.9 88	22 W	0212 10.0 305 0905 -1.2 -37 1543 8.2 250 2103 3.6 110	7 F	0243 10.3 314 0940 -1.8 -55 1622 8.5 259 2148 3.3 101	22 Sa	0310 8.6 262 1000 -0.2 -6 1644 7.9 241 2218 3.7 113
8 M	0204 10.4 317 0836 -0.3 -9 1452 8.8 268 2031 2.3 70	23 Tu	0242 10.4 317 0928 -0.8 -24 1559 8.4 256 2125 3.3 101	8 W	0210 10.5 320 0903 -1.3 -40 1536 8.3 253 2055 3.3 101	23 Th	0251 9.3 283 0948 -0.5 -15 1632 7.8 238 2151 4.0 122	8 Sa	0337 9.6 293 1032 -1.2 -37 1718 8.5 259 2256 3.2 98	23 Su	0354 7.8 238 1040 0.5 15 1729 7.8 238 2316 3.6 110
9 Tu	0235 10.3 314 0916 -0.2 -6 1538 8.3 253 2107 3.0 91	24 W	0321 9.6 293 1016 -0.1 -3 1655 7.7 235 2213 4.1 125	9 Th	0252 10.1 308 0951 -1.0 -30 1632 8.0 244 2148 3.8 116	24 F	0334 8.6 262 1034 0.2 6 1726 7.5 229 2249 4.3 131	9 Su	0440 8.7 265 1129 -0.5 -15 1817 8.7 265	24 M	0447 7.1 216 1124 1.1 34 1815 7.8 238
10 W	0312 10.0 305 1004 0.0 0 1633 7.7 235 2150 3.7 113	25 Th	0406 8.8 268 1110 0.7 21 1802 7.2 219 2315 4.6 140	10 F	0343 9.5 290 1047 -0.6 -18 1736 7.8 238 2255 4.0 122	25 Sa	0425 7.8 238 1125 0.8 24 1825 7.4 226	10 M	0013 2.9 88 0555 7.9 241 1229 0.2 6 1916 9.0 274	25 Tu	0022 3.4 104 0551 6.5 198 1212 1.7 52 1902 8.0 244
11 Th	0357 9.6 293 1102 0.4 12 1742 7.3 223 2250 4.3 131	26 F	0501 7.9 241 1214 1.3 40 1918 7.1 216	11 Sa	0445 8.8 268 1152 -0.1 -3 1846 7.9 241	26 Su	0001 4.3 131 0528 7.1 216 1222 1.4 43 1923 7.5 229	11 Tu	0133 2.2 67 0719 7.4 226 1331 0.8 24 2012 9.4 287	26 W	0131 2.9 88 0708 6.1 186 1304 2.3 70 1949 8.3 253
12 F	0455 9.1 277 1212 0.6 18 1906 7.2 219	27 Sa	0041 4.7 143 0616 7.3 223 1325 1.7 52 2029 7.3 223	12 Su	0020 3.9 119 0604 8.2 250 1301 0.2 6 1953 8.3 253	27 M	0120 3.9 119 0646 6.6 201 1321 1.7 52 2014 7.7 235	12 W	0244 1.3 40 0841 7.3 223 1433 1.4 43 2103 9.8 299	27 Th	0234 2.1 64 0827 6.1 186 1400 2.7 82 2034 8.7 265
13 Sa	0015 4.5 137 0614 8.7 265 1331 0.6 18 2026 7.6 232	28 Su	0211 4.4 134 0743 7.1 216 1431 1.7 52 2121 7.6 232	13 M	0147 3.3 101 0732 7.9 241 1408 0.4 12 2051 8.9 271	28 Tu	0230 3.3 101 0806 6.5 198 1417 2.0 61 2057 8.2 250	13 Th	0345 0.2 6 0954 7.5 229 1530 1.8 55 2150 10.3 314	28 F	0328 1.2 37 0938 6.5 198 1456 3.0 91 2118 9.3 283
14 Su	0152 4.2 128 0744 8.6 262 1443 0.3 9 2127 8.3 253	29 M	0318 3.7 113 0858 7.2 219 1525 1.6 49 2200 8.1 247	14 Tu	0301 2.2 67 0853 8.1 247 1509 0.5 15 2140 9.6 293	29 W	0325 2.4 73 0915 6.7 204 1507 2.1 64 2135 8.7 265	14 F	0438 -0.7 -21 1055 7.8 238 1623 2.2 67 2234 10.6 323	29 Sa	0415 0.3 9 1036 7.0 213 1549 3.1 94 2201 9.8 299
15 M	0312 3.2 98 0905 9.0 274 1544 -0.1 -3 2216 9.2 280	30 Tu	0407 2.8 85 0956 7.6 232 1608 1.5 46 2233 8.6 262	15 W	0401 0.9 27 1002 8.4 256 1602 0.7 21 2223 10.3 314	30 Th	0409 1.4 43 1012 7.1 216 1552 2.2 67 2210 9.2 280	15 Sa	0524 -1.4 -43 1149 8.2 250 1712 2.5 76 2316 10.7 326	30 Su	0500 -0.7 -21 1127 7.6 232 1639 3.1 94 2244 10.4 317
						31 F	0449 0.4 12 1101 7.5 229 1633 2.3 70 2244 9.8 299				

Time meridian 135° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Yakutat, Alaska, 2019

Times and Heights of High and Low Waters

April					May					June																			
Time		Height			Time		Height			Time		Height			Time		Height												
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm		h	m	ft	cm										
1 M	0451	3.3	10.1		16 Tu	0429	1.7	5.2		1 W	0500	1.8	5.5		16 Th	0508	-0.4	-12		1 Sa	0543	-0.5	-15		16 Su	0625	-1.8	-55	
	1046	8.7	265			1029	9.5	290			1100	8.1	247			1117	8.7	265			1201	8.0	244			1252	8.4	256	
	1715	0.8	24			1651	-0.5	-15			1701	1.2	37			1705	0.7	21			1728	2.2	67			1810	2.6	79	
	2340	8.7	265			2315	10.0	305			2320	9.2	280			2321	10.9	332			2335	10.5	320						
2 Tu	0529	2.5	7.6		17 W	0521	0.4	12		2 Th	0535	0.9	27		17 F	0554	-1.3	-40		2 Su	0621	-1.3	-40		17 M	0014	11.0	335	
	1128	9.1	277			1126	10.0	305			1142	8.4	256			1210	9.0	274			1244	8.3	253			0705	-1.9	-58	
	1748	0.5	15			1736	-0.6	-18			1735	1.2	37			1749	1.0	30			1808	2.3	70			1335	8.6	262	
						2354	10.7	326			2348	9.7	296													1852	2.8	85	
3 W	0008	9.1	277		18 Th	0608	-0.7	-21		3 F	0610	0.1	3		18 Sa	0000	11.3	344		3 M	0011	10.9	332		18 Tu	0052	10.9	332	
	0603	1.7	52			1217	10.2	311			1221	8.7	265			0638	-1.9	-58			0700	-1.9	-58			0744	-1.8	-55	
	1205	9.3	283			1818	-0.4	-12			1808	1.3	40			1258	9.1	277			1326	8.5	259			1416	8.6	262	
	1818	0.4	12													1831	1.4	43			1848	2.4	73			1933	3.0	91	
4 Th	0033	9.6	293		19 F	0031	11.3	344		4 Sa	0015	10.2	311		19 Su	0037	11.4	347		4 Tu	0049	11.2	341		19 W	0129	10.6	323	
	0636	1.0	30			0652	-1.5	-46			0644	-0.7	-21			0720	-2.2	-67			0741	-2.3	-70			0823	-1.5	-46	
	1240	9.5	290			1305	10.2	311			1258	8.8	268			1343	9.1	277			1409	8.6	262			1456	8.5	259	
	1847	0.4	12			1858	0.0	0			1840	1.5	46			1912	1.9	58			1929	2.6	79			2014	3.2	98	
5 F	0058	9.9	302		20 Sa	0108	11.5	351		5 Su	0045	10.6	323		20 M	0114	11.3	344		5 W	0129	11.2	341		20 Th	0206	10.2	311	
	0708	0.3	9			0736	-1.9	-58			0719	-1.2	-37			0800	-2.1	-64			0824	-2.4	-73			0901	-1.1	-34	
	1314	9.5	290			1351	9.9	302			1337	8.8	268			1427	8.9	271			1454	8.6	262			1536	8.3	253	
	1915	0.6	18			1937	0.6	18			1913	1.8	55			1952	2.4	73			2014	2.7	82			2055	3.4	104	
6 Sa	0123	10.2	311		21 Su	0144	11.5	351		6 M	0116	10.8	329		21 Tu	0151	10.9	332		6 Th	0213	11.0	335		21 F	0245	9.6	293	
	0741	-0.1	-3			0818	-1.9	-58			0757	-1.5	-46			0841	-1.7	-52			0909	-2.3	-70			0939	-0.7	-21	
	1349	9.3	283			1437	9.4	287			1417	8.7	265			1512	8.5	259			1543	8.5	259			1617	8.1	247	
	1944	0.9	27			2016	1.4	43			1948	2.1	64			2032	3.0	91			2104	2.9	88			2139	3.5	107	

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Yakutat, Alaska, 2019

Times and Heights of High and Low Waters

October				November				December																					
Time	Height			Time	Height			Time	Height			Time	Height																
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm		h	m	ft	cm										
1 Tu	0225	10.6	323		16 W	0210	9.3	283		1 F	0355	9.1	277		16 Sa	0325	8.8	268		1 Su	0428	8.8	268		16 M	0404	9.2	280	
	0819	0.5	15			0755	2.2	67			0919	3.6	110			0844	3.8	116			0947	4.4	134			0929	3.7	113	
	1428	11.7	357			1357	10.6	323			1517	10.6	323			1442	10.8	329			1534	9.8	299			1522	10.6	323	
	2059	-1.3	-40			2032	-0.1	-3			2213	-0.1	-3			2140	-0.4	-12			2232	0.6	18			2215	-0.7	-21	
2 W	0315	9.8	299		17 Th	0248	8.9	271		2 Sa	0453	8.5	259		17 Su	0416	8.5	259		2 M	0521	8.5	259		17 Tu	0456	9.1	277	
	0901	1.5	46			0825	2.8	85			1009	4.3	131			0931	4.2	128			1044	4.8	146			1030	3.7	113	
	1508	11.2	341			1427	10.5	320			1604	9.7	296			1529	10.2	311			1624	8.8	268			1619	9.7	296	
	2148	-0.7	-21			2110	0.0	0			2307	0.8	24			2231	0.0	0			2322	1.4	43			2306	0.0	0	
3 Th	0409	8.9	271		18 F	0331	8.5	259		3 Su	0559	8.0	244		18 M	0516	8.2	250		3 Tu	0619	8.3	253		18 W	0552	9.2	280	
	0944	2.6	79			0859	3.4	104			1113	4.9	149			1032	4.5	137			1153	4.9	149			1143	3.6	110	
	1552	10.5	320			1503	10.2	311			1701	8.7	265			1627	9.5	290			1725	8.0	244			1728	8.7	265	
	2241	0.1	3			2154	0.3	9			2307	0.8	24			2331	0.5	15			2331	0.5	15			2331	0.5	15	

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Cordova, Alaska, 2019

Times and Heights of High and Low Waters

April				May				June																																																																																		
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height																																																																															
<small>h m ft cm</small>	<small>h m ft cm</small>	<small>h m ft cm</small>	<small>h m ft cm</small>	<small>h m ft cm</small>	<small>h m ft cm</small>	<small>h m ft cm</small>	<small>h m ft cm</small>	<small>h m ft cm</small>	<small>h m ft cm</small>	<small>h m ft cm</small>	<small>h m ft cm</small>																																																																															
1 M 0510 3.7 113 1103 10.9 332 1734 0.8 24 2357 10.9 332	16 Tu 0445 1.9 58 1051 12.2 372 1708 -0.7 -21 2336 12.6 384	1 W 0517 2.1 64 1114 10.4 317 1722 1.3 40 2336 11.7 357	16 Th 0522 -0.5 -15 1135 11.4 347 1724 0.4 12 2343 13.7 418	1 Sa 0557 -0.6 -18 1216 10.3 314 1752 2.2 67 2357 13.1 399	16 Su 0635 -2.1 -64 1311 10.9 332 1828 2.3 70	2 Tu 0546 2.6 79 1146 11.4 347 1805 0.4 12	17 W 0536 0.2 6 1147 12.8 390 1752 -1.1 -34	2 Th 0551 0.9 27 1157 10.8 329 1755 1.1 34	17 F 0607 -1.7 -52 1229 11.7 357 1807 0.6 18	2 Su 0634 -1.5 -46 1301 10.7 326 1831 2.2 67	17 M 0036 13.6 415 0715 -2.4 -73 1355 11.0 335 1910 2.6 79	3 W 0026 11.5 351 0618 1.6 49 1224 11.8 360 1834 0.1 3	18 Th 0016 13.6 415 0622 -1.2 -37 1239 13.1 399 1834 -1.1 -34	3 F 0007 12.3 375 0624 -0.1 -3 1238 11.2 341 1828 1.1 34	18 Sa 0023 14.1 430 0649 -2.5 -76 1318 11.8 360 1849 1.0 30	3 M 0034 13.6 415 0713 -2.3 -70 1345 11.0 335 1911 2.3 70	18 Tu 0115 13.5 411 0754 -2.3 -70 1436 11.0 335 1951 2.8 85	4 Th 0053 12.1 369 0650 0.7 21 1300 12.1 369 1903 0.1 3	19 F 0055 14.2 433 0705 -2.2 -67 1327 13.1 399 1914 -0.7 -21	4 Sa 0037 12.9 393 0658 -1.0 -30 1318 11.4 347 1901 1.3 40	19 Su 0101 14.2 433 0730 -2.8 -85 1403 11.7 357 1930 1.5 46	4 Tu 0112 13.9 424 0754 -2.7 -82 1428 11.1 338 1953 2.5 76	19 W 0152 13.1 399 0833 -1.9 -58 1514 10.8 329 2033 3.2 98	5 F 0120 12.6 384 0723 0.0 0 1335 12.1 369 1933 0.3 9	20 Sa 0132 14.5 442 0748 -2.6 -79 1412 12.8 390 1954 0.0 0	5 Su 0107 13.3 405 0733 -1.6 -49 1356 11.4 347 1935 1.6 49	20 M 0137 14.0 427 0811 -2.6 -79 1446 11.4 347 2011 2.2 67	5 W 0152 14.0 427 0837 -2.8 -85 1513 11.0 335 2038 2.7 82	20 Th 0228 12.6 384 0913 -1.4 -43 1552 10.5 320 2115 3.5 107	6 Sa 0146 12.9 393 0756 -0.4 -12 1409 12.0 366 2004 0.7 21	21 Su 0207 14.4 439 0830 -2.5 -76 1456 12.2 372 2035 1.0 30	6 M 0138 13.6 415 0811 -1.9 -58 1435 11.3 344 2012 2.0 61	21 Tu 0212 13.5 411 0852 -2.1 -64 1529 10.9 332 2053 2.9 88	6 Th 0234 13.7 418 0923 -2.6 -79 1601 10.8 329 2128 3.0 91	21 F 0304 11.9 363 0952 -0.8 -24 1632 10.2 311 2159 3.8 116	7 Su 0212 13.1 399 0831 -0.7 -21 1443 11.6 354 2037 1.3 40	22 M 0241 13.9 424 0913 -2.0 -61 1541 11.4 347 2116 2.1 64	7 Tu 0210 13.6 415 0852 -1.9 -58 1517 10.9 332 2052 2.6 79	22 W 0247 12.8 390 0935 -1.4 -43 1613 10.3 314 2136 3.6 110	7 F 0319 13.1 399 1011 -2.2 -67 1655 10.6 323 2222 3.2 98	22 Sa 0341 11.1 338 1032 -0.1 -3 1715 9.9 302 2246 4.0 122	8 M 0238 13.1 399 0909 -0.7 -21 1520 11.1 338 2112 2.0 61	23 Tu 0316 13.1 399 0957 -1.1 -34 1628 10.4 317 2159 3.2 98	8 W 0245 13.4 408 0936 -1.7 -52 1603 10.4 317 2137 3.2 98	23 Th 0323 11.9 363 1018 -0.5 -15 1702 9.7 296 2223 4.2 128	8 Sa 0413 12.2 372 1102 -1.5 -46 1757 10.5 320 2322 3.3 101	23 Su 0425 10.2 311 1113 0.7 21 1804 9.7 296 2337 4.1 125	9 Tu 0307 13.0 396 0951 -0.5 -15 1601 10.3 314 2150 2.9 88	24 W 0352 12.1 369 1044 -0.1 -3 1725 9.5 290 2246 4.2 128	9 Th 0324 12.8 390 1024 -1.2 -37 1701 9.8 299 2228 3.8 116	24 F 0404 10.9 332 1104 0.4 12 1800 9.3 283 2314 4.7 143	9 Su 0521 11.1 338 1156 -0.6 -18 1901 10.7 326	24 M 0521 9.3 283 1156 1.5 46 1856 9.8 299	10 W 0341 12.6 384 1038 -0.1 -3 1655 9.5 290 2235 3.8 116	25 Th 0434 11.0 335 1135 1.0 30 1838 8.9 271 2340 5.0 152	10 F 0413 12.0 366 1118 -0.6 -18 1814 9.5 290 2328 4.2 128	25 Sa 0456 9.9 302 1153 1.2 37 1904 9.2 280	10 M 0030 3.3 101 0645 10.2 311 1255 0.2 6 2001 11.2 341	25 Tu 0034 4.1 125 0636 8.6 262 1243 2.2 67 1946 10.1 308	11 Th 0424 12.0 366 1132 0.4 12 1816 8.8 268 2331 4.5 137	26 F 0536 9.9 302 1233 1.8 55 1957 8.8 268	11 Sa 0523 11.1 338 1217 0.0 0 1931 9.7 296	26 Su 0014 5.0 152 0612 9.0 274 1246 1.9 58 2002 9.4 287	11 Tu 0146 2.8 85 0807 9.8 299 1358 1.0 30 2054 11.9 363	26 W 0140 3.8 116 0753 8.3 253 1337 2.9 88 2032 10.6 323	12 F 0529 11.2 341 1236 0.9 27 1950 8.8 268	27 Sa 0047 5.5 168 0708 9.2 280 1344 2.4 73 2101 9.1 277	12 Su 0040 4.3 131 0657 10.4 317 1324 0.4 12 2036 10.3 314	27 M 0124 4.8 146 0736 8.6 262 1346 2.3 70 2050 9.8 299	12 W 0305 1.8 55 0919 9.8 299 1503 1.5 46 2143 12.5 381	27 Th 0251 3.0 91 0902 8.3 253 1437 3.3 101 2115 11.2 341	13 Sa 0044 5.0 152 0707 10.8 329 1352 1.0 30 2104 9.5 290	28 Su 0218 5.4 165 0830 9.1 277 1503 2.4 73 2151 9.6 293	13 M 0203 3.8 116 0823 10.4 317 1435 0.6 18 2130 11.2 341	28 Tu 0245 4.2 128 0846 8.7 265 1449 2.5 76 2131 10.4 317	13 Th 0413 0.5 15 1025 10.0 305 1604 1.8 55 2229 13.0 396	28 F 0355 1.9 58 1003 8.7 265 1538 3.5 107 2157 11.9 363	14 Su 0214 4.7 143 0837 11.0 335 1511 0.6 18 2203 10.5 320	29 M 0346 4.5 137 0934 9.4 287 1603 2.0 61 2230 10.3 314	14 Tu 0325 2.6 79 0934 10.6 323 1541 0.5 15 2218 12.2 372	29 W 0352 3.1 94 0945 8.9 271 1545 2.5 76 2209 11.1 338	14 F 0507 -0.7 -21 1126 10.3 314 1657 2.0 61 2313 13.4 408	29 Sa 0446 0.7 21 1101 9.2 280 1632 3.4 104 2240 12.6 384	15 M 0340 3.6 110 0948 11.6 354 1616 -0.1 -3 2252 11.6 354	30 Tu 0439 3.3 101 1027 9.9 302 1646 1.6 49 2304 11.0 335	15 W 0430 1.0 30 1038 11.1 338 1636 0.4 12 2301 13.0 396	30 Th 0440 1.8 55 1039 9.4 287 1632 2.4 73 2245 11.8 360	15 Sa 0553 -1.6 -49 1222 10.6 323 1745 2.2 67 2355 13.6 415	30 Su 0530 -0.6 -18 1155 9.8 299 1721 3.1 94 2324 13.3 405	31 F 0519 0.6 18 1128 9.9 302 1713 2.3 70 2321 12.5 381

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Cordova, Alaska, 2019

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
<small>h m</small> <small>ft cm</small>	<small>ft cm</small>	<small>h m</small> <small>ft cm</small>	<small>ft cm</small>	<small>h m</small> <small>ft cm</small>	<small>ft cm</small>	<small>h m</small> <small>ft cm</small>	<small>ft cm</small>	<small>h m</small> <small>ft cm</small>	<small>ft cm</small>	<small>h m</small> <small>ft cm</small>	<small>ft cm</small>
1 Tu	0247 13.7 418 0837 0.0 0 1449 14.8 451 2112 -1.7 -52	16 W	0229 12.0 366 0817 2.3 70 1415 13.5 411 2049 -0.3 -9	1 F	0413 11.5 351 0940 3.8 116 1532 13.2 402 2225 -0.1 -3	16 Sa	0341 11.1 338 0912 4.3 131 1456 13.5 411 2157 -0.5 -15	1 Su	0446 11.1 338 1007 4.8 146 1549 12.1 369 2245 0.7 21	16 M	0424 11.6 354 0953 4.1 125 1539 13.2 402 2231 -0.8 -24
2 W	0334 12.7 387 0920 1.3 40 1527 14.1 430 2200 -1.0 -30	17 Th	0304 11.5 351 0851 3.1 94 1443 13.3 405 2129 0.0 0	2 Sa	0511 10.7 326 1030 4.8 146 1617 11.9 363 2316 1.0 30	17 Su	0432 10.7 326 1001 4.8 146 1540 12.8 390 2248 0.1 3	2 M	0542 10.6 323 1100 5.4 165 1638 10.9 332 2333 1.6 49	17 Tu	0518 11.5 351 1050 4.2 128 1637 12.1 369 2322 0.0 0
3 Th	0427 11.5 351 1005 2.7 82 1608 13.1 399 2251 0.1 3	18 F	0343 10.8 329 0928 3.9 119 1513 12.9 393 2213 0.5 15	3 Su	0623 10.1 308 1127 5.6 171 1719 10.7 326	18 M	0539 10.3 314 1059 5.2 158 1638 11.8 360 2344 0.7 21	3 Tu	0644 10.4 317 1159 5.7 174 1750 9.8 299	18 W	0620 11.6 354 1154 4.1 125 1755 11.0 335
4 F	0531 10.4 317 1054 4.1 125 1657 11.9 363 2347 1.2 37	19 Sa	0432 10.1 308 1012 4.7 143 1552 12.3 375 2304 1.0 30	4 M	0014 2.1 64 0741 9.9 302 1236 6.1 186 1853 9.9 302	19 Tu	0655 10.4 317 1207 5.3 162 1808 11.0 335	4 W	0025 2.5 76 0743 10.5 320 1309 5.6 171 1918 9.2 280	19 Th	0017 0.9 27 0722 11.9 363 1306 3.8 116 1924 10.3 314
5 Sa	0653 9.6 293 1152 5.2 158 1810 10.8 329	20 Su	0545 9.5 290 1106 5.4 165 1648 11.5 351	5 Tu	0122 2.8 85 0845 10.2 311 1406 5.9 180 2018 9.7 296	20 W	0046 1.2 37 0803 11.0 335 1326 4.9 149 1945 10.7 326	5 Th	0123 3.2 98 0833 10.8 329 1431 5.0 152 2033 9.2 280	20 F	0117 1.8 55 0819 12.5 381 1425 2.9 88 2045 10.2 311
6 Su	0054 2.2 67 0819 9.5 290 1306 5.9 180 1941 10.3 314	21 M	0004 1.5 46 0719 9.4 287 1216 5.8 177 1823 10.9 332	6 W	0237 3.0 91 0934 10.7 326 1536 5.0 152 2124 9.9 302	21 Th	0154 1.6 49 0858 11.9 363 1450 3.7 113 2103 11.0 335	6 F	0225 3.6 110 0916 11.4 347 1543 4.0 122 2135 9.4 287	21 Sa	0222 2.6 79 0911 13.2 402 1541 1.7 52 2156 10.5 320
7 M	0219 2.6 79 0929 9.9 302 1447 5.8 177 2059 10.4 317	22 Tu	0115 1.7 52 0835 10.0 305 1341 5.5 168 2004 11.0 335	7 Th	0342 2.9 88 1013 11.3 344 1629 3.8 116 2217 10.4 317	22 F	0302 1.7 52 0946 12.9 393 1600 2.1 64 2208 11.5 351	7 Sa	0325 3.7 113 0953 12.0 366 1632 2.7 82 2230 9.8 299	22 Su	0329 3.0 91 1000 13.9 424 1641 0.3 9 2301 10.9 332
8 Tu	0341 2.4 73 1022 10.4 317 1609 4.9 149 2200 10.7 326	23 W	0232 1.5 46 0932 11.0 335 1508 4.4 134 2119 11.6 354	8 F	0428 2.6 79 1046 12.0 366 1706 2.6 79 2303 10.8 329	23 Sa	0403 1.6 49 1030 13.9 424 1655 0.4 12 2308 12.0 366	8 Su	0415 3.7 113 1029 12.7 387 1711 1.5 46 2319 10.3 314	23 M	0429 3.1 94 1047 14.4 439 1731 -0.9 -27
9 W	0435 1.9 58 1102 11.0 335 1657 3.8 116 2250 11.2 341	24 Th	0341 0.9 27 1020 12.1 369 1617 2.7 82 2222 12.4 378	9 Sa	0505 2.4 73 1117 12.6 384 1739 1.4 43 2346 11.3 344	24 Su	0454 1.5 46 1113 14.7 448 1742 -1.1 -34	9 M	0458 3.6 110 1104 13.3 405 1746 0.4 12	24 Tu	0000 11.4 347 0521 3.2 98 1132 14.7 448 1815 -1.7 -52
10 Th	0514 1.4 43 1135 11.6 354 1733 2.7 82 2332 11.7 357	25 F	0436 0.3 9 1103 13.3 405 1709 0.9 27 2319 13.0 396	10 Su	0538 2.3 70 1147 13.2 402 1811 0.5 15	25 M	0003 12.4 378 0541 1.6 49 1154 15.2 463 1826 -2.1 -64	10 Tu	0005 10.9 332 0537 3.6 110 1140 13.8 421 1822 -0.5 -15	25 W	0052 11.8 360 0608 3.2 98 1216 14.9 454 1857 -2.1 -64
11 F	0546 1.1 34 1204 12.2 372 1805 1.7 52	26 Sa	0523 -0.1 -3 1144 14.3 436 1756 -0.7 -21	11 M	0025 11.6 354 0610 2.3 70 1217 13.7 418 1844 -0.3 -9	26 Tu	0055 12.7 387 0625 1.9 58 1235 15.5 472 1909 -2.5 -76	11 W	0049 11.3 344 0615 3.5 107 1216 14.3 436 1858 -1.2 -37	26 Th	0138 12.1 369 0652 3.3 101 1258 14.8 451 1937 -2.1 -64
12 Sa	0011 12.0 366 0616 0.9 27 1231 12.7 387 1836 0.9 27	27 Su	0012 13.5 411 0606 -0.2 -6 1223 15.0 457 1840 -1.9 -58	12 Tu	0104 11.9 363 0643 2.5 76 1246 14.0 427 1917 -0.8 -24	27 W	0143 12.8 390 0707 2.3 70 1314 15.3 466 1951 -2.5 -76	12 Th	0131 11.6 354 0654 3.5 107 1253 14.6 445 1936 -1.7 -52	27 F	0220 12.2 372 0735 3.4 104 1338 14.4 439 2017 -1.8 -55
13 Su	0046 12.3 375 0645 1.0 30 1257 13.1 399 1907 0.3 9	28 M	0102 13.7 418 0648 0.1 3 1302 15.5 472 1923 -2.5 -76	13 W	0141 11.9 363 0717 2.8 85 1316 14.2 433 1953 -1.1 -34	28 Th	0228 12.6 384 0750 2.9 88 1352 14.9 454 2033 -2.0 -61	13 F	0212 11.8 360 0733 3.6 110 1330 14.7 448 2016 -1.9 -58	28 Sa	0259 12.1 369 0817 3.6 110 1415 13.9 424 2056 -1.3 -40
14 M	0121 12.3 375 0715 1.2 37 1323 13.4 408 1939 -0.1 -3	29 Tu	0150 13.6 415 0729 0.7 21 1340 15.5 472 2007 -2.6 -79	14 Th	0219 11.9 363 0752 3.2 98 1347 14.2 433 2031 -1.1 -34	29 F	0312 12.2 372 0834 3.5 107 1430 14.2 433 2116 -1.3 -40	14 Sa	0253 11.9 363 0816 3.7 113 1410 14.5 442 2059 -1.8 -55	29 Su	0337 11.8 360 0900 3.9 119 1451 13.2 402 2135 -0.6 -18
15 Tu	0155 12.2 372 0745 1.7 52 1349 13.5 411 2013 -0.3 -9	30 W	0236 13.1 399 0811 1.6 49 1417 15.0 457 2051 -2.1 -64	15 F	0258 11.6 354 0830 3.7 113 1420 14.0 427 2112 -0.9 -27	30 Sa	0357 11.6 354 0919 4.2 128 1508 13.2 402 2200 -0.4 -12	15 Su	0336 11.7 357 0902 3.9 119 1452 14.0 427 2144 -1.4 -43	30 M	0414 11.5 351 0944 4.2 128 1528 12.3 375 2214 0.2 6
		31 Th	0323 12.4 378 0854 2.7 82 1454 14.3 436 2137 -1.2 -37							31 Tu	0454 11.1 338 1030 4.5 137 1608 11.2 341 2254 1.1 34

Time meridian 135° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Valdez, Alaska, 2019

Times and Heights of High and Low Waters

Table with 3 main sections: January, February, and March. Each section contains a 5x3 grid of columns for Time and Height. Each column contains three rows of data: time (h m ft) and height (ft cm). Includes day abbreviations (Tu, W, Th, F, Sa, Su, M) and symbols (●, ○) for specific days.

Time meridian 135° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Valdez, Alaska, 2019

Times and Heights of High and Low Waters

April				May				June			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	h m	ft	h m	ft	h m	ft	h m	ft	h m	ft
1 M	0508 3.5 107 1101 10.4 317 1731 0.8 24 2352 10.4 317	16 Tu	0445 1.8 55 1046 11.6 354 1707 -0.6 -18 2329 12.2 372	1 W	0516 2.0 61 1112 9.8 299 1721 1.4 43 2331 11.3 344	16 Th	0521 -0.5 -15 1131 10.9 332 1723 0.6 18 2336 13.2 402	1 Sa	0557 -0.5 -15 1213 9.9 302 1750 2.4 73 2350 12.8 390	16 Su	0635 -2.1 -64 1307 10.4 317 1828 2.6 79
2 Tu	0545 2.5 76 1143 10.9 332 1804 0.4 12	17 W	0535 0.2 6 1142 12.2 372 1751 -0.9 -27	2 Th	0551 0.9 27 1155 10.3 314 1754 1.3 40	17 F	0606 -1.7 -52 1224 11.2 341 1806 0.8 24	2 Su	0635 -1.5 -46 1257 10.3 314 1829 2.5 76	17 M	0029 13.3 405 0715 -2.3 -70 1351 10.6 323 1910 2.8 85
3 W	0021 11.0 335 0618 1.5 46 1220 11.2 341 1834 0.2 6	18 Th	0009 13.0 396 0621 -1.2 -37 1233 12.5 381 1833 -0.9 -27	3 F	0001 11.9 363 0624 -0.1 -3 1234 10.6 323 1827 1.3 40	18 Sa	0015 13.6 415 0649 -2.5 -76 1313 11.3 344 1848 1.2 37	3 M	0026 13.3 405 0713 -2.2 -67 1340 10.6 323 1908 2.5 76	18 Tu	0107 13.1 399 0755 -2.3 -70 1432 10.6 323 1951 3.0 91
4 Th	0047 11.6 354 0650 0.7 21 1255 11.5 351 1903 0.2 6	19 F	0047 13.7 418 0704 -2.2 -67 1321 12.5 381 1913 -0.5 -15	4 Sa	0030 12.4 378 0658 -1.0 -30 1312 10.9 332 1859 1.5 46	19 Su	0052 13.7 418 0730 -2.8 -85 1358 11.3 344 1929 1.7 52	4 Tu	0103 13.6 415 0753 -2.7 -82 1423 10.7 326 1950 2.7 82	19 W	0143 12.8 390 0834 -2.0 -61 1510 10.4 317 2032 3.3 101
5 F	0113 12.0 366 0722 0.0 0 1329 11.6 354 1932 0.4 12	20 Sa	0123 14.0 427 0747 -2.6 -79 1406 12.3 375 1953 0.2 6	5 Su	0059 12.9 393 0733 -1.6 -49 1350 10.9 332 1933 1.8 55	20 M	0129 13.6 415 0811 -2.6 -79 1441 11.0 335 2010 2.3 70	5 W	0142 13.6 415 0836 -2.8 -85 1508 10.7 326 2035 2.9 88	20 Th	0219 12.2 372 0912 -1.5 -46 1549 10.2 311 2114 3.6 110
6 Sa	0138 12.4 378 0755 -0.5 -15 1402 11.5 351 2002 0.8 24	21 Su	0158 13.9 424 0829 -2.5 -76 1451 11.7 357 2033 1.1 34	6 M	0129 13.1 399 0810 -1.9 -58 1429 10.8 329 2009 2.2 67	21 Tu	0204 13.1 399 0852 -2.2 -67 1525 10.6 323 2051 3.0 91	6 Th	0224 13.4 408 0921 -2.7 -82 1557 10.5 320 2124 3.1 94	21 F	0255 11.6 354 0951 -0.9 -27 1630 9.9 302 2157 3.8 116
7 Su	0203 12.6 384 0829 -0.7 -21 1436 11.1 338 2033 1.4 43	22 M	0233 13.4 408 0912 -2.1 -64 1536 10.9 332 2113 2.1 64	7 Tu	0201 13.1 399 0849 -2.0 -61 1511 10.5 320 2048 2.7 82	22 W	0239 12.4 378 0933 -1.5 -46 1610 10.0 305 2134 3.6 110	7 F	0309 12.7 387 1008 -2.2 -67 1651 10.3 314 2218 3.3 101	22 Sa	0333 10.8 329 1030 -0.1 -3 1714 9.7 296 2242 4.1 125
8 M	0230 12.6 384 0906 -0.8 -24 1513 10.6 323 2107 2.1 64	23 Tu	0308 12.6 384 0956 -1.2 -37 1625 10.1 308 2156 3.2 98	8 W	0235 12.9 393 0932 -1.8 -55 1558 10.0 305 2131 3.3 101	23 Th	0315 11.5 351 1016 -0.6 -18 1701 9.5 290 2220 4.2 128	8 Sa	0403 11.8 360 1058 -1.5 -46 1752 10.3 314 2319 3.4 104	23 Su	0416 9.9 302 1109 0.6 18 1803 9.5 290 2333 4.2 128
9 Tu	0258 12.5 381 0947 -0.6 -18 1555 9.9 302 2144 2.9 88	24 W	0344 11.6 354 1041 -0.2 -6 1723 9.2 280 2241 4.2 128	9 Th	0315 12.4 378 1020 -1.3 -40 1657 9.5 290 2222 3.8 116	24 F	0355 10.5 320 1101 0.3 9 1759 9.1 277 2311 4.7 143	9 Su	0511 10.7 326 1152 -0.6 -18 1856 10.5 320	24 M	0511 8.9 271 1150 1.4 43 1853 9.6 293
10 W	0332 12.1 369 1032 -0.2 -6 1650 9.1 277 2227 3.7 113	25 Th	0427 10.5 320 1132 0.8 24 1837 8.7 265 2335 5.0 152	10 F	0403 11.6 354 1113 -0.7 -21 1810 9.3 283 2322 4.3 131	25 Sa	0447 9.5 290 1149 1.1 34 1902 9.0 274	10 M	0028 3.3 101 0635 9.8 299 1251 0.3 9 1955 11.0 335	25 Tu	0032 4.1 125 0626 8.2 250 1235 2.2 67 1942 9.9 302
11 Th	0415 11.5 351 1126 0.3 9 1811 8.5 259 2322 4.5 137	26 F	0529 9.5 290 1232 1.7 52 1953 8.5 259	11 Sa	0512 10.7 326 1213 -0.1 -3 1926 9.4 287	26 Su	0011 4.9 149 0603 8.7 265 1243 1.8 55 1958 9.2 280	11 Tu	0148 2.8 85 0759 9.3 283 1355 1.1 34 2048 11.5 351	26 W	0142 3.8 116 0746 7.8 238 1329 2.9 88 2027 10.3 314
12 F	0519 10.8 329 1231 0.8 24 1944 8.5 259	27 Sa	0047 5.4 165 0702 8.8 268 1345 2.3 70 2057 8.8 268	12 Su	0037 4.3 131 0646 10.0 305 1321 0.5 15 2030 10.0 305	27 M	0127 4.8 146 0730 8.2 250 1345 2.3 70 2047 9.6 293	12 W	0307 1.8 55 0914 9.3 283 1501 1.7 52 2137 12.1 369	27 Th	0256 3.0 91 0857 7.9 241 1431 3.4 104 2110 10.9 332
13 Sa	0037 4.9 149 0656 10.3 314 1351 0.9 27 2059 9.1 277	28 Su	0225 5.2 158 0826 8.7 265 1503 2.3 70 2147 9.3 283	13 M	0205 3.8 116 0815 9.8 299 1434 0.7 21 2124 10.9 332	28 Tu	0250 4.1 125 0842 8.2 250 1448 2.6 79 2128 10.1 308	13 Th	0413 0.5 15 1022 9.5 290 1603 2.0 61 2223 12.7 387	28 F	0358 1.9 58 1001 8.2 250 1533 3.6 110 2151 11.6 354
14 Su	0214 4.7 143 0829 10.4 317 1511 0.6 18 2158 10.1 308	29 M	0347 4.3 131 0932 8.9 271 1601 2.0 61 2227 9.9 302	14 Tu	0327 2.5 76 0929 10.1 308 1540 0.7 21 2212 11.8 360	29 W	0354 3.0 91 0943 8.4 256 1544 2.6 79 2205 10.8 329	14 F	0506 -0.7 -21 1123 9.8 299 1656 2.2 67 2307 13.0 396	29 Sa	0447 0.7 21 1059 8.7 265 1629 3.6 110 2234 12.3 375
15 M	0342 3.5 107 0943 11.0 335 1615 -0.1 -3 2246 11.1 338	30 Tu	0438 3.2 98 1026 9.3 283 1645 1.7 52 2301 10.6 323	15 W	0430 1.0 30 1033 10.5 320 1635 0.6 18 2255 12.6 384	30 Th	0441 1.8 55 1037 8.9 271 1630 2.5 76 2240 11.5 351	15 Sa	0552 -1.6 -49 1218 10.2 311 1744 2.4 73 2348 13.2 402	30 Su	0531 -0.5 -15 1153 9.4 287 1718 3.4 104 2317 13.0 396
						31 F	0520 0.6 18 1126 9.4 287 1711 2.5 76 2315 12.2 372				

Time meridian 135° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Seward, Alaska, 2019

Times and Heights of High and Low Waters

April				May				June			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft cm	h m	ft cm	h m	ft cm	h m	ft cm	h m	ft cm	h m	ft cm
1 M	0508 3.1 94 1102 9.0 274 1734 0.6 18 2356 8.8 268	16 Tu	0444 1.6 49 1044 9.9 302 1707 -0.7 -21 2329 10.3 314	1 W	0515 1.6 49 1114 8.4 256 1719 1.1 34 2332 9.5 290	16 Th	0523 -0.5 -15 1131 9.2 280 1721 0.6 18 2335 11.3 344	1 Sa	0556 -0.6 -18 1212 8.4 256 1744 2.1 64 2349 11.0 335	16 Su	0639 -1.9 -58 1305 8.8 268 1824 2.4 73
2 Tu	0545 2.2 67 1143 9.4 287 1805 0.3 9	17 W	0536 0.2 6 1140 10.4 317 1751 -0.8 -24	2 Th	0550 0.7 21 1154 8.8 268 1751 1.0 30	17 F	0609 -1.5 -46 1223 9.4 287 1804 0.8 24	2 Su	0634 -1.5 -46 1255 8.8 268 1822 2.1 64	17 M	0026 11.5 351 0719 -2.1 -64 1347 8.9 271 1905 2.6 79
3 W	0021 9.4 287 0618 1.4 43 1219 9.7 296 1834 0.1 3	18 Th	0008 11.2 341 0622 -1.0 -30 1230 10.7 326 1832 -0.7 -21	3 F	0000 10.1 308 0623 -0.2 -6 1233 9.1 277 1823 1.1 34	18 Sa	0013 11.7 357 0651 -2.2 -67 1310 9.5 290 1845 1.2 37	3 M	0025 11.5 351 0712 -2.1 -64 1336 9.0 274 1902 2.2 67	18 Tu	0105 11.4 347 0757 -2.0 -61 1427 8.9 271 1945 2.8 85
4 Th	0046 9.9 302 0649 0.6 18 1253 9.9 302 1901 0.1 3	19 F	0044 11.8 360 0706 -1.8 -55 1317 10.7 326 1912 -0.3 -9	4 Sa	0028 10.7 326 0657 -0.9 -27 1310 9.3 283 1854 1.2 37	19 Su	0050 11.9 363 0732 -2.5 -76 1354 9.5 290 1925 1.6 49	4 Tu	0103 11.8 360 0752 -2.5 -76 1419 9.1 277 1943 2.4 73	19 W	0142 11.1 338 0835 -1.7 -52 1506 8.8 268 2025 3.0 91
5 F	0110 10.3 314 0720 0.0 0 1327 10.0 305 1929 0.3 9	20 Sa	0120 12.1 369 0748 -2.2 -67 1403 10.4 317 1950 0.3 9	5 Su	0058 11.1 338 0731 -1.5 -46 1348 9.3 283 1927 1.5 46	20 M	0127 11.8 360 0812 -2.3 -70 1438 9.2 280 2004 2.2 67	5 W	0143 11.8 360 0835 -2.6 -79 1505 9.1 277 2027 2.6 79	20 Th	0220 10.6 323 0913 -1.3 -40 1546 8.6 262 2106 3.2 98
6 Sa	0136 10.6 323 0752 -0.4 -12 1401 9.9 302 1957 0.7 21	21 Su	0156 12.0 366 0830 -2.2 -67 1447 9.9 302 2028 1.1 34	6 M	0130 11.3 344 0808 -1.8 -55 1428 9.2 280 2002 1.9 58	21 Tu	0203 11.4 347 0853 -1.9 -58 1521 8.9 271 2044 2.7 82	6 Th	0227 11.6 354 0920 -2.4 -73 1553 8.9 271 2117 2.8 85	21 F	0258 10.0 305 0951 -0.8 -24 1626 8.3 253 2150 3.4 104
7 Su	0203 10.9 332 0826 -0.7 -21 1437 9.6 293 2027 1.2 37	22 M	0232 11.6 354 0912 -1.8 -55 1533 9.2 280 2107 2.0 61	7 Tu	0203 11.4 347 0847 -1.8 -55 1511 8.9 271 2040 2.4 73	22 W	0241 10.8 329 0934 -1.3 -40 1606 8.4 256 2126 3.2 98	7 F	0314 11.1 338 1009 -2.0 -61 1646 8.8 268 2213 3.0 91	22 Sa	0339 9.3 283 1030 -0.2 -6 1708 8.2 250 2239 3.6 110
8 M	0233 10.9 332 0903 -0.7 -21 1516 9.1 277 2100 1.8 55	23 Tu	0309 11.0 335 0956 -1.1 -34 1621 8.5 259 2148 2.9 88	8 W	0241 11.2 341 0931 -1.6 -49 1559 8.5 259 2123 2.9 88	23 Th	0320 10.0 305 1017 -0.6 -18 1655 8.0 244 2213 3.7 113	8 Sa	0408 10.3 314 1101 -1.3 -40 1743 8.7 265 2318 3.1 94	23 Su	0423 8.5 259 1110 0.5 15 1753 8.1 247 2334 3.6 110
9 Tu	0305 10.8 329 0944 -0.6 -18 1601 8.5 259 2136 2.5 76	24 W	0348 10.2 311 1044 -0.2 -6 1716 7.7 235 2234 3.7 113	9 Th	0323 10.8 329 1020 -1.2 -37 1654 8.1 247 2214 3.4 104	24 F	0403 9.1 277 1103 0.2 6 1750 7.6 232 2307 4.1 125	9 Su	0510 9.3 283 1156 -0.6 -18 1845 8.9 271	24 M	0515 7.7 235 1153 1.2 37 1842 8.1 247
10 W	0342 10.5 320 1032 -0.2 -6 1654 7.8 238 2220 3.3 101	25 Th	0433 9.2 280 1138 0.7 21 1825 7.2 219 2332 4.4 134	10 F	0414 10.1 308 1116 -0.7 -21 1759 7.8 238 2318 3.8 116	25 Sa	0453 8.3 253 1155 0.9 27 1851 7.5 229	10 M	0034 2.9 88 0624 8.4 256 1257 0.2 6 1946 9.2 280	25 Tu	0039 3.5 107 0619 7.0 213 1241 1.8 55 1931 8.3 253
11 Th	0427 10.1 308 1129 0.2 6 1803 7.2 219 2317 3.9 119	26 F	0529 8.3 253 1243 1.4 43 1950 7.0 213	11 Sa	0516 9.3 283 1219 -0.2 -6 1914 7.9 241	26 Su	0016 4.3 131 0557 7.5 229 1252 1.4 43 1953 7.6 232	11 Tu	0158 2.3 70 0749 7.8 238 1400 0.8 24 2043 9.7 296	26 W	0152 3.1 94 0736 6.6 201 1334 2.3 70 2019 8.7 265
12 F	0527 9.5 290 1239 0.6 18 1932 7.1 216	27 Sa	0054 4.7 143 0645 7.6 232 1400 1.7 52 2104 7.3 223	12 Su	0040 3.8 116 0636 8.7 265 1330 0.2 6 2025 8.4 256	27 M	0139 4.0 122 0715 7.0 213 1353 1.8 55 2046 8.0 244	12 W	0313 1.4 43 0911 7.7 235 1503 1.3 40 2135 10.3 314	27 Th	0300 2.3 70 0854 6.6 201 1432 2.7 82 2105 9.3 283
13 Sa	0037 4.3 131 0648 9.0 274 1401 0.6 18 2057 7.6 232	28 Su	0235 4.4 134 0817 7.4 226 1509 1.7 52 2155 7.7 235	13 M	0212 3.2 98 0805 8.4 256 1440 0.3 9 2123 9.1 277	28 Tu	0256 3.3 101 0836 6.9 210 1451 1.9 58 2128 8.5 259	13 Th	0416 0.3 9 1023 7.9 241 1600 1.7 52 2221 10.8 329	28 F	0357 1.4 43 1003 6.9 210 1527 3.0 91 2149 9.9 302
14 Su	0217 4.0 122 0819 9.0 274 1516 0.2 6 2159 8.4 256	29 M	0347 3.6 110 0931 7.6 232 1602 1.5 46 2233 8.3 253	14 Tu	0330 2.1 64 0925 8.5 259 1541 0.4 12 2211 9.9 302	29 W	0353 2.4 73 0943 7.1 216 1540 2.0 61 2205 9.1 277	14 F	0509 -0.7 -21 1125 8.2 250 1652 2.0 61 2305 11.2 341	29 Sa	0446 0.3 9 1102 7.4 226 1620 3.0 91 2233 10.6 323
15 M	0341 3.0 91 0938 9.4 287 1617 -0.3 -9 2247 9.4 287	30 Tu	0436 2.6 79 1028 7.9 241 1644 1.3 40 2304 8.9 271	15 W	0431 0.7 21 1033 8.8 268 1633 0.4 12 2254 10.7 326	30 Th	0439 1.4 43 1039 7.5 229 1624 2.0 61 2240 9.7 296	15 Sa	0556 -1.5 -46 1218 8.5 259 1740 2.2 67 2347 11.5 351	30 Su	0530 -0.7 -21 1153 8.0 244 1709 2.9 88 2316 11.2 341
						31 F	0519 0.3 9 1128 7.9 241 1705 2.1 64 2314 10.4 317				

Time meridian 135° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Seldovia, Alaska, 2019

Times and Heights of High and Low Waters

January				February				March												
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height							
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm						
1 Tu	0430	4.9	149		16 W	0330	6.4	195		1 F	0049	15.1	460							
	1053	17.7	539			0611	6.2	189			16 Sa	0525	5.9	180						
	1738	1.3	40			1215	16.8	512				1817	-0.8	-24						
				2312	13.8	421		1902	0.5	15		1 F	0456	7.5	229					
2 W	0001	15.3	466		17 Th	0441	6.2	189		2 Sa	0034		14.5	442						
	0531	5.1	155			1050	17.3	527			0602		6.5	198						
	1144	18.1	552			1743	0.9	27			1202	15.4	469							
	1829	0.2	6						1845	1.5	46		17 Su	0512	5.4	165				
3 Th	0055	16.1	491		18 F	0015	15.3	466		3 Su	0138	18.5		564						
	0623	5.0	152			0544	5.4	165			0717	2.1		64						
	1229	18.5	564			1147	18.7	570			1322	21.0	640							
	1911	-0.7	-21		1834	-1.1	-34		1951	-4.3	-131		3 Su	0113	15.5	472				
4 F	0141	16.9	515		19 Sa	0107	16.9	515		4 M	0220	20.1		613						
	0708	4.6	140			0639	4.3	131			0805	0.3		9						
	1310	18.8	573			1240	20.1	613			1411	22.1	674							
	1949	-1.3	-40		1921	-3.0	-91		2033	-5.1	-155		4 M	0145	16.5	503				
5 Sa	0220	17.5	533		20 Su	0154	18.5	564		5 Tu	0300	21.2		646						
	0748	4.3	131			0729	2.9	88			0850	-1.1		-34						
	1348	19.1	582			1330	21.3	649			1458	22.5	686							
	2024	-1.7	-52		2006	-4.5	-137		2115	-5.2	-158		5 Tu	0213	17.4	530				
6 Su	0256	17.9	546		21 M	0239	19.7	600		6 W	0340	21.8		664						
	0826	3.9	119			0817	1.7	52			0935	-1.8		-55						
	1424	19.2	585			1419	22.2	677			1545	22.1	674							
	2057	-1.7	-52		2050	-5.3	-162		2156	-4.3	-131		6 W	0240	18.2	555				
7 M	0330	18.0	549		22 Tu	0322	20.6	628		7 Th	0419	21.7		661						
	0903	3.8	116			0903	0.8	24			1020	-1.9		-58						
	1500	19.1	582			1507	22.4	683			1631	20.9	637							
	2130	-1.5	-46		2133	-5.3	-162		2237	-2.7	-82		7 Th	0306	18.7	570				
8 Tu	0404	18.0	549		23 W	0404	21.0	640		8 F	0458	21.0		640						
	0939	3.8	116			0950	0.3	9			1106	-1.2		-37						
	1535	18.6	567			1555	21.9	668			1719	19.1	582							
	2204	-1.0	-30		2217	-4.6	-140		2319	-0.5	-15		8 F	0332	19.0	579				
9 W	0437	17.7	539		24 Th	0447	20.9	637		9 Sa	0538	19.8		604						
	1016	4.0	122			1039	0.4	12			1155	0.1		3						
	1611	17.9	546			1644	20.7	631			1810	16.9	515							
	2237	-0.2	-6		2301	-3.1	-94		2313	1.4	43		9 Sa	0359	19.0	579				
10 Th	0511	17.2	524		25 F	0531	20.3	619		10 Su	0003	1.9		58						
	1055	4.4	134			1130	0.9	27			0621	18.2		555						
	1648	16.9	515			1736	18.9	576			1251	1.6	49							
	2311	0.8	24		2347	-1.0	-30		1911	14.8	451		10 Su	0426	18.7	570				
11 F	0546	16.7	509		26 Sa	0617	19.3	588		11 M	0054	4.4		134						
	1136	4.9	149			1225	1.7	52			0711	16.6		506						
	1728	15.7	479			1833	16.8	512			1358	2.9	88							
	2348	2.1	64						2029	13.2	402		11 M	0455	18.2	555				
12 Sa	0623	16.1	491		27 Su	0037	1.3	40		12 Tu	0157	6.4		195						
	1223	5.3	162			0706	18.2	555			0814	15.1		460						
	1815	14.5	442			1328	2.6	79			1524	3.7	113							
				1940	14.9	454		1944	12.9	393		2209	12.7	387		12 Tu	0527	17.4	530	
13 Su	0029	3.4	104		28 M	0132	3.6	110		13 W	0322	7.6	232							
	0705	15.7	479			0802	17.2	524			0936	14.4	439							
	1319	5.5	168			1442	3.1	94			1656	3.4	104							
	1914	13.4	408		2102	13.6	415		2337	13.4	408		13 W	0000	4.6	140				
14 M	0117	4.7	143		29 Tu	0238	5.5	168		14 Th	0055	6.2		189						
	0753	15.6	475			0906	16.4	500			0704	15.6		475						
	1424	5.3	162			1605	3.0	91			1404	3.0	91							
	2030	12.7	387		2233	13.4	408		2050	12.6	384		14 Th	0217	7.2	219				
15 Tu	0218	5.8	177		30 W	0355	6.6	201		15 F	0824	15.1		460						
	0850	15.7	479			1016	16.1	491			1533	2.7		82						
	1537	4.4	134			1720	2.3	70			2227	13.3	405							
	2155	12.8	390		2352	14.1	430						15 F	0217	7.2	219				
16 W	0511	6.7	204		31 Th	0511	6.7	204		31 Su	0000	14.1		430						
	1121	16.3	497			1121	16.3	497			0543	6.2		189						
	1817	1.4	43			1817	1.4	43			1137	14.2	433							

Time meridian 135° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Seldovia, Alaska, 2019

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	h m	ft	h m	ft	h m	ft	h m	ft	h m	ft
1 Tu	0352 21.2 646 0946 -1.3 -40 1557 21.8 664 2216 -3.2 -98	16 W	0337 18.5 564 0927 1.9 58 1529 19.5 594 2152 -1.0 -30	1 F	0512 18.0 549 1050 4.0 122 1648 18.5 564 2326 0.0 0	16 Sa	0446 17.4 530 1023 4.6 140 1617 18.7 570 2256 -0.7 -21	1 Su	0543 16.9 515 1118 5.6 171 1710 16.8 512 2348 1.3 40	16 M	0523 18.0 549 1104 4.3 131 1700 18.5 564 2334 -1.0 -30
2 W	0439 19.8 604 1028 0.6 18 1637 20.5 625 2302 -1.7 -52	17 Th	0413 17.8 543 1000 3.0 91 1559 18.9 576 2228 -0.3 -9	2 Sa	0606 16.4 500 1140 5.8 177 1734 16.6 506	17 Su	0535 16.5 503 1111 5.6 171 1704 17.6 536 2347 0.5 15	2 M	0635 15.8 482 1212 6.6 201 1800 15.1 460	17 Tu	0614 17.5 533 1201 4.7 143 1757 17.2 524
3 Th	0529 17.9 546 1113 2.9 88 1719 18.7 570 2353 0.2 6	18 F	0454 16.7 509 1037 4.3 131 1633 18.0 549 2309 0.7 21	3 Su	0019 2.0 61 0710 15.0 457 1242 7.2 219 1832 14.7 448	18 M	0633 15.8 482 1211 6.4 195 1803 16.3 497	3 Tu	0039 2.9 88 0733 15.0 457 1318 7.2 219 1903 13.7 418	18 W	0027 0.4 12 0710 17.2 524 1307 4.9 149 1906 15.8 482
4 F	0626 16.0 488 1204 5.1 155 1807 16.8 512	19 Sa	0542 15.5 472 1120 5.7 174 1715 16.9 515	4 M	0126 3.6 110 0828 14.3 436 1404 7.9 241 1953 13.4 408	19 Tu	0048 1.6 49 0741 15.5 472 1325 6.7 204 1920 15.2 463	4 W	0139 4.2 128 0836 14.7 448 1436 7.2 219 2022 12.9 393	19 Th	0128 1.8 55 0812 17.1 521 1423 4.5 137 2027 14.9 454
5 Sa	0053 2.2 67 0739 14.4 439 1308 7.0 213 1909 14.9 454	20 Su	0000 1.8 55 0643 14.4 439 1217 7.0 213 1811 15.7 479	5 Tu	0248 4.5 137 0947 14.4 439 1541 7.5 229 2128 13.1 399	20 W	0159 2.4 73 0853 15.8 482 1450 6.0 183 2050 14.9 454	5 Th	0246 5.0 152 0935 15.0 457 1553 6.3 192 2144 12.9 393	20 F	0234 2.9 88 0914 17.5 533 1540 3.4 104 2151 14.9 454
6 Su	0211 3.6 110 0910 13.7 418 1437 7.9 241 2038 13.8 421	21 M	0107 2.7 82 0804 13.9 424 1337 7.7 235 1932 14.8 451	6 W	0407 4.6 140 1047 15.1 460 1653 6.2 189 2244 13.8 421	21 Th	0313 2.6 79 0958 16.8 512 1608 4.3 131 2213 15.6 475	6 F	0350 5.3 162 1025 15.5 472 1653 5.0 152 2252 13.5 411	21 Sa	0343 3.6 110 1014 18.1 552 1649 1.7 52 2306 15.6 475
7 M	0348 4.1 125 1037 14.2 433 1619 7.4 226 2215 13.9 424	22 Tu	0229 3.1 94 0930 14.5 442 1510 7.1 216 2109 14.9 454	7 Th	0503 4.2 128 1129 15.9 485 1739 4.6 140 2338 14.8 451	22 F	0421 2.3 70 1053 18.2 555 1711 2.1 64 2321 16.8 512	7 Sa	0445 5.3 162 1106 16.4 500 1738 3.4 104 2346 14.5 442	22 Su	0448 3.8 116 1108 19.0 579 1748 0.0 0
8 Tu	0504 3.6 110 1136 15.1 460 1727 6.1 186 2324 14.7 448	23 W	0350 2.5 76 1037 15.9 485 1630 5.3 162 2232 16.1 491	8 F	0544 3.6 110 1202 16.9 515 1815 3.0 91	23 Sa	0518 1.9 58 1140 19.6 597 1804 -0.2 -6	8 Su	0531 5.0 152 1143 17.3 527 1816 1.8 55	23 M	0010 16.6 506 0546 3.7 113 1158 19.7 600 1838 -1.5 -46
9 W	0553 2.8 85 1217 16.1 491 1810 4.6 140	24 Th	0456 1.4 43 1129 17.6 536 1731 2.9 88 2336 17.7 539	9 Sa	0020 15.8 482 0618 3.1 94 1232 17.8 543 1847 1.5 46	24 Su	0019 18.0 549 0609 1.5 46 1224 20.8 634 1850 -2.1 -64	9 M	0031 15.6 475 0612 4.5 137 1218 18.3 558 1852 0.3 9	24 Tu	0105 17.6 536 0638 3.5 107 1245 20.3 619 1923 -2.6 -79
10 Th	0011 15.8 482 0629 2.1 64 1248 17.0 518 1845 3.1 94	25 F	0549 0.2 6 1213 19.4 591 1821 0.3 9	10 Su	0058 16.8 512 0651 2.7 82 1300 18.8 573 1919 0.1 3	25 M	0110 19.1 582 0656 1.2 37 1305 21.6 658 1934 -3.5 -107	10 Tu	0113 16.7 509 0652 4.1 125 1253 19.2 585 1928 -1.1 -34	25 W	0153 18.4 561 0725 3.2 98 1329 20.7 631 1923 -3.2 -98
11 F	0049 16.8 512 0659 1.4 43 1315 17.9 546 1916 1.7 52	26 Sa	0031 19.3 588 0636 -0.7 -21 1254 20.9 637 1906 -1.9 -58	11 M	0134 17.7 539 0723 2.4 73 1329 19.5 594 1951 -1.1 -34	26 Tu	0158 19.8 604 0740 1.3 40 1346 22.0 671 2016 -4.1 -125	11 W	0153 17.6 536 0730 3.6 110 1329 20.0 610 2004 -2.2 -67	26 Th	0237 18.9 576 0809 3.0 91 1410 20.7 631 2045 -3.3 -101
12 Sa	0123 17.8 543 0728 0.9 27 1341 18.7 570 1946 0.4 12	27 Su	0121 20.5 625 0719 -1.2 -37 1333 22.1 674 1949 -3.6 -110	12 Tu	0209 18.3 558 0756 2.3 70 1358 20.0 610 2023 -1.9 -58	27 W	0244 20.0 610 0822 1.6 49 1426 21.8 664 2057 -4.0 -122	12 Th	0233 18.3 558 0809 3.3 101 1407 20.5 625 2041 -2.9 -88	27 F	0318 19.1 582 0851 3.1 94 1451 20.3 619 2123 -2.9 -88
13 Su	0156 18.5 564 0756 0.6 18 1407 19.3 588 2016 -0.5 -15	28 M	0208 21.2 646 0801 -1.1 -34 1411 22.6 689 2031 -4.4 -134	13 W	0246 18.6 567 0830 2.4 73 1429 20.3 619 2058 -2.2 -67	28 Th	0328 19.8 604 0904 2.3 70 1505 21.1 643 2138 -3.3 -101	13 F	0313 18.7 570 0849 3.3 101 1446 20.6 628 2120 -3.1 -94	28 Sa	0358 18.9 576 0932 3.3 101 1530 19.6 597 2201 -2.1 -64
14 M	0229 18.9 576 0825 0.7 21 1434 19.7 600 2047 -1.1 -34	29 Tu	0253 21.2 646 0842 -0.5 -15 1449 22.5 686 2113 -4.4 -134	14 Th	0323 18.6 567 0905 2.9 88 1502 20.1 613 2134 -2.1 -64	29 F	0412 19.1 582 0947 3.2 98 1545 20.0 610 2219 -2.0 -61	14 Sa	0354 18.7 570 0930 3.4 104 1527 20.4 622 2201 -2.9 -88	29 Su	0437 18.3 558 1013 3.8 116 1609 18.6 567 2239 -0.9 -27
15 Tu	0302 18.9 576 0856 1.1 34 1501 19.8 604 2119 -1.2 -37	30 W	0338 20.6 628 0923 0.7 21 1528 21.7 661 2155 -3.5 -107	15 F	0403 18.1 552 0942 3.6 110 1538 19.6 597 2212 -1.6 -49	30 Sa	0456 18.1 552 1031 4.4 134 1626 18.5 564 2302 -0.4 -12	15 Su	0437 18.4 561 1015 3.8 116 1611 19.7 600 2245 -2.1 -64	30 M	0515 17.6 536 1055 4.5 137 1649 17.4 530 2317 0.5 15
		31 Th	0424 19.5 594 1005 2.2 67 1607 20.3 619 2239 -2.0 -61							31 Tu	0555 16.8 512 1140 5.2 158 1731 15.9 485 2357 2.0 61

Time meridian 135° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Nikiski, Alaska, 2019

Times and Heights of High and Low Waters

January				February				March			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	h m	ft	h m	ft	h m	ft	h m	ft	h m	ft
1 Tu	0108 17.6 536 0704 5.2 158 1313 20.6 628 1958 0.8 24	16 W	0036 15.7 479 0623 7.5 229 1226 18.7 570 1924 2.6 79	1 F	0252 18.2 555 0838 6.7 204 1432 19.4 591 2118 -0.1 -3	16 Sa	0213 17.9 546 0803 6.7 204 1348 20.0 610 2045 -1.2 -37	1 F	0137 16.7 509 0725 8.0 244 1325 17.2 524 2011 1.9 58	16 Sa	0049 16.5 503 0640 7.8 238 1227 17.8 543 1927 0.9 27
2 W	0210 18.3 558 0801 5.5 168 1401 20.9 637 2048 -0.3 -9	17 Th	0139 16.8 512 0726 7.3 223 1317 19.7 600 2017 0.6 18	2 Sa	0335 19.1 582 0925 5.9 180 1514 19.8 604 2157 -0.8 -24	17 Su	0302 19.6 597 0858 4.8 146 1442 21.6 658 2133 -3.1 -94	2 Sa	0234 17.8 543 0824 6.9 210 1420 18.0 549 2058 0.9 27	17 Su	0150 18.1 552 0746 5.9 180 1336 19.3 588 2023 -0.9 -27
3 Th	0301 19.1 582 0852 5.5 168 1444 21.1 643 2132 -1.2 -37	18 F	0232 18.3 558 0822 6.5 198 1406 20.9 637 2105 -1.4 -43	3 Su	0412 19.8 604 1005 5.1 155 1551 20.3 619 2233 -1.3 -40	18 M	0345 21.2 646 0947 2.8 85 1531 23.1 704 2218 -4.5 -137	3 Su	0315 18.8 573 0909 5.6 171 1503 18.8 573 2136 0.1 3	18 M	0239 19.9 607 0842 3.5 107 1432 21.1 643 2111 -2.5 -76
4 F	0345 19.8 604 0937 5.3 162 1523 21.2 646 2212 -1.7 -52	19 Sa	0319 19.7 600 0913 5.3 162 1452 22.2 677 2151 -3.2 -98	4 M	0445 20.4 622 1042 4.2 128 1626 20.7 631 2307 -1.6 -49	19 Tu	0427 22.6 689 1033 0.9 27 1619 24.1 735 2301 -5.2 -158	4 M	0349 19.7 600 0947 4.2 128 1539 19.6 597 2210 -0.6 -18	19 Tu	0322 21.5 655 0931 1.1 34 1522 22.6 689 2156 -3.6 -110
5 Sa	0424 20.3 619 1018 5.1 155 1559 21.3 649 2250 -1.9 -58	20 Su	0403 21.1 643 1001 4.0 122 1538 23.4 713 2236 -4.6 -140	5 Tu	0518 20.9 637 1118 3.5 107 1701 20.9 637 2340 -1.6 -49	20 W	0508 23.5 716 1119 -0.5 -15 1706 24.5 747 2343 -5.1 -155	5 Tu	0420 20.4 622 1022 3.0 91 1613 20.3 619 2242 -0.9 -27	20 W	0401 22.9 698 1017 -1.0 -30 1609 23.6 719 2239 -4.0 -122
6 Su	0502 20.6 628 1057 4.9 149 1635 21.2 646 2326 -1.9 -58	21 M	0447 22.2 677 1048 2.7 82 1626 24.1 735 2320 -5.3 -162	6 W	0551 21.1 643 1153 2.9 88 1736 20.9 637	21 Th	0548 24.0 732 1204 -1.4 -43 1755 24.1 735	6 W	0449 20.9 637 1056 1.9 58 1646 20.8 634 2313 -1.1 -34	21 Th	0440 23.9 728 1101 -2.5 -76 1654 24.0 732 2320 -3.7 -113
7 M	0539 20.8 634 1136 4.7 143 1712 21.0 640	22 Tu	0530 22.9 698 1134 1.6 49 1714 24.3 741	7 Th	0012 -1.3 -40 0623 21.1 643 1228 2.6 79 1812 20.6 628	22 F	0026 -4.1 -125 0630 24.0 732 1251 -1.5 -46 1845 23.0 701	7 Th	0518 21.3 649 1129 1.1 34 1719 21.0 640 2344 -0.9 -27	22 F	0518 24.3 741 1145 -3.3 -101 1741 23.7 722
8 Tu	0002 -1.6 -49 0617 20.8 634 1214 4.6 140 1750 20.5 625	23 W	0004 -5.3 -162 0615 23.3 710 1222 1.0 30 1805 23.8 725	8 F	0044 -0.6 -18 0655 20.9 637 1305 2.6 79 1850 19.9 607	23 Sa	0108 -2.4 -73 0713 23.4 713 1339 -0.9 -27 1938 21.4 652	8 F	0546 21.5 655 1203 0.6 18 1753 20.9 637	23 Sa	0001 -2.6 -79 0557 24.1 735 1229 -3.2 -98 1828 22.7 692
9 W	0037 -1.1 -34 0656 20.6 628 1252 4.6 140 1829 19.9 607	24 Th	0048 -4.5 -137 0700 23.2 707 1311 0.9 27 1859 22.7 692	9 Sa	0116 0.5 15 0727 20.5 625 1343 2.9 88 1931 18.8 573	24 Su	0153 0.0 0 0758 22.2 677 1431 0.3 9 2036 19.4 591	9 Sa	0015 -0.2 -6 0613 21.5 655 1237 0.4 12 1829 20.4 622	24 Su	0042 -0.9 -27 0637 23.3 710 1314 -2.4 -73 1918 21.2 646
10 Th	0113 -0.2 -6 0735 20.2 616 1333 4.9 149 1912 18.9 576	25 F	0134 -2.9 -88 0748 22.8 695 1403 1.3 40 1956 21.1 643	10 Su	0148 2.0 61 0759 19.9 607 1425 3.4 104 2018 17.5 533	25 M	0241 2.7 82 0848 20.6 628 1531 -1.7 52 2142 17.5 533	10 Su	0045 0.8 24 0640 21.2 646 1313 0.6 18 1908 19.5 594	25 M	0125 1.3 40 0719 21.8 664 1403 -0.9 -27 2013 19.4 591
11 F	0149 1.0 30 0816 19.6 597 1418 5.3 162 2000 17.7 539	26 Sa	0222 -0.7 -21 0838 21.9 668 1501 2.0 61 2059 19.2 585	11 M	0224 3.8 116 0833 19.1 582 1517 4.0 122 2120 16.2 494	26 Tu	0339 5.4 165 0946 18.9 576 1641 2.9 88 2258 16.2 494	11 M	0117 2.2 67 0707 20.7 631 1352 1.2 37 1953 18.3 558	26 Tu	0212 3.8 116 0806 20.0 610 1458 1.0 30 2116 17.7 539
12 Sa	0228 2.5 76 0859 19.0 579 1509 5.7 174 2058 16.5 503	27 Su	0315 1.9 58 0932 20.8 634 1606 2.7 82 2210 17.5 533	12 Tu	0307 5.7 174 0916 18.4 561 1624 4.3 131 2238 15.3 466	27 W	0450 7.5 229 1056 17.5 533 1757 3.3 101	12 Tu	0151 4.0 122 0737 19.9 607 1439 2.1 64 2051 16.9 515	27 W	0307 6.2 189 0902 17.9 546 1603 2.7 82 2229 16.4 500
13 Su	0312 4.2 128 0945 18.4 561 1610 5.8 177 2208 15.5 472	28 M	0416 4.3 131 1032 19.8 604 1718 3.0 91 2328 16.5 503	13 W	0413 7.5 229 1017 17.8 543 1740 4.0 122	28 Th	0021 16.0 488 0610 8.3 253 1214 16.9 515 1911 2.8 85	13 W	0234 5.9 180 0817 18.8 573 1542 2.9 88 2207 15.8 482	28 Th	0418 8.0 244 1016 16.3 497 1718 3.7 113 2349 16.0 488
14 M	0407 5.8 177 1036 18.1 552 1718 5.4 165 2324 15.2 463	29 Tu	0525 6.2 189 1138 19.0 579 1831 2.7 82	14 Th	0001 15.3 466 0541 8.4 256 1135 17.8 543 1851 2.7 82	14 Th	0339 7.6 232 0920 17.7 539 1703 3.2 98 2332 15.6 475	14 Th	0339 7.6 232 0920 17.7 539 1703 3.2 98 2332 15.6 475	29 F	0541 8.6 262 1142 15.5 472 1834 3.6 110
15 Tu	0514 7.0 213 1131 18.1 552 1824 4.3 131	30 W	0047 16.5 503 0636 7.2 219 1243 18.8 573 1937 1.8 55	15 F	0114 16.3 497 0659 8.0 244 1247 18.6 567 1952 0.8 24	15 F	0515 8.5 259 1058 17.1 521 1821 2.5 76	15 F	0515 8.5 259 1058 17.1 521 1821 2.5 76	30 Sa	0103 16.6 506 0700 7.9 241 1259 15.9 485 1938 2.9 88
		31 Th	0157 17.2 524 0743 7.2 219 1342 19.0 579 2032 0.8 24							31 Su	0200 17.6 536 0801 6.5 198 1358 16.9 515 2026 2.0 61

Time meridian 135° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Nikiski, Alaska, 2019

Times and Heights of High and Low Waters

April				May				June			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft cm	h m	ft cm	h m	ft cm	h m	ft cm	h m	ft cm	h m	ft cm
1 M	0242 18.6 567 0845 4.8 146 1442 17.9 546 2105 1.2 37	16 Tu	0211 20.3 619 0824 1.9 58 1420 20.3 619 2046 -1.2 -37	1 W	0234 19.2 585 0851 2.5 76 1451 18.1 552 2102 2.3 70	16 Th	0223 21.8 664 0855 -1.3 -40 1456 20.4 622 2106 0.6 18	1 Sa	0253 20.3 619 0935 -0.9 -27 1541 19.0 579 2140 3.8 116	16 Su	0318 21.8 664 1009 -3.2 -98 1617 20.2 616 2215 3.4 104
2 Tu	0316 19.5 594 0922 3.2 98 1519 19.0 579 2139 0.7 21	17 W	0253 21.8 664 0913 -0.4 -12 1509 21.7 661 2132 -1.8 -55	2 Th	0305 20.0 610 0928 0.9 27 1528 19.0 579 2137 2.1 64	17 F	0303 22.6 689 0941 -2.9 -88 1543 21.1 643 2151 0.8 24	2 Su	0323 21.0 640 1014 -2.2 -67 1620 19.7 600 2220 3.7 113	17 M	0357 21.7 661 1051 -3.5 -107 1700 20.4 622 2258 3.6 110
3 W	0346 20.3 619 0957 1.8 55 1553 19.8 604 2212 0.3 9	18 Th	0332 23.0 701 0959 -2.4 -73 1556 22.5 686 2215 -1.9 -58	3 F	0334 20.7 631 1003 -0.5 -15 1603 19.7 600 2211 2.0 61	18 Sa	0341 23.0 701 1024 -3.9 -119 1628 21.4 652 2234 1.2 37	3 M	0355 21.7 661 1053 -3.2 -98 1701 20.3 619 2300 3.5 107	18 Tu	0436 21.4 652 1131 -3.3 -101 1743 20.4 622 2340 3.9 119
4 Th	0414 20.9 637 1030 0.5 15 1626 20.4 622 2243 0.2 6	19 F	0410 23.8 725 1042 -3.7 -113 1641 22.9 698 2256 -1.4 -43	4 Sa	0401 21.2 646 1038 -1.6 -49 1639 20.3 619 2246 2.1 64	19 Su	0419 23.0 701 1107 -4.2 -128 1712 21.3 649 2316 2.0 61	4 Tu	0429 22.1 674 1133 -3.9 -119 1743 20.5 625 2342 3.5 107	19 W	0516 20.8 634 1211 -2.8 -85 1826 20.2 616
5 F	0440 21.4 652 1104 -0.5 -15 1659 20.8 634 2315 0.4 12	20 Sa	0447 23.9 728 1125 -4.2 -128 1726 22.6 689 2337 -0.4 -12	5 Su	0427 21.7 661 1114 -2.5 -76 1716 20.5 625 2321 2.4 73	20 M	0456 22.5 686 1149 -3.9 -119 1757 21.0 640 2358 2.9 88	5 W	0508 22.2 677 1216 -4.0 -122 1830 20.5 625	20 Th	0022 4.2 128 0557 20.1 613 1250 -1.9 -58 1911 19.8 604
6 Sa	0506 21.7 661 1138 -1.2 -37 1734 20.9 637 2346 0.9 27	21 Su	0525 23.5 716 1208 -4.0 -122 1812 21.9 668	6 M	0456 21.9 668 1151 -2.9 -88 1756 20.5 625 2358 3.0 91	21 Tu	0535 21.6 658 1230 -3.1 -94 1844 20.3 619	6 Th	0027 3.7 113 0553 21.8 664 1301 -3.6 -110 1920 20.3 619	21 F	0105 4.6 140 0642 19.1 582 1331 -0.8 -24 1957 19.3 588
7 Su	0532 21.8 664 1212 -1.5 -46 1811 20.5 625	22 M	0018 1.1 34 0603 22.6 689 1251 -3.0 -91 1901 20.7 631	7 Tu	0527 21.9 668 1231 -2.8 -85 1841 20.0 610	22 W	0041 3.9 119 0617 20.4 622 1313 -1.8 -55 1934 19.5 594	7 F	0116 4.0 122 0645 20.9 637 1350 -2.7 -82 2014 19.9 607	22 Sa	0150 5.1 155 0731 17.9 546 1413 0.6 18 2044 18.7 570
8 M	0019 1.8 55 0558 21.6 658 1249 -1.3 -40 1852 19.8 604	23 Tu	0101 2.8 85 0644 21.1 643 1337 -1.5 -46 1954 19.4 591	8 W	0038 3.7 113 0604 21.4 652 1314 -2.3 -70 1931 19.4 591	23 Th	0126 5.0 152 0703 18.9 576 1359 -0.3 -9 2027 18.6 567	8 Sa	0212 4.4 134 0746 19.6 597 1444 -1.4 -43 2112 19.5 594	23 Su	0240 5.6 171 0826 16.7 509 1459 2.1 64 2135 18.1 552
9 Tu	0054 3.0 91 0628 21.1 643 1329 -0.7 -21 1939 18.8 573	24 W	0147 4.7 143 0730 19.3 588 1427 0.3 9 2052 18.0 549	9 Th	0124 4.7 143 0647 20.4 622 1403 -1.3 -40 2028 18.6 567	24 F	0216 6.1 186 0756 17.3 527 1449 1.3 40 2124 17.8 543	9 Su	0315 4.6 140 0859 18.3 558 1544 0.1 3 2213 19.4 591	24 M	0337 6.0 183 0929 15.6 475 1551 3.5 107 2227 17.7 539
10 W	0133 4.5 137 0703 20.2 616 1417 0.3 9 2037 17.6 536	25 Th	0241 6.5 198 0825 17.3 527 1525 2.1 64 2158 17.0 518	10 F	0219 5.7 174 0744 19.1 582 1502 -0.1 -3 2134 18.0 549	25 Sa	0315 6.9 210 0902 15.9 485 1546 2.8 85 2224 17.3 527	10 M	0426 4.4 134 1019 17.3 527 1649 1.3 40 2315 19.5 594	25 Tu	0440 5.9 180 1039 14.9 454 1648 4.8 146 2319 17.6 536
11 Th	0222 6.1 186 0749 19.0 579 1518 1.4 43 2149 16.7 509	26 F	0347 7.8 238 0938 15.7 479 1633 3.4 104 2309 16.5 503	11 Sa	0328 6.4 195 0902 17.7 539 1610 0.9 27 2243 17.9 546	26 Su	0423 7.2 219 1017 14.9 454 1649 3.8 116 2324 17.2 524	11 Tu	0538 3.5 107 1137 17.1 521 1754 2.2 67	26 W	0545 5.3 162 1148 14.8 451 1748 5.6 171
12 F	0332 7.4 226 0900 17.6 536 1634 2.1 64 2309 16.5 503	27 Sa	0505 8.2 250 1102 14.9 454 1745 4.0 122	12 Su	0446 6.2 189 1033 16.9 515 1721 1.4 43 2350 18.5 564	27 M	0533 6.7 204 1131 14.7 448 1751 4.4 134	12 W	0013 20.0 610 0645 2.0 61 1248 17.5 533 1856 2.7 82	27 Th	0009 17.7 539 0645 4.1 125 1252 15.3 466 1846 6.1 186
13 Sa	0501 7.7 235 1043 16.8 512 1751 1.9 58	28 Su	0017 16.8 512 0621 7.4 226 1220 15.1 460 1849 3.8 116	13 M	0602 5.0 152 1157 17.2 524 1828 1.3 40	28 Tu	0019 17.5 533 0637 5.6 171 1237 15.2 463 1847 4.5 137	13 Th	0107 20.6 628 0744 0.2 6 1350 18.2 555 1952 2.9 88	28 F	0055 18.2 555 0738 2.6 79 1347 16.2 494 1939 6.1 186
14 Su	0022 17.3 527 0622 6.6 201 1213 17.4 530 1859 1.0 30	29 M	0113 17.5 533 0724 5.9 180 1322 15.9 485 1942 3.3 101	14 Tu	0049 19.5 594 0708 3.0 91 1307 18.2 555 1927 1.0 30	29 W	0107 18.1 552 0730 4.0 122 1333 16.0 488 1937 4.4 134	14 F	0155 21.3 649 0837 -1.3 -40 1444 19.1 582 2044 3.1 94	29 Sa	0137 18.9 576 0825 0.9 27 1436 17.4 530 2027 5.8 177
15 M	0122 18.7 570 0728 4.4 134 1323 18.7 570 1956 -0.2 -6	30 Tu	0158 18.4 561 0811 4.2 128 1411 17.0 518 2024 2.7 82	15 W	0139 20.7 631 0804 0.7 21 1405 19.3 588 2019 0.6 18	30 Th	0147 18.8 573 0815 2.3 70 1420 17.1 521 2020 4.2 128	15 Sa	0238 21.7 661 0925 -2.5 -76 1532 19.7 600 2131 3.2 98	30 Su	0215 19.8 604 0909 -0.8 -24 1520 18.5 564 2113 5.2 158
						31 F	0221 19.5 594 0856 0.7 21 1501 18.1 552 2101 4.0 122				

Time meridian 135° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Nikiski, Alaska, 2019

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	h m	ft	h m	ft	h m	ft	h m	ft	h m	ft
1 M	0253 20.8 634 0952 -2.4 -73 1602 19.5 594 2158 4.5 137	16 Tu O	0345 20.7 631 1035 -2.5 -76 1647 20.0 610 2243 4.2 128	1 Th	0404 23.0 701 1058 -4.8 -146 1707 22.0 671 2312 1.6 49	16 F	0448 20.8 634 1125 -1.6 -49 1733 20.9 637 2338 2.4 73	1 Su	0529 24.3 741 1200 -3.9 -119 1801 24.1 735	16 M	0538 21.1 643 1157 0.6 18 1752 21.6 658
2 Tu	0332 21.7 661 1034 -3.6 -110 1645 20.4 622 2243 3.8 116	17 W	0424 20.7 631 1113 -2.5 -76 1725 20.3 619 2323 3.8 116	2 F	0452 23.6 719 1141 -5.1 -155 1749 22.6 689 2358 0.6 18	17 Sa	0524 20.8 634 1157 -1.2 -37 1805 21.0 640	2 M	0025 -2.0 -61 0618 23.5 716 1243 -2.5 -76 1843 23.7 722	17 Tu	0020 0.5 15 0614 20.6 628 1228 1.6 49 1818 21.2 646
3 W	0414 22.4 683 1117 -4.5 -137 1728 21.0 640 2328 3.1 94	18 Th	0502 20.6 628 1150 -2.3 -70 1803 20.4 622	3 Sa	0541 23.5 716 1224 -4.7 -143 1833 22.9 698	18 Su	0014 2.1 64 0600 20.5 625 1229 -0.5 -15 1837 20.8 634	3 Tu	0113 -1.7 -52 0711 22.1 674 1328 -0.3 -9 1928 22.7 692	18 W	0055 0.8 24 0652 19.7 600 1259 3.0 91 1844 20.6 628
4 Th	0459 22.7 692 1200 -4.8 -146 1813 21.4 652	19 F	0001 3.6 110 0541 20.3 619 1225 -1.8 -55 1841 20.3 619	4 Su	0046 0.1 3 0633 22.8 695 1309 -3.5 -107 1919 22.7 692	19 M	0050 2.1 64 0638 19.9 607 1301 0.6 18 1909 20.4 622	4 W	0204 -0.6 -18 0809 20.2 616 1416 2.3 70 2018 21.2 646	19 Th	0132 1.4 43 0736 18.5 564 1333 4.7 143 1912 19.8 604
5 F	0014 2.5 76 0548 22.5 686 1245 -4.5 -137 1901 21.5 655	20 Sa	0040 3.5 107 0622 19.7 600 1301 -0.9 -27 1920 20.0 610	5 M	0136 0.2 6 0728 21.5 655 1355 -1.6 -49 2007 22.1 674	20 Tu	0127 2.4 73 0719 18.9 576 1334 2.1 64 1941 19.7 600	5 Th	0302 0.8 24 0915 18.4 561 1513 4.9 149 2116 19.5 594	20 F	0216 2.4 73 0832 17.2 524 1413 6.5 198 1947 18.7 570
6 Sa	0104 2.3 70 0642 21.8 664 1332 -3.6 -110 1950 21.3 649	21 Su	0120 3.7 113 0704 18.9 576 1337 0.2 6 1959 19.5 594	6 Tu	0231 0.7 21 0829 19.8 604 1446 0.8 24 2059 21.2 646	21 W	0208 3.0 91 0805 17.7 539 1408 3.8 116 2013 18.9 576	6 F	0410 2.2 67 1030 17.0 518 1622 7.0 213 2227 18.0 549	21 Sa	0314 3.3 101 0945 16.1 491 1514 8.2 250 2043 17.5 533
7 Su	0157 2.4 73 0742 20.6 628 1421 -2.0 -61 2042 21.0 640	22 M	0203 4.0 122 0751 17.8 543 1414 1.7 52 2040 18.9 576	7 W	0332 1.5 46 0937 18.1 552 1543 3.3 101 2157 20.1 613	22 Th	0256 3.7 113 0903 16.3 497 1449 5.7 174 2053 18.0 549	7 Sa	0526 2.9 88 1152 16.6 506 1742 8.0 244 2348 17.3 527	22 Su	0432 3.9 119 1109 15.9 485 1649 9.1 277 2226 16.7 509
8 M	0255 2.6 79 0847 19.1 582 1516 0.0 0 2138 20.5 625	23 Tu	0251 4.5 137 0844 16.6 506 1455 3.4 104 2123 18.2 555	8 Th	0441 2.1 64 1052 16.9 515 1650 5.4 165 2302 19.1 582	23 F	0357 4.3 131 1017 15.4 469 1548 7.5 229 2149 17.3 527	8 Su	0642 2.7 82 1310 17.2 524 1900 7.7 235	23 M	0552 3.4 104 1225 16.7 509 1814 8.4 256
9 Tu	0401 2.7 82 0959 17.8 543 1616 1.9 58 2237 20.1 613	24 W	0346 4.9 149 0948 15.5 472 1544 5.2 158 2212 17.6 536	9 F	0555 2.1 64 1211 16.5 503 1803 6.6 201	24 Sa	0512 4.3 131 1137 15.2 463 1714 8.6 262 2308 17.0 518	9 M	0102 17.5 533 0746 1.9 58 1410 18.3 558 2003 6.6 201	24 Tu	0002 17.3 527 0659 2.0 61 1326 18.2 555 1922 6.6 201
10 W	0511 2.5 76 1114 17.0 518 1721 3.6 110 2337 19.9 607	25 Th	0451 4.9 149 1059 14.9 454 1646 6.6 201 2305 17.4 530	10 Sa	0010 18.7 570 0705 1.5 46 1326 17.1 521 1914 6.8 207	25 Su	0625 3.4 104 1251 16.0 488 1835 8.4 256	10 Tu	0202 18.3 558 0837 1.0 30 1454 19.3 588 2051 5.2 158	25 W	0112 18.8 573 0756 0.3 9 1414 19.9 607 2017 4.2 128
11 Th	0620 1.7 52 1229 16.9 515 1827 4.7 143	26 F	0558 4.3 131 1212 15.0 457 1756 7.5 229	11 Su	0115 18.7 570 0806 0.6 18 1427 18.0 549 2015 6.3 192	26 M	0024 17.7 539 0728 1.8 55 1351 17.4 530 1940 7.2 219	11 W	0247 19.2 585 0917 0.2 6 1529 20.1 613 2130 3.9 119	26 Th	0208 20.7 631 0845 -1.3 -40 1455 21.6 658 2105 1.7 52
12 F	0037 19.9 607 0725 0.6 18 1337 17.4 530 1930 5.2 158	27 Sa	0002 17.6 536 0700 3.0 91 1318 15.8 482 1902 7.6 232	12 M	0211 19.2 585 0856 -0.3 -9 1514 18.9 576 2105 5.5 168	27 Tu	0127 19.0 579 0821 -0.1 -3 1439 19.0 579 2034 5.4 165	12 Th	0324 19.9 607 0952 -0.2 -6 1600 20.7 631 2206 2.7 82	27 F	0257 22.5 686 0929 -2.5 -76 1533 23.1 704 2151 -0.5 -15
13 Sa	0131 20.1 613 0821 -0.6 -18 1435 18.2 555 2026 5.2 158	28 Su	0056 18.3 558 0755 1.3 40 1413 17.1 521 2000 6.9 210	13 Tu	0257 19.7 600 0939 -1.0 -30 1553 19.7 600 2148 4.6 140	28 W	0220 20.7 631 0909 -2.0 -61 1522 20.6 628 2123 3.3 101	13 F	0358 20.6 628 1025 -0.5 -15 1629 21.2 646 2239 1.7 52	28 Sa	0343 23.8 725 1012 -3.1 -94 1611 24.3 741 2235 -2.3 -70
14 Su	0220 20.4 622 0911 -1.5 -46 1525 19.0 579 2116 4.9 149	29 M	0146 19.4 591 0845 -0.5 -15 1501 18.5 564 2052 5.8 177	14 W	0336 20.1 613 1016 -1.5 -46 1628 20.3 619 2226 3.7 113	29 Th	0308 22.3 680 0954 -3.5 -107 1601 22.1 674 2209 1.3 40	14 Sa	0431 21.0 640 1056 -0.4 -12 1658 21.5 655 2313 1.0 30	29 Su	0428 24.4 744 1054 -3.0 -91 1649 24.9 759 2319 -3.3 -101
15 M	0304 20.6 628 0955 -2.2 -67 1608 19.6 597 2201 4.6 140	30 Tu	0233 20.7 631 0931 -2.3 -70 1544 19.8 604 2140 4.4 134	15 Th	0413 20.5 625 1051 -1.7 -52 1701 20.7 631 2303 3.0 91	30 F	0355 23.6 719 1036 -4.4 -134 1640 23.2 707 2254 -0.4 -12	15 Su	0504 21.2 646 1127 -0.1 -3 1725 21.7 661 2346 0.6 18	30 M	0514 24.3 741 1135 -2.1 -64 1727 24.9 759
		31 W	0318 22.0 671 1015 -3.8 -116 1625 21.0 640 2226 2.9 88			31 Sa	0441 24.3 741 1118 -4.6 -140 1720 23.9 728 2339 -1.6 -49				

Time meridian 135° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Anchorage, Alaska, 2019

Times and Heights of High and Low Waters

April				May				June								
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height			
	h	m	ft	cm	h	m	ft	cm	h	m	ft	cm	h	m	ft	cm
1 M	0522	27.7	844		16 Tu	1124	2.5	76	1 W	1146	2.1	64	16 Th	1206	-1.6	-49
	1140	4.6	140			1655	29.9	911		1727	26.8	817		1740	29.9	911
	1715	26.2	799			2352	-0.7	-21		2358	2.2	67				
	2355	1.2	37													
2 Tu	0557	28.6	872		17 W	0542	31.3	954	2 Th	0543	29.1	887	17 F	0021	1.2	37
	1221	3.0	91			1222	-0.2	-6		1226	0.7	21		0556	31.6	963
	1754	27.7	844			1750	31.3	954		1805	28.0	853		1255	-2.9	-88
														1830	30.4	927
3 W	0036	0.4	12		18 Th	0044	-1.4	-43	3 F	0040	2.2	67	18 Sa	0108	1.7	52
	0624	29.3	893			0624	32.1	978		0616	29.8	908		0634	31.7	966
	1257	1.8	55			1312	-2.1	-64		1305	-0.2	-6		1341	-3.3	-101
	1829	28.8	878			1839	32.1	978		1842	28.9	881		1916	30.6	933
4 Th	0114	0.3	9		19 F	0130	-1.3	-40	4 Sa	0118	2.6	79	19 Su	0150	2.5	76
	0652	29.9	911			0701	32.6	994		0648	30.4	927		0709	31.7	966
	1333	0.9	27			1357	-3.2	-98		1343	-1.0	-30		1422	-3.0	-91
	1904	29.7	905			1925	32.4	988		1920	29.5	899		1959	30.5	930
5 F	0149	0.6	18		20 Sa	0212	-0.6	-18	5 Su	0153	3.2	98	20 M	0229	3.5	107
	0722	30.6	933			0736	32.9	1003		0719	30.9	942		0744	31.5	960
	1408	0.1	3			1439	-3.5	-107		1421	-1.7	-52		1500	-2.3	-70
	1940	30.2	920			2010	32.2	981		1959	29.7	905		2039	30.2	920
6 Sa	0222	1.2	37		21 Su	0250	0.6	18	6 M	0226	3.7	113	21 Tu	0303	4.5	137
	0753	30.9	942			0811	32.9	1003		0750	31.0	945		0820	30.8	939
	1443	-0.6	-18			1519	-3.1	-94		1500	-2.0	-61		1534	-1.3	-40
	2016	30.2	920			2053	31.6	963		2039	29.5	899		2118	29.6	902
7 Su	0252	2.1	64		22 M	0326	2.2	67	7 Tu	0259	4.2	128	22 W	0334	5.5	168
	0821	31.0	945			0847	32.2	981		0821	30.7	936		0856	29.4	896
	1519	-1.0	-30			1556	-2.1	-64		1539	-1.9	-58		1607	-0.3	-9
	2053	29.8	908			2136	30.6	933		2119	29.0	884		2157	28.7	875
8 M	0321	2.9	88		23 Tu	0359	3.9	119	8 W	0335	4.9	149	23 Th	0406	6.4	195
	0849	30.7	936			0923	30.7	936		0857	30.1	917		0932	27.7	844
	1556	-0.9	-27			1632	-0.7	-21		1619	-1.4	-43		1641	0.7	21
	2130	28.9	881			2220	29.1	887		2202	28.3	863		2239	27.7	844
9 Tu	0352	3.9	119		24 W	0430	5.8	177	9 Th	0415	5.7	174	24 F	0443	7.3	223
	0919	30.1	917			1000	28.5	869		0938	29.2	890		1011	25.7	783
	1635	-0.5	-15			1708	0.9	27		1700	-0.7	-21		1718	1.8	55
	2210	27.9	850			2308	27.4	835		2249	27.6	841		2325	26.8	817
10 W	0429	5.2	158		25 Th	0506	7.7	235	10 F	0502	6.5	198	25 Sa	0528	8.1	247
	0955	29.1	887			1039	26.0	792		1028	27.9	850		1101	23.9	728
	1716	0.3	9			1748	2.6	79		1747	0.2	6		1801	3.1	94
	2258	26.8	817							2346	27.2	829				
11 Th	0512	6.6	201		26 F	0002	26.0	792	11 Sa	0558	7.2	219	26 Su	0019	26.1	796
	1041	27.8	847			0553	9.5	290		1130	26.7	814		0625	8.5	259
	1802	1.2	37			1134	23.6	719		1842	1.2	37		1210	22.5	686
	2356	25.9	789			1837	4.2	128						1857	4.4	134
12 F	0605	8.1	247		27 Sa	0105	25.1	765	12 Su	0058	27.2	829	27 M	0119	25.9	789
	1141	26.5	808			0710	10.5	320		0711	7.2	219		0752	8.0	244
	1858	2.2	67			1301	22.1	674		1244	26.0	792		1331	22.1	674
						1946	5.3	162		1951	1.8	55		2013	5.2	158
13 Sa	0113	25.6	780		28 Su	0218	25.1	765	13 M	0216	28.0	853	28 Tu	0223	26.2	799
	0716	9.0	274			0901	9.1	277		0838	5.6	171		0915	5.9	180
	1256	25.7	783			1426	22.1	674		1413	26.3	802		1449	22.7	692
	2012	2.5	76			2105	5.0	152		2105	1.8	55		2125	5.0	152
14 Su	0246	26.5	808		29 M	0337	26.0	792	14 Tu	0324	29.2	890	29 W	0323	26.9	820
	0848	7.9	241			1008	6.5	198		0957	3.1	94		1013	3.6	110
	1425	26.2	799			1547	23.5	716		1536	27.5	838		1602	24.1	735
	2130	1.8	55			2213	3.9	119		2217	1.6	49		2225	4.7	143
15 M	0357	28.3	863		30 Tu	0430	27.3	832	15 W	0422	30.4	927	30 Th	0415	27.7	844
	1011	5.4	165			1101	4.0	122		1108	0.5	15		1105	1.7	52
	1550	27.9	850			1644	25.3	771		1643	28.9	881		1657	25.6	780
	2247	0.6	18			2310	2.8	85		2326	1.2	37		2317	4.5	137
													31 F	0458	28.5	869
														1151	0.3	9
														1741	26.8	817

Time meridian 135° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Anchorage, Alaska, 2019

Times and Heights of High and Low Waters

October				November				December																										
	Time	Height				Time	Height				Time	Height				Time	Height																	
		h	m	ft	cm			h	m	ft	cm			h	m	ft	cm			h	m	ft	cm											
1 Tu		0318	-3.5	-107		16 W		0301	-0.5	-15		1 F		0418	-1.4	-43		16 Sa		0357	-0.8	-24		1 Su		0430	0.4	12		16 M		0424	-1.5	-46
		0845	33.2	1012				0836	30.0	914				1003	30.0	914				0940	28.4	866				1023	28.5	869				1010	28.8	878
		1531	-0.5	-15				1505	3.8	116				1622	5.8	177				1553	6.4	195				1636	7.3	223				1633	5.5	168
		2054	33.8	1030				2029	30.8	939				2145	29.8	908				2112	29.1	887				2203	26.8	817				2155	28.8	878
2 W		0400	-3.1	-94		17 Th		0337	-0.4	-12		2 Sa		0456	0.4	12		17 Su		0437	-0.1	-3		2 M		0506	1.7	52		17 Tu		0507	-0.8	-24
		0932	32.1	978				0912	29.2	890				1052	28.4	866				1023	27.7	844				1107	27.5	838				1057	28.8	878
		1610	1.6	49				1534	4.9	149				1700	7.8	238				1637	7.2	219				1717	8.1	247				1725	5.4	165
		2134	32.7	997				2057	30.1	917				2228	27.1	826				2159	27.9	850				2250	24.8	756				2250	27.8	847
3 Th		0442	-1.8	-55		18 F		0414	0.1	3		3 Su		0535	2.4	73		18 M		0520	0.8	24		3 Tu		0547	3.1	94		18 W		0554	0.3	9
		1022	30.4	927				0950	28.1	856				1147	26.9	820				1114	27.1	826				1157	26.6	811				1151	28.8	878
		1648	4.2	128				1608	6.1	186				1746	9.6	293				1729	7.8	238				1809	8.7	265				1824	5.1	155
		2216	30.7	936				2131	29.0	884				2325	24.4	744				2257	26.6	811				2352	23.1	704				2352	26.8	817

Time meridian 135° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Kodiak, Alaska, 2019

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	h m	ft	h m	ft	h m	ft	h m	ft	h m	ft
1 Tu	0320 9.0 274 0909 0.4 12 1523 10.1 308 2149 -1.1 -34	16 W	0304 7.8 238 0844 1.8 55 1451 9.2 280 2121 -0.1 -3	1 F	0450 7.5 229 1004 2.9 88 1611 9.3 283 2303 -0.1 -3	16 Sa	0420 7.2 219 0933 3.1 94 1538 9.5 290 2231 -0.4 -12	1 Su	0522 7.2 219 1029 3.6 110 1628 8.5 259 2322 0.4 12	16 M	0459 7.5 229 1016 3.0 91 1617 9.3 283 2306 -0.6 -18
2 W	0410 8.3 253 0949 1.2 37 1603 9.8 299 2237 -0.5 -15	17 Th	0342 7.5 229 0916 2.3 70 1522 9.2 280 2200 0.0 0	2 Sa	0545 6.9 210 1052 3.5 107 1657 8.5 259 2356 0.7 21	17 Su	0510 6.9 210 1020 3.5 107 1624 9.0 274 2322 0.0 0	2 M	0613 6.9 210 1122 3.9 119 1716 7.7 235	17 Tu	0550 7.5 229 1115 3.1 94 1713 8.5 259 2357 -0.1 -3
3 Th	0502 7.5 229 1031 2.1 64 1646 9.2 280 2330 0.2 6	18 F	0423 7.1 216 0950 2.8 85 1558 9.0 274 2245 0.3 9	3 Su	0651 6.5 198 1150 4.1 125 1752 7.7 235	18 M	0609 6.7 204 1119 3.7 113 1721 8.4 256	3 Tu	0010 1.0 30 0710 6.7 204 1227 4.0 122 1813 6.9 210	18 W	0645 7.6 232 1225 3.0 91 1819 7.6 232
4 F	0602 6.7 204 1118 3.0 91 1734 8.5 259	19 Sa	0513 6.6 201 1031 3.3 101 1641 8.7 265 2338 0.7 21	4 M	0100 1.4 43 0811 6.4 195 1311 4.3 131 1903 7.0 213	19 Tu	0020 0.4 12 0717 6.8 207 1233 3.8 116 1832 7.7 235	4 W	0104 1.6 49 0810 6.7 204 1354 3.9 119 1926 6.3 192	19 Th	0052 0.6 18 0744 7.9 241 1348 2.6 79 1939 6.8 207
5 Sa	0032 0.9 27 0718 6.2 189 1217 3.8 116 1834 7.8 238	20 Su	0615 6.2 189 1124 3.8 116 1736 8.2 250	5 Tu	0218 1.7 52 0926 6.5 198 1501 4.1 125 2032 6.6 201	20 W	0127 0.7 21 0827 7.1 216 1523 3.4 104 1958 7.3 223	5 Th	0204 2.0 61 0905 7.0 213 1523 3.4 104 2052 5.9 180	20 F	0154 1.2 37 0844 8.3 253 1514 1.9 58 2109 6.5 198
6 Su	0152 1.4 43 0856 6.0 183 1344 4.2 128 1953 7.3 223	21 M	0042 1.0 30 0737 6.1 186 1238 4.1 125 1848 7.8 238	6 W	0328 1.8 55 1018 6.9 210 1615 3.4 104 2152 6.6 201	21 Th	0236 1.0 30 0928 7.7 235 1532 2.5 76 2126 7.2 219	6 F	0303 2.2 67 0950 7.4 226 1625 2.6 79 2209 6.0 183	21 Sa	0258 1.7 52 0941 8.8 268 1627 1.0 30 2233 6.5 198
7 M	0321 1.6 49 1017 6.3 192 1532 4.0 122 2121 7.2 219	22 Tu	0159 1.1 34 0903 6.4 195 1412 3.9 119 2018 7.7 235	7 Th	0421 1.8 55 1056 7.4 226 1704 2.6 79 2253 6.8 207	22 F	0340 1.0 30 1019 8.5 259 1640 1.4 43 2241 7.4 226	7 Sa	0355 2.4 73 1029 7.9 241 1711 1.8 55 2311 6.2 189	22 Su	0400 2.0 61 1032 9.4 287 1726 0.1 3 2343 6.8 207
8 Tu	0427 1.4 43 1109 6.7 204 1642 3.4 104 2232 7.4 226	23 W	0316 0.9 27 1008 7.0 213 1542 3.1 94 2143 7.9 241	8 F	0502 1.7 52 1127 7.9 241 1744 1.8 55 2342 7.1 216	23 Sa	0436 1.1 34 1104 9.3 283 1735 0.2 6 2345 7.7 235	8 Su	0440 2.5 76 1105 8.5 259 1751 1.0 30	23 M	0457 2.3 70 1121 9.9 302 1816 -0.7 -21
9 W	0516 1.2 37 1147 7.2 219 1730 2.7 82 2325 7.7 235	24 Th	0420 0.5 15 1056 7.9 241 1649 1.9 58 2253 8.3 253	9 Sa	0537 1.7 52 1155 8.4 256 1818 1.0 30	24 Su	0526 1.2 37 1147 10.0 305 1824 -0.7 -21	9 M	0002 6.6 201 0522 2.6 79 1140 9.0 274 1827 0.3 9	24 Tu	0041 7.2 219 0550 2.4 73 1206 10.3 314 1902 -1.2 -37
10 Th	0554 1.0 30 1216 7.6 232 1808 2.0 61	25 F	0512 0.3 9 1138 8.7 265 1744 0.7 21 2353 8.7 265	10 Su	0025 7.4 226 0609 1.7 52 1223 8.9 271 1850 0.4 12	25 M	0041 8.0 244 0612 1.4 43 1228 10.5 320 1909 -1.4 -43	10 Tu	0047 7.0 213 0602 2.6 79 1215 9.5 290 1902 -0.4 -12	25 W	0131 7.5 229 0638 2.5 76 1249 10.4 317 1943 -1.4 -43
11 F	0008 7.9 241 0625 0.8 24 1242 8.0 244 1842 1.4 43	26 Sa	0558 0.1 3 1218 9.5 290 1833 -0.4 -12	11 M	0103 7.6 232 0640 1.8 55 1251 9.3 283 1922 -0.1 -3	26 Tu	0132 8.2 250 0656 1.6 49 1308 10.8 329 1952 -1.7 -52	11 W	0128 7.3 223 0641 2.6 79 1250 10.0 305 1938 -0.9 -27	26 Th	0215 7.7 235 0723 2.6 79 1330 10.4 317 2023 -1.4 -43
12 Sa	0046 8.1 247 0653 0.8 24 1307 8.4 256 1912 0.8 24	27 Su	0046 9.0 274 0641 0.2 6 1257 10.2 311 1919 -1.2 -37	12 Tu	0141 7.7 235 0712 1.9 58 1320 9.6 293 1954 -0.5 -15	27 W	0219 8.2 250 0738 2.0 61 1347 10.8 329 2033 -1.7 -52	12 Th	0208 7.5 229 0719 2.7 82 1327 10.3 314 2015 -1.2 -37	27 F	0256 7.8 238 0805 2.7 82 1410 10.2 311 2100 -1.2 -37
13 Su	0121 8.2 250 0720 0.9 27 1331 8.8 268 1943 0.3 9	28 M	0136 9.0 274 0722 0.4 12 1335 10.6 323 2003 -1.6 -49	13 W	0217 7.8 238 0744 2.2 67 1351 9.8 299 2029 -0.7 -21	28 Th	0304 8.1 247 0819 2.3 70 1426 10.5 320 2114 -1.4 -43	13 F	0248 7.6 232 0759 2.7 82 1405 10.4 317 2054 -1.3 -40	28 Sa	0335 7.8 238 0845 2.8 85 1448 9.8 299 2136 -0.9 -27
14 M	0155 8.2 250 0747 1.1 34 1357 9.0 274 2014 0.0 0	29 Tu	0224 8.9 271 0801 0.9 27 1412 10.7 326 2046 -1.7 -52	14 Th	0255 7.7 235 0818 2.5 76 1423 9.9 302 2106 -0.8 -24	29 F	0349 7.8 238 0900 2.8 85 1505 10.0 305 2155 -0.9 -27	14 Sa	0329 7.6 232 0840 2.8 85 1445 10.3 314 2135 -1.3 -40	29 Su	0413 7.6 232 0925 2.9 88 1526 9.3 283 2212 -0.5 -15
15 Tu	0229 8.1 247 0815 1.4 43 1423 9.2 280 2046 -0.1 -3	30 W	0311 8.5 259 0841 1.5 46 1451 10.5 320 2130 -1.4 -43	15 F	0335 7.5 229 0854 2.8 85 1458 9.8 299 2146 -0.7 -21	30 Sa	0435 7.5 229 0943 3.2 98 1545 9.3 283 2237 -0.3 -9	15 Su	0413 7.6 232 0925 2.9 88 1529 9.9 302 2219 -1.1 -34	30 M	0451 7.4 226 1007 3.1 94 1604 8.6 262 2248 0.1 3
		31 Th	0359 8.0 244 0921 2.2 67 1530 10.0 305 2215 -0.8 -24							31 Tu	0529 7.2 219 1053 3.2 98 1645 7.8 238 2325 0.7 21

Time meridian 135° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Alitak, Alaska, 2019

Times and Heights of High and Low Waters

October				November				December						
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height	
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm
1 Tu	0326	12.9	393		16 W	0310	11.5	351		1 F	0446	10.8	329	
	0932	0.3	9			0903	2.5	76			1026	3.8	116	
	1530	14.0	427			1459	12.7	387		16 Sa	0953	4.2	128	
	2210	-1.7	-52			2141	-0.2	-6			1545	12.5	381	
											2249	-0.6	-18	
										1 Su	0517	10.2	311	
2 W	0412	11.9	363		17 Th	0346	11.1	338			1053	4.6	140	
	1011	1.6	49			0932	3.2	98			1635	10.9	332	
	1608	13.3	405			1529	12.5	381			2339	0.4	12	
	2257	-1.0	-30			2218	0.0	0		2 M	0609	9.6	293	
											1145	5.1	155	
											1723	9.7	296	
3 Th	0502	10.7	326		18 F	0426	10.4	317			0027	1.4	43	
	1050	2.9	88			1004	3.9	119			0709	9.3	283	
	1649	12.2	372			1602	12.0	366			1254	5.3	162	
	2348	0.0	0			2300	0.5	15			1824	8.7	265	
										3 Tu	0121	2.2	67	
4 F	0600	9.6	293		19 Sa	0513	9.7	296			0813	9.2	280	
	1135	4.2	128			1043	4.6	140			1422	5.1	155	
	1736	11.0	335			1643	11.4	347			1946	8.0	244	
						2353	1.0	30		4 W	0220	2.9	88	
											0912	9.5	290	
5 Sa	0049	1.0	30		20 Su	0614	9.0	274			1546	4.4	134	
	0714	8.7	265			1136	5.3	162			2117	7.9	241	
	1236	5.2	158			1737	10.6	323		5 Th	0319	3.2	98	
	1837	9.8	299								1001	10.1	308	
											1643	3.3	101	
6 Su	0207	1.8	55		21 M	0102	1.4	43			2231	8.3	253	
	0849	8.3	253			0733	8.7	265		6 F	0412	3.4	104	
	1416	5.7	174			1258	5.6	171			1042	10.7	326	
	2007	9.1	277			1852	9.9	302			1726	2.2	67	
											2327	8.9	271	
7 M	0333	2.0	61		22 Tu	0223	1.4	43			0426	3.0	91	
	1013	8.6	262			0902	9.0	274			1042	12.4	378	
	1613	5.3	162			1442	5.2	158			1743	-0.3	-9	
	2145	9.0	274			2027	9.7	296			2349	9.7	296	
										7 Sa	0459	3.5	107	
8 Tu	0441	1.8	55		23 W	0340	1.1	34			1118	11.4	347	
	1108	9.2	280			1013	9.8	299			1804	1.1	34	
	1716	4.4	134			1612	4.0	122		8 Su	0012	9.6	293	
	2255	9.5	290			2158	10.2	311			0541	3.5	107	
											1153	12.1	369	
9 W	0531	1.4	43		24 Th	0443	0.5	15			1841	0.1	3	
	1148	9.9	302			1104	11.0	335		9 M	0053	10.3	314	
	1758	3.4	104			1716	2.3	70			0622	3.6	110	
	2344	10.1	308			2309	11.1	338			1227	12.7	387	
											1918	-0.8	-24	
10 Th	0610	1.1	34		25 F	0535	0.1	3			0132	10.8	329	
	1220	10.6	323			1148	12.2	372			0702	3.5	107	
	1832	2.5	76			1808	0.6	18			1302	13.2	402	
											1956	-1.5	-46	
11 F	0024	10.7	326		26 Sa	0006	11.9	363			0210	11.2	341	
	0643	1.0	30			0621	-0.1	-3			0743	3.6	110	
	1249	11.2	341			1228	13.3	405			1338	13.6	415	
	1903	1.6	49			1855	-0.9	-27			2035	-2.0	-61	
										12 Th	0210	11.2	341	
12 Sa	0100	11.2	341		27 Su	0057	12.5	381			0743	3.6	110	
	0712	0.9	27			0705	0.0	0			1338	13.6	415	
	1316	11.8	360			1307	14.1	430			2035	-2.0	-61	
	1933	0.9	27			1940	-2.0	-61		13 F	0249	11.4	347	
											0823	3.6	110	
13 Su	0133	11.6	354		28 M	0144	12.8	390			1415	13.7	418	
	0739	1.1	34			0746	0.4	12			2115	-2.2	-67	
	1341	12.3	375			1345	14.6	445		14 Sa	0328	11.4	347	
	2003	0.3	9			2025	-2.6	-79			0905	3.7	113	
											1455	13.5	411	
14 M	0205	11.8	360		29 Tu	0229	12.8	390			2156	-2.0	-61	
	0807	1.4	43			0826	1.0	30		15 Su	0410	11.2	341	
	1406	12.6	384			1422	14.6	445			0950	3.8	116	
	2034	-0.1	-3			2108	-2.7	-82			1537	12.9	393	
											2239	-1.6	-49	
15 Tu	0237	11.7	357		30 W	0314	12.4	378			0448	10.6	323	
	0835	1.9	58			0906	1.9	58			1032	3.9	119	
	1432	12.7	387			1500	14.1	430			1615	11.1	338	
	2107	-0.3	-9			2150	-2.3	-70			2305	0.0	0	
										31 Th	0527	10.2	311	
						0359	11.7	357			1115	4.2	128	
						0945	2.8	85			1654	10.1	308	
						1538	13.3	405			2340	1.0	30	
						2234	-1.4	-43						

Time meridian 135° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Sand Point, Popof Island, Alaska, 2019

Times and Heights of High and Low Waters

January				February				March						
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height	
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm
1 Tu	0417	3.1	94		16 W	0251	3.4	104		1 F	0108	5.7	174	
	1046	7.9	241			0935	7.4	226			0558	3.9	119	
	1753	0.5	15			1705	1.0	30			1155	7.5	229	
2 W	0019	5.6	171		17 Th	0401	3.7	113		16 Sa	0025	5.5	168	
	0514	3.4	104			1029	7.8	238			0453	3.8	116	
	1130	8.1	247			1758	0.1	3			1101	7.9	241	
3 Th	0113	5.9	180		18 F	0041	5.6	171		17 Su	0110	6.1	186	
	0608	3.6	110			0508	3.7	113			0603	3.3	101	
	1212	8.1	247			1121	8.3	253			1203	8.4	256	
4 F	0158	6.2	189		19 Sa	0129	6.1	186		18 M	0150	6.6	201	
	0655	3.7	113			0610	3.6	110			0701	2.8	85	
	1250	8.2	250			1213	8.8	268			1258	8.7	265	
5 Sa	0237	6.3	192		20 Su	0212	6.6	201		19 Tu	0227	7.1	216	
	0736	3.7	113			0706	3.3	101			0753	2.1	64	
	1325	8.2	250			1304	9.1	277			1350	8.9	271	
6 Su	0313	6.4	195		21 M	0253	6.9	210		20 W	0305	7.5	229	
	0813	3.7	113			0757	3.0	91			0842	1.6	49	
	1358	8.1	247			1353	9.3	283			1439	8.7	265	
7 M	0348	6.5	198		22 Tu	0335	7.2	219		21 Th	0342	7.8	238	
	0847	3.7	113			0848	2.7	82			0931	1.2	37	
	1431	7.9	241			1442	9.1	277			1529	8.3	253	
8 Tu	0422	6.5	198		23 W	0417	7.4	226		22 F	0421	7.9	241	
	0921	3.6	110			0940	2.5	76			1022	0.9	27	
	1503	7.7	235			1532	8.7	265			1621	7.6	232	
9 W	0455	6.5	198		24 Th	0459	7.6	232		23 Sa	0459	7.9	241	
	0958	3.6	110			1037	2.3	70			1116	0.9	27	
	1538	7.3	223			1625	8.0	244			1715	6.7	204	
10 Th	0527	6.4	195		25 F	0542	7.6	232		24 Su	0538	7.7	235	
	1039	3.6	110			1137	2.2	67			1213	1.0	30	
	1615	6.9	210			1722	7.1	216			1815	5.8	177	
11 F	0558	6.4	195		26 Sa	0626	7.6	232		25 M	0620	7.4	226	
	1126	3.6	110			1244	2.1	64			1319	1.1	34	
	1656	6.3	192			1825	6.1	186			1932	5.1	155	
12 Sa	0631	6.5	198		27 Su	0033	1.5	46		26 Tu	0037	2.9	88	
	1223	3.5	107			0714	7.5	229			0708	7.0	213	
	1745	5.7	174			1400	1.9	58			1437	1.2	37	
13 Su	0015	1.8	55		28 M	0123	2.4	73		27 W	0140	3.6	110	
	0707	6.6	201			0810	7.4	226			0814	6.6	201	
	1336	3.2	98			1520	1.5	46			1555	1.0	30	
14 M	0054	2.4	73		29 Tu	0228	3.2	98		28 Th	0322	4.0	122	
	0750	6.7	204			0911	7.3	223			0934	6.5	198	
	1458	2.7	82			1631	1.1	34			1702	0.8	24	
15 Tu	0145	2.9	88		30 W	0344	3.7	113		29 F	0013	3.3	101	
	0842	7.0	213			1011	7.3	223			0646	6.8	207	
	1607	1.9	58			1732	0.6	18			1437	0.8	24	
16 W	0224	4.8	146		31 Th	0017	5.3	162		30 Sa	0127	3.8	116	
						0456	3.9	119			0800	6.7	204	
						1106	7.4	226			1558	0.4	12	

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Sand Point, Popof Island, Alaska, 2019

Times and Heights of High and Low Waters

July				August				September											
Time		Height		Time		Height		Time		Height		Time		Height					
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm					
1 M	0012	7.5	229		16 Tu	0112	7.3	223		1 Su	0306	8.0	244		16 M	0310	6.7	204	
	0730	-1.6	-49			0820	-1.4	-43			0932	-0.8	-24			0919	0.9	27	
	1409	5.4	165			1458	5.6	171			1550	7.6	232			1528	6.8	207	
	1855	2.7	82			2001	2.8	85			2155	0.3	9			2141	1.0	30	
2 Tu	0055	7.9	241		17 W	0149	7.2	219		2 M	0359	7.4	226		17 Tu	0345	6.4	195	
	0811	-2.1	-64			0855	-1.4	-43			1012	-0.1	-3			0942	1.4	43	
	1452	5.6	171			1535	5.6	171			1629	7.7	235			1551	6.9	210	
	1943	2.6	79			2039	2.7	82			2248	0.2	6			2215	0.9	27	
3 W	0140	8.1	247		18 Th	0225	7.1	216		3 Tu	0454	6.7	204		18 W	0424	6.0	183	
	0854	-2.3	-70			0929	-1.2	-37			1052	0.8	24			1007	1.9	58	
	1536	5.8	177			1610	5.7	174			1710	7.6	232			1618	6.9	210	
	2030	2.5	76			2115	2.7	82			2345	0.2	6			2255	0.9	27	
4 Th	0225	8.1	247		19 F	0300	6.9	210		4 W	0555	5.9	180		19 Th	0508	5.5	168	
	0937	-2.4	-73			1002	-0.9	-27			1134	1.7	52			1034	2.4	73	
	1621	6.0	183			1643	5.7	174			1752	7.3	223			1649	6.8	207	
	2121	2.4	73			2153	2.6	79								2341	0.9	27	
5 F	0314	7.9	241		20 Sa	0335	6.5	198		5 Th	0048	0.4	12		20 F	0601	5.1	155	
	1022	-2.1	-64			1034	-0.5	-15			0708	5.2	158			1108	3.0	91	
	1706	6.2	189			1715	5.7	174			1221	2.6	79			1727	6.7	204	
	2217	2.3	70			2234	2.6	79			1841	6.9	210						
6 Sa	0405	7.4	226		21 Su	0412	6.1	186		6 W	0202	0.6	18		21 Sa	0040	1.0	30	
	1107	-1.6	-49			1104	-0.1	-3			0843	4.8	146			0716	4.7	143	
	1752	6.3	192			1745	5.7	174			1325	3.3	101			1152	3.5	107	
	2320	2.2	67			2319	2.5	76			1944	6.5	198			1816	6.6	201	
7 Su	0502	6.7	204		22 M	0453	5.6	171		7 Tu	0321	0.6	18		22 Su	0159	1.0	30	
	1153	-1.0	-30			1133	0.4	12			1016	4.8	146			0916	4.7	143	
	1839	6.4	195			1815	5.7	174			1503	3.7	113			1301	3.9	119	
											2107	6.3	192			1924	6.5	198	
8 M	0029	2.0	61		23 Tu	0010	2.4	73		8 W	0431	0.5	15		23 M	0323	0.7	21	
	0605	5.9	180			0538	5.1	155			1128	5.1	155			1036	5.0	152	
	1241	-0.2	-6			1204	1.0	30			1627	3.6	110			1457	3.9	119	
	1929	6.5	198			1847	5.8	177			2222	6.3	192			2056	6.5	198	
9 Tu	0148	1.6	49		24 W	0112	2.2	67		9 Th	0530	0.3	9		24 Tu	0432	0.3	9	
	0721	5.1	155			0634	4.5	137			1218	5.5	168			1129	5.6	171	
	1334	0.7	21			1238	1.6	49			1732	3.3	101			1628	3.5	107	
	2023	6.7	204			1925	5.9	180			2322	6.5	198			2220	6.9	210	
10 W	0307	1.1	34		25 Th	0227	1.9	58		10 M	0619	0.2	6		25 W	0529	-0.1	-3	
	0859	4.6	140			0756	4.0	122			1256	5.8	177			1211	6.2	189	
	1433	1.5	46			1321	2.2	67			1822	2.9	88			1733	2.7	82	
	2118	6.9	210			2012	6.1	186								2329	7.4	226	
11 Th	0417	0.4	12		26 F	0338	1.3	40		11 Tu	0012	6.7	204		26 Th	0618	-0.4	-12	
	1030	4.5	137			0952	3.9	119			0659	0.1	3			1248	6.8	207	
	1536	2.1	64			1420	2.6	79			1328	6.0	183			1829	1.8	55	
	2210	7.0	213			2106	6.3	192			1902	2.5	76						
12 F	0518	-0.2	-6		27 Sa	0439	0.6	18		12 W	0054	6.9	210		27 F	0028	7.8	238	
	1145	4.6	140			1116	4.2	128			0733	0.0	0			0703	-0.5	-15	
	1638	2.6	79			1529	3.0	91			1355	6.3	192			1324	7.4	226	
	2300	7.2	219			2201	6.7	204			1936	2.1	64			1918	1.0	30	
13 Sa	0613	-0.8	-24		28 Su	0533	-0.1	-3		13 Th	0054	6.9	210		28 Sa	0121	8.0	244	
	1248	4.9	149			1218	4.6	140			0802	0.1	3			0744	-0.4	-12	
	1737	2.8	85			1637	3.1	94			1421	6.5	198			1359	7.9	241	
	2347	7.3	223			2255	7.2	219			2008	1.8	55			2005	0.2	6	
14 Su	0700	-1.1	-34		29 M	0624	-0.9	-27		14 W	0204	7.0	213		29 Su	0212	8.0	244	
	1338	5.2	158			1308	5.1	155			0830	0.3	9			0823	0.0	0	
	1832	2.9	88			1741	3.0	91			1444	6.6	201			1433	8.2	250	
						2349	7.6	232			2038	1.5	46			2051	-0.4	-12	
15 M	0031	7.3	223		30 Tu	0710	-1.5	-46		15 Th	0237	6.9	210		30 M	0302	7.7	235	
	0742	-1.4	-43			1350	5.5	168			0855	0.6	18			0901	0.5	15	
	1420	5.4	165			1840	2.7	82			1506	6.8	207			1509	8.3	253	
	1920	2.9	88								2109	1.2	37			2138	-0.6	-18	
16 W	0041	8.0	244		31 W	0041	8.0	244		16 F	0216	8.3	253		31 Sa	0216	8.3	253	
	0754	-2.0	-61			0754	-2.0	-61			0812	-1.5	-46			0852	-1.3	-40	
	1430	5.9	180			1430	5.9	180			1436	7.0	213			1513	7.4	226	
	1933	2.4	73			2025	2.3	70			2015	1.1	34			2104	0.6	18	

Time meridian 135° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Sand Point, Popof Island, Alaska, 2019

Times and Heights of High and Low Waters

October				November				December								
Time	Height			Time	Height			Time	Height			Time	Height			
	h m	ft cm			h m	ft cm			h m	ft cm			h m	ft cm		
1 Tu	0354 0940 1546 2227	7.3 1.3 8.2 -0.6	223 40 250 -18	16 W	0339 0906 1506 2153	6.4 2.4 7.6 0.1	195 73 232 3	1 F	0540 1035 1626 2345	6.3 3.6 7.6 0.0	192 110 232 0	16 Sa	0509 0949 1547 2305	6.2 3.8 7.9 -0.3	189 116 241 -9	
2 W	0449 1019 1624 2319	6.7 2.0 7.9 -0.3	204 61 241 -9	17 Th	0420 0933 1535 2232	6.1 2.8 7.6 0.2	186 85 232 6	2 Sa	0642 1129 1710	5.9 4.1 6.9	180 125 210	17 Su	0603 1038 1634 2358	6.0 4.1 7.5 0.1	183 125 229 3	
3 Th	0549 1102 1706	6.1 2.8 7.4	186 85 226	18 F	0507 1004 1610 2318	5.8 3.3 7.4 0.3	177 101 226 9	3 Su	0041 0755 1458 1805	0.6 5.7 4.4 6.2	18 174 134 189	18 M	0706 1145 1731	6.0 4.2 7.0	183 128 213	
4 F	0016 0658 1152 1752	0.1 5.5 3.5 6.9	3 168 107 210	19 Sa	0603 1044 1652	5.5 3.7 7.2	168 113 219	4 M	0148 0910 1434 1927	1.1 5.8 4.3 5.7	34 177 131 174	19 Tu	0059 0817 1322 1844	0.5 6.1 4.2 6.5	15 186 128 198	
5 Sa	0122 0826 1305 1852	0.6 5.2 4.0 6.3	18 158 122 192	20 Su	0014 0718 1138 1745	0.5 5.3 4.1 6.9	15 162 125 210	5 Tu	0258 1009 1558 2119	1.5 6.0 3.9 5.5	46 183 119 168	20 W	0208 0920 1507 2025	0.9 6.5 3.6 6.1	27 198 110 186	
6 Su	0240 0953 1458 2028	0.9 5.3 4.1 5.9	27 162 125 180	21 M	0126 0854 1306 1857	0.7 5.4 4.3 6.5	21 165 131 198	6 W	0359 1053 1656 2234	1.7 6.3 3.3 5.6	52 192 101 171	21 Th	0315 1010 1621 2204	1.2 7.0 2.7 6.1	37 213 82 186	
7 M	0352 1056 1622 2200	1.0 5.6 3.8 5.9	30 171 116 180	22 Tu	0247 1003 1509 2038	0.8 5.8 4.0 6.3	24 177 122 192	7 Th	0448 1128 1742 2332	1.8 6.6 2.6 5.8	55 201 79 177	22 F	0414 1054 1720 2320	1.4 7.6 1.6 6.3	43 232 49 192	
8 Tu	0452 1142 1721 2304	1.0 5.9 3.3 6.1	30 180 101 186	23 W	0356 1052 1629 2212	0.7 6.3 3.2 6.6	21 192 98 201	8 F	0530 1158 1820	1.9 7.0 1.9	58 213 58	23 Sa	0507 1134 1812	1.7 8.2 0.5	52 250 15	
9 W	0541 1217 1807 2356	1.0 6.2 2.7 6.3	30 189 82 192	24 Th	0454 1133 1729 2324	0.6 7.0 2.2 6.9	18 213 67 210	9 Sa	0020 0607 1224 1854	6.1 2.1 7.3 1.3	186 64 223 40	24 Su	0024 0557 1213 1900	6.6 2.0 8.6 -0.4	201 61 262 -12	
10 Th	0621 1246 1844	1.0 6.5 2.2	30 198 67	25 F	0544 1211 1821	0.6 7.6 1.1	18 232 34	10 Su	0102 0640 1248 1926	6.3 2.2 7.6 0.7	192 67 232 21	25 M	0119 0644 1250 1944	6.8 2.3 8.9 -1.0	207 70 271 -30	
11 F	0039 0655 1312 1917	6.6 1.0 6.8 1.6	201 30 207 49	26 Sa	0024 0630 1247 1909	7.3 0.7 8.2 0.2	223 21 250 6	11 M	0141 0711 1312 1957	6.5 2.4 7.9 0.2	198 73 241 6	26 Tu	0210 0727 1327 2026	7.0 2.7 9.0 -1.3	213 82 274 -40	
12 Sa	0117 0725 1335 1948	6.7 1.2 7.1 1.2	204 37 216 37	27 Su	0119 0713 1322 1954	7.5 1.0 8.6 -0.6	229 30 262 -18	12 Tu	0218 0740 1337 2029	6.5 2.7 8.1 -0.2	198 82 247 -6	27 W	0258 0809 1404 2107	7.0 3.0 8.9 -1.4	213 91 271 -43	
13 Su	0152 0752 1357 2018	6.8 1.4 7.3 0.7	207 43 223 21	28 M	0210 0753 1357 2038	7.5 1.4 8.8 -1.1	229 43 268 -34	13 W	0256 0808 1404 2102	6.5 2.9 8.2 -0.5	198 88 250 -15	28 Th	0346 0849 1441 2149	6.9 3.3 8.6 -1.1	210 101 262 -34	
14 M	0227 0817 1418 2048	6.8 1.6 7.5 0.4	207 49 229 12	29 Tu	0300 0832 1432 2121	7.3 1.9 8.8 -1.2	223 58 268 -37	14 Th	0336 0838 1434 2138	6.5 3.2 8.2 -0.6	198 98 250 -18	29 F	0435 0931 1518 2232	6.7 3.6 8.2 -0.7	204 110 250 -21	
15 Tu	0302 0841 1441 2119	6.6 2.0 7.6 0.2	201 61 232 6	30 W	0350 0911 1508 2207	7.1 2.5 8.6 -1.0	216 76 262 -30	15 F	0420 0911 1508 2219	6.3 3.5 8.1 -0.5	192 107 247 -15	30 Sa	0524 1016 1557 2316	6.5 3.9 7.6 -0.1	198 119 232 -3	
				31 Th	0444 0951 1546 2254	6.7 3.1 8.1 -0.6	204 94 247 -18									

Time meridian 135° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Unalaska, Alaska, 2019

Times and Heights of High and Low Waters

April				May				June			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	h m	ft	h m	ft	h m	ft	h m	ft	h m	ft
1 M	0431 3.0 91 0951 2.0 61 1445 2.7 82 2154 0.5 15	16 Tu	0311 3.1 94 0857 1.3 40 1434 3.0 91 2108 0.2 6	1 W	0331 2.8 85 1002 1.0 30 1556 2.2 67 2124 1.3 40	16 Th	0256 3.4 104 1006 -0.1 -3 1647 2.5 76 2132 1.5 46	1 Sa	0231 3.1 94 1038 -0.3 -9	16 Su	0323 3.5 107 1140 -1.0 -30 2000 3.3 101 2347 2.9 88
2 Tu	0458 2.8 85 1025 1.8 55 1534 2.6 79 2229 0.8 24	17 W	0344 3.2 98 0957 0.8 24 1557 2.9 88 2202 0.6 18	2 Th	0342 2.7 82 1035 0.7 21 1711 2.2 67 2156 1.7 52	17 F	0329 3.4 104 1059 -0.6 -18 1816 2.7 82 2236 2.0 61	2 Su	0246 3.3 101 1116 -0.6 -18	17 M	0355 3.4 104 1227 -1.0 -30 2055 3.5 107
3 W	0518 2.7 82 1101 1.6 49 1632 2.5 76 2303 1.1 34	18 Th	0420 3.2 98 1059 0.3 9 1725 2.8 85 2300 1.1 34	3 F	0351 2.7 82 1110 0.4 12 1834 2.3 70 2232 2.0 61	18 Sa	0404 3.4 104 1152 -0.8 -24 1938 3.0 91 2353 2.4 73	3 M	0310 3.4 104 1158 -0.8 -24	18 Tu	0120 3.0 91 0429 3.2 98 1313 -0.9 -27 2141 3.6 110
4 Th	0534 2.6 79 1140 1.3 40 1741 2.4 73 2340 1.4 43	19 F	0458 3.2 98 1201 -0.1 -3 1855 2.9 88	4 Sa	0401 2.7 82 1147 0.1 3 1958 2.5 76 2318 2.4 73	19 Su	0442 3.3 101 1244 -1.0 -30 2047 3.3 101	4 Tu	0347 3.5 107 1244 -1.0 -30 2200 3.3 101	19 W	0251 2.9 88 0506 3.0 91 1358 -0.8 -24 2220 3.7 113
5 F	0548 2.5 76 1222 1.0 30 1900 2.4 73	20 Sa	0006 1.6 49 0541 3.2 98 1301 -0.5 -15 2020 3.1 94	5 Su	0414 2.8 85 1228 -0.2 -6 2112 2.8 85	20 M	0121 2.6 79 0524 3.1 94 1336 -1.0 -30 2144 3.6 110	5 W	0034 3.2 98 0437 3.5 107 1333 -1.2 -37 2222 3.5 107	20 Th	1441 -0.6 -18 2255 3.7 113
6 Sa	0022 1.7 52 0602 2.5 76 1306 0.7 21 2025 2.5 76	21 Su	0121 2.0 61 0627 3.1 94 1359 -0.7 -21 2135 3.3 101	6 M	0022 2.7 82 0435 3.0 91 1312 -0.5 -15 2207 3.1 94	21 Tu	0251 2.7 82 0611 2.9 88 1426 -0.9 -27 2234 3.7 113	6 Th	0206 3.2 98 0542 3.4 104 1423 -1.2 -37 2248 3.6 110	21 F	1522 -0.4 -12 2326 3.6 110
7 Su	0113 2.0 61 0620 2.6 79 1351 0.4 12 2144 2.7 82	22 M	0242 2.2 67 0718 3.0 91 1456 -0.8 -24 2238 3.5 107	7 Tu	0139 2.9 88 0509 3.1 94 1400 -0.7 -21 2250 3.3 101	22 W	0410 2.6 79 0705 2.8 85 1514 -0.8 -24 2318 3.8 116	7 F	0324 2.9 88 0659 3.3 101 1514 -1.1 -34 2316 3.6 110	22 Sa	0548 2.2 67 0812 2.3 70 1602 -0.1 -3 2352 3.5 107
8 M	0211 2.3 70 0642 2.7 82 1437 0.1 3 2251 2.9 88	23 Tu	0400 2.3 70 0814 2.9 88 1551 -0.8 -24 2334 3.7 113	8 W	0253 3.0 91 0600 3.1 94 1449 -0.8 -24 2325 3.4 104	23 Th	0515 2.4 73 0806 2.6 79 1601 -0.6 -18 2357 3.8 116	8 Sa	0432 2.5 76 0823 3.0 91 1604 -0.9 -27 2345 3.7 113	23 Su	0623 1.9 58 0932 2.1 64 1639 0.2 6
9 Tu	0310 2.5 76 0713 2.8 85 1524 -0.2 -6 2345 3.1 94	24 W	0510 2.2 67 0912 2.8 85 1643 -0.7 -21	9 Th	0354 2.9 88 0707 3.1 94 1539 -0.9 -27 2357 3.5 107	24 F	0606 2.2 67 0910 2.4 73 1646 -0.4 -12	9 Su	0533 2.0 61 0952 2.7 82 1654 -0.5 -15	24 M	0016 3.4 104 0655 1.6 49 1054 2.0 61 1713 0.6 18
10 W	0403 2.7 82 0756 3.0 91 1612 -0.4 -12	25 Th	0023 3.7 113 0609 2.2 67 1010 2.7 82 1732 -0.5 -15	10 F	0447 2.8 85 0822 3.1 94 1630 -0.9 -27	25 Sa	0033 3.7 113 0649 2.0 61 1015 2.3 70 1728 -0.1 -3	10 M	0014 3.7 113 0631 1.4 43 1122 2.5 76 1743 0.0 0	25 Tu	0035 3.3 101 0725 1.2 37 1217 1.9 58 1744 1.0 30
11 Th	0029 3.2 98 0447 2.8 85 0851 3.1 94 1701 -0.6 -18	26 F	0108 3.7 113 0700 2.0 61 1106 2.6 79 1819 -0.3 -9	11 Sa	0027 3.5 107 0538 2.5 76 0941 3.0 91 1719 -0.8 -24	26 Su	0104 3.5 107 0727 1.7 52 1121 2.1 64 1806 0.2 6	11 Tu	0045 3.7 113 0727 0.7 21 1255 2.3 70 1831 0.6 18	26 W	0049 3.3 101 0755 0.8 24 1342 1.9 58 1810 1.4 43
12 F	0106 3.2 98 0529 2.7 82 0952 3.3 101 1750 -0.7 -21	27 Sa	0148 3.5 107 0744 1.9 58 1200 2.5 76 1903 0.0 0	12 Su	0056 3.4 104 0630 2.0 61 1100 2.8 85 1808 -0.5 -15	27 M	0130 3.4 104 0801 1.4 43 1229 2.0 61 1841 0.6 18	12 W	0116 3.7 113 0820 0.1 3 1429 2.3 70 1921 1.2 37	27 Th	0100 3.2 98 0824 0.4 12 1512 2.0 61 1828 1.8 55
13 Sa	0139 3.2 98 0614 2.5 76 1057 3.3 101 1839 -0.6 -18	28 Su	0224 3.4 104 0823 1.7 52 1254 2.4 73 1943 0.3 9	13 M	0125 3.4 104 0723 1.5 46 1222 2.7 82 1857 -0.1 -3	28 Tu	0150 3.2 98 0832 1.1 34 1341 2.0 61 1913 1.0 30	13 Th	0147 3.7 113 0912 -0.4 -12 1602 2.5 76 2014 1.8 55	28 F	0109 3.3 101 0854 0.1 3
14 Su	0210 3.2 98 0703 2.2 67 1205 3.3 101 1928 -0.5 -15	29 M	0253 3.1 94 0857 1.5 46 1349 2.3 70 2019 0.6 18	14 Tu	0154 3.4 104 0817 1.0 30 1347 2.5 76 1946 0.4 12	29 W	0205 3.1 94 0902 0.8 24 1459 2.0 61 1940 1.4 43	14 F	0219 3.7 113 1003 -0.7 -21 1732 2.7 82 2113 2.3 70	29 Sa	0119 3.4 104 0927 -0.3 -9
15 M	0240 3.2 98 0758 1.8 55 1317 3.2 98 2018 -0.2 -6	30 Tu	0315 3.0 91 0930 1.3 40 1449 2.2 67 2052 0.9 27	15 W	0224 3.4 104 0912 0.4 12 1515 2.5 76 2037 1.0 30	30 Th	0215 3.0 91 0932 0.4 12 1624 2.1 64 2002 1.8 55	15 Sa	0251 3.6 110 1052 -1.0 -30 1853 3.0 91 2224 2.7 82	30 Su	0137 3.6 110 1004 -0.6 -18
						31 F	0222 3.1 94 1003 0.1 3 1759 2.3 70 2020 2.2 67				

Time meridian 135° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings. * Neither a high or low water but an intermediate value to show the period of an approximate stand.

Unalaska, Alaska, 2019

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
<small>h m</small>	<small>ft cm</small>	<small>h m</small>	<small>ft cm</small>	<small>h m</small>	<small>ft cm</small>	<small>h m</small>	<small>ft cm</small>	<small>h m</small>	<small>ft cm</small>	<small>h m</small>	<small>ft cm</small>
1 M	0205 3.8 116 1045 -0.9 -27	16 Tu	0329 3.4 104 1208 -0.7 -21 2040 3.4 104	1 Th	0339 4.0 122 1153 -1.1 -34 1951 3.0 91 2329 2.7 82	16 F	0107 2.5 76 0443 2.8 85 1301 0.2 6 2056 2.9 88	1 Su	0049 1.3 40 0639 3.2 98 1316 0.2 6 1951 3.2 98	16 M	0143 1.3 40 0751 2.3 70 1352 1.4 43 1955 2.5 76
2 Tu	0245 3.9 119 1130 -1.1 -34	17 W	0055 3.0 91 0359 3.2 98 1250 -0.6 -18 2120 3.4 104	2 F	0449 3.8 116 1245 -1.0 -30 2021 3.2 98	17 Sa	0202 2.3 70 0543 2.5 76 1338 0.4 12 2117 2.8 85	2 M	0206 0.7 21 0813 3.0 91 1417 0.6 18 2036 3.3 101	17 Tu	0228 1.0 30 0913 2.4 73 1443 1.7 52 2015 2.5 76
3 W	0336 3.9 119 1219 -1.2 -37 2110 3.3 101 2345 3.2 98	18 Th	0214 2.9 88 0433 3.0 91 1331 -0.4 -12 2153 3.4 104	3 Sa	0103 2.3 70 0610 3.4 104 1338 -0.7 -21 2056 3.3 101	18 Su	0252 2.0 61 0659 2.3 70 1417 0.6 18 2135 2.8 85	3 Tu	0317 0.2 6 0944 3.0 91 1521 1.1 34 2123 3.4 104	18 W	0311 0.7 21 1028 2.6 79 1534 2.0 61 2035 2.6 79
4 Th	0438 3.8 116 1309 -1.3 -40 2130 3.4 104	19 F	1409 -0.2 -6 2219 3.3 101	4 Su	0228 1.7 52 0740 3.1 94 1433 -0.3 -9 2133 3.5 107	19 M	0337 1.7 52 0825 2.2 67 1456 0.9 27 2153 2.8 85	4 W	0422 -0.3 -9 1108 3.1 94 1626 1.5 46 2212 3.5 107	19 Th	0352 0.4 12 1133 2.8 85 1621 2.3 70 2057 2.7 82
5 F	0126 3.0 91 0550 3.6 110 1401 -1.1 -34 2157 3.5 107	20 Sa	0414 2.4 73 0632 2.5 76 1447 0.0 0 2242 3.3 101	5 M	0343 1.1 34 0914 2.8 85 1528 0.2 6 2212 3.6 110	20 Tu	0417 1.3 40 0952 2.2 67 1536 1.3 40 2209 2.8 85	5 Th	0522 -0.6 -18 1223 3.2 98 1731 1.8 55 2302 3.5 107	20 F	0434 0.2 6 1228 2.9 88 1657 2.5 76 2125 2.9 88
6 Sa	0253 2.6 79 0713 3.2 98 1452 -0.9 -27 2227 3.6 110	21 Su	0453 2.1 64 0756 2.2 67 1524 0.3 9 2302 3.2 98	6 Tu	0451 0.5 15 1048 2.7 82 1625 0.7 21 2252 3.7 113	21 W	0455 0.9 27 1114 2.2 67 1615 1.6 49 2225 2.9 88	6 F	0619 -0.8 -24 1330 3.4 104 1833 2.0 61 2352 3.5 107	21 Sa	0515 -0.1 -3 1315 3.0 91 1725 2.6 79 2201 3.1 94
7 Su	0409 2.0 61 0844 2.9 88 1544 -0.5 -15 2259 3.7 113	22 M	0528 1.7 52 0925 2.1 64 1600 0.6 18 2320 3.2 98	7 W	0553 -0.1 -3 1217 2.7 82 1723 1.3 40 2334 3.8 116	22 Th	0531 0.6 18 1228 2.4 73 1649 1.9 58 2240 3.0 91	7 Sa	0714 -0.8 -24 1431 3.4 104 1931 2.1 64	22 Su	0557 -0.3 -9 1355 3.0 91 1751 2.7 82 2245 3.4 104
8 M	0516 1.3 40 1019 2.6 79 1635 0.0 0 2333 3.8 116	23 Tu	0601 1.3 40 1053 2.0 61 1634 1.0 30 2335 3.1 94	8 Th	0650 -0.5 -15 1340 2.8 85 1822 1.7 52	23 F	0607 0.3 9 1336 2.5 76 1716 2.2 67 2258 3.2 98	8 Su	0040 3.4 104 0806 -0.6 -18 1528 3.4 104 2026 2.2 67	23 M	0641 -0.4 -12 1428 3.0 91 1824 2.6 79 2338 3.5 107
9 Tu	0617 0.6 18 1154 2.4 73 1726 0.6 18	24 W	0633 0.9 27 1220 2.0 61 1704 1.4 43 2347 3.2 98	9 F	0016 3.8 116 0745 -0.8 -24 1455 3.0 91 1922 2.1 64	24 Sa	0644 0.0 0 1436 2.6 79 1738 2.5 76 2323 3.4 104	9 M	0125 3.3 101 0856 -0.4 -12 1621 3.2 98 2116 2.3 70	24 Tu	0727 -0.5 -15 1458 3.0 91 1908 2.4 73
10 W	0008 3.9 119 0714 0.0 0 1327 2.4 73 1819 1.2 37	25 Th	0704 0.5 15 1344 2.1 64 1728 1.8 55 2358 3.2 98	10 Sa	0058 3.7 113 0837 -0.9 -27 1605 3.1 94 2021 2.4 73	25 Su	0724 -0.3 -9 1528 2.7 82 1803 2.6 79 2359 3.7 113	10 Tu	0208 3.2 98 0942 -0.2 -6 1710 3.1 94 2202 2.3 70	25 W	0036 3.6 110 0814 -0.5 -15 1528 2.9 88 2003 2.1 64
11 Th	0043 3.9 119 0808 -0.5 -15 1458 2.6 79 1913 1.8 55	26 F	0736 0.2 6 1508 2.3 70 1743 2.2 67	11 Su	0138 3.6 110 0928 -0.8 -24 1710 3.2 98 2119 2.6 79	26 M	0806 -0.6 -18 1611 2.7 82 1841 2.6 79	11 W	0249 3.0 91 1026 0.1 3 1754 2.9 88 2246 2.2 67	26 Th	0141 3.6 110 0903 -0.3 -9 1600 2.9 88 2106 1.7 52
12 F	0118 3.9 119 0900 -0.8 -24 1623 2.8 85 2011 2.3 70	27 Sa	0012 3.4 104 0810 -0.2 -6	12 M	0215 3.5 107 1016 -0.7 -21 1811 3.2 98 2216 2.7 82	27 Tu	0044 3.9 119 0852 -0.7 -21 1645 2.7 82 1936 2.6 79	12 Th	0330 2.8 85 1107 0.3 9 1829 2.8 85 2329 2.1 64	27 F	0253 3.4 104 0955 0.0 0 1635 3.0 91 2215 1.3 40
13 Sa	0153 3.8 116 0950 -0.9 -27 1741 3.0 91 2113 2.6 79	28 Su	0032 3.6 110 0847 -0.5 -15	13 Tu	0250 3.3 101 1101 -0.5 -15 1906 3.1 94 2312 2.7 82	28 W	0138 3.9 119 0940 -0.8 -24 1718 2.7 82 2045 2.4 73	13 F	0418 2.6 79 1146 0.6 18 1857 2.6 79	28 Sa	0414 3.2 98 1050 0.4 12 1714 3.1 94 2326 0.8 24
14 Su	0227 3.7 113 1038 -0.9 -27 1850 3.2 98 2222 2.9 88	29 M	0104 3.9 119 0928 -0.8 -24	14 W	0323 3.1 94 1143 -0.3 -9 1953 3.1 94	29 Th	0240 3.9 119 1030 -0.7 -21 1752 2.8 85 2204 2.2 67	14 Sa	0012 1.9 58 0517 2.5 76 1224 0.9 27 1918 2.5 76	29 Su	0544 3.1 94 1150 0.9 27 1757 3.2 98
15 M	0259 3.5 107 1124 -0.9 -27 1950 3.3 101 2336 3.0 91	30 Tu	0146 4.0 122 1014 -1.0 -30	15 Th	0009 2.7 82 0359 3.0 91 1223 -0.1 -3 2029 3.0 91	30 F	0350 3.7 113 1123 -0.5 -15 1828 2.9 88 2327 1.8 55	15 Su	0058 1.6 49 0629 2.4 73 1306 1.2 37 1936 2.5 76	30 M	0037 0.3 9 0716 3.1 94 1257 1.3 40 1845 3.2 98
		31 W	0238 4.1 125 1102 -1.1 -34 1925 3.0 91 2151 2.8 85			31 Sa	0510 3.4 104 1218 -0.2 -6 1908 3.0 91				

Time meridian 135° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

* Neither a high or low water but an intermediate value to show the period of an approximate stand.

Sweeper Cove, Adak Island, Alaska, 2019

Times and Heights of High and Low Waters

January				February				March																					
Time	Height			Time	Height			Time	Height			Time	Height																
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm															
1 Tu	1229	4.5	137	0	16 W	1114	4.3	131	9	1 F	1220	4.3	131	0	16 Sa	2049	-0.8	-24	1 F	1132	3.9	119	16 Sa	1923	-0.7	-21			
	2055	0.0	0			1959	0.3	9			2158	-0.4	-12			2099	-0.8	-24		2035	-0.3	-9		1032	4.2	128			
2 W	1244	4.5	137	-9	17 Th	1130	4.6	140	-6	2 Sa	1231	4.2	128	-9	17 Su	1231	4.8	146	-27	2 Sa	1157	3.8	116	-3	17 Su	1131	4.2	128	-18
	2141	-0.3	-9			2038	-0.2	-6			2240	-0.3	-9			2139	-0.9	-27			2120	-0.1	-3		2013	-0.6	-18		
3 Th	1254	4.5	137	-15	18 F	1158	4.9	149	-21	3 Su	1240	4.2	128	-6	18 M	1331	4.6	140	-21	3 Su	1223	3.7	113	0	18 M	1237	4.0	122	-12
	2224	-0.5	-15			2121	-0.7	-21			2320	-0.2	-6			2230	-0.7	-21			2204	0.0	0		2104	-0.4	-12		
4 F	1255	4.4	134	-15	19 Sa	1236	5.1	155	-30	4 M	1247	4.0	122	0	19 Tu	1441	4.3	131	-15	4 M	1253	3.5	107	9	19 Tu	0522	2.7	82	79
	2306	-0.5	-15			2208	-1.0	-30			2357	0.0	0			2320	-0.5	-15			2244	0.3	9		0749	2.6	79		
5 Sa	1247	4.4	134	-15	20 Su	1323	5.1	155	-34	5 Tu	1229	3.8	116	119	20 W	0754	3.2	98	91	5 Tu	1330	3.3	101	15	20 W	0526	2.7	82	70
	2345	-0.5	-15			2257	-1.1	-34			●				1037	3.0	91	119			2322	0.5	15		1520	3.4	104		
6 Su	1220	4.4	134		21 M	1420	4.9	149	-34	6 W	0032	0.2	6	110	21 Th	0010	-0.1	-3	98	6 W	1425	3.0	91	24	21 Th	0545	2.8	85	52
						2347	-1.1	-34			1045	3.6	110			0753	3.2	98	76		2357	0.8	24		1112	1.7	52		
7 M	0023	-0.4	-12	131	22 Tu	1528	4.6	140		7 Th	0104	0.4	12	107	22 F	0059	0.4	12	104	7 Th	0826	2.9	88	82	22 F	0610	3.0	91	37
	1141	4.3	131			0036	-0.8	-24			1016	3.5	107			0810	3.4	104	58		1241	2.6	79		1231	1.2	37		
8 Tu	0059	-0.3	-9	128	23 W	0036	-0.8	-24	116	8 F	0133	0.7	21	104	23 Sa	0146	1.0	30	110	8 F	0031	1.1	34	85	23 Sa	0031	1.5	46	98
	1123	4.2	128			0943	3.8	116	113		1003	3.4	104			0835	3.6	110	37		0812	2.8	85		0640	3.2	98		
9 W	0133	-0.1	-3	125	24 Th	0124	-0.4	-12	107	9 Sa	0159	1.1	34	104	24 Su	0233	1.5	46	116	9 Sa	0101	1.4	43	55	24 Su	0713	3.3	101	3
	1116	4.1	125			0935	3.8	116	94		0956	3.4	104			0904	3.8	116	18		0805	2.8	85		1440	0.1	3		
10 Th	0205	0.2	6	122	25 F	0209	0.1	3	91	10 Su	0220	1.5	46	67	25 M	0318	2.1	64	119	10 Su	0129	1.8	55	73	25 M	0223	2.3	70	104
	1113	4.0	122			0948	3.9	119	70		0952	3.4	104			0934	3.9	119	6		0802	2.9	88		1535	-0.2	-6		
11 F	0233	0.5	15	119	26 Sa	0252	0.7	21	82	11 M	0230	1.9	58	40	26 Tu	0029	2.8	85	76	11 M	0148	2.2	67	76	26 Tu	0321	2.6	79	104
	1113	3.9	119			1009	4.1	125			0950	3.5	107			0401	2.5	76	119		0803	3.0	91		0824	3.4	104		
12 Sa	0257	0.9	27	116	27 Su	0332	1.3	40	76	12 Tu	0952	3.7	113	24	27 W	1006	3.9	119	-3	12 Tu	0149	2.4	73	101	27 W	0034	3.2	98	85
	1112	3.8	116			1034	4.2	128			1758	0.8	24			1807	-0.1	-3			0810	3.3	101		0901	3.4	104		
13 Su	0314	1.3	40	64	28 M	0408	2.0	61	131	13 W	1001	4.0	122	6	28 Th	1105	3.9	119	-9	13 W	0827	3.6	110	0	28 Th	0140	3.2	98	88
	1111	3.8	116			1059	4.3	131			1835	0.2	6			1947	-0.3	-9			1702	0.0	0		0513	2.9	88		
14 M	0316	1.8	55	119	29 Tu	0201	2.6	79	76	14 Th	1023	4.3	131	-6	29 F	0858	3.8	116	-12	14 Th	0858	3.8	116	-12	29 F	0241	3.2	98	91
	1109	3.9	119			0431	2.5	76	134		1916	-0.2	-6			1747	-0.4	-12			1747	-0.4	-12		1016	3.3	101		
15 Tu	1108	4.0	122	24	30 W	1147	4.4	134	-9	15 F	1056	4.6	140	-18	15 F	0940	4.1	125	-18	15 F	0940	4.1	125	-18	30 Sa	0337	3.1	94	88
	1927	0.8	24			2027	-0.3	-9			2001	-0.6	-18			1834	-0.6	-18			1834	-0.6	-18		1054	3.2	98		
16 W	1206	4.4	134	-12	31 Th	1206	4.4	134	-12																1943	0.0	0		
	2113	-0.4	-12			2113	-0.4	-12																		0427	2.9	88	
																										0728	2.8	85	
																										1136	3.1	94	
																										2027	0.2	6	

Time meridian 150° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.

Heights are referred to mean lower low water which is the chart datum of soundings.

* Neither a high or low water but an intermediate value to show the period of an approximate stand.

Sweeper Cove, Adak Island, Alaska, 2019

Times and Heights of High and Low Waters

July				August				September						
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height	
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm
1 M	0036	4.2	128		16 Tu	0116	4.0	122		1 Th	0159	4.4	134	
	1022	-0.9	-27			1129	-1.0	-30			1125	-1.2	-37	
										16 F	0152	3.3	101	
											1225	0.0	0	
											2202	3.1	94	
										1 Su	0521	3.2	98	
											1234	0.4	12	
											1927	3.0	91	
2 Tu	0107	4.4	134		17 W	0121	3.9	119		2 M	0115	1.5	46	
	1105	-1.2	-37			1210	-0.8	-24			0703	2.9	88	
											1323	0.9	27	
											1952	3.2	98	
3 W	0150	4.4	134		18 Th	0039	3.7	113		3 Tu	0228	0.9	27	
	1151	-1.4	-43			1249	-0.7	-21			0843	2.8	85	
						2307	3.6	110			1411	1.5	46	
											2022	3.4	104	
4 Th	0243	4.3	131		19 F	1325	-0.4	-12		4 W	0332	0.3	9	
	1237	-1.5	-46			2255	3.5	107			1020	2.8	85	
											1459	1.9	58	
											2056	3.6	110	
5 F	0350	4.1	125		20 Sa	1358	-0.2	-6		5 Th	0431	-0.2	-6	
	1323	-1.3	-40			2252	3.4	104			1151	2.8	85	
	2251	3.5	107								1548	2.3	70	
											2132	3.7	113	
6 Sa	0136	3.4	104		21 Su	1427	0.2	6		6 F	0527	-0.4	-12	
	0511	3.7	113			2252	3.3	101			1317	2.9	88	
	1407	-1.0	-30								1635	2.6	79	
	2236	3.5	107								2209	3.7	113	
7 Su	0320	2.9	88		22 M	1453	0.6	18		7 Sa	0622	-0.6	-18	
	0644	3.1	94			2253	3.2	98			1439	3.0	91	
	1450	-0.5	-15								1722	2.8	85	
	2243	3.6	110								2246	3.7	113	
8 M	0436	2.2	67		23 Tu	0553	1.9	58		8 Su	0714	-0.5	-15	
	0828	2.6	79			0813	2.0	61			1600	3.0	91	
	1530	0.1	3			1512	1.0	30			1803	2.9	88	
	2259	3.7	113			2254	3.2	98			2322	3.6	110	
9 Tu	0540	1.4	43		24 W	0612	1.5	46		9 M	0806	-0.4	-12	
	1020	2.2	67			1028	1.8	55			2358	3.5	107	
	1607	0.8	24			1517	1.4	43						
	2319	3.8	116			2255	3.3	101						
10 W	0638	0.7	21		25 Th	0640	1.0	30		10 Tu	0855	-0.2	-6	
	1221	2.0	61			2255	3.5	107						
	1637	1.4	43											
	2341	4.0	122											
11 Th	0733	0.1	3		26 F	0710	0.5	15		11 W	0033	3.3	101	
	1444	2.1	64			2300	3.7	113			0943	0.1	3	
	1649	2.0	61											
12 F	0004	4.1	125		27 Sa	0744	0.1	3		12 Th	0113	3.1	94	
	0824	-0.4	-12			2314	4.0	122			1029	0.3	9	
13 Sa	0027	4.1	125		28 Su	0822	-0.4	-12		13 F	0204	2.9	88	
	0914	-0.7	-21			2339	4.3	131			1112	0.6	18	
											1941	2.6	79	
											2307	2.5	76	
14 Su	0047	4.1	125		29 M	0904	-0.8	-24		14 Sa	0317	2.7	82	
	1001	-0.9	-27								1152	0.9	27	
											1934	2.6	79	
15 M	0104	4.1	125		30 Tu	0015	4.5	137		15 Su	0016	2.2	67	
	1046	-1.0	-30			0949	-1.0	-30			0454	2.5	76	
											1231	1.2	37	
											1930	2.5	76	
					31 W	0102	4.5	137		31 Sa	0344	3.6	110	
						1036	-1.2	-37			1144	0.0	0	
											1910	2.8	85	
											2347	2.1	64	

Time meridian 150° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.

Heights are referred to mean lower low water which is the chart datum of soundings.

* Neither a high or low water but an intermediate value to show the period of an approximate stand.

Massacre Bay, Attu Island, Alaska, 2019

Times and Heights of High and Low Waters

January					February					March																						
Time		Height			Time		Height			Time		Height			Time		Height															
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm		h	m	ft	cm													
1 Tu	0340	2.7	82		16 W	1151	4.1	125		1 F	1330	3.9	119		16 Sa	1221	4.0	122		1 F	1221	3.3	101		16 Sa	1106	3.4	104				
	0556	2.6	79			2026	0.4	12			2224	-0.2	-6			2128	-0.6	-18			2056	-0.2	-6			1952	-0.6	-18				
	1257	4.4	134																													
	2111	0.2	6																													
2 W	1329	4.3	131		17 Th	1214	4.3	131		2 Sa	1409	3.7	113		17 Su	1322	4.0	122		2 Sa	1309	3.2	98		17 Su	1211	3.3	101				
	2200	-0.1	-3			2112	0.0	0			2311	-0.2	-6			2222	-0.7	-21			2150	-0.2	-6			2051	-0.5	-15				
3 Th	1401	4.2	128		18 F	1248	4.4	134		3 Su	0829	3.4	104		18 M	1434	3.9	119		3 Su	0642	2.7	82		18 M	0525	2.4	73				
	2248	-0.2	-6			2200	-0.4	-12			1058	3.3	101			2314	-0.6	-18			0923	2.6	79			0738	2.3	70				
4 F	1433	4.1	125		19 Sa	1332	4.5	137		4 M	0850	3.4	104		19 Tu	0734	2.9	88		4 M	0710	2.7	82		19 Tu	0532	2.4	73				
	2332	-0.3	-9			2248	-0.6	-18			1451	3.6	110			1031	2.8	85			1050	2.5	76			0931	2.0	61				
5 Sa	0855	3.8	116		20 Su	1427	4.5	137		5 Tu	0033	-0.1	-3		20 W	0003	-0.4	-12		5 Tu	0732	2.7	82		20 W	0549	2.5	76				
	1122	3.7	113			2337	-0.8	-24			0909	3.4	104			0739	3.0	91			1155	2.3	70			1055	1.5	46				
6 Su	0014	-0.3	-9		21 M	1533	4.3	131		6 W	0108	0.1	3		21 Th	0049	-0.1	-3		6 W	0006	0.2	6		21 Th	0612	2.6	79				
	0923	3.9	119			0924	3.4	104			1417	2.8	85			0755	3.1	94			0748	2.7	82			1203	0.9	27				
7 M	0052	-0.2	-6		22 Tu	0024	-0.7	-21		7 Th	0140	0.3	9		22 F	0133	0.3	9		7 Th	0043	0.4	12		22 F	0025	0.6	18				
	0951	4.0	122			0904	3.6	110			1456	2.6	79			1420	1.2	37			1324	1.8	55			1302	0.4	12				
8 Tu	0128	-0.1	-3		23 W	0109	-0.5	-15		8 F	0208	0.5	15		23 Sa	0215	0.7	21		8 F	0115	0.6	18		23 Sa	0113	1.0	30				
	1015	3.9	119			0909	3.6	110			1531	2.2	67			0844	3.4	104			0809	2.6	79			0708	2.9	88				
9 W	0201	0.1	3		24 Th	0152	-0.2	-6		9 Sa	0234	0.9	27		24 Su	0256	1.2	37		9 Sa	0146	0.9	27		24 Su	0159	1.3	40				
	1034	3.9	119			0925	3.7	113			1605	1.9	58			0914	3.5	107			0816	2.6	79			1448	-0.4	-12				
10 Th	0232	0.3	9		25 F	0234	0.3	9		10 Su	0257	1.2	37		25 M	0336	1.6	49		10 Su	0213	1.2	37		25 M	0244	1.6	49				
	1048	3.8	116			1547	1.9	58			1640	1.5	46			1710	0.0	0			1506	0.8	24			1539	-0.6	-18				
11 F	0259	0.6	18		26 Sa	0313	0.8	24		11 M	0317	1.6	49		26 Tu	0006	2.5	76		11 M	0237	1.5	46		26 Tu	0330	1.9	58				
	1059	3.8	116			1011	4.0	122			1718	1.0	30			0415	1.9	58			0832	2.8	85			0852	3.1	94				
12 Sa	0325	1.0	30		27 Su	0351	1.3	40		12 Tu	0331	1.9	58		27 W	0134	2.5	76		12 Tu	0258	1.8	55		27 W	0003	2.6	79				
	1107	3.7	113			1039	4.1	125			1801	0.6	18			1059	3.6	110			1623	0.1	3			0931	3.0	91				
13 Su	0347	1.3	40		28 M	0426	1.8	55		13 W	0125	2.3	70		28 Th	0309	2.5	76		13 W	0312	2.1	64		28 Th	0110	2.5	76				
	1114	3.7	113			1109	4.2	128			1031	3.7	113			0535	2.4	73			0905	3.1	94			0505	2.1	64				
14 M	0405	1.8	55		29 Tu	1848	0.4	12		14 Th	1057	3.8	116		14 Th	1139	3.5	107		14 Th	0934	3.3	101		29 F	0218	2.5	76				
	1123	3.8	116			0143	2.5	76			1847	0.2	6			1902	-0.3	-9			1759	-0.4	-12			0600	2.2	67				
15 Tu	0405	1.8	55		30 W	0459	2.3	70		15 F	1134	4.0	122		15 F	1014	3.4	104		15 F	1014	3.4	104		30 Sa	0322	2.4	73				
	1134	3.9	119			1944	0.1	3			2033	-0.4	-12			1854	-0.6	-18			1854	-0.6	-18			0706	2.2	67				
16 W	0111	2.3	70		31 Th	1217	4.1	125																								
	0409	2.2	67			2133	-0.2	-6																								

Time meridian 150° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.

Heights are referred to mean lower low water which is the chart datum of soundings.

* Neither a high or low water but an intermediate value to show the period of an approximate stand.

Massacre Bay, Attu Island, Alaska, 2019

Times and Heights of High and Low Waters

Table with columns for months (October, November, December) and days of the week. Each cell contains time and height data in multiple units (h, m, ft, cm).

Time meridian 150° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

* Neither a high or low water but an intermediate value to show the period of an approximate stand.

Village Cove, St. Paul Bay, Alaska 2019

Times and Heights of High and Low Waters

April				May				June			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	h m	ft	h m	ft	h m	ft	h m	ft	h m	ft
1 M	0500 2.8 85 1015 2.0 61 1515 2.6 79 2231 0.7 21	16 Tu	0401 3.1 94 0950 1.5 46 1524 2.9 88 2200 0.5 15	1 W	0406 2.8 85 1032 1.3 40 1629 2.4 73 2210 1.5 46	16 Th	0344 3.4 104 1047 0.2 6 1730 2.8 85 2230 1.7 52	1 Sa	0309 3.1 94 1118 0.2 6 1912 2.6 79 2204 2.5 76	16 Su	0401 3.4 104 1214 -0.7 -21 2011 3.2 98
2 Tu	0531 2.7 82 1056 1.9 58 1609 2.6 79 2311 0.9 27	17 W	0437 3.2 98 1049 1.0 30 1650 2.9 88 2256 0.9 27	2 Th	0424 2.8 85 1111 1.0 30 1743 2.4 73 2249 1.8 55	17 F	0417 3.4 104 1140 -0.1 -3 1848 3.0 91 2334 2.1 64	2 Su	0329 3.2 98 1158 -0.2 -6 2008 2.9 88 2309 2.7 82	17 M	0028 2.7 82 0432 3.2 98 1259 -0.7 -21 2104 3.4 104
3 W	0557 2.7 82 1138 1.7 52 1714 2.5 76 2349 1.1 34	18 Th	0514 3.2 98 1148 0.6 18 1814 3.0 91 2355 1.3 40	3 F	0437 2.8 85 1150 0.7 21 1852 2.5 76 2332 2.0 61	18 Sa	0452 3.3 101 1230 -0.4 -12 1956 3.2 98	3 M	0358 3.3 101 1239 -0.4 -12 2057 3.1 94	18 Tu	0134 2.8 85 0507 3.1 94 1425 -0.6 -18 2149 3.4 104
4 Th	0619 2.6 79 1220 1.4 43 1822 2.5 76	19 F	0553 3.2 98 1243 0.2 6 1930 3.1 94	4 Sa	0449 2.8 85 1229 0.4 12 1954 2.7 82	19 Su	0040 2.4 73 0529 3.2 98 1318 -0.6 -18 2058 3.3 101	4 Tu	0024 2.9 88 0440 3.3 101 1323 -0.6 -18 2142 3.3 101	19 W	0241 2.8 85 0548 2.9 88 1425 -0.5 -15 2228 3.4 104
5 F	0027 1.4 43 0638 2.6 79 1300 1.2 37 1926 2.5 76	20 Sa	0054 1.6 49 0632 3.2 98 1337 -0.1 -3 2041 3.2 98	5 Su	0019 2.3 70 0507 2.9 88 1308 0.2 6 2054 2.9 88	20 M	0146 2.5 76 0608 3.1 94 1406 -0.6 -18 2154 3.4 104	5 W	0135 2.9 88 0533 3.3 101 1409 -0.8 -24 2221 3.4 104	20 Th	0344 2.7 82 0634 2.8 85 1508 -0.3 -9 2302 3.4 104
6 Sa	0104 1.6 49 0653 2.7 82 1342 0.9 27 2031 2.6 79	21 Su	0156 1.9 58 0711 3.2 98 1431 -0.3 -9 2149 3.3 101	6 M	0110 2.5 76 0535 3.0 91 1349 -0.1 -3 2150 3.0 91	21 Tu	0256 2.6 79 0648 3.0 91 1453 -0.6 -18 2243 3.5 107	6 Th	0250 2.9 88 0633 3.3 101 1459 -0.8 -24 2259 3.5 107	21 F	0436 2.5 76 0723 2.7 82 1549 -0.1 -3 2333 3.3 101
7 Su	0143 1.9 58 0707 2.7 82 1424 0.6 18 2138 2.7 82	22 M	0302 2.1 64 0752 3.1 94 1524 -0.4 -12 2249 3.4 104	7 Tu	0207 2.7 82 0612 3.0 91 1435 -0.3 -9 2240 3.2 98	22 W	0403 2.5 76 0728 2.8 85 1540 -0.4 -12 2327 3.5 107	7 F	0401 2.7 82 0738 3.1 94 1550 -0.7 -21 2335 3.5 107	22 Sa	0520 2.3 70 0819 2.5 76 1627 0.2 6
8 M	0228 2.1 64 0725 2.8 85 1510 0.3 9 2240 2.8 85	23 Tu	0408 2.3 70 0836 3.0 91 1615 -0.4 -12 2345 3.4 104	8 W	0313 2.7 82 0656 3.1 94 1523 -0.5 -15 2326 3.3 101	23 Th	0459 2.5 76 0812 2.7 82 1625 -0.2 -6	8 Sa	0502 2.4 73 0853 2.9 88 1640 -0.4 -12	23 Su	0001 3.3 101 0603 2.1 64 0930 2.3 70 1702 0.5 15
9 Tu	0320 2.3 70 0751 2.9 88 1556 0.1 3 2338 2.9 88	24 W	0508 2.3 70 0923 2.8 85 1705 -0.3 -9	9 Th	0416 2.7 82 0747 3.1 94 1613 -0.5 -15	24 F	0007 3.4 104 0549 2.3 70 0905 2.6 79 1708 0.0 0	9 Su	0012 3.6 110 0601 2.0 61 1021 2.7 82 1730 -0.1 -3	24 M	0028 3.2 98 0647 1.8 55 1049 2.2 67 1734 0.8 24
10 W	0413 2.5 76 0827 3.0 91 1644 -0.1 -3	25 Th	0037 3.4 104 0603 2.3 70 1013 2.7 82 1752 -0.1 -3	10 F	0009 3.4 104 0511 2.6 79 0849 3.0 91 1703 -0.5 -15	25 Sa	0046 3.4 104 0637 2.2 67 1008 2.4 73 1749 0.3 9	10 M	0048 3.6 110 0701 1.5 46 1156 2.5 76 1820 0.4 12	25 Tu	0052 3.2 98 0731 1.5 46 1219 2.0 61 1803 1.2 37
11 Th	0035 3.0 91 0502 2.6 79 0914 3.1 94 1732 -0.3 -9	26 F	0127 3.3 101 0657 2.2 67 1104 2.6 79 1840 0.1 3	11 Sa	0051 3.4 104 0606 2.4 73 1003 2.9 88 1754 -0.3 -9	26 Su	0121 3.3 101 0724 2.0 61 1115 2.3 70 1829 0.6 18	11 Tu	0123 3.6 110 0800 1.0 30 1338 2.4 73 1914 0.9 27	26 W	0111 3.2 98 0812 1.1 34 1359 2.0 61 1827 1.5 46
12 F	0127 3.1 94 0553 2.6 79 1012 3.1 94 1824 -0.3 -9	27 Sa	0210 3.2 98 0748 2.1 64 1200 2.5 76 1927 0.4 12	12 Su	0130 3.4 104 0706 2.1 64 1126 2.8 85 1847 0.0 0	27 M	0151 3.2 98 0808 1.7 52 1236 2.2 67 1908 0.9 27	12 W	0157 3.6 110 0855 0.5 15 1510 2.5 76 2010 1.4 43	27 Th	0125 3.2 98 0851 0.8 24 1524 2.1 64 1849 1.9 58
13 Sa	0212 3.1 94 0651 2.4 73 1117 3.1 94 1918 -0.3 -9	28 Su	0247 3.1 94 0833 2.0 61 1307 2.4 73 2013 0.6 18	13 M	0206 3.4 104 0805 1.7 52 1301 2.6 79 1942 0.4 12	28 Tu	0216 3.1 94 0848 1.4 43 1405 2.1 64 1945 1.3 40	13 Th	0230 3.6 110 0947 0.0 0 1637 2.6 79 2107 1.9 58	28 F	0135 3.2 98 0927 0.4 12 1651 2.3 70 1913 2.2 67
14 Su	0251 3.1 94 0753 2.2 67 1234 3.1 94 2013 -0.1 -3	29 M	0318 3.0 91 0914 1.8 55 1415 2.4 73 2054 0.9 27	14 Tu	0240 3.4 104 0900 1.2 37 1437 2.6 79 2036 0.8 24	29 W	0235 3.0 91 0926 1.1 34 1524 2.2 67 2019 1.6 49	14 F	0301 3.5 107 1038 -0.3 -9 1801 2.8 85 2208 2.3 70	29 Sa	0149 3.3 101 1005 0.1 3
15 M	0326 3.1 94 0852 1.9 58 1400 3.0 91 2107 0.1 3	30 Tu	0344 2.9 88 0953 1.6 49 1520 2.4 73 2133 1.2 37	15 W	0312 3.4 104 0954 0.7 21 1604 2.6 79 2131 1.3 40	30 Th	0249 3.0 91 1003 0.8 24 1644 2.2 67 2050 1.9 58	15 Sa	0331 3.5 107 1127 -0.6 -18 1912 3.1 94 2317 2.6 79	30 Su	0212 3.4 104 1045 -0.2 -6
						31 F	0258 3.1 94 1040 0.5 15 1805 2.4 73 2122 2.2 67				

Time meridian 135° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to mean lower low water which is the chart datum of soundings.

Village Cove, St. Paul Bay, Alaska 2019

Times and Heights of High and Low Waters

October				November				December																					
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height																
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm															
1 Tu	0221	0.0	0		16 W	0206	0.5	15		1 F	0347	-0.7	-21		16 Sa	0256	-0.4	-12		1 Su	0403	-0.4	-12		16 M	0317	-0.6	-18	
	0913	3.3	101			0939	2.8	85			1120	3.6	110			1112	3.4	104			1145	3.6	110			1114	3.5	107	
	1445	1.6	49			1441	2.3	70			1651	2.3	70			1618	2.8	85			1738	2.3	70			1644	2.5	76	
	2014	3.2	98			1851	2.7	82			2057	2.9	88			1903	3.0	91			2058	2.5	76			2005	2.9	88	
2 W	0321	-0.3	-9		17 Th	0247	0.3	9		2 Sa	0438	-0.5	-15		17 Su	0342	-0.4	-12		2 M	0448	-0.1	-3		17 Tu	0406	-0.4	-12	
	1023	3.4	104			1033	3.0	91			1210	3.6	110			1149	3.4	104			1223	3.5	107			1145	3.6	110	
	1550	1.9	58			1537	2.4	73			1749	2.2	67			1706	2.7	82			1828	2.1	64			1739	2.1	64	
	2101	3.2	98			1917	2.8	85			2156	2.7	82			2003	2.9	88			2208	2.3	70			2134	2.6	79	
3 Th	0418	-0.4	-12		18 F	0331	0.1	3		3 Su	0527	-0.3	-9		18 M	0430	-0.4	-12		3 Tu	0530	0.2	6		18 W	0453	0.0	0	
	1128	3.4	104			1123	3.1	94			1258	3.5	107			1225	3.4	104			1259	3.4	104			1217	3.6	110	
	1652	2.0	61			1625	2.5	76			1844	2.1	64			1753	2.5	76			1917	1.8	55			1835	1.6	49	
	2152	3.1	94			1951	2.8	85			2255	2.6	79			2117	2.8	85			2322	2.2	67			2314	2.4	73	
4 F	0512	-0.5	-15		19 Sa	0415	-0.1	-3		4 M	0615	0.0	0		19 Tu	0517	-0.2	-6		4 W	0610	0.6	18		19 Th	0541	0.4	12	
	1230	3.4	104			1211	3.1	94			1342	3.4	104			1259	3.4	104			1329	3.3	101			1248	3.6	110	
	1751	2.1	64			1707	2.6	79			1938	2.0	61			1845	2.1	64			2002	1.6	49			1931	1.0	30	
	2243	3.0	91			2036	2.9	88			2359	2.4	73			2242	2.6	79											
5 Sa	0605	-0.4	-12		20 Su	0500	-0.2	-6		5 Tu	0703	0.3	9		20 W	0606	0.0	0		5 Th	0047	2.1	64		20 F	0100	2.3	70	
	1329	3.4	104			1257	3.2	98			1420	3.3	101			1332	3.4	104			0649	1.0	30			0631	0.9	27	
	1850	2.1	64			1748	2.6	79			2026	1.8	55			1939	1.7	52			1355	3.2	98			1320	3.7	113	
	2336	2.9	88			2134	2.9	88													2042	1.3	40			2025	0.5	15	
6 Su	0659	-0.2	-6		21 M	0547	-0.2	-6		6 W	0110	2.3	70		21 Th	0017	2.5	76		6 F	0214	2.1	64		21 Sa	0239	2.4	73	
	1422	3.3	101			1339	3.2	98			0749	0.7	21			0657	0.4	12			0726	1.4	43			0726	1.5	46	
	1948	2.1	64			1835	2.4	73			1453	3.1	94			1402	3.4	104			1415	3.2	98			1352	3.7	113	
						2239	2.9	88			2108	1.6	49			2032	1.2	37			2118	0.9	27			2116	-0.1	-3	
7 M	0033	2.8	85		22 Tu	0637	-0.1	-3		7 Th	0222	2.3	70		22 F	0202	2.5	76		7 Sa	0333	2.1	64		22 Su	0407	2.6	79	
	0751	0.0	0			1415	3.1	94			0833	1.0	30			0752	0.9	27			0800	1.7	52			0825	1.9	58	
	1509	3.2	98			1929	2.2	67			1519	3.0	91			1432	3.5	107			1429	3.1	94			1423	3.7	113	
	2041	2.0	61			2354	2.9	88			2147	1.3	40			2123	0.6	18			2154	0.6	18			2206	-0.5	-15	
8 Tu	0133	2.7	82		23 W	0731	0.1	3		8 F	0330	2.3	70		23 Sa	0334	2.5	76		8 Su	0455	2.3	70		23 M	0531	2.8	85	
	0841	0.3	9			1448	3.1	94			0913	1.3	40			0847	1.4	43			0829	2.1	64			0926	2.4	73	
	1550	3.0	91			2025	1.9	58			1540	2.9	88			1502	3.5	107			1437	3.1	94			1456	3.6	110	
	2127	1.9	58								2224	1.1	34			2215	0.1	3			2230	0.3	9			2256	-0.8	-24	
9 W	0231	2.6	79		24 Th	0122	2.8	85		9 Sa	0442	2.3	70		24 Su	0502	2.7	82		9 M	0620	2.5	76		24 Tu	0644	3.1	94	
	0928	0.6	18			0825	0.3	9			0952	1.7	52			0946	1.8	55			0856	2.4	73			1035	2.7	82	
	1627	2.9	88			1520	3.1	94			1555	2.9	88			1533	3.5	107			1446	3.2	98			1528	3.6	110	
	2209	1.8	55			2120	1.4	43			2302	0.8	24			2307	-0.3	-9			2306	0.1	3			2345	-0.9	-27	
10 Th	0326	2.5	76		25 F	0253	2.8	85		10 Su	0557	2.4	73		25 M	0624	3.0	91		10 Tu	0727	2.7	82		25 W	0744	3.3	101	
	1012	0.8	24			0919	0.7	21			1032	2.0	61			1051	2.2	67			0929	2.6	79			1149	2.8	85	
	1659	2.8	85			1552	3.2	98			1603	2.8	85			1607	3.5	107			1502	3.2	98			1604	3.4	104	
	2250	1.6	49			2216	0.9	27			2339	0.6	18			2359	-0.7	-21			2344	-0.2	-6						
11 F	0426	2.5	76		26 Sa	0422	2.8	85		11 M	0704	2.6	79		26 Tu	0733	3.2	98		11 W	0819	2.9	88		26 Th	0032	-0.9	-27	
	1056	1.1	34			1016	1.1	34			1120	2.3	70			1203	2.5	76			1028	2.8	85			0836	3.4	104	
	1726	2.7	82			1626	3.2	98			1611	2.9	88			1646	3.4	104			1526	3.3	101			1301	2.9	88	
	2330	1.4	43			2314	0.4	12																1643		3.2	98		
12 Sa	0533	2.5	76		27 Su	0551	2.9	88		12 Tu	0016	0.3	9		27 W	0049	-0.8	-24		12 Th	0022	-0.4	-12		27 F	0118	-0.8	-24	
	1139	1.4	43			1117	1.5	46			0803	2.8	85			0835	3.4	104			0901	3.1	94			0923	3.5	107	
	1749	2.6	79			1704	3.2	98			1214	2.5	76			1315	2.7	82			1201	3.0	91			1410	2.8	85	
											1625	2.9	88			1730	3.3	101			1600	3.3	101			1730	3.0	91	
13 Su	0010	1.2	37		28 M	0011	0.0	0		13 W	0053	0.1	3		28 Th	0138	-0.9	-27		13 F	0102	-0.6	-18		28 Sa	0202	-0.7	-21	
	0639	2.5	76			0709	3.1	94			0859	2.9	88			0931	3.6	110			0938	3.2	98			1004	3.5	107	
	1221	1.6	49			1222	1.8	55			1310	2.7	82			1428	2.7	82			1317	3.1	94			1520	2.7	82	
	1807	2.6	79			1745	3.3	101			1650	2.9	88			1817	3.1	94			1646	3.3	101			1821	2.9	88	
14 M	0048	1.0	30		29 Tu	0105	-0.4	-12		14 Th	0131	-0.1	-3		29 F	0227	-0.8	-24		14 Sa	0144	-0.7	-21		29 Su	0247	-0.4		

Port Moller, Bristol Bay, Alaska, 2019

Times and Heights of High and Low Waters

January				February				March																					
	Time		Height			Time		Height			Time		Height																
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm															
1 Tu	0039	-0.7	-21		16 W	0645	8.7	265		1 F	0036	-0.6	-18		16 Sa	0635	10.0	305											
	0722	10.1	308			1145	5.7	174			0739	10.5	320			1209	5.3	162											
	1249	4.0	122			1659	9.7	296			1317	4.5	137			1659	9.2	280											
	1829	10.6	323								1831	8.8	268																
2 W	0128	-1.0	-30		17 Th	0027	0.0	0		2 Sa	0238	-0.6	-18		17 Su	0130	-1.6	-49		2 Sa	0125	-0.3	-9		17 Su	0015	-1.1	-34	
	0826	10.5	320			0739	9.3	283			0959	10.6	323			0847	10.3	314			0832	10.3	314			0722	10.2	311	
	1350	4.8	146			1242	6.2	189			1528	5.6	171			1413	5.7	174			1411	4.8	146			1302	4.9	149	
	1910	9.9	302			1731	9.8	299			2012	8.3	253			1859	9.9	302			1917	8.3	253			1802	9.4	287	
3 Th	0215	-1.1	-34		18 F	0108	-0.8	-24		3 Su	0321	-0.2	-6		18 M	0224	-1.9	-58		3 Su	0211	0.1	3		18 M	0111	-1.1	-34	
	0927	10.8	329			0831	9.8	299			1047	10.5	320			0936	10.6	323			0921	10.1	308			0809	10.3	314	
	1450	5.4	165			1339	6.5	198			1620	5.7	174			1511	5.2	158			1501	4.9	149			1357	4.3	131	
	1950	9.2	280			1813	9.8	299			2054	7.9	241			2005	9.8	299			2002	8.0	244			1909	9.5	290	
4 F	0301	-1.0	-30		19 Sa	0154	-1.5	-46		4 M	0402	0.2	6		19 Tu	0320	-1.8	-55		4 M	0254	0.6	18		19 Tu	0207	-1.0	-30	
	1023	11.0	335			0923	10.4	317			1129	10.4	317			1025	10.9	332			1005	9.8	299			0856	10.4	317	
	1549	5.7	174			1437	6.5	198			1709	5.6	171			1610	4.5	137			1548	4.9	149			1452	3.5	107	
	2029	8.6	262			1903	9.9	302			2140	7.5	229			2120	9.7	296			2048	7.7	235			2020	9.6	293	
5 Sa	0344	-0.7	-21		20 Su	0244	-2.0	-61		5 Tu	0441	0.6	18		20 W	0418	-1.5	-46		5 Tu	0335	1.0	30		20 W	0305	-0.6	-18	
	1114	11.1	338			1014	10.9	332			1206	10.3	314			1113	11.1	338			1043	9.5	290			0943	10.4	317	
	1645	5.9	180			1536	6.3	192			1756	5.4	165			1709	3.5	107			1632	4.8	146			1548	2.6	79	
	2110	8.0	244			2002	9.8	299			2231	7.3	223			2239	9.7	296			2137	7.5	229			2135	9.7	296	
6 Su	0426	-0.4	-12		21 M	0337	-2.3	-70		6 W	0519	1.0	30		21 Th	0516	-0.9	-27		6 W	0414	1.5	46		21 Th	0403	0.0	0	
	1159	11.1	338			1103	11.3	344			1238	10.1	308			1200	11.3	344			1116	9.3	283			1030	10.5	320	
	1739	5.9	180			1637	5.8	177			1840	5.1	155			1808	2.4	73			1713	4.5	137			1644	1.6	49	
	2155	7.6	232			2112	9.6	293			2326	7.2	219			2356	9.7	296			2230	7.5	229			2249	10.0	305	
7 M	0507	0.0	0		22 Tu	0433	-2.2	-67		7 Th	0558	1.5	46		22 F	0615	-0.2	-6		7 Th	0454	2.0	61		22 F	0503	0.6	18	
	1240	11.0	335			1151	11.7	357			1308	10.0	305			1248	11.4	347			1144	9.1	277			1118	10.5	320	
	1831	5.8	177			1737	5.0	152			1921	4.6	140			1907	1.4	43			1752	4.1	125			1740	0.7	21	
	2245	7.3	223			2231	9.4	287														2325	7.5	229					
8 Tu	0546	0.4	12		23 W	0531	-1.9	-58		8 F	0025	7.1	216		23 Sa	0111	9.9	302		8 F	0534	2.5	76		23 Sa	0000	10.3	314	
	1317	11.0	335			1239	12.0	366			0637	2.0	61			0715	0.7	21			1212	9.0	274			0602	1.3	40	
	1920	5.5	168			1837	4.0	122			1337	9.9	302			1336	11.3	344			1829	3.5	107			1206	10.3	314	
	2340	7.1	216			2352	9.3	283			2001	3.9	119			2004	0.4	12								1836	-0.1	-3	
9 W	0626	0.8	24		24 Th	0629	-1.3	-40		9 Sa	0126	7.2	219		24 Su	0224	10.1	308		9 Sa	0021	7.7	235		24 Su	0109	10.6	323	
	1352	10.9	332			1326	12.2	372			0720	2.6	79			0816	1.6	49			0617	3.0	91			0703	2.0	61	
	2006	5.0	152			1937	2.9	88			1404	9.7	296			1425	11.1	338			1238	8.8	268			1256	10.1	308	
											2038	3.3	101																

Port Moller, Bristol Bay, Alaska, 2019

Times and Heights of High and Low Waters

October				November				December																					
Time	Height			Time	Height			Time	Height			Time	Height																
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm		h	m	ft	cm										
1 Tu	0601	-0.2	-6		16 W	0553	1.6	49		1 F	0040	9.0	274		16 Sa	0631	-0.2	-6		1 Su	0109	8.0	244		16 M	0658	-0.8	-24	
	1242	11.2	341			1301	9.7	296			0723	-1.2	-37			1412	11.3	344			0745	-0.4	-12			1425	11.9	363	
	1837	2.5	76			1847	5.2	158			1432	12.4	378			2009	5.8	177			1458	12.2	372			2032	4.9	149	
						2334	7.7	235			2029	3.9	119								2108	4.1	125						
2 W	0021	10.2	311		17 Th	0628	1.2	37		2 Sa	0141	8.7	265		17 Su	0005	7.7	235		2 M	0211	7.8	238		17 Tu	0110	7.9	241	
	0658	-0.8	-24			1348	10.1	308			0818	-0.9	-27			0720	-0.4	-12			0836	0.2	6			0752	-0.4	-12	
	1347	11.6	354			1938	5.4	165			1524	12.3	375			1454	11.5	351			1543	12.0	366			1505	12.0	366	
	1940	2.9	88								2127	3.7	113			2057	5.4	165			2200	3.7	113			2122	3.9	119	
3 Th	0116	9.9	302		18 F	0007	7.7	235		3 Su	0241	8.5	259		18 M	0111	7.8	238		3 Tu	0313	7.7	235		18 W	0231	8.0	244	
	0754	-1.1	-34			0708	0.7	21			0911	-0.3	-9			0811	-0.3	-9			0925	1.0	30			0849	0.3	9	
	1449	11.9	363			1434	10.5	326			1615	12.1	369			1536	11.6	354			1624	11.6	354			1545	11.9	363	
	2041	3.2	98			2027	5.5	168			2222	3.6	110			2144	4.9	149			2249	3.3	101			2212	2.8	85	
4 F	0212	9.7	296		19 Sa	0046	7.7	235		4 M	0341	8.3	253		19 Tu	0224	7.9	241		4 W	0415	7.6	232		19 Th	0348	8.3	253	
	0850	-1.1	-34			0751	0.4	12			1004	0.3	9			0905	0.0	0			1014	1.9	58			0947	1.1	34	
	1449	11.9	363			1519	10.7	326			1703	11.7	357			1617	11.6	354			1702	11.1	338			1625	11.8	360	
	2141	3.4	104			2114	5.5	168			2316	3.4	104			2232	4.1	125			2336	2.8	85			2303	1.6	49	
5 Sa	0309	9.4	287		20 Su	0134	7.9	241		5 Tu	0440	8.1	247		20 W	0338	8.1	247		5 Th	0516	7.7	235		20 F	0503	8.7	265	
	0945	-0.8	-24			0838	0.1	3			1056	1.1	34			1001	0.5	15			1103	2.8	85			1047	2.1	64	
	1644	11.8	360			1604	10.9	332			1749	11.2	341			1657	11.5	351			1737	10.6	323			1706	11.6	354	
	2239	3.5	107			2200	5.3	162							2321	3.2	98								2354	0.5	15		
6 Su	0406	9.1	277		21 M	0229	8.0	244		6 W	0007	3.2	98		21 Th	0451	8.4	256		6 F	0019	2.4	73		21 Sa	0616	9.3	283	
	1040	-0.4	-12			0928	0.0	0			0540	8.0	244			1059	1.2	37			0618	7.8	238			1149	3.1	94	
	1739	11.5	351			1647	10.9	332			1147	1.9	58			1737	11.4	347			1153	3.7	113			1747	11.3	344	
	2336	3.6	110			2246	5.0	152			1830	10.7	326								1807	10.1	308						
7 M	0503	8.8	268		22 Tu	0330	8.3	253		7 Th	0054	3.0	91		22 F	0010	2.1	64		7 Sa	0059	1.9	58		22 Su	0044	-0.5	-15	
	1135	0.2	6			1021	0.1	3			0638	8.0	244			0604	8.8	268			0717	8.1	247			0724	9.9	302	
	1831	11.1	338			1730	10.9	332			1237	2.7	82			1159	2.0	61			1243	4.6	140			1252	4.0	122	
						2334	4.5	137			1906	10.1	308			1816	11.2	341			1833	9.5	290			1828	10.9	332	
8 Tu	0031	3.6	110		23 W	0437	8.5	259		8 F	0137	2.7	82		23 Sa	0059	1.0	30		8 Su	0135	1.5	46		23 M	0133	-1.2	-37	
	0559	8.5	259			1117	0.3	9			0735	8.1	247			0715	9.4	287			0814	8.6	262			0830	10.5	320	
	1227	0.8	24			1811	10.8	329			1325	3.5	107			1301	2.9	88			1334	5.4	165			1355	4.7	143	
	1919	10.6	323								1937	9.5	290			1856	10.9	332			1854	9.1	277			1912	10.4	317	
9 W	0123	3.6	110		24 Th	0023	3.7	113		9 Sa	0216	2.4	73		24 Su	0148	0.0	0		9 M	0208	1.1	34		24 Tu	0222	-1.6	-49	
	0654	8.3	253			0547	8.8	268			0831	8.3	253			0824	10.0	305			0908	9.0	274			0932	11.0	335	
	1317	1.5	46			1215	0.7	21			1413	4.3	131			1404	3.7	113			1426	6.0	183			1458	5.2	158	
	2003	10.1	308			1852	10.7	326			2003	9.0	274			1938	10.5	320			1911	8.8	268			1957	9.9	302	
10 Th	0210	3.6	110		25 F	0112	2.8	85		10 Su	0252	2.1	64		25 M	0238	-0.8	-24		10 Tu	0240	0.6	18		25 W	0312	-1.8	-55	
	0747	8.2	250			0657	9.2	280			0927	8.6	262			0931	10.7	326			1001	9.5	290			1031	11.4	347	
	1404	2.1	64			1315	1.3	40			1502	4.9	149			1507	4.3	131			1519	6.5	198			1600	5.5	168	
	2041	9.6	293			1933	10.6	323			2026	8.5	259			2023	10.1	308			1929	8.5	259			2046	9.3	283	
11 F	0254	3.5	107		26 Sa	0203	1.8	55		11 M	0325	1.7	52		26 Tu	0328	-1.3	-40		11 W	0313	0.2	6		26 Th	0401	-1.7	-52	
	0841	8.1	247			0808	9.7	296			1021	9.0	274			1034	11.3	344			1050	10.1	308			1125	11.7	357	
	1450	2.8	85			1415	2.0	61			1553	5.5	168			1610	4.7	143			1613	6.7	204			1700	5.5	168	
	2115	9.1	277			2016	10.5	320			2046	8.2	250			2113	9.6	293			1956	8.4	256			2140	8.8	268	
12 Sa	0334	3.2	98		27 Su	0254	0.8	24		12 Tu	0358	1.3	40		27 W	0419	-1.6	-49		12 Th	0349	-0.3	-9		27 F	0450	-1.4	-43	
	0936	8.2	250			0920	10.2	311			1111	9.6	293			1134	11.8	360			1135	10.6	323			1216	11.9	363	
	1536	3.5	107			1518	2.7	82			1644	5.9	180			1713	4.9	149			1706	6.8	207			1759	5.4	165	
	2145	8.7	265			2102	10.3	314			2107	8.0	244			2208	9.2	280			2036	8.3	253			2238	8.3	253	
13 Su	0411	2.9	88		28 M	0347	-																						

Platinum, Alaska, 2019

Times and Heights of High and Low Waters

January				February				March																					
Time	Height			Time	Height			Time	Height			Time	Height																
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm		h	m	ft	cm										
1 Tu	0440	5.8	177		16 W	0415	4.8	146		1 F	0119	1.5	46		16 Sa	0024	1.7	52		1 F	0500	4.5	137		16 Sa	0422	3.8	116	
	1039	-0.7	-21			0953	0.4	12			0616	4.0	122			0524	3.4	104			1025	0.3	9			0914	0.4	12	
	1747	9.1	277			1722	8.2	250			1139	0.1	3			1025	0.0	0			1740	9.3	283			1655	9.4	287	
						2351	2.3	70			1904	9.6	293			1820	9.7	296								2347	1.3	40	
2 W	0025	1.8	55		17 Th	0501	4.0	122		2 Sa	0222	1.4	43		17 Su	0120	1.5	46		2 Sa	0042	1.4	43		17 Su	0510	3.8	116	
	0538	4.9	149			1021	0.2	6			0714	3.7	113			0620	3.2	98			0554	4.3	131			1006	0.3	9	
	1122	-0.4	-12			1807	8.9	271			1226	0.5	15			1117	-0.1	-3			1114	0.6	18			1748	9.4	287	
	1840	9.6	293								1954	9.5	290			1912	10.0	305			1831	9.0	274						
3 Th	0139	1.6	49		18 F	0058	2.0	61		3 Su	0320	1.3	40		18 M	0212	1.4	43		3 Su	0138	1.4	43		18 M	0038	1.3	40	
	0638	4.1	125			0553	3.4	104			0811	3.6	110			0721	3.4	104			0649	4.1	125			0606	4.0	122	
	1207	-0.1	-3			1057	0.1	3			1313	0.8	24			1219	-0.2	-6			1205	0.9	27			1109	0.3	9	
	1931	9.9	302			1854	9.6	293			2042	9.4	287			2006	10.0	305			1922	8.7	265			1843	9.2	280	
4 F	0247	1.3	40		19 Sa	0159	1.6	49		4 M	0412	1.1	34		19 Tu	0302	1.1	34		4 M	0230	1.5	46		19 Tu	0125	1.2	37	
	0739	3.7	113			0651	3.0	91			0907	3.6	110			0824	3.8	116			0743	4.1	125			0706	4.5	137	
	1252	0.2	6			1141	-0.1	-3			1400	1.1	34			1326	-0.1	-3			1256	1.2	37			1221	0.4	12	
	2020	10.0	305			1943	10.2	311		●	2129	9.2	280		○	2101	9.9	302			2012	8.4	256			1940	8.9	271	
5 Sa	0349	1.0	30		20 Su	0256	1.3	40		5 Tu	0456	1.0	30		20 W	0349	0.8	24		5 Tu	0316	1.5	46		20 W	0211	1.0	30	
	0839	3.4	104			0751	2.8	85			1001	3.7	113			0927	4.5	137			0837	4.2	128			0807	5.2	158	
	1336	0.6	18			1233	-0.2	-6			1450	1.4	43			1437	0.1	3			1349	1.4	43			1335	0.5	15	
●	2108	10.0	305		○	2033	10.6	323			2215	8.9	271			2155	9.6	293			2100	8.1	247			2037	8.4	256	
6 Su	0444	0.7	21		21 M	0348	0.9	27		6 W	0531	1.0	30		21 Th	0433	0.5	15		6 W	0357	1.5	46		21 Th	0257	0.8	24	
	0937	3.4	104			0852	2.9	88			1052	4.0	122			1027	5.4	165			0930	4.5	137			0907	6.2	189	
	1421	0.9	27			1331	-0.2	-6			1544	1.6	49			1553	0.3	9			1444	1.6	49			1450	0.5	15	
	2155	9.9	302			2125	10.8	329			2258	8.6	262			2249	9.0	274		●	2147	7.8	238			2134	7.9	241	
7 M	0529	0.5	15		22 Tu	0436	0.6	18		7 Th	0602	0.9	27		22 F	0516	0.2	6		7 Th	0433	1.5	46		22 F	0343	0.6	18	
	1031	3.4	104			0953	3.3	101			1140	4.4	134			1125	6.5	198			1019	5.0	152			1006	7.2	219	
	1508	1.2	37			1435	-0.1	-3			1639	1.8	55			1707	0.5	15			1542	1.7	52			1605	0.5	15	
	2239	9.7	296			2217	10.7	326			2340	8.2	250			2341	8.3	253			2233	7.4	226			2230	7.3	223	
8 Tu	0608	0.4	12		23 W	0519	0.2	6		8 F	0630	0.8	24		23 Sa	0559	-0.1	-3		8 F	0504	1.4	43		23 Sa	0429	0.3	9	
	1122	3.6	110			1052	4.0	122			1225	4.9	149			1221	7.5	229			1105	5.5	168			1101	8.2	250	
	1558	1.5	46			1545	0.2	6			1735	2.0	61			1818	0.6	18			1641	1.7	52			1716	0.4	12	
	2322	9.4	287			2308	10.4	317													2317	7.0	213			2325	6.7	204	
9 W	0642	0.4	12		24 Th	0600	-0.1	-3		9 Sa	0022	7.7	235		24 Su	0034	7.6	232		9 Sa	0534	1.3	40		24 Su	0514	0.1	3	
	1211	3.9	119			1149	4.9	149			0658	0.8	24			0641	-0.4	-12			1148	6.1	186			1155	8.9	271	
	1649	1.8	55			1659	0.5	15			1310	5.5	168			1317	8.3	253			1738	1.7	52			1822	0.3	9	
						2359	9.7	296			1831	2.1	64			1926	0.7	21											
10 Th	0003	9.1	277		25 F	0641	-0.4	-12		10 Su	0104	7.1	216		25 M	0127	6.8	207		10 Su	0001	6.5	198		25 M	0019	6.1	186	
	0713	0.3	9			1247	5.9	180			0724	0.8	24			0725	-0.5	-15			0602	1.3	40			0600	0.1	3	
	1259	4.2	128			1811	0.8	24			1354	6.1	186			1412	9.0	274			1231	6.7	204			1248	9.4	287	
	1740	2.0	61								1927	2.1	64			2032	0.8	24			1832	1.5	46			1924	0.2	6	
11 F	0045	8.6	262		26 Sa	0050	8.9	271		11 M	0146	6.4	195		26 Tu	0221	6.1	186		11 M	0045	6.0	183		26 Tu	0113	5.7	174	
	0743	0.3	9			0721	-0.6	-18			0750	0.7	21			0809	-0.4	-12			0630	1.2	37			0646	0.1	3	
	1346	4.7	143			1344	7.0	213			1436	6.8	207			1505	9.4	287			1312	7.3	223			1340	9.7	296	
	1834	2.2	67			1923	1.1	34			2025	2.1	64		○	2135	0.9	27			1925	1.4	43			2022	0.2	6	
12 Sa	0127	8.0	244		27 Su	0143	8.0	244		12 Tu	0229	5.7	174		27 W	0314	5.5	168		12 Tu	0129	5.4	165		27 W	0207	5.3	162	
	0811	0.4	12			0802	-0.8	-24			0814	0.7	21			0853	-0.3	-9			0656	1.2	37			0733	0.2	6	
	1432	5.3	162			1440	7.9	241			1517	7.5	229			1557	9.5	290			1354	7.8	238			1432	9.7	296	
	1931	2.4	73		○	2035	1.4	43		○	2122	2.0	61			2238	1.1	34			2017	1.3	40			2117	0.4	12	
13 Su	0209	7.2	219		28 M	0236	7.0	213		13 W	0311	5.0	152		28 Th	0407	5.0	152											

Platinum, Alaska, 2019

Times and Heights of High and Low Waters

April				May				June																									
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height																				
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm																			
1 M	0045	1.3	40		16 Tu	0559	5.2	158		1 W	0026	1.2	37		16 Th	0646	7.7	235		1 Sa	0028	0.9	27		16 Su	0050	-0.2	-6					
	0625	4.7	143			1116	1.0	30			0650	5.8	177			1253	1.6	49			0749	8.1	247			0815	10.2	311					
	1145	1.5	46			1815	8.1	247			1232	2.2	67			1848	5.9	180			1432	1.9	58			1527	0.9	27		2030	3.7	113	
	1845	7.8	238								1853	6.2	189									1958	4.0	122									
2 Tu	0129	1.5	46		17 W	0039	0.7	21		2 Th	0101	1.3	40		17 F	0040	0.0	0		2 Su	0059	1.0	30		17 M	0136	0.1	3					
	0717	4.9	149			0657	6.0	183			0738	6.4	195			0741	8.6	262			0832	8.8	268			0905	10.5	320					
	1243	1.7	52			1234	1.1	34			1338	2.1	64			1409	1.3	40			1534	1.4	43			1628	0.5	15		2132	3.5	107	
	1935	7.3	223			1913	7.4	226			1945	5.6	171			1950	5.1	155			2054	3.5	107										
3 W	0208	1.6	49		18 Th	0123	0.6	18		3 F	0134	1.4	43		18 Sa	0124	0.1	3		3 M	0132	1.0	30		18 Tu	0224	0.4	12					
	0808	5.2	158			0754	7.0	213			0824	7.0	213			0834	9.4	287			0916	9.4	287			0954	10.5	320					
	1343	1.8	55			1351	1.0	30			1442	1.9	58			1521	0.9	27			1630	0.9	27			1720	0.2	6		2230	3.5	107	
	2025	6.9	210			2013	6.7	204			2039	5.1	155			2052	4.6	140			2149	3.2	98										
4 Th	0245	1.6	49		19 F	0207	0.5	15		4 Sa	0206	1.5	46		19 Su	0210	0.2	6		4 Tu	0209	0.9	27		19 W	0314	0.8	24					
	0857	5.7	174			0851	8.0	244			0908	7.6	232			0926	10.0	305			1000	9.9	302			1041	10.4	317					
	1443	1.8	55			1506	0.8	24			1544	1.5	46			1627	0.5	15			1720	0.5	15			1806	0.0	0		2324	3.7	113	
	2115	6.4	195			2113	6.1	186			2133	4.6	140			2153	4.2	128			2241	3.1	94										
5 F	0320	1.7	52		20 Sa	0253	0.4	12		5 Su	0239	1.5	46		20 M	0258	0.4	12		5 W	0253	0.9	27		20 Th	0405	1.1	34					
	0944	6.3	192			0946	8.9	271			0952	8.3	253			1016	10.4	317			1044	10.3	314			1127	10.1	308					
	1545	1.7	52			1618	0.5	15			1726	0.1	3			1726	0.1	3			1805	0.1	3			1848	-0.1	-3		2231	3.1	94	
	2205	6.0	183			2212	5.6	171			2225	4.3	131			2251	4.1	125			2331	3.1	94										
6 Sa	0354	1.7	52		21 Su	0341	0.4	12		6 M	0313	1.5	46		21 Tu	0348	0.6	18		6 Th	0343	0.8	24		21 F	0016	3.9	119					
	1028	6.9	210			1038	9.6	293			1034	8.9	271			1105	10.5	320			1129	10.5	320			0457	1.4	43					
	1644	1.4	43			1724	0.2	6			1734	0.7	21			1817	-0.2	-6			1847	-0.1	-3			1212	9.7	296		1927	-0.1	-3	
	2253	5.6	171			2308	5.2	158			2314	4.0	122			2345	4.1	125								1927	-0.1	-3					
7 Su	0426	1.6	49		22 M	0430	0.4	12		7 Tu	0349	1.4	43		22 W	0439	0.9	27		7 F	0021	3.3	101		22 Sa	0107	4.1	125					
	1110	7.5	229			1129	10.0	305			1116	9.4	287			1152	10.4	317			1216	10.5	320			0548	1.7	52					
	1739	1.2	37			1822	-0.1	-3			1822	0.3	9			1905	-0.3	-9			1927	-0.3	-9			1256	9.2	280		2003	0.0	0	
	2340	5.2	158																							2003	0.0	0					
8 M	0458	1.6	49		23 Tu	0003	4.9	149		8 W	0002	3.8	116		23 Th	0039	4.1	125		8 Sa	0112	3.7	113		23 Su	0158	4.5	137					
	1151	8.0	244			0519	0.5	15			0429	1.3	40			0530	1.1	34			0539	1.0	30			0641	2.1	64					
	1830	0.9	27			1219	10.1	308			1158	9.7	296			1239	10.0	305			1304	10.1	308			1340	8.6	262		2036	0.1	3	
						1916	-0.2	-6			1907	0.1	3			1949	-0.3	-9			2006	-0.4	-12										
9 Tu	0026	4.8	146		24 W	0057	4.8	146		9 Th	0049	3.7	113		24 F	0131	4.3	131		9 Su	0204	4.4	134		24 M	0246	5.0	152					
	0529	1.5	46			0608	0.7	21			0512	1.2	37			0620	1.4	43			0643	1.2	37			0737	2.3	70					
	1233	8.5	259			1309	10.0	305			1242	9.9	302			1326	9.6	293			1353	9.6	293			1424	7.9	241		2106	0.2	6	
	1919	0.7	21			2007	-0.2	-6			1951	0.0	0			2031	-0.1	-3			2044	-0.4	-12										
10 W	0112	4.4	134		25 Th	0151	4.7	143		10 F	0137	3.7	113		25 Sa	0222	4.5	137		10 M	0257	5.2	158		25 Tu	0332	5.5	168					
	0601	1.3	40			0656	0.9	27			0559	1.1	34			0710	1.7	52			0752	1.5	46			0837	2.6	79					
	1315	9.0	274			1358	9.7	296			1329	9.9	302			1412	9.0	274			1444	8.7	265			1507	7.1	216		2135	0.3	9	
	2006	0.5	15			2055	0.0	0			2033	-0.1	-3			2110	0.0	0			2122	-0.5	-15										
11 Th	0157	4.1	125		26 F	0242	4.7	143		11 Sa	0225	3.9	119		26 Su	0312	4.8	146		11 Tu	0350	6.2	189		26 W	0416	6.1	186					
	0636	1.2	37			0745	1.2	37			0651	1.1	34			0803	2.0	61			0907	1.8	55			0940	2.7	82					
	1400	9.3	283			1447	9.3	283			1417	9.7	296			1458	8.4	256			1535	7.8	238			1551	6.3	192		2203	0.4	12	
	2053	0.5	15			2141	0.2	6			2114	0.0	0			2147	0.3	9			2200	-0.5	-15										
12 F	0242	4.0	122		27 Sa	0332	4.8	146		12 Su	0314	4.3	131		27 M	0359	5.1	155		12 W	0444	7.2	219		27 Th	0500	6.8	207					
	0716	1.0	30			0835	1.4	43			0751	1.2	37			0859	2.3	70			1025	2.0	61			1048	2.7	82					
	1446	9.4	287			1535	8.8	268			1507	9.3	283			1543	7.6	232			1628	6.7	204			1636	5.4	165		2231	0.5	15	
	2138	0.6	18			2225	0.5	15			2154	0.0	0			2221	0.5	15			2240	-0.5	-15										
13 Sa	0326	4.0	122		28 Su	0421	4.9	149		13 M	0404	5.0	152		28 Tu	0446	5.6	171		13 Th	0537	8.2	250		28 F	0544	7.5	229					
	0804	0.9	27			0927	1.7	52			0858	1.4	43			1000	2.5	76			1147	2.0	61			1200	2.6	79					
	1534	9.4	287			1623	8.1	247			1558	8.6	262			1629	6.9	210			1725	5.7	174			1725	4						

Platinum, Alaska, 2019

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	h m	ft	h m	ft	h m	ft	h m	ft	h m	ft
1 M	0003 0.5 15 0757 9.5 290 1510 1.4 43 2011 2.9 88	16 Tu	0113 0.3 9 0844 10.2 311 1613 0.8 24 2108 3.4 104	1 Th	0106 0.0 0 0902 10.3 314 1610 0.9 27 2126 3.3 101	16 F	0239 1.3 40 0956 8.8 268 1706 1.0 30 2230 4.3 131	1 Su	0325 0.4 12 1022 8.6 262 1643 0.5 15 2255 6.5 198	16 M	0434 1.7 52 1101 6.7 204 1711 1.4 43 2329 6.4 195
2 Tu	0043 0.4 12 0843 10.1 308 1605 1.0 30 2107 2.8 85	17 W	0201 0.6 18 0933 10.1 308 1703 0.6 18 2205 3.5 107	2 F	0207 0.1 3 0952 10.3 314 1653 0.6 18 2224 3.9 119	17 Sa	0334 1.5 46 1041 8.5 259 1740 1.0 30 2319 4.7 143	2 M	0440 0.5 15 1115 8.0 244 1725 0.1 3 2350 7.6 232	17 Tu	0529 1.6 49 1146 6.3 192 1740 1.4 43
3 W	0128 0.3 9 0930 10.5 320 1653 0.6 18 2203 2.8 85	18 Th	0250 1.0 30 1019 9.8 299 1745 0.5 15 2259 3.7 113	3 Sa	0316 0.3 9 1043 10.0 305 1733 0.3 9 2321 4.8 146	18 Su	0431 1.7 52 1124 8.0 244 1809 0.9 27	3 Tu	0551 0.5 15 1207 7.3 223 1808 -0.2 -6	18 W	0010 6.9 210 0622 1.4 43 1230 5.8 177 1809 1.4 43
4 Th	0220 0.3 9 1017 10.7 326 1736 0.3 9 2257 3.1 94	19 F	0342 1.3 40 1104 9.5 290 1822 0.4 12 2349 4.0 122	4 Su	0429 0.5 15 1133 9.5 290 1812 -0.1 -3	19 M	0005 5.2 158 0527 1.9 58 1207 7.5 229 1838 0.9 27	4 W	0045 8.5 259 0659 0.5 15 1301 6.6 201 1852 -0.4 -12	19 Th	0052 7.4 226 0712 1.3 40 1315 5.3 162 1837 1.4 43
5 F	0320 0.4 12 1105 10.7 326 1815 0.0 0 2350 3.7 113	20 Sa	0436 1.6 49 1147 9.1 277 1855 0.4 12	5 M	0017 5.8 177 0542 0.8 24 1224 8.7 265 1851 -0.4 -12	20 Tu	0049 5.7 174 0622 1.9 58 1249 6.9 210 1905 0.9 27	5 Th	0140 9.2 280 0805 0.5 15 1355 5.9 180 1937 -0.4 -12	20 F	0133 7.9 241 0802 1.2 37 1400 4.8 146 1905 1.3 40
6 Sa	0426 0.6 18 1153 10.3 314 1854 -0.2 -6	21 Su	0038 4.4 134 0530 1.9 58 1230 8.5 259 1926 0.4 12	6 Tu	0113 6.9 210 0654 1.0 30 1316 7.8 238 1931 -0.6 -18	21 W	0133 6.3 192 0717 1.9 58 1333 6.3 192 1932 0.9 27	6 F	0235 9.7 296 0908 0.6 18 1450 5.4 165 2024 -0.3 -9	21 Sa	0215 8.3 253 0852 1.1 34 1443 4.4 134 1935 1.1 34
7 Su	0044 4.5 137 0535 0.9 27 1242 9.7 296 1931 -0.5 -15	22 M	0126 4.9 149 0626 2.1 64 1312 7.9 241 1954 0.4 12	7 W	0210 7.9 241 0806 1.2 37 1409 6.9 210 2012 -0.7 -21	22 Th	0216 6.9 210 0812 1.9 58 1417 5.6 171 1958 0.9 27	7 Sa	0328 9.8 299 1010 0.8 24 1544 5.0 152 2112 -0.1 -3	22 Su	0258 8.6 262 0940 1.1 34 1526 4.0 122 2009 0.9 27
8 M	0140 5.4 165 0647 1.2 37 1333 8.9 271 2009 -0.6 -18	23 Tu	0213 5.5 168 0723 2.3 70 1355 7.2 219 2022 0.5 15	8 Th	0304 8.8 268 0917 1.3 40 1503 6.0 183 2055 -0.7 -21	23 F	0258 7.5 229 0908 1.9 58 1500 5.0 152 2024 0.8 24	8 Su	0421 9.7 296 1112 0.9 27 1638 4.7 143 2202 0.2 6	23 M	0343 8.9 271 1030 1.2 37 1608 3.8 116 2050 0.8 24
9 Tu	0236 6.5 198 0800 1.5 46 1425 7.9 241 2048 -0.8 -24	24 W	0257 6.1 186 0822 2.5 76 1438 6.4 195 2048 0.5 15	9 F	0358 9.4 287 1027 1.4 43 1557 5.3 162 2140 -0.6 -18	24 Sa	0340 8.0 244 1003 1.8 55 1542 4.4 134 2052 0.7 21	9 M	0514 9.5 290 1212 1.1 34 1733 4.5 137 2255 0.6 18	24 Tu	0430 9.0 274 1120 1.3 40 1653 3.8 116 2140 0.7 21
10 W	0330 7.5 229 0915 1.8 55 1517 6.8 207 2127 -0.8 -24	25 Th	0339 6.8 207 0923 2.5 76 1521 5.6 171 2114 0.5 15	10 Sa	0451 9.7 296 1138 1.4 43 1652 4.7 143 2226 -0.4 -12	25 Su	0423 8.5 259 1101 1.8 55 1625 3.9 119 2124 0.5 15	10 Tu	0607 9.1 277 1309 1.2 37 1829 4.4 134 2349 0.9 27	25 W	0520 9.0 274 1209 1.3 40 1745 4.0 122 2241 0.6 18
11 Th	0424 8.5 259 1032 1.9 58 1611 5.8 177 2208 -0.8 -24	26 F	0421 7.4 226 1027 2.4 73 1604 4.9 149 2140 0.5 15	11 Su	0545 9.9 302 1246 1.3 40 1750 4.2 128 2315 -0.1 -3	26 M	0508 9.0 274 1200 1.7 52 1710 3.5 107 2204 0.3 9	11 W	0700 8.7 265 1401 1.3 40 1924 4.4 134	26 Th	0614 8.8 268 1255 1.2 37 1841 4.5 137 2353 0.7 21
12 F	0517 9.2 280 1150 1.8 55 1707 4.9 149 2251 -0.6 -18	27 Sa	0504 8.1 247 1133 2.3 70 1649 4.1 125 2207 0.4 12	12 M	0638 9.8 299 1348 1.3 40 1848 3.9 119	27 Tu	0557 9.3 283 1255 1.6 49 1801 3.4 104 2254 0.2 6	12 Th	0045 1.2 37 0751 8.3 253 1447 1.4 43 2018 4.6 140	27 F	0710 8.5 259 1338 1.1 34 1940 5.3 162
13 Sa	0610 9.8 299 1305 1.5 46 1807 4.2 128 2337 -0.4 -12	28 Su	0548 8.7 265 1238 2.0 61 1738 3.5 107 2240 0.3 9	13 Tu	0006 0.3 9 0729 9.6 293 1446 1.2 37 1946 3.8 116	28 W	0648 9.5 290 1345 1.5 46 1857 3.5 107 2354 0.1 3	13 F	0140 1.4 43 0841 8.0 244 1529 1.4 43 2111 4.9 149	28 Sa	0108 0.7 21 0807 8.0 244 1421 0.9 27 2038 6.3 192
14 Su	0703 10.1 308 1413 1.3 40 1908 3.8 116	29 M	0634 9.3 283 1337 1.8 55 1832 3.1 94 2321 0.1 3	14 W	0057 0.6 18 0820 9.4 287 1540 1.1 34 2043 3.8 116	29 Th	0741 9.6 293 1432 1.3 40 1957 3.9 119	14 Sa	0237 1.6 49 0929 7.6 232 1607 1.5 46 2200 5.3 162	29 Su	0223 0.6 18 0904 7.5 229 1505 0.7 21 2136 7.4 226
15 M	0025 -0.1 -3 0754 10.2 311 1516 1.0 30 2008 3.5 107	30 Tu	0722 9.8 299 1432 1.5 46 1928 2.9 88	15 Th	0147 1.0 30 0909 9.1 277 1627 1.1 34 2139 4.0 122	30 F	0100 0.2 6 0834 9.4 287 1517 1.1 34 2058 4.5 137	15 Su	0335 1.7 52 1016 7.2 219 1640 1.4 43 2246 5.8 177	30 M	0339 0.5 15 1001 6.9 210 1551 0.4 12 2231 8.4 256
		31 W	0011 0.0 0 0811 10.1 308 1523 1.2 37 2026 3.0 91			31 Sa	0210 0.3 9 0928 9.1 277 1600 0.8 24 2157 5.5 168				

Time meridian 135° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Bethel, Kuskokwim River, Alaska, 2019

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	h m	ft	h m	ft	h m	ft	h m	ft	h m	ft
1 M	0037 1.0 30 0301 1.1 34 0936 -0.3 -9 1552 4.2 128	16 Tu	0117 0.8 24 0410 1.2 37 1054 -0.3 -9 1636 4.1 125	1 Th	1025 -0.5 -15 1653 4.6 140	16 F	0236 0.8 24 0548 1.4 43 1200 0.0 0 1752 3.7 113	1 Su	0150 0.9 27 0556 2.1 64 1227 0.1 3 1814 3.3 101	16 M	0211 1.0 30 0652 2.2 67 1351 0.6 18 1913 2.6 79
2 Tu	1004 -0.3 -9 1634 4.5 137	17 W	0224 0.7 21 0509 1.1 34 1133 -0.2 -6 1724 4.1 125	2 F	0247 0.9 27 0459 1.1 34 1111 -0.4 -12 1744 4.4 134	17 Sa	0315 0.9 27 0637 1.5 46 1249 0.2 6 1843 3.5 107	2 M	0232 0.8 24 0654 2.5 76 1350 0.4 12 1908 2.8 85	17 Tu	0232 0.9 27 0730 2.5 76 1500 0.8 24 2001 2.3 70
3 W	1036 -0.4 -12 1719 4.7 143	18 Th	0319 0.7 21 0607 1.1 34 1214 0.0 0 1812 4.1 125	3 Sa	0309 0.9 27 0607 1.3 40 1207 -0.2 -6 1835 4.1 125	18 Su	0342 0.9 27 0724 1.7 52 1345 0.4 12 1933 3.3 101	3 Tu	0316 0.7 21 0750 2.9 88 1519 0.6 18 2002 2.4 73	18 W	0256 0.8 24 0808 2.8 85 1611 0.9 27 2049 2.0 61
4 Th	1113 -0.3 -9 1807 4.8 146	19 F	0404 0.6 18 0701 1.1 34 1300 0.1 3 1902 4.0 122	4 Su	0339 0.8 24 0710 1.6 49 1318 0.1 3 1927 3.7 113	19 M	0400 0.8 24 0808 1.9 58 1449 0.6 18 2022 3.1 94	4 W	0400 0.5 15 0845 3.1 94 1645 0.8 24 2058 2.0 61	19 Th	0324 0.7 21 0848 3.1 94 1723 0.9 27 2137 1.7 52
5 F	1159 -0.2 -6 1856 4.7 143	20 Sa	0441 0.6 18 0754 1.2 37 1352 0.3 9 1951 3.9 119	5 M	0413 0.7 21 0812 2.0 61 1452 0.5 15 2020 3.2 98	20 Tu	0416 0.8 24 0852 2.1 64 1556 0.8 24 2111 2.7 82	5 Th	0447 0.4 12 0940 3.3 101 1811 0.8 24 2200 1.7 52	20 F	0356 0.6 18 0930 3.4 104 1834 0.8 24 2226 1.4 43
6 Sa	0453 0.6 18 0727 0.9 27 1300 0.0 0 1947 4.4 134	21 Su	0510 0.6 18 0846 1.4 43 1452 0.5 15 2041 3.7 113	6 Tu	0452 0.5 15 0913 2.4 73 1625 0.7 21 2115 2.7 82	21 W	0438 0.6 18 0936 2.4 73 1706 0.9 27 2201 2.4 73	6 F	0535 0.2 6 1035 3.5 107 1933 0.8 24 2310 1.5 46	21 Sa	0433 0.4 12 1014 3.7 113 1939 0.7 21 2315 1.2 37
7 Su	0513 0.5 15 0834 1.2 37 1424 0.3 9 2039 4.0 122	22 M	0530 0.6 18 0939 1.6 49 1558 0.7 21 2131 3.4 104	7 W	0533 0.3 9 1013 2.7 82 1752 0.9 27 2213 2.3 70	22 Th	0505 0.5 15 1019 2.8 85 1818 1.0 30 2252 2.1 64	7 Sa	0624 0.1 3 1129 3.6 110 2043 0.7 21	22 Su	0515 0.2 6 1102 4.0 122 2030 0.7 21
8 M	0542 0.4 12 0940 1.6 49 1607 0.6 18 2133 3.5 107	23 Tu	0548 0.5 15 1031 1.9 58 1707 0.9 27 2223 3.0 91	8 Th	0616 0.1 3 1112 3.1 94 1917 0.9 27 2316 1.9 58	23 F	0536 0.3 9 1103 3.1 94 1930 1.0 30 2341 1.8 55	8 Su	0027 1.4 43 0712 0.0 0 1222 3.6 110 2141 0.6 18	23 M	0000 1.1 34 0601 0.1 3 1150 4.3 131 2108 0.6 18
9 Tu	0618 0.2 6 1045 2.1 64 1739 0.8 24 2230 3.0 91	24 W	0610 0.4 12 1120 2.3 70 1818 1.0 30 2315 2.7 82	9 F	0700 -0.1 -3 1207 3.4 104 2037 0.8 24	24 Sa	0610 0.1 3 1147 3.5 107 2036 0.9 27	9 M	0147 1.4 43 0800 -0.1 -3 1313 3.6 110 2233 0.7 21	24 Tu	0044 1.2 37 0650 -0.1 -3 1240 4.4 134 2142 0.6 18
10 W	0656 0.1 3 1147 2.6 79 1903 0.9 27 2329 2.5 76	25 Th	0635 0.2 6 1202 2.7 82 1930 1.1 34	10 Sa	0020 1.7 52 0745 -0.2 -6 1258 3.6 110 2148 0.8 24	25 Su	0025 1.5 46 0646 0.0 0 1230 3.9 119 2133 0.9 27	10 Tu	0236 1.5 46 0846 -0.1 -3 1403 3.6 110 2320 0.7 21	25 W	0127 1.3 40 0741 -0.2 -6 1330 4.4 134 2215 0.6 18
11 Th	0736 -0.1 -3 1243 3.1 94 2022 0.9 27	26 F	0005 2.3 70 0703 0.1 3 1240 3.1 94 2039 1.0 30	11 Su	0122 1.5 46 0828 -0.3 -9 1347 3.7 113 2251 0.8 24	26 M	0104 1.3 40 0724 -0.2 -6 1315 4.2 128 2221 0.8 24	11 W	0318 1.6 49 0931 -0.1 -3 1453 3.6 110	26 Th	0212 1.6 49 0834 -0.3 -9 1420 4.2 128 2250 0.7 21
12 F	0028 2.1 64 0816 -0.3 -9 1333 3.5 107 2138 0.8 24	27 Sa	0050 1.9 58 0733 -0.1 -3 1317 3.5 107 2146 1.0 30	12 M	0218 1.4 43 0911 -0.3 -9 1434 3.8 116 2352 0.8 24	27 Tu	0140 1.3 40 0804 -0.4 -12 1400 4.4 134 2304 0.9 27	12 Th	0006 0.8 24 0401 1.6 49 1016 -0.1 -3 1544 3.5 107	27 F	0301 1.9 58 0930 -0.3 -9 1511 3.9 119 2327 0.7 21
13 Sa	0125 1.8 55 0856 -0.4 -12 1419 3.8 116 2250 0.8 24	28 Su	0128 1.6 49 0803 -0.2 -6 1355 3.9 119 2251 1.0 30	13 Tu	0311 1.4 43 0952 -0.3 -9 1521 3.8 116	28 W	0219 1.3 40 0847 -0.5 -15 1447 4.5 137 2345 0.9 27	13 F	0048 0.9 27 0445 1.7 52 1102 0.1 3 1637 3.3 101	28 Sa	0353 2.3 70 1030 -0.1 -3 1603 3.5 107
14 Su	0219 1.5 46 0936 -0.4 -12 1504 4.0 122	29 M	0201 1.3 40 0835 -0.4 -12 1435 4.3 131	14 W	0051 0.8 24 0404 1.4 43 1033 -0.2 -6 1610 3.8 116	29 Th	0304 1.4 43 0933 -0.5 -15 1537 4.4 134	14 Sa	0123 0.9 27 0529 1.9 58 1152 0.3 9 1730 3.1 94	29 Su	0007 0.7 21 0448 2.7 82 1136 0.1 3 1657 3.0 91
15 M	0004 0.8 24 0314 1.3 40 1015 -0.4 -12 1549 4.1 125	30 Tu	0003 1.0 30 0230 1.1 34 0908 -0.5 -15 1518 4.5 137	15 Th	0147 0.8 24 0456 1.3 40 1115 -0.1 -3 1701 3.8 116	30 F	0026 1.0 30 0358 1.5 46 1023 -0.4 -12 1628 4.1 125	15 Su	0150 1.0 30 0612 2.0 61 1248 0.5 15 1822 2.9 88	30 M	0049 0.7 21 0542 3.1 94 1252 0.4 12 1752 2.5 76
		31 W	0944 -0.5 -15 1604 4.6 140			31 Sa	0108 1.0 30 0457 1.8 55 1120 -0.2 -6 1721 3.8 116				

Time meridian 135° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Unalakleet, Alaska, 2019

Times and Heights of High and Low Waters

January				February				March																					
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height																
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm															
1 Tu	1122	0.4	12	116	16 W	1855	3.5	107	1 F	2030	4.3	131	16 Sa	1918	4.5	137	1 F	1859	4.0	122	16 Sa	1743	4.3	131					
2 W	1057	0.5	15	128	17 Th	0950	0.5	15	122	2 Sa	0629	-0.2	-6	17 Su	0547	-0.2	-6	143	2 Sa	0447	0.1	3	119	17 Su	0347	0.1	3	131	
3 Th	0616	0.2	6	134	18 F	0852	0.3	9	134	3 Su	0709	-0.3	-9	18 M	0622	-0.4	-12	143	3 Su	0538	0.1	3	116	18 M	0434	0.0	0	128	
4 F	0653	-0.2	-6	137	19 Sa	0638	-0.2	-6	146	4 M	0745	-0.4	-12	19 Tu	0655	-0.4	-12	140	4 M	0622	0.1	3	110	19 Tu	0510	0.1	3	119	
5 Sa	0730	-0.5	-15	137	20 Su	0704	-0.5	-15	152	5 Tu	0816	-0.3	-9	20 W	0723	-0.3	-9	131	5 Tu	0659	0.2	6	107	20 W	0540	0.2	6	110	
6 Su	0806	-0.6	-18	137	21 M	0735	-0.8	-24	155	6 W	0843	-0.3	-9	21 Th	0747	-0.2	-6	116	6 W	0728	0.3	9	101	21 Th	0603	0.4	12	55	
7 M	0838	-0.7	-21	134	22 Tu	0807	-0.9	-27	155	7 Th	0903	-0.1	-3	22 F	0011	3.9	119	3	7 Th	0750	0.4	12	94	22 F	0623	0.6	18	70	
8 Tu	0908	-0.7	-21	134	23 W	0835	-0.9	-27	155	8 F	0028	3.6	110	3	23 Sa	0106	3.4	104	9	8 F	0802	0.6	18	55	23 Sa	0026	2.7	82	24
9 W	0007	4.3	131	137	24 Th	0011	4.8	146	101	9 Sa	0100	3.3	101	9	24 Su	0159	2.8	85	15	9 Sa	0032	2.8	85	24	24 Su	0130	2.3	70	30
10 Th	0038	4.1	125	137	25 F	0100	4.4	134	15	10 Su	0131	3.0	91	15	25 M	0254	2.1	64	18	10 Su	0112	2.5	76	30	25 M	0236	1.9	58	34
11 F	0107	3.9	119	137	26 Sa	0148	3.7	113	58	11 M	0202	2.5	76	18	26 Tu	0358	1.6	49	24	11 M	0153	2.2	67	34	26 Tu	0350	1.5	46	37
12 Sa	0134	3.5	107	0	27 Su	0234	3.0	91	0	12 Tu	0233	2.0	61	21	27 W	0053	0.7	21	34	12 Tu	0238	1.8	55	27	27 W	0531	1.3	40	37
13 Su	0157	3.1	94	67	28 M	0320	2.2	67	9	13 W	0300	1.5	46	21	28 Th	0230	0.5	15	122	13 W	0331	1.4	43	21	28 Th	0011	0.1	3	119
14 M	0209	2.6	79	12	29 Tu	0128	1.4	43	116	14 Th	0900	0.7	21	116	29 F	0446	1.1	34	116	14 Th	0726	1.0	30	116	29 F	0122	0.2	6	116
15 Tu	1024	0.5	15	91	30 W	1013	0.5	15	125	15 F	0832	0.5	15	128	30 Sa	0105	0.5	15	125	15 F	1651	4.1	125	30 Sa	0233	0.2	6	110	
					31 Th	0454	0.4	12	128													31 Su	0335	0.3	9	104			

Time meridian 135° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Unalakleet, Alaska, 2019

Times and Heights of High and Low Waters

April				May				June															
Time		Height		Time		Height		Time		Height		Time		Height									
h	m	ft	cm	h	m	ft	cm	h	m	ft	cm	h	m	ft	cm								
1 M	0424	0.4	12	16 Tu	0300	0.2	6	1 W	0304	0.8	24	16 Th	0148	0.6	18	1 Sa	0927	3.4	104	16 Su	0949	4.5	137
	1938	3.2	98		1907	3.4	104		1129	2.2	67		0923	2.9	88		1902	0.6	18		1914	-0.4	-12
2 Tu	0503	0.5	15	17 W	0333	0.4	12	2 Th	0313	1.0	30	17 F	0206	0.8	24	2 Su	0950	3.8	116	17 M	1028	4.7	143
	2035	2.9	88		1052	1.8	55		1053	2.4	73		0951	3.4	104		1927	0.1	3		1955	-0.7	-21
3 W	0533	0.7	21	18 Th	1347	1.7	52	3 F	1726	1.7	52	18 Sa	0214	1.0	30	3 M	1020	4.2	128	18 Tu	1106	4.8	146
	2144	2.7	82		1617	1.4	43		1049	2.7	82		1025	3.9	119		1958	-0.3	-9		2033	-0.8	-24
4 Th	0551	0.9	27	19 F	2157	2.3	70	4 Sa	0315	1.2	37	19 Su	1101	4.3	131	4 Tu	1054	4.5	137	19 W	1142	4.7	143
	1247	2.0	61		0418	0.9	27		1057	3.0	91		1949	-0.3	-9		2030	-0.6	-18		2108	-0.9	-27
5 F	1634	1.7	52	20 Sa	1112	2.8	85	5 Su	0315	1.3	40	20 M	1137	4.5	137	5 W	1132	4.8	146	20 Th	1217	4.6	140
	2259	2.4	73		1759	1.0	30		1914	0.8	24		2034	-0.6	-18		2104	-0.9	-27		2141	-0.8	-24
6 Sa	0554	1.1	34	21 Su	2343	1.9	58	6 M	1115	3.4	104	21 Tu	1212	4.6	140	6 Th	1212	5.0	152	21 F	1250	4.4	134
	1234	2.2	67		0436	1.1	34		1955	0.4	12		2115	-0.8	-24		2137	-1.0	-30		2211	-0.7	-21
7 Su	1802	1.5	46	22 M	1144	3.4	104	7 Tu	1139	3.8	116	22 W	1247	4.6	140	7 F	1254	5.0	152	22 Sa	1320	4.2	128
	0006	2.2	67		1919	0.5	15		2032	0.0	0		2154	-0.8	-24		2209	-1.0	-30		2236	-0.5	-15
8 M	0551	1.4	43	23 Tu	0452	1.3	40	8 W	1208	4.1	125	23 Th	1321	4.5	137	8 Sa	1336	4.8	146	23 Su	1349	3.8	116
	1244	2.9	88		1218	3.8	116		2109	-0.3	-9		2230	-0.7	-21		2239	-0.9	-27		2255	-0.3	-9
9 Tu	2013	0.8	24	24 W	2022	0.0	0	9 Th	1241	4.4	134	24 F	1354	4.3	131	9 Su	1418	4.4	134	24 M	1414	3.4	104
	0202	1.8	55		1404	4.3	131		2146	-0.6	-18		2305	-0.5	-15		2307	-0.6	-18		2307	0.0	0
10 W	0548	1.5	46	25 Th	2249	-0.4	-12	10 F	1317	4.6	140	25 Sa	1426	4.0	122	10 M	1502	3.8	116	25 Tu	1428	3.0	91
	1302	3.2	98		2203	-0.4	-12		2303	-0.7	-21		2337	-0.3	-9		2330	-0.3	-9		2315	0.2	6
11 Th	2101	0.5	15	26 F	1404	4.3	131	11 Sa	1241	4.4	134	26 Su	1456	3.6	110	11 Tu	1547	3.0	91	26 W	0815	2.5	76
	0312	1.5	46		2203	-0.4	-12		2146	-0.6	-18		2305	-0.5	-15		2350	0.0	0		1049	2.4	73
12 F	0529	1.4	43	27 Sa	1439	4.5	137	12 Su	1317	4.6	140	27 M	0005	-0.1	-3	12 W	0753	2.7	82	27 Th	1343	2.5	76
	1326	3.6	110		2342	-0.5	-15		2146	-0.6	-18		1524	3.2	98		1637	2.2	67		2318	0.4	12
13 Sa	2146	0.2	6	28 Su	1518	4.0	122	13 M	1241	4.4	134	28 Tu	0025	0.2	6	13 Th	0006	0.3	9	28 F	0752	2.8	85
	0312	1.5	46		1558	3.7	113		2146	-0.6	-18		1537	2.7	82		0811	3.3	101		2253	0.6	18
14 Su	0529	1.4	43	29 M	0024	-0.1	-3	14 Tu	1317	4.6	140	29 W	0038	0.5	15	14 F	0013	0.5	15	29 Sa	0806	3.5	107
	1326	3.6	110		1558	3.7	113		2146	-0.6	-18		1524	3.2	98		1744	0.7	21		2157	0.5	15
15 M	2146	0.2	6	30 Tu	0024	-0.1	-3	15 W	1317	4.6	140	30 Th	0045	0.7	21	15 Sa	0912	4.2	128	30 Su	0829	4.0	122
	0529	1.4	43		1558	3.7	113		2146	-0.6	-18		0915	2.7	82		1831	0.1	3		1903	0.2	6
16 Tu	1326	3.6	110	31 W	0241	0.5	15	16 Th	1241	4.4	134	31 F	0041	0.9	27								
	2146	0.2	6		0241	0.5	15		1241	4.4	134		0915	3.0	91								

Time meridian 135° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Nome, Alaska, 2019

Times and Heights of High and Low Waters

April				May				June			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	h m	ft	h m	ft	h m	ft	h m	ft	h m	ft
1 M	0208 1.0 30 0821 0.2 6 1534 1.3 40 2159 0.7 21	16 Tu	0052 1.2 37 0741 0.0 0 1436 1.4 43 2018 0.7 21	1 W	0234 1.0 30 0815 0.3 9 1509 1.4 43 2148 0.5 15	16 Th	0213 1.2 37 0804 0.2 6 1441 1.5 46 2114 0.3 9	1 Sa	0354 1.0 30 0827 0.7 21 1440 1.4 43 2158 0.2 6	16 Su	0450 1.2 37 0910 0.8 24 1511 1.5 46 2240 -0.1 -3
2 Tu	0305 1.1 34 0910 0.3 9 1612 1.3 40 2221 0.7 21	17 W	0211 1.3 40 0837 0.0 0 1519 1.4 43 2118 0.5 15	2 Th	0327 1.0 30 0855 0.4 12 1533 1.3 40 2212 0.5 15	17 F	0326 1.2 37 0854 0.4 12 1516 1.5 46 2205 0.1 3	2 Su	0449 1.0 30 0904 0.8 24 1453 1.4 43 2229 0.1 3	17 M	0601 1.2 37 1003 0.9 27 1546 1.4 43 2325 -0.2 -6
3 W	0354 1.1 34 0952 0.3 9 1640 1.3 40 2243 0.6 18	18 Th	0322 1.3 40 0929 0.1 3 1559 1.5 46 2213 0.3 9	3 F	0417 1.1 34 0932 0.5 15 1553 1.3 40 2237 0.4 12	18 Sa	0436 1.2 37 0943 0.5 15 1551 1.5 46 2253 0.0 0	3 M	0540 1.1 34 0945 0.9 27 1505 1.4 43 2305 0.0 0	18 Tu	0703 1.3 40 1059 1.0 30 1625 1.4 43
4 Th	0438 1.2 37 1030 0.3 9 1703 1.3 40 2309 0.5 15	19 F	0428 1.3 40 1018 0.2 6 1636 1.5 46 2304 0.2 6	4 Sa	0505 1.1 34 1007 0.6 18 1610 1.3 40 2305 0.2 6	19 Su	0542 1.3 40 1032 0.7 21 1625 1.5 46 2338 -0.1 -3	4 Tu	0628 1.2 37 1032 1.0 30 1528 1.4 43 2346 -0.2 -6	19 W	0008 -0.2 -6 0755 1.3 40 1157 1.1 34 1710 1.3 40
5 F	0520 1.2 37 1104 0.4 12 1723 1.2 37 2338 0.4 12	20 Sa	0532 1.4 43 1106 0.4 12 1713 1.5 46 2354 0.0 0	5 Su	0551 1.1 34 1043 0.7 21 1624 1.3 40 2336 0.1 3	20 M	0645 1.3 40 1123 0.8 24 1701 1.4 43	5 W	0715 1.3 40 1127 1.0 30 1606 1.4 43	20 Th	0052 -0.2 -6 0840 1.3 40 1258 1.0 30 1803 1.2 37
6 Sa	0603 1.2 37 1138 0.5 15 1741 1.2 37	21 Su	0633 1.4 43 1154 0.5 15 1750 1.4 43	6 M	0637 1.2 37 1121 0.8 24 1635 1.3 40	21 Tu	0023 -0.2 -6 0744 1.3 40 1217 0.9 27 1739 1.3 40	6 Th	0032 -0.2 -6 0804 1.3 40 1227 1.1 34 1658 1.4 43	21 F	0136 -0.1 -3 0919 1.4 43 1400 1.0 30 1902 1.2 37
7 Su	0009 0.3 9 0647 1.2 37 1212 0.6 18 1757 1.2 37	22 M	0041 -0.1 -3 0734 1.4 43 1244 0.7 21 1827 1.4 43	7 Tu	0011 0.0 0 0725 1.2 37 1203 0.9 27 1651 1.3 40	22 W	0108 -0.2 -6 0838 1.4 43 1316 1.0 30 1823 1.3 40	7 F	0122 -0.3 -9 0854 1.4 43 1332 1.1 34 1804 1.4 43	22 Sa	0220 -0.1 -3 0956 1.4 43 1503 1.0 30 2003 1.1 34
8 M	0042 0.2 6 0732 1.2 37 1247 0.7 21 1810 1.2 37	23 Tu	0129 -0.1 -3 0833 1.4 43 1338 0.8 24 1908 1.3 40	8 W	0051 -0.1 -3 0814 1.3 40 1251 1.0 30 1719 1.4 43	23 Th	0154 -0.1 -3 0929 1.4 43 1419 1.0 30 1917 1.2 37	8 Sa	0216 -0.3 -9 0944 1.5 46 1440 1.0 30 1927 1.3 40	23 Su	0303 -0.1 -3 1032 1.4 43 1606 0.9 27 2104 1.1 34
9 Tu	0119 0.1 3 0820 1.3 40 1325 0.8 24 1823 1.3 40	24 W	0217 -0.1 -3 0932 1.4 43 1436 0.9 27 1954 1.2 37	9 Th	0136 -0.2 -6 0905 1.3 40 1346 1.0 30 1801 1.3 40	24 F	0241 -0.1 -3 1018 1.4 43 1529 1.0 30 2021 1.1 34	9 Su	0311 -0.3 -9 1033 1.5 46 1549 0.9 27 2053 1.3 40	24 M	0345 0.0 0 1106 1.4 43 1708 0.8 24 2205 1.0 30
10 W	0159 0.0 0 0911 1.3 40 1407 0.9 27 1843 1.3 40	25 Th	0306 -0.1 -3 1030 1.4 43 1543 0.9 27 2050 1.1 34	10 F	0228 -0.2 -6 0958 1.4 43 1447 1.0 30 1857 1.3 40	25 Sa	0330 0.0 0 1105 1.4 43 1646 0.9 27 2131 1.0 30	10 M	0406 -0.3 -9 1121 1.5 46 1659 0.8 24 2216 1.2 37	25 Tu	0425 0.1 3 1138 1.4 43 1805 0.7 21 2307 1.0 30
11 Th	0245 0.0 0 1005 1.3 40 1457 0.9 27 1918 1.3 40	26 F	0358 0.0 0 1127 1.4 43 1700 0.9 27 2159 1.0 30	11 Sa	0324 -0.2 -6 1053 1.4 43 1553 1.0 30 2018 1.3 40	26 Su	0420 0.0 0 1149 1.4 43 1808 0.8 24 2241 1.0 30	11 Tu	0459 -0.2 -6 1205 1.6 49 1808 0.6 18 2337 1.2 37	26 W	0504 0.2 6 1207 1.4 43 1854 0.6 18
12 F	0337 0.0 0 1102 1.3 40 1554 1.0 30 2008 1.3 40	27 Sa	0453 0.1 3 1223 1.4 43 1842 0.8 24 2315 1.0 30	12 Su	0422 -0.2 -6 1146 1.4 43 1703 0.9 27 2202 1.2 37	27 M	0508 0.1 3 1231 1.4 43 1915 0.7 21 2348 1.0 30	12 W	0551 0.0 0 1246 1.6 49 1912 0.5 15	27 Th	0010 0.9 27 0540 0.4 12 1232 1.4 43 1934 0.5 15
13 Sa	0436 -0.1 -3 1200 1.3 40 1658 1.0 30 2125 1.2 37	28 Su	0548 0.1 3 1315 1.4 43 2009 0.8 24	13 M	0521 -0.1 -3 1235 1.5 46 1812 0.8 24 2334 1.2 37	28 Tu	0553 0.2 6 1307 1.4 43 2002 0.6 18	13 Th	0056 1.1 34 0641 0.2 6 1325 1.6 49 2011 0.3 9	28 F	0116 0.9 27 0613 0.5 15 1253 1.4 43 2009 0.4 12
14 Su	0539 -0.1 -3 1257 1.3 40 1806 0.9 27 2318 1.2 37	29 M	0029 1.0 30 0641 0.2 6 1400 1.4 43 2053 0.7 21	14 Tu	0618 -0.1 -3 1321 1.5 46 1918 0.7 21	29 W	0053 0.9 27 0635 0.3 9 1337 1.4 43 2036 0.6 18	14 F	0215 1.1 34 0731 0.4 12 1401 1.6 49 2105 0.1 3	29 Sa	0223 0.9 27 0646 0.7 21 1310 1.4 43 2043 0.2 6
15 M	0641 0.0 0 1349 1.4 43 1914 0.8 24	30 Tu	0136 1.0 30 0730 0.3 9 1438 1.4 43 2124 0.6 18	15 W	0057 1.2 37 0713 0.0 0 1402 1.5 46 2019 0.5 15	30 Th	0156 0.9 27 0715 0.4 12 1402 1.4 43 2104 0.4 12	15 Sa	0334 1.1 34 0820 0.6 18 1436 1.5 46 2154 0.0 0	30 Su	0329 0.9 27 0720 0.8 24 1324 1.4 43 2118 0.1 3
						31 F	0256 0.9 27 0752 0.5 15 1423 1.4 43 2131 0.3 9				

Time meridian 135° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean low water which is the chart datum of soundings.

Cape Krusenstern, Alaska 2019

Times and Heights of High and Low Waters

October				November				December											
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height						
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm					
1 Tu	0619	0.1	3		16 W	0632	0.0	0		1 F	0637	0.0	0						
	1219	0.3	9			1311	0.3	9			1402	0.4	12		16 Sa	0620	0.0	0	
	1705	0.0	0			1718	0.1	3			1853	0.2	6			1916	0.2	6	
													2335	0.3		9			
2 W	0027	0.5	15		17 Th	0008	0.5	15		2 Sa	0008	0.4	12		17 Su	0640	0.0	0	
	0653	0.0	0			0655	0.0	0			0710	0.0	0			1453	0.5	15	
	1312	0.3	9			1354	0.3	9			1448	0.5	15			2034	0.2	6	
	1752	0.0	0		1759	0.1	3		2006	0.2	6								
3 Th	0104	0.5	15		18 F	0011	0.4	12		3 Su	0041	0.3	9		18 M	0001	0.3	9	
	0728	0.0	0			0719	0.0	0			0743	0.0	0			0703	0.0	0	
	1405	0.3	9			1433	0.3	9			1535	0.5	15			1530	0.5	15	
	1845	0.1	3		1851	0.2	6		2118	0.2	6		2207	0.1	3				
4 F	0136	0.5	15		19 Sa	0034	0.4	12		4 M	0117	0.3	9		19 Tu	0021	0.2	6	
	0803	0.0	0			0740	0.0	0			0813	0.0	0			0731	0.0	0	
	1454	0.3	9			1509	0.4	12			1628	0.5	15			1612	0.5	15	
	1946	0.1	3		1955	0.2	6		2331	0.1	3								
5 Sa	0157	0.4	12		20 Su	0104	0.3	9		5 Tu	0153	0.2	6		20 W	0803	0.0	0	
	0837	0.0	0			0800	0.0	0			0842	0.0	0			1708	0.6	18	
	1548	0.4	12			1547	0.4	12			1728	0.5	15						
	2047	0.2	6		2059	0.2	6												
6 Su	0220	0.4	12		21 M	0135	0.3	9		6 W	0910	0.0	0		21 Th	0839	0.0	0	
	0910	0.0	0			0821	0.0	0			1822	0.5	15			1803	0.6	18	
	1656	0.4	12			1644	0.4	12											
	2158	0.2	6		2233	0.1	3												
7 M	0247	0.3	9		22 Tu	0205	0.2	6		7 Th	0944	0.1	3		22 F	0920	0.0	0	
	0945	0.0	0			0847	0.0	0			1909	0.5	15			1850	0.6	18	
	1804	0.4	12			1750	0.5	15											
8 Tu	0012	0.1	3		23 W	0920	0.0	0		8 F	0336	0.0	0		23 Sa	0543	0.0	0	
	0317	0.2	6			1843	0.5	15			0810	0.1	3			0811	0.1	3	
	1029	0.1	3								1032	0.0	0			1014	0.0	0	
	1900	0.4	12						1954	0.5	15		1933	0.6	18				
9 W	0153	0.1	3		24 Th	1004	0.0	0		9 Sa	0401	0.0	0		24 Su	0351	0.0	0	
	0707	0.2	6			1930	0.5	15			0918	0.2	6			0915	0.1	3	
	1127	0.1	3								1144	0.1	3			1133	0.0	0	
	1951	0.5	15						2040	0.5	15		2017	0.6	18				
10 Th	0330	0.1	3		25 F	1109	0.1	3		10 Su	0426	0.0	0		25 M	0408	0.0	0	
	0815	0.2	6			2018	0.5	15			1012	0.2	6			1006	0.2	6	
	1222	0.1	3								1247	0.1	3			1250	0.1	3	
	2042	0.5	15						2124	0.5	15		2102	0.5	15				
11 F	0417	0.1	3		26 Sa	0421	0.0	0		11 M	0449	0.0	0		26 Tu	0426	0.0	0	
	0922	0.2	6			0925	0.1	3			1053	0.2	6			1049	0.3	9	
	1311	0.1	3			1221	0.0	0			1351	0.1	3			1412	0.2	6	
	2130	0.5	15		2107	0.6	18		2202	0.5	15		2141	0.5	15				
12 Sa	0449	0.1	3		27 Su	0438	0.0	0		12 Tu	0509	0.0	0		27 W	0445	-0.1	-3	
	1016	0.2	6			1014	0.2	6			1132	0.3	9			1132	0.3	9	
	1404	0.1	3			1327	0.1	3			1517	0.2	6			1549	0.2	6	
	2212	0.5	15		2152	0.6	18		2231	0.5	15		2206	0.5	15				
13 Su	0517	0.0	0		28 M	0456	0.0	0		13 W	0526	0.0	0		28 Th	0507	-0.1	-3	
	1101	0.2	6			1056	0.2	6			1213	0.3	9			1217	0.4	12	
	1508	0.1	3			1446	0.1	3			1620	0.2	6			1656	0.2	6	
	2250	0.5	15		2230	0.5	15		2240	0.5	15		2224	0.4	12				
14 M	0544	0.0	0		29 Tu	0516	0.0	0		14 Th	0543	0.0	0		29 F	0532	-0.1	-3	
	1143	0.2	6			1137	0.3	9			1255	0.3	9			1305	0.4	12	
	1600	0.1	3			1600	0.1	3			1710	0.2	6			1758	0.2	6	
	2323	0.5	15		2301	0.5	15		2247	0.4	12		2248	0.4	12				
15 Tu	0608	0.0	0		30 W	0539	0.0	0		15 F	0601	0.0	0		30 Sa	0559	-0.1	-3	
	1226	0.3	9			1223	0.3	9			1337	0.4	12			1351	0.5	15	
	1640	0.1	3			1656	0.1	3			1804	0.2	6			1918	0.2	6	
	2353	0.5	15		2323	0.5	15		2309	0.4	12		2316	0.3	9				
					31 Th	0607	0.0	0											
						1313	0.4	12											
						1750	0.1	3											
					2342	0.4	12												

Time meridian 135° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Sand Island, Midway Islands, 2019

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
	h m ft cm		h m ft cm		h m ft cm		h m ft cm		h m ft cm		h m ft cm
1 M	0204 0.7 21 0853 -0.3 -9 1627 1.4 43 2307 0.5 15	16 Tu	0316 0.8 24 0950 -0.1 -3 1721 1.4 43 2346 0.5 15	1 Th	0345 0.9 27 1019 -0.1 -3 1731 1.5 46 2353 0.5 15	16 F	0452 1.0 30 1108 0.2 6 1808 1.3 40	1 Su	0601 1.3 40 1209 0.2 6 1817 1.4 43	16 M	0004 0.3 9 0616 1.2 37 1227 0.4 12 1824 1.1 34
2 Tu	0258 0.7 21 0942 -0.3 -9 1713 1.4 43 2351 0.5 15	17 W	0409 0.8 24 1035 0.0 0 1801 1.4 43	2 F	0453 1.0 30 1115 -0.1 -3 1812 1.5 46	17 Sa	0022 0.5 15 0541 1.0 30 1150 0.3 9 1838 1.3 40	2 M	0037 0.2 6 0701 1.4 43 1304 0.3 9 1856 1.3 40	17 Tu	0033 0.3 9 0657 1.3 40 1307 0.5 15 1850 1.1 34
3 W	0355 0.7 21 1032 -0.3 -9 1757 1.4 43	18 Th	0026 0.5 15 0459 0.8 24 1118 0.0 0 1838 1.4 43	3 Sa	0034 0.4 12 0600 1.1 34 1211 0.0 0 1851 1.4 43	18 Su	0052 0.4 12 0628 1.1 34 1231 0.3 9 1905 1.3 40	3 Tu	0120 0.1 3 0759 1.4 43 1359 0.4 12 1936 1.3 40	18 W	0102 0.2 6 0738 1.3 40 1349 0.5 15 1916 1.0 30
4 Th	0031 0.4 12 0455 0.7 21 1123 -0.3 -9 1839 1.4 43	19 F	0102 0.4 12 0548 0.8 24 1159 0.1 3 1911 1.3 40	4 Su	0115 0.3 9 0706 1.1 34 1307 0.1 3 1930 1.4 43	19 M	0121 0.4 12 0715 1.1 34 1313 0.4 12 1931 1.2 37	4 W	0205 0.0 0 0856 1.4 43 1455 0.5 15 2018 1.2 37	19 Th	0134 0.2 6 0821 1.3 40 1432 0.6 18 1943 1.0 30
5 F	0110 0.4 12 0557 0.8 24 1216 -0.2 -6 1920 1.4 43	20 Sa	0135 0.4 12 0638 0.8 24 1241 0.1 3 1942 1.3 40	5 M	0158 0.2 6 0811 1.2 37 1404 0.3 9 2008 1.3 40	20 Tu	0151 0.3 9 0801 1.2 37 1356 0.5 15 1957 1.2 37	5 Th	0252 0.0 0 0954 1.4 43 1552 0.6 18 2102 1.1 34	20 F	0209 0.1 3 0907 1.4 43 1519 0.6 18 2013 1.0 30
6 Sa	0150 0.3 9 0703 0.8 24 1310 -0.1 -3 2000 1.3 40	21 Su	0207 0.3 9 0729 0.9 27 1324 0.2 6 2011 1.2 37	6 Tu	0242 0.1 3 0916 1.2 37 1503 0.4 12 2048 1.3 40	21 W	0222 0.2 6 0849 1.2 37 1442 0.5 15 2024 1.1 34	6 F	0341 0.0 0 1053 1.4 43 1653 0.6 18 2150 1.1 34	21 Sa	0249 0.1 3 0958 1.4 43 1610 0.7 21 2049 0.9 27
7 Su	0232 0.2 6 0812 0.9 27 1407 0.0 0 2040 1.3 40	22 M	0239 0.3 9 0822 0.9 27 1409 0.3 9 2040 1.2 37	7 W	0329 0.0 0 1021 1.3 40 1605 0.5 15 2130 1.2 37	22 Th	0256 0.2 6 0939 1.2 37 1533 0.6 18 2052 1.1 34	7 Sa	0433 0.1 3 1155 1.4 43 1759 0.7 21 2244 1.0 30	22 Su	0336 0.1 3 1054 1.4 43 1708 0.7 21 2136 0.9 27
8 M	0316 0.1 3 0923 0.9 27 1508 0.2 6 2120 1.2 37	23 Tu	0313 0.2 6 0918 1.0 30 1457 0.4 12 2108 1.1 34	8 Th	0417 0.0 0 1126 1.3 40 1711 0.6 18 2216 1.1 34	23 F	0334 0.1 3 1033 1.3 40 1629 0.7 21 2124 1.0 30	8 Su	0529 0.1 3 1258 1.3 40 1907 0.7 21 2344 1.0 30	23 M	0431 0.1 3 1154 1.3 40 1812 0.7 21 2240 0.9 27
9 Tu	0403 0.0 0 1036 1.0 30 1613 0.3 9 2201 1.1 34	24 W	0347 0.2 6 1015 1.0 30 1552 0.5 15 2138 1.0 30	9 F	0508 0.0 0 1230 1.3 40 1822 0.7 21 2306 1.0 30	24 Sa	0417 0.1 3 1132 1.3 40 1734 0.8 24 2203 1.0 30	9 M	0630 0.2 6 1359 1.3 40 2011 0.7 21	24 Tu	0535 0.1 3 1256 1.3 40 1915 0.7 21
10 W	0451 -0.1 -3 1149 1.1 34 1725 0.5 15 2246 1.0 30	25 Th	0425 0.1 3 1114 1.1 34 1655 0.6 18 2210 1.0 30	10 Sa	0602 0.0 0 1333 1.4 43 1935 0.7 21	25 Su	0506 0.1 3 1234 1.4 43 1845 0.8 24 2252 1.0 30	10 Tu	0051 0.9 27 0732 0.2 6 1454 1.3 40 2107 0.6 18	25 W	0001 0.9 27 0645 0.1 3 1354 1.3 40 2011 0.6 18
11 Th	0541 -0.1 -3 1257 1.2 37 1841 0.5 15 2334 0.9 27	26 F	0505 0.1 3 1215 1.2 37 1807 0.7 21 2246 0.9 27	11 Su	0002 1.0 30 0657 0.1 3 1433 1.4 43 2043 0.7 21	26 M	0603 0.0 0 1336 1.4 43 1955 0.8 24 2358 1.0 30	11 W	0159 0.9 27 0832 0.3 9 1543 1.3 40 2153 0.6 18	26 Th	0128 1.0 30 0757 0.1 3 1446 1.3 40 2101 0.5 15
12 F	0633 -0.1 -3 1401 1.2 37 1956 0.6 18	27 Sa	0550 0.0 0 1315 1.3 40 1924 0.7 21 2329 0.9 27	12 M	0102 0.9 27 0753 0.1 3 1527 1.4 43 2143 0.7 21	27 Tu	0705 0.0 0 1435 1.4 43 2055 0.7 21	12 Th	0302 1.0 30 0927 0.3 9 1624 1.3 40 2231 0.5 15	27 F	0248 1.1 34 0906 0.2 6 1533 1.3 40 2148 0.3 9
13 Sa	0027 0.9 27 0724 -0.1 -3 1458 1.3 40 2107 0.6 18	28 Su	0638 0.0 0 1414 1.3 40 2038 0.7 21	13 Tu	0205 0.9 27 0847 0.1 3 1616 1.4 43 2233 0.6 18	28 W	0117 1.0 30 0809 0.0 0 1528 1.4 43 2145 0.7 21	13 F	0358 1.0 30 1017 0.3 9 1659 1.2 37 2304 0.5 15	28 Sa	0357 1.2 37 1010 0.2 6 1617 1.2 37 2232 0.2 6
14 Su	0124 0.8 24 0814 -0.1 -3 1550 1.3 40 2208 0.5 15	29 M	0023 0.9 27 0731 -0.1 -3 1509 1.4 43 2140 0.7 21	14 W	0304 0.9 27 0937 0.1 3 1658 1.4 43 2315 0.6 18	29 Th	0236 1.0 30 0912 0.0 0 1615 1.4 43 2229 0.5 15	14 Sa	0448 1.1 34 1103 0.3 9 1730 1.2 37 2335 0.4 12	29 Su	0500 1.4 43 1110 0.2 6 1659 1.2 37 2316 0.1 3
15 M	0221 0.8 24 0903 -0.1 -3 1638 1.4 43 2301 0.5 15	30 Tu	0126 0.9 27 0827 -0.1 -3 1600 1.5 46 2230 0.7 21	15 Th	0400 0.9 27 1024 0.2 6 1736 1.4 43 2350 0.5 15	30 F	0350 1.1 34 1013 0.1 3 1658 1.4 43 2312 0.4 12	15 Su	0533 1.2 37 1146 0.4 12 1758 1.2 37	30 M	0556 1.4 43 1206 0.3 9 1741 1.2 37
		31 W	0235 0.9 27 0923 -0.1 -3 1647 1.5 46 2313 0.6 18			31 Sa	0458 1.2 37 1112 0.1 3 1738 1.4 43 2354 0.3 9				

Time meridian 165° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Nawiliwili, Kauai Island, Hawaii, 2019

Times and Heights of High and Low Waters

April				May				June			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
1 M	h m ft cm 0156 1.5 46 0831 0.2 6 1411 1.0 30 1940 0.1 3	16 Tu	h m ft cm 0137 1.7 52 0808 -0.1 -3 1414 1.2 37 1952 0.0 0	1 W	h m ft cm 0133 1.3 40 0749 0.0 0 1427 1.3 40 2013 0.3 9	16 Th	h m ft cm 0135 1.2 37 0748 -0.3 -9 1450 1.8 55 2102 0.3 9	1 Sa	h m ft cm 0141 0.9 27 0748 -0.3 -9 1515 1.9 58 2154 0.4 12	16 Su	h m ft cm 0222 0.7 21 0812 -0.3 -9 1554 2.2 67 2303 0.4 12
2 Tu	0225 1.5 46 0847 0.1 3 1442 1.1 34 2021 0.1 3	17 W	0216 1.6 49 0835 -0.2 -6 1457 1.4 43 2048 0.0 0	2 Th	0202 1.2 37 0810 -0.1 -3 1458 1.5 46 2059 0.3 9	17 F	0213 1.0 30 0816 -0.3 -9 1530 1.9 58 2158 0.3 9	2 Su	0218 0.8 24 0819 -0.3 -9 1551 2.1 64 2243 0.3 9	17 M	0303 0.6 18 0845 -0.2 -6 1630 2.2 67 2345 0.4 12
3 W	0252 1.5 46 0905 0.0 0 1514 1.2 37 2100 0.1 3	18 Th	0252 1.4 43 0902 -0.2 -6 1539 1.6 49 2142 0.1 3	3 F	0229 1.1 34 0833 -0.2 -6 1531 1.7 52 2144 0.3 9	18 Sa	0249 0.9 27 0845 -0.3 -9 1608 2.0 61 2252 0.3 9	3 M	0256 0.7 21 0854 -0.3 -9 1631 2.2 67 2334 0.3 9	18 Tu	0344 0.6 18 0920 -0.2 -6 1706 2.1 64
4 Th	0316 1.4 43 0925 0.0 0 1546 1.3 40 ● 2140 0.1 3	19 F	0327 1.2 37 0930 -0.3 -9 1621 1.8 55 ○ 2236 0.2 6	4 Sa	0257 1.0 30 0858 -0.2 -6 1606 1.8 55 ● 2232 0.3 9	19 Su	0326 0.8 24 0915 -0.3 -9 1647 2.1 64 2345 0.3 9	4 Tu	0338 0.6 18 0931 -0.3 -9 1714 2.2 67	19 W	0026 0.3 9 0427 0.6 18 0956 -0.1 -3 1744 2.0 61
5 F	0340 1.3 40 0947 -0.1 -3 1620 1.5 46 2222 0.2 6	20 Sa	0400 1.0 30 0958 -0.3 -9 1704 1.8 55 2332 0.2 6	5 Su	0326 0.9 27 0926 -0.3 -9 1643 1.9 58 2323 0.3 9	20 M	0402 0.6 18 0946 -0.2 -6 1727 2.0 61	5 W	0028 0.3 9 0425 0.6 18 1012 -0.3 -9 1800 2.2 67	20 Th	0109 0.3 9 0514 0.6 18 1034 0.0 0 1822 1.9 58
6 Sa	0404 1.2 37 1011 -0.1 -3 1657 1.5 46 2308 0.3 9	21 Su	0432 0.9 27 1027 -0.2 -6 1748 1.8 55	6 M	0357 0.8 24 0957 -0.3 -9 1725 1.9 58	21 Tu	0041 0.3 9 0441 0.5 15 1019 -0.1 -3 1809 2.0 61	6 Th	0127 0.3 9 0522 0.5 15 1057 -0.2 -6 1850 2.1 64	21 F	0152 0.3 9 0611 0.6 18 1114 0.2 6 1901 1.8 55
7 Su	0428 1.0 30 1038 -0.1 -3 1738 1.6 49	22 M	0033 0.3 9 0505 0.7 21 1057 -0.2 -6 1835 1.8 55	7 Tu	0021 0.3 9 0431 0.6 18 1031 -0.2 -6 1812 1.9 58	22 W	0141 0.3 9 0527 0.5 15 1054 0.0 0 1854 1.8 55	7 F	0227 0.2 6 0641 0.5 15 1149 0.0 0 1943 2.0 61	22 Sa	0236 0.3 9 0727 0.6 18 1158 0.3 9 1941 1.7 52
8 M	0002 0.3 9 0453 0.9 27 1107 -0.1 -3 1825 1.6 49	23 Tu	0147 0.4 12 0540 0.5 15 1130 0.0 0 1929 1.7 52	8 W	0130 0.3 9 0511 0.5 15 1110 -0.1 -3 1906 1.9 58	23 Th	0249 0.3 9 0631 0.4 12 1133 0.1 3 1944 1.7 52	8 Sa	0325 0.2 6 0826 0.5 15 1253 0.2 6 2038 1.8 55	23 Su	0317 0.3 9 0905 0.7 21 1254 0.5 15 2021 1.5 46
9 Tu	0108 0.4 12 0519 0.7 21 1140 -0.1 -3 1923 1.6 49	24 W	0327 0.3 9 0631 0.4 12 1208 0.1 3 2030 1.6 49	9 Th	0252 0.3 9 0612 0.4 12 1157 0.0 0 2008 1.8 55	24 F	0356 0.3 9 0818 0.4 12 1222 0.3 9 2038 1.6 49	9 Su	0414 0.1 3 1011 0.7 21 1416 0.4 12 ○ 2134 1.6 49	24 M	0354 0.3 9 1037 0.8 24 1413 0.7 21 ○ 2102 1.4 43
10 W	0238 0.5 15 0548 0.6 18 1223 0.0 0 2033 1.6 49	25 Th	0524 0.3 9 0845 0.4 12 1301 0.2 6 2139 1.5 46	10 F	0416 0.3 9 0812 0.4 12 1300 0.1 3 2115 1.8 55	25 Sa	0446 0.3 9 1013 0.5 15 1332 0.4 12 2134 1.5 46	10 M	0455 0.0 0 1131 1.0 30 1559 0.6 18 2229 1.5 46	25 Tu	0426 0.2 6 1143 1.0 30 1559 0.8 24 2145 1.2 37
11 Th	1322 0.1 3 2152 1.6 49	26 F	0613 0.3 9 1056 0.5 15 1425 0.4 12 ○ 2245 1.5 46	11 Sa	0514 0.2 6 1021 0.5 15 1427 0.3 9 ○ 2220 1.7 52	26 Su	0520 0.2 6 1131 0.7 21 1507 0.6 18 ○ 2226 1.4 43	11 Tu	0531 -0.1 -3 1231 1.3 40 1744 0.7 21 2321 1.3 40	26 W	0457 0.1 3 1230 1.3 40 1749 0.8 24 2231 1.1 34
12 F	0618 0.3 9 1000 0.4 12 1447 0.1 3 ○ 2304 1.7 52	27 Sa	0639 0.2 6 1204 0.6 18 1607 0.4 12 2341 1.4 43	12 Su	0552 0.1 3 1143 0.7 21 1607 0.3 9 2318 1.6 49	27 M	0545 0.2 6 1222 0.9 27 1645 0.6 18 2313 1.3 40	12 W	0604 -0.1 -3 1319 1.5 46 1915 0.6 18	27 Th	0528 0.0 0 1309 1.5 46 1918 0.8 24 2322 0.9 27
13 Sa	0649 0.2 6 1141 0.5 15 1622 0.1 3	28 Su	0658 0.2 6 1248 0.8 24 1730 0.4 12	13 M	0624 0.0 0 1240 1.0 30 1738 0.4 12	28 Tu	0607 0.1 3 1301 1.1 34 1808 0.6 18 2354 1.2 37	13 Th	0010 1.1 34 0636 -0.2 -6 1402 1.8 55 2028 0.6 18	28 F	0600 -0.1 -3 1344 1.8 55 2023 0.7 21
14 Su	0003 1.7 52 0716 0.1 3 1242 0.7 21 1744 0.1 3	29 M	0025 1.4 43 0714 0.1 3 1323 1.0 30 1834 0.4 12	14 Tu	0009 1.5 46 0653 -0.1 -3 1327 1.3 40 1856 0.4 12	29 W	0629 0.0 0 1335 1.3 40 1916 0.6 18	14 F	0056 0.9 27 0707 -0.3 -9 1441 2.0 61 2128 0.5 15	29 Sa	0014 0.8 24 0635 -0.2 -6 1420 2.0 61 2113 0.5 15
15 M	0053 1.7 52 0742 0.0 0 1330 1.0 30 1852 0.1 3	30 Tu	0102 1.3 40 0731 0.1 3 1355 1.1 34 1926 0.3 9	15 W	0054 1.4 43 0721 -0.2 -6 1410 1.5 46 2002 0.3 9	30 Th	0031 1.1 34 0653 -0.1 -3 1408 1.6 49 2013 0.5 15	15 Sa	0140 0.8 24 0739 -0.3 -9 1518 2.1 64 2218 0.4 12	30 Su	0104 0.8 24 0713 -0.3 -9 1457 2.2 67 2158 0.5 15
						31 F	0106 1.0 30 0719 -0.2 -6 1441 1.8 55 2105 0.5 15				

Time meridian 150° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Nawiliwili, Kauai Island, Hawaii, 2019

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	h m	ft	h m	ft	h m	ft	h m	ft	h m	ft
1 M	0154 0.7 21 0753 -0.3 -9 1536 2.3 70 2241 0.4 12	16 Tu	0256 0.7 21 0830 -0.1 -3 1611 2.2 67 2318 0.4 12	1 Th	0331 0.9 27 0914 -0.3 -9 1639 2.4 73 2329 0.3 9	16 F	0400 1.0 30 0936 0.1 3 1643 2.0 61 2317 0.4 12	1 Su	0511 1.5 46 1055 0.2 6 1723 1.8 55 2346 0.1 3	16 M	0457 1.5 46 1049 0.5 15 1647 1.5 46 2304 0.3 9
2 Tu	0242 0.7 21 0835 -0.3 -9 1617 2.4 73 2324 0.3 9	17 W	0335 0.7 21 0907 -0.1 -3 1644 2.1 64 2347 0.4 12	2 F	0424 1.0 30 1002 -0.1 -3 1719 2.3 70	17 Sa	0437 1.1 34 1013 0.2 6 1709 1.8 55 2342 0.4 12	2 M	0609 1.5 46 1154 0.5 15 1757 1.5 46	17 Tu	0538 1.6 49 1136 0.6 18 1707 1.3 40 2330 0.3 9
3 W	0332 0.7 21 0919 -0.3 -9 1700 2.4 73	18 Th	0414 0.8 24 0944 0.0 0 1717 2.1 64	3 Sa	0007 0.2 6 0522 1.0 30 1053 0.0 0 1758 2.1 64	18 Su	0518 1.1 34 1051 0.3 9 1733 1.7 52	3 Tu	0022 0.1 3 0714 1.6 49 1305 0.7 21 1832 1.3 40	18 W	0624 1.6 49 1233 0.7 21 1726 1.2 37
4 Th	0009 0.3 9 0426 0.7 21 1005 -0.2 -6 1743 2.3 70	19 F	0017 0.4 12 0456 0.8 24 1022 0.1 3 1748 2.0 61	4 Su	0045 0.2 6 0628 1.1 34 1149 0.3 9 1837 1.8 55	19 M	0009 0.4 12 0605 1.2 37 1134 0.5 15 1756 1.5 46	4 W	0101 0.2 6 0829 1.7 52 1445 0.8 24 1909 1.0 30	19 Th	0000 0.3 9 0723 1.6 49 1352 0.8 24 1744 1.0 30
5 F	0055 0.3 9 0528 0.7 21 1054 -0.1 -3 1828 2.2 67	20 Sa	0048 0.4 12 0543 0.8 24 1100 0.2 6 1819 1.8 55	5 M	0125 0.2 6 0744 1.2 37 1254 0.6 18 1916 1.6 49	20 Tu	0038 0.3 9 0702 1.2 37 1226 0.7 21 1816 1.4 43	5 Th	0145 0.2 6 0949 1.7 52 1743 0.7 21 2012 0.8 24	20 F	0038 0.3 9 0837 1.7 52
6 Sa	0141 0.2 6 0642 0.7 21 1147 0.1 3 1913 2.0 61	21 Su	0121 0.4 12 0641 0.8 24 1142 0.4 12 1848 1.7 52	6 Tu	0207 0.1 3 0910 1.3 40 1423 0.8 24 1957 1.3 40	21 W	0110 0.3 9 0812 1.3 40 1338 0.9 27 1835 1.2 37	6 F	0241 0.3 9 1105 1.8 55 1927 0.6 18 2225 0.7 21	21 Sa	0129 0.3 9 0959 1.7 52
7 Su	0227 0.2 6 0810 0.8 24 1251 0.4 12 1959 1.8 55	22 M	0154 0.3 9 0755 0.9 27 1233 0.6 18 1915 1.5 46	7 W	0252 0.1 3 1034 1.5 46 1638 0.9 27 2047 1.0 30	22 Th	0147 0.3 9 0936 1.4 43 1533 0.9 27 1852 1.0 30	7 Sa	0351 0.3 9 1207 1.9 58 2001 0.6 18 2358 0.8 24	22 Su	0244 0.4 12 1112 1.9 58 1914 0.6 18 2301 0.7 21
8 M	0312 0.1 3 0945 1.0 30 1414 0.6 18 2046 1.5 46	23 Tu	0229 0.3 9 0924 1.0 30 1344 0.8 24 1942 1.3 40	8 Th	0341 0.1 3 1144 1.7 52 1914 0.8 24 2205 0.9 27	23 F	0235 0.3 9 1053 1.6 49	8 Su	0503 0.3 9 1257 1.9 58 2025 0.5 15	23 M	0409 0.3 9 1210 2.0 61 1934 0.5 15
9 Tu	0356 0.0 0 1108 1.3 40 1606 0.8 24 2137 1.3 40	24 W	0306 0.3 9 1046 1.2 37 1531 0.9 27 2011 1.1 34	9 F	0434 0.1 3 1240 1.9 58 2024 0.7 21 2334 0.8 24	24 Sa	0334 0.2 6 1155 1.8 55 1954 0.7 21 2219 0.8 24	9 M	0055 0.9 27 0605 0.3 9 1338 2.0 61 2045 0.5 15	24 Tu	0014 0.8 24 0525 0.3 9 1259 2.1 64 1958 0.4 12
10 W	0437 0.0 0 1213 1.5 46 1815 0.8 24 2233 1.0 30	25 Th	0346 0.2 6 1147 1.4 43 1752 0.9 27 2057 1.0 30	10 Sa	0527 0.1 3 1327 2.0 61 2101 0.6 18	25 Su	0438 0.2 6 1246 2.0 61 2013 0.6 18 2358 0.8 24	10 Tu	0136 1.0 30 0655 0.3 9 1413 2.0 61 2102 0.5 15	25 W	0106 1.0 30 0629 0.2 6 1342 2.2 67 2024 0.3 9
11 Th	0517 -0.1 -3 1304 1.8 55 1957 0.7 21 2334 0.9 27	26 F	0429 0.1 3 1235 1.7 52 1941 0.7 21 2222 0.8 24	11 Su	0043 0.8 24 0617 0.1 3 1407 2.1 64 2127 0.5 15	26 M	0541 0.1 3 1331 2.2 67 2039 0.5 15	11 W	0210 1.1 34 0738 0.2 6 1445 2.0 61 2119 0.4 12	26 Th	0152 1.2 37 0726 0.1 3 1422 2.1 64 2051 0.2 6
12 F	0557 -0.1 -3 1348 2.0 61 2102 0.6 18	27 Sa	0515 0.0 0 1317 1.9 58 2031 0.7 21 2348 0.8 24	12 M	0134 0.8 24 0702 0.1 3 1442 2.1 64 2149 0.5 15	27 Tu	0100 0.9 27 0638 0.0 0 1413 2.3 70 2107 0.4 12	12 Th	0242 1.2 37 0816 0.2 6 1513 1.9 58 2137 0.4 12	27 F	0237 1.4 43 0820 0.1 3 1500 2.0 61 2120 0.1 3
13 Sa	0034 0.8 24 0636 -0.1 -3 1427 2.1 64 2146 0.5 15	28 Su	0603 -0.1 -3 1357 2.1 64 2107 0.6 18	13 Tu	0215 0.9 27 0744 0.0 0 1515 2.1 64 2210 0.5 15	28 W	0151 1.0 30 0731 -0.1 -3 1453 2.3 70 2137 0.4 12	13 F	0313 1.3 40 0853 0.2 6 1539 1.9 58 2156 0.4 12	28 Sa	0322 1.6 49 0913 0.1 3 1536 1.9 58 2149 0.1 3
14 Su	0127 0.7 21 0714 -0.1 -3 1503 2.2 67 2220 0.5 15	29 M	0054 0.8 24 0651 -0.2 -6 1437 2.3 70 2142 0.5 15	14 W	0251 0.9 27 0823 0.0 0 1546 2.1 64 2231 0.4 12	29 Th	0239 1.1 34 0821 -0.1 -3 1532 2.3 70 2208 0.3 9	14 Sa	0346 1.4 43 0930 0.3 9 1603 1.8 55 2217 0.3 9	29 Su	0409 1.8 55 1006 0.3 9 1610 1.7 52 2219 0.0 0
15 M	0214 0.7 21 0752 -0.1 -3 1537 2.2 67 2249 0.4 12	30 Tu	0149 0.8 24 0739 -0.2 -6 1518 2.4 73 2216 0.4 12	15 Th	0325 1.0 30 0900 0.1 3 1615 2.1 64 2253 0.4 12	30 F	0327 1.2 37 0911 -0.1 -3 1610 2.2 67 2240 0.2 6	15 Su	0420 1.4 43 1008 0.4 12 1625 1.6 49 2240 0.3 9	30 M	0457 1.9 58 1102 0.4 12 1644 1.4 43 2250 0.0 0
		31 W	0240 0.8 24 0826 -0.3 -9 1558 2.4 73 2252 0.3 9			31 Sa	0417 1.3 40 1002 0.0 0 1647 2.0 61 2312 0.2 6				

Time meridian 150° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Honolulu, Oahu Island, Hawaii, 2019

Times and Heights of High and Low Waters

January				February				March						
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height	
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm
1 Tu	0138	2.0	61		16 W	0056	1.8	55		1 F	0127	1.8	55	
	0824	0.5	15			0748	0.6	18			0848	0.2	6	
	1239	0.9	27			1150	0.8	24			1336	0.6	18	
	1848	-0.2	-6			1804	-0.2	-6			1848	0.0	0	
2 W	0217	2.1	64		17 Th	0139	2.1	64		2 Sa	0207	1.8	55	
	0919	0.4	12			0845	0.4	12			0915	0.1	3	
	1331	0.8	24			1255	0.7	21			1414	0.7	21	
	1922	-0.2	-6			1849	-0.3	-9			1934	0.0	0	
3 Th	0252	2.2	67		18 F	0222	2.3	70		3 Su	0242	1.9	58	
	1002	0.3	9			0931	0.2	6			0938	0.1	3	
	1418	0.7	21			1353	0.7	21			1447	0.8	24	
	1955	-0.2	-6			1934	-0.4	-12			2014	-0.1	-3	
4 F	0326	2.3	70		19 Sa	0304	2.5	76		4 M	0313	1.9	58	
	1039	0.2	6			1015	0.1	3			1000	0.0	0	
	1500	0.7	21			1446	0.7	21			1518	0.9	27	
	2029	-0.2	-6			2021	-0.4	-12			2052	-0.1	-3	
5 Sa	0359	2.3	70		20 Su	0347	2.6	79		5 Tu	0342	1.9	58	
	1114	0.2	6			1056	0.0	0			1023	0.0	0	
	1540	0.7	21			1538	0.7	21			1550	1.0	30	
	2103	-0.2	-6			2108	-0.4	-12			2128	-0.1	-3	
6 Su	0431	2.3	70		21 M	0430	2.6	79		6 W	0410	1.8	55	
	1147	0.2	6			1138	-0.1	-3			1045	0.0	0	
	1619	0.7	21			1630	0.7	21			1623	1.1	34	
	2138	-0.1	-3			2157	-0.4	-12			2205	0.0	0	
7 M	0505	2.2	67		22 Tu	0514	2.5	76		7 Th	0438	1.7	52	
	1222	0.2	6			1220	-0.1	-3			1108	0.0	0	
	1659	0.7	21			1725	0.8	24			1659	1.2	37	
	2213	0.0	0			2247	-0.2	-6			2244	0.0	0	
8 Tu	0539	2.1	64		23 W	0557	2.4	73		8 F	0505	1.6	49	
	1257	0.2	6			1302	-0.1	-3			1132	0.0	0	
	1743	0.7	21			1825	0.9	27			1737	1.3	40	
	2249	0.1	3			2341	0.0	0			2327	0.2	6	
9 W	0613	2.0	61		24 Th	0640	2.1	64		9 Sa	0533	1.4	43	
	1334	0.2	6			1344	-0.1	-3			1157	0.0	0	
	1835	0.7	21			1933	1.0	30			1819	1.4	43	
	2328	0.2	6											
10 Th	0647	1.9	58		25 F	0043	0.2	6		10 Su	0016	0.3	9	
	1411	0.2	6			0723	1.8	55			0603	1.2	37	
	1936	0.7	21			1427	-0.1	-3			1225	0.0	0	
						2049	1.1	34			1908	1.4	43	
11 F	0013	0.4	12		26 Sa	0201	0.5	15		11 M	0118	0.4	12	
	0722	1.7	52			0808	1.5	46			0635	1.0	30	
	1448	0.1	3			1511	-0.1	-3			1256	0.0	0	
	2050	0.9	27			2210	1.3	40			2006	1.5	46	
12 Sa	0113	0.6	18		27 Su	0346	0.7	21		12 Tu	0243	0.5	15	
	0800	1.6	49			0859	1.2	37			0716	0.8	24	
	1525	0.1	3			1556	-0.1	-3			1336	0.0	0	
	2209	1.0	30			2324	1.5	46			2116	1.5	46	
13 Su	0243	0.7	21		28 M	0551	0.7	21		13 W	0440	0.5	15	
	0842	1.4	43			1001	0.9	27			0821	0.6	18	
	1603	0.1	3			1643	-0.1	-3			1431	0.0	0	
	2317	1.3	40								2232	1.7	52	
14 M	0442	0.8	24		29 Tu	0025	1.7	52		14 Th	0624	0.3	9	
	0935	1.2	37			0732	0.5	15			1010	0.5	15	
	1641	0.0	0			1118	0.7	21			1544	0.0	0	
						1731	-0.1	-3			2342	1.8	55	
15 Tu	0011	1.5	46		30 W	0115	1.9	58		15 F	0722	0.2	6	
	0631	0.7	21			0835	0.4	12			1151	0.5	15	
	1040	1.0	30			1232	0.6	18			1705	0.0	0	
	1722	-0.1	-3			1817	-0.1	-3						
					31 Th	0157	2.0	61		31 Su	0128	1.6	49	
						0917	0.3	9			0826	0.0	0	
						1331	0.6	18			1401	0.8	24	
						1901	-0.1	-3			1921	0.1	3	

Time meridian 150° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Honolulu, Oahu Island, Hawaii, 2019

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	h m	ft	h m	ft	h m	ft	h m	ft	h m	ft
1 M	0231 0.7 21 0813 -0.3 -9 1544 2.5 76 2257 0.2 6	16 Tu	0329 0.7 21 0852 -0.1 -3 1620 2.3 70 2335 0.2 6	1 Th	0405 0.9 27 0935 -0.3 -9 1650 2.6 79 2352 0.0 0	16 F	0430 1.0 30 0959 0.1 3 1656 2.1 64 2344 0.2 6	1 Su	0537 1.6 49 1125 0.2 6 1745 1.9 58	16 M	0519 1.6 49 1117 0.4 12 1714 1.6 49 2331 0.2 6
2 Tu	0321 0.7 21 0854 -0.3 -9 1626 2.5 76 2343 0.1 3	17 W	0410 0.7 21 0929 -0.1 -3 1654 2.3 70	2 F	0458 1.0 30 1026 -0.2 -6 1732 2.4 73	17 Sa	0508 1.1 34 1037 0.2 6 1725 2.0 61	2 M	0014 0.0 0 0633 1.7 52 1229 0.4 12 1826 1.6 49	17 Tu	0559 1.7 52 1206 0.5 15 1743 1.4 43 2357 0.2 6
3 W	0412 0.7 21 0938 -0.3 -9 1709 2.6 79	18 Th	0008 0.2 6 0451 0.7 21 1006 0.0 0 1727 2.2 67	3 Sa	0032 0.0 0 0556 1.1 34 1120 0.0 0 1815 2.2 67	18 Su	0011 0.2 6 0549 1.2 37 1118 0.3 9 1754 1.8 55	3 Tu	0051 0.1 3 0734 1.8 55 1346 0.6 18 1910 1.3 40	18 W	0645 1.7 52 1306 0.6 18 1816 1.2 37
4 Th	0029 0.0 0 0508 0.6 18 1025 -0.2 -6 1754 2.5 76	19 F	0041 0.2 6 0535 0.8 24 1044 0.1 3 1801 2.1 64	4 Su	0112 0.0 0 0659 1.2 37 1221 0.3 9 1858 2.0 61	19 M	0038 0.3 9 0635 1.3 40 1204 0.5 15 1824 1.7 52	4 W	0131 0.1 3 0842 1.8 55 1525 0.7 21 2004 1.1 34	19 Th	0027 0.3 9 0739 1.7 52 1427 0.7 21 1856 1.0 30
5 F	0116 0.0 0 0610 0.7 21 1116 -0.1 -3 1840 2.3 70	20 Sa	0115 0.2 6 0624 0.8 24 1124 0.3 9 1835 1.9 58	5 M	0153 0.0 0 0810 1.3 40 1334 0.5 15 1943 1.7 52	20 Tu	0108 0.3 9 0728 1.3 40 1300 0.7 21 1855 1.5 46	5 Th	0218 0.2 6 0957 1.9 58 1722 0.6 18 2124 0.8 24	20 F	0104 0.3 9 0845 1.8 55 1616 0.7 21 2000 0.8 24
6 Sa	0203 0.0 0 0721 0.8 24 1214 0.2 6 1928 2.1 64	21 Su	0150 0.2 6 0721 0.9 27 1210 0.4 12 1909 1.8 55	6 Tu	0236 0.0 0 0926 1.5 46 1510 0.7 21 2032 1.4 43	21 W	0139 0.3 9 0830 1.4 43 1418 0.8 24 1931 1.2 37	6 F	0315 0.3 9 1109 1.9 58 1853 0.5 15 2308 0.8 24	21 Sa	0156 0.3 9 0959 1.9 58 1756 0.6 18 2149 0.7 21
7 Su	0250 0.0 0 0842 0.9 27 1326 0.4 12 2017 1.9 58	22 M	0224 0.2 6 0826 1.0 30 1307 0.6 18 1944 1.6 49	7 W	0321 0.0 0 1042 1.7 52 1708 0.8 24 2133 1.1 34	22 Th	0217 0.3 9 0940 1.5 46 1609 0.8 24 2021 1.0 30	7 Sa	0424 0.3 9 1211 2.0 61 1946 0.4 12	22 Su	0309 0.3 9 1110 2.0 61 1854 0.4 12 2330 0.8 24
8 M	0335 -0.1 -3 1005 1.1 34 1459 0.6 18 2108 1.6 49	23 Tu	0259 0.2 6 0938 1.1 34 1427 0.8 24 2022 1.4 43	8 Th	0409 0.1 3 1149 1.9 58 1855 0.7 21 2250 0.9 27	23 F	0303 0.3 9 1050 1.7 52 1806 0.7 21 2140 0.9 27	8 Su	0029 0.8 24 0533 0.3 9 1303 2.0 61 2023 0.3 9	23 M	0433 0.3 9 1211 2.1 64 1934 0.3 9
9 Tu	0418 -0.1 -3 1119 1.4 43 1649 0.7 21 2204 1.3 40	24 W	0335 0.2 6 1047 1.3 40 1616 0.9 27 2109 1.2 37	9 F	0501 0.1 3 1245 2.0 61 2006 0.5 15	24 Sa	0359 0.2 6 1152 1.9 58 1920 0.6 18 2314 0.8 24	9 M	0123 0.9 27 0631 0.3 9 1345 2.1 64 2051 0.3 9	24 Tu	0037 0.9 27 0548 0.2 6 1303 2.2 67 2008 0.2 6
10 W	0500 -0.1 -3 1219 1.7 52 1835 0.7 21 2304 1.1 34	25 Th	0413 0.1 3 1145 1.6 49 1808 0.8 24 2209 1.0 30	10 Sa	0009 0.8 24 0552 0.1 3 1332 2.1 64 2053 0.4 12	25 Su	0502 0.1 3 1246 2.1 64 2007 0.4 12	10 Tu	0202 1.0 30 0720 0.2 6 1422 2.1 64 2116 0.3 9	25 W	0128 1.1 34 0652 0.1 3 1350 2.3 70 2040 0.1 3
11 Th	0540 -0.1 -3 1310 2.0 61 1958 0.6 18	26 F	0455 0.1 3 1234 1.8 55 1930 0.7 21 2320 0.9 27	11 Su	0113 0.8 24 0641 0.1 3 1413 2.2 67 2129 0.3 9	26 M	0029 0.8 24 0602 0.0 0 1334 2.3 70 2045 0.3 9	11 W	0234 1.1 34 0802 0.2 6 1454 2.1 64 2138 0.2 6	26 Th	0214 1.3 40 0750 0.0 0 1433 2.3 70 2112 0.0 0
12 F	0007 0.9 27 0620 -0.2 -6 1354 2.1 64 2100 0.4 12	27 Sa	0538 0.0 0 1318 2.0 61 2027 0.5 15	12 M	0202 0.8 24 0726 0.0 0 1450 2.2 67 2159 0.3 9	27 Tu	0128 0.9 27 0659 -0.1 -3 1419 2.4 73 2121 0.2 6	12 Th	0305 1.2 37 0840 0.2 6 1524 2.0 61 2200 0.2 6	27 F	0259 1.5 46 0845 0.0 0 1514 2.2 67 2143 0.0 0
13 Sa	0106 0.8 24 0658 -0.2 -6 1433 2.3 70 2147 0.3 9	28 Su	0028 0.8 24 0624 -0.1 -3 1401 2.3 70 2112 0.4 12	13 Tu	0243 0.8 24 0807 0.0 0 1524 2.2 67 2226 0.3 9	28 W	0219 1.0 30 0752 -0.1 -3 1502 2.5 76 2156 0.1 3	13 F	0336 1.3 40 0918 0.2 6 1552 2.0 61 2222 0.2 6	28 Sa	0344 1.7 52 0939 0.1 3 1554 2.0 61 2214 -0.1 -3
14 Su	0159 0.7 21 0737 -0.2 -6 1510 2.3 70 2227 0.3 9	29 M	0128 0.8 24 0711 -0.2 -6 1443 2.4 73 2153 0.2 6	14 W	0319 0.9 27 0846 0.0 0 1556 2.2 67 2252 0.2 6	29 Th	0307 1.1 34 0844 -0.2 -6 1543 2.5 76 2230 0.0 0	14 Sa	0409 1.4 43 0955 0.2 6 1619 1.9 58 2244 0.2 6	29 Su	0429 1.9 58 1035 0.1 3 1633 1.8 55 2245 -0.1 -3
15 M	0247 0.7 21 0815 -0.1 -3 1545 2.3 70 2302 0.2 6	30 Tu	0222 0.8 24 0758 -0.3 -9 1525 2.6 79 2233 0.1 3	15 Th	0354 1.0 30 0923 0.0 0 1626 2.2 67 2318 0.2 6	30 F	0355 1.3 40 0935 -0.1 -3 1624 2.4 73 2304 0.0 0	15 Su	0443 1.5 46 1034 0.3 9 1647 1.7 52 2307 0.2 6	30 M	0516 2.0 61 1134 0.3 9 1713 1.5 46 2317 0.0 0
		31 W	0313 0.8 24 0846 -0.3 -9 1608 2.6 79 2312 0.1 3			31 Sa	0445 1.4 43 1029 0.0 0 1705 2.2 67 2339 0.0 0				

Time meridian 150° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Honolulu, Oahu Island, Hawaii, 2019

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
	h m ft cm		h m ft cm		h m ft cm		h m ft cm		h m ft cm		h m ft cm
1 Tu	0606 2.1 64	16 W	0533 2.0 61	1 F	0720 2.2 67	16 Sa	0646 2.3 70	1 Su	0735 2.1 64	16 M	0719 2.2 67
	1239 0.4 12		1215 0.5 15		1518 0.4 12		1436 0.3 9		1538 0.2 6		1502 0.1 3
	1755 1.2 37		1711 1.1 34		1940 0.6 18		1846 0.6 18		2050 0.6 18		2014 0.6 18
	2351 0.1 3		2301 0.1 3				2342 0.2 6				
2 W	0659 2.1 64	17 Th	0616 2.0 61	2 Sa	0012 0.3 9	17 Su	0742 2.2 67	2 M	0028 0.5 15	17 Tu	0039 0.3 9
	1357 0.5 15		1319 0.5 15		0819 2.0 61		1546 0.3 9		0826 1.9 58		0812 2.1 64
	1843 1.0 30		1749 0.9 27		1635 0.3 9		2024 0.6 18		1629 0.2 6		1552 0.0 0
	2331 0.2 6		2138 0.6 18				2232 0.7 21		2149 0.8 24		
3 Th	0027 0.2 6	18 F	0706 2.0 61	3 Su	0108 0.5 15	18 M	0040 0.3 9	3 Tu	0144 0.6 18	18 W	0204 0.5 15
	0759 2.0 61		1440 0.5 15		0923 1.9 58		0844 2.1 64		0920 1.7 52		0907 1.9 58
	1532 0.5 15		1842 0.8 24		1733 0.3 9		1645 0.2 6		1711 0.2 6		1637 0.0 0
	1949 0.8 24				2326 0.7 21		2214 0.7 21		2344 0.9 27		2311 1.1 34
4 F	0110 0.3 9	19 Sa	0009 0.3 9	4 M	0245 0.6 18	19 Tu	0208 0.5 15	4 W	0331 0.8 24	19 Th	0353 0.7 21
	0907 2.0 61		0807 2.0 61		1028 1.8 55		0948 2.0 61		1015 1.6 49		1005 1.6 49
	1712 0.5 15		1614 0.5 15		1815 0.2 6		1730 0.1 3		1744 0.1 3		1718 -0.1 -3
	2139 0.7 21		2011 0.6 18				2335 0.9 27				
5 Sa	0213 0.5 15	20 Su	0104 0.3 9	5 Tu	0024 0.9 27	20 W	0357 0.6 18	5 Th	0029 1.2 37	20 F	0013 1.4 43
	1019 1.9 58		0918 2.0 61		0431 0.7 21		1050 1.9 58		0513 0.8 24		0541 0.7 21
	1822 0.4 12		1728 0.4 12		1125 1.7 52		1808 0.0 0		1105 1.5 46		1104 1.4 43
	2332 0.7 21		2213 0.7 21		1846 0.2 6				1811 0.1 3		1755 -0.2 -6
6 Su	0343 0.5 15	21 M	0230 0.4 12	6 W	0101 1.1 34	21 Th	0031 1.2 37	6 F	0105 1.4 43	21 Sa	0103 1.8 55
	1126 1.9 58		1029 2.0 61		0551 0.7 21		0535 0.6 18		0633 0.8 24		0712 0.6 18
	1906 0.3 9		1816 0.2 6		1213 1.7 52		1146 1.8 55		1152 1.4 43		1202 1.2 37
			2341 0.8 24		1911 0.1 3		1841 -0.1 -3		1836 0.0 0		1831 -0.2 -6
7 M	0038 0.9 27	22 Tu	0412 0.5 15	7 Th	0132 1.3 40	22 F	0117 1.6 49	7 Sa	0136 1.6 49	22 Su	0147 2.1 64
	0510 0.5 15		1132 2.1 64		0653 0.6 18		0655 0.5 15		0737 0.7 21		0824 0.5 15
	1221 1.9 58		1853 0.1 3		1253 1.6 49		1238 1.6 49		1235 1.2 37		1258 1.0 30
	1938 0.3 9				1933 0.1 3		1913 -0.2 -6		1901 0.0 0		1907 -0.3 -9
8 Tu	0119 1.0 30	23 W	0038 1.0 30	8 F	0201 1.5 46	23 Sa	0159 1.9 58	8 Su	0207 1.9 58	23 M	0228 2.3 70
	0617 0.5 15		0538 0.4 12		0744 0.6 18		0803 0.5 15		0830 0.6 18		0923 0.4 12
	1306 1.9 58		1227 2.1 64		1328 1.5 46		1325 1.5 46		1315 1.1 34		1350 0.9 27
	2004 0.2 6		1926 0.0 0		1953 0.1 3		1944 -0.2 -6		1926 -0.1 -3		1942 -0.3 -9
9 W	0151 1.2 37	24 Th	0125 1.3 40	9 Sa	0230 1.7 52	24 Su	0240 2.2 67	9 M	0238 2.1 64	24 Tu	0308 2.4 73
	0709 0.4 12		0650 0.3 9		0830 0.5 15		0905 0.4 12		0918 0.5 15		1013 0.2 6
	1343 1.9 58		1315 2.0 61		1400 1.4 43		1411 1.3 40		1354 1.0 30		1439 0.8 24
	2026 0.2 6		1957 -0.1 -3		2014 0.0 0		2015 -0.3 -9		1953 -0.1 -3		2018 -0.3 -9
10 Th	0220 1.3 40	25 F	0208 1.6 49	10 Su	0259 1.9 58	25 M	0320 2.4 73	10 Tu	0310 2.2 67	25 W	0346 2.5 76
	0754 0.4 12		0752 0.3 9		0914 0.5 15		1002 0.3 9		1003 0.4 12		1059 0.2 6
	1415 1.8 55		1359 1.9 58		1431 1.3 40		1454 1.1 34		1434 0.9 27		1525 0.7 21
	2046 0.2 6		2027 -0.1 -3		2036 0.0 0		2046 -0.3 -9		2023 -0.2 -6		2054 -0.3 -9
11 F	0249 1.5 46	26 Sa	0250 1.9 58	11 M	0329 2.1 64	26 Tu	0359 2.5 76	11 W	0345 2.3 70	26 Th	0423 2.5 76
	0835 0.3 9		0851 0.2 6		0958 0.4 12		1056 0.2 6		1047 0.3 9		1142 0.1 3
	1444 1.8 55		1441 1.8 55		1503 1.2 37		1538 0.9 27		1514 0.8 24		1610 0.7 21
	2106 0.1 3		2056 -0.2 -6		2059 -0.1 -3		2118 -0.2 -6		2055 -0.2 -6		2130 -0.2 -6
12 Sa	0318 1.6 49	27 Su	0332 2.1 64	12 Tu	0402 2.2 67	27 W	0439 2.5 76	12 Th	0422 2.4 73	27 F	0501 2.4 73
	0914 0.3 9		0948 0.2 6		1043 0.4 12		1150 0.2 6		1133 0.2 6		1223 0.1 3
	1512 1.7 52		1522 1.6 49		1536 1.1 34		1623 0.8 24		1557 0.7 21		1656 0.6 18
	2126 0.1 3		2126 -0.2 -6		2125 -0.1 -3		2151 -0.1 -3		2130 -0.2 -6		2207 -0.1 -3
13 Su	0349 1.8 55	28 M	0414 2.3 70	13 W	0437 2.3 70	28 Th	0520 2.5 76	13 F	0501 2.5 76	28 Sa	0538 2.3 70
	0954 0.4 12		1045 0.3 9		1132 0.4 12		1244 0.2 6		1222 0.2 6		1305 0.1 3
	1540 1.6 49		1602 1.3 40		1611 1.0 30		1711 0.7 21		1644 0.7 21		1745 0.6 18
	2148 0.1 3		2156 -0.1 -3		2153 -0.1 -3		2224 0.0 0		2207 -0.2 -6		2244 0.0 0
14 M	0421 1.9 58	29 Tu	0457 2.4 73	14 Th	0515 2.3 70	29 F	0602 2.4 73	14 Sa	0544 2.4 73	29 Su	0616 2.2 67
	1037 0.4 12		1144 0.3 9		1225 0.4 12		1341 0.2 6		1314 0.2 6		1348 0.1 3
	1608 1.4 43		1644 1.1 34		1651 0.8 24		1806 0.6 18		1740 0.6 18		1840 0.6 18
	2210 0.1 3		2227 -0.1 -3		2224 0.0 0		2300 0.1 3		2249 -0.1 -3		2324 0.2 6
15 Tu	0455 2.0 61	30 W	0541 2.4 73	15 F	0558 2.3 70	30 Sa	0647 2.2 67	15 Su	0630 2.4 73	30 M	0655 2.0 61
	1123 0.4 12		1247 0.3 9		1327 0.4 12		1440 0.2 6		1408 0.1 3		1431 0.1 3
	1638 1.3 40		1729 0.9 27		1740 0.7 21		1916 0.6 18		1848 0.6 18		1946 0.7 21
	2234 0.1 3		2259 0.0 0		2259 0.1 3		2339 0.3 9		2338 0.1 3		
	31 Th	0629 2.3 70								31 Tu	0009 0.4 12
		1358 0.4 12									0734 1.8 55
		1823 0.7 21									1512 0.2 6
		2333 0.2 6									2106 0.8 24

Time meridian 150° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Moku O Loe, Oahu Island, Hawaii, 2019

Times and Heights of High and Low Waters

January				February				March			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
<small>h m ft cm</small>	<small>ft cm</small>	<small>h m ft cm</small>	<small>ft cm</small>	<small>h m ft cm</small>	<small>ft cm</small>	<small>h m ft cm</small>	<small>ft cm</small>	<small>h m ft cm</small>	<small>ft cm</small>	<small>h m ft cm</small>	<small>ft cm</small>
1 Tu 0101 1.9 58 0705 1.1 34 1034 1.3 40 1749 -0.2 -6		16 W 0027 1.8 55 0644 1.2 37 0916 1.3 40 1703 -0.1 -3		1 F 0156 2.3 70 0855 0.9 27 1201 1.1 34 1839 -0.2 -6		16 Sa 0120 2.5 76 0812 0.9 27 1144 1.1 34 1820 -0.4 -12		1 F 0102 2.1 64 0826 0.8 24 1129 0.9 27 1747 0.1 3		16 Sa 0010 2.2 67 0730 0.8 24 1047 1.0 30 1710 0.0 0	
2 W 0136 2.2 67 0805 1.1 34 1118 1.2 37 1821 -0.3 -9		17 Th 0102 2.2 67 0742 1.1 34 1033 1.2 37 1747 -0.3 -9		2 Sa 0222 2.4 73 0907 0.9 27 1245 1.1 34 1914 -0.2 -6		17 Su 0157 2.6 79 0835 0.8 24 1244 1.2 37 1909 -0.5 -15		2 Sa 0129 2.2 67 0824 0.8 24 1219 1.1 34 1828 0.1 3		17 Su 0050 2.4 73 0738 0.7 21 1200 1.2 37 1809 -0.2 -6	
3 Th 0207 2.3 70 0846 1.0 30 1159 1.2 37 1852 -0.3 -9		18 F 0139 2.4 73 0821 1.0 30 1139 1.2 37 1832 -0.5 -15		3 Su 0246 2.4 73 0923 0.8 24 1324 1.2 37 1947 -0.2 -6		18 M 0232 2.7 82 0903 0.6 18 1337 1.4 43 1955 -0.5 -15		3 Su 0153 2.2 67 0830 0.7 21 1256 1.2 37 1904 0.0 0		18 M 0126 2.5 76 0758 0.5 15 1254 1.4 43 1900 -0.2 -6	
4 F 0236 2.4 73 0918 1.0 30 1238 1.2 37 1923 -0.4 -12		19 Sa 0216 2.7 82 0857 0.9 27 1235 1.2 37 1916 -0.6 -18		4 M 0311 2.4 73 0941 0.8 24 1359 1.3 40 2018 -0.2 -6		19 Tu 0307 2.7 82 0932 0.5 15 1427 1.5 46 2039 -0.4 -12		4 M 0215 2.2 67 0841 0.7 21 1329 1.3 40 1937 0.0 0		19 Tu 0159 2.5 76 0822 0.4 12 1343 1.6 49 1948 -0.2 -6	
5 Sa 0304 2.5 76 0947 0.9 27 1316 1.2 37 1954 -0.4 -12		20 Su 0254 2.8 85 0933 0.8 24 1327 1.2 37 2000 -0.7 -21		5 Tu 0335 2.4 73 1002 0.7 21 1435 1.3 40 2049 -0.2 -6		20 W 0340 2.6 79 1004 0.4 12 1517 1.6 49 2122 -0.2 -6		5 Tu 0236 2.2 67 0855 0.6 18 1402 1.5 46 2008 0.0 0		20 W 0230 2.4 73 0849 0.2 6 1431 1.8 55 2033 -0.1 -3	
6 Su 0333 2.5 76 1016 0.9 27 1352 1.2 37 2025 -0.3 -9		21 M 0333 2.8 85 1009 0.7 21 1417 1.3 40 2043 -0.6 -18		6 W 0359 2.3 70 1025 0.7 21 1511 1.3 40 2119 0.0 0		21 Th 0411 2.4 73 1036 0.3 9 1609 1.6 49 2205 0.1 3		6 W 0257 2.2 67 0913 0.5 15 1435 1.5 46 2039 0.0 0		21 Th 0259 2.2 67 0917 0.1 3 1518 1.9 58 2118 0.2 6	
7 M 0403 2.4 73 1045 0.9 27 1427 1.2 37 2057 -0.2 -6		22 Tu 0411 2.8 85 1048 0.7 21 1508 1.3 40 2126 -0.4 -12		7 Th 0422 2.2 67 1050 0.6 18 1550 1.3 40 2148 0.1 3		22 F 0440 2.2 67 1111 0.2 6 1706 1.6 49 2249 0.5 15		7 Th 0317 2.1 64 0934 0.4 12 1511 1.6 49 2110 0.2 6		22 F 0327 2.0 61 0946 0.0 0 1607 1.9 58 2203 0.4 12	
8 Tu 0432 2.4 73 1118 0.9 27 1503 1.1 34 2127 -0.1 -3		23 W 0448 2.6 79 1128 0.6 18 1604 1.3 40 2209 -0.2 -6		8 F 0444 2.1 64 1117 0.5 15 1634 1.3 40 2218 0.4 12		23 Sa 0505 1.9 58 1147 0.2 6 1815 1.5 46 2338 0.8 24		8 F 0337 2.0 61 0956 0.3 9 1549 1.6 49 2141 0.4 12		23 Sa 0351 1.8 55 1016 0.0 0 1658 1.9 58 2252 0.7 21	
9 W 0502 2.3 70 1152 0.8 24 1542 1.1 34 2157 0.1 3		24 Th 0524 2.4 73 1211 0.5 15 1707 1.2 37 2252 0.2 6		9 Sa 0504 1.9 58 1147 0.5 15 1728 1.3 40 2249 0.6 18		24 Su 0523 1.6 49 1227 0.2 6 1949 1.5 46		9 Sa 0355 1.9 58 1019 0.2 6 1630 1.6 49 2216 0.6 18		24 Su 0410 1.6 49 1046 0.0 0 1756 1.9 58 2351 1.0 30	
10 Th 0531 2.1 64 1231 0.8 24 1630 1.0 30 2226 0.3 9		25 F 0558 2.1 64 1258 0.4 12 1830 1.2 37 2339 0.6 18		10 Su 0521 1.8 55 1221 0.4 12 1845 1.3 40 2329 0.9 27		25 M 0051 1.2 37 0524 1.4 43 1315 0.2 6 2205 1.6 49		10 Su 0412 1.7 52 1045 0.2 6 1720 1.6 49 2255 0.8 24		25 M 0420 1.4 43 1117 0.1 3 1908 1.8 55	
11 F 0558 2.0 61 1313 0.7 21 1738 1.0 30 2256 0.5 15		26 Sa 0628 1.9 58 1348 0.3 9 2031 1.2 37		11 M 0536 1.6 49 1305 0.3 9 2051 1.4 43		26 Tu 1420 0.3 9 2341 1.8 55		11 M 0426 1.6 49 1115 0.2 6 1824 1.6 49 2350 1.1 34		26 Tu 0145 1.1 34 0347 1.2 37 1153 0.2 6 2050 1.8 55	
12 Sa 0625 1.9 58 1359 0.6 18 1932 1.0 30 2332 0.8 24		27 Su 0043 1.0 30 0654 1.6 49 1444 0.3 9 2259 1.5 46		12 Tu 0046 1.2 37 0541 1.4 43 1403 0.2 6 2302 1.6 49		27 W 1542 0.3 9		12 Tu 0433 1.4 43 1154 0.2 6 2002 1.6 49		27 W 1244 0.4 12 2233 1.8 55	
13 Su 0652 1.7 52 1446 0.5 15 2224 1.2 37		28 M 0330 1.3 40 0710 1.4 43 1541 0.2 6		13 W 1515 0.1 3		28 Th 0029 2.0 61 1654 0.2 6		13 W 1251 0.2 6 2203 1.8 55		28 Th 1427 0.5 15 2335 1.9 58	
14 M 0054 1.1 34 0722 1.5 46 1533 0.3 9 2347 1.5 46		29 Tu 0014 1.8 55 1634 0.1 3		14 Th 0001 1.9 58 1626 0.0 0				14 Th 1418 0.2 6 2321 2.0 61		29 F 0800 0.7 21 1043 0.8 24 1615 0.5 15	
15 Tu 0430 1.3 40 0806 1.4 43 1618 0.1 3		30 W 0056 2.0 61 1721 0.0 0		15 F 0043 2.2 67 0801 0.9 27 1019 1.0 30 1727 -0.2 -6				15 F 1555 0.1 3		30 Sa 0015 2.0 61 0735 0.7 21 1147 1.0 30 1722 0.4 12	
		31 Th 0128 2.2 67 0846 0.9 27 1100 1.0 30 1802 -0.1 -3								31 Su 0044 2.0 61 0734 0.7 21 1224 1.2 37 1808 0.3 9	

Time meridian 150° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Kahului, Maui Island, Hawaii, 2019

Times and Heights of High and Low Waters

October				November				December															
Time		Height		Time		Height		Time		Height		Time		Height									
h	m	ft	cm	h	m	ft	cm	h	m	ft	cm	h	m	ft	cm								
1 Tu	0417	2.4	73	16 W	0353	2.4	73	1 F	0544	2.4	73	16 Su	0518	2.5	76	1 Su	0608	2.3	70				
	1020	0.7	21		0956	0.9	27		1258	1.1	34		1219	1.1	34		0608	2.3	70	16 M	0556	2.6	79
	1543	1.9	58		1459	1.7	52		1515	1.2	37		1504	1.2	37		2236	0.3	9	1635	1.0	30	
	2207	0.0	0		2126	0.0	0		2226	0.2	6		2206	0.0	0		2206	0.3	9	2250	0.1	3	
2 W	0508	2.3	70	17 Th	0433	2.3	70	2 Sa	0649	2.2	67	17 Su	0617	2.4	73	2 M	0703	2.2	67	17 Tu	0647	2.4	73
	1116	1.0	30		1040	1.1	34		2300	0.4	12		2250	0.2	6		2314	0.6	18		1431	0.7	21
	1601	1.6	49		1513	1.6	49		0814	2.1	64		0727	2.3	70		0803	2.0	61		1823	0.9	27
	2239	0.1	3		2152	0.0	0		2359	0.7	21		2356	0.4	12		2122	0.9	27		2059	1.1	34
3 Th	0609	2.2	67	18 F	0522	2.2	67	3 Su	0814	2.1	64	18 M	0727	2.3	70	3 Tu	0803	2.0	61	18 W	0742	2.2	67
	1238	1.2	37		1144	1.2	37		0937	2.1	64		0841	2.3	70		1646	0.8	24		1528	0.6	18
	1603	1.4	43		1519	1.4	43		1810	0.8	24		1658	0.7	21		2122	0.9	27		2059	1.1	34
	2313	0.3	9		2224	0.1	3		2246	1.0	30		2117	0.9	27		0031	0.8	24		0119	0.8	24

Time meridian 150° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Hilo, Hawaii Island, Hawaii, 2019

Times and Heights of High and Low Waters

April				May				June															
Time		Height		Time		Height		Time		Height		Time		Height									
	<small>h m</small>	<small>ft</small>	<small>cm</small>		<small>h m</small>	<small>ft</small>	<small>cm</small>		<small>h m</small>	<small>ft</small>	<small>cm</small>		<small>h m</small>	<small>ft</small>	<small>cm</small>								
1 M	0124	2.1	64	16 Tu	0104	2.4	73	1 W	0100	1.9	58	16 Th	0102	2.0	61	1 Sa	0112	1.6	49	16 Su	0145	1.4	43
	0754	0.2	6		0734	-0.1	-3		0725	0.0	0		0726	-0.5	-15		0733	-0.4	-12		0800	-0.5	-15
	1333	1.5	46		1333	1.9	58		1346	1.9	58		1410	2.4	73		1436	2.6	79		1518	2.8	85
	1922	0.1	3		1926	-0.1	-3		1939	0.3	9		2015	0.4	12		2055	0.5	15		2155	0.6	18
2 Tu	0152	2.2	67	17 W	0142	2.4	73	2 Th	0129	1.9	58	17 F	0139	1.8	55	2 Su	0149	1.5	46	17 M	0225	1.3	40
	0814	0.1	3		0804	-0.3	-9		0749	-0.2	-6		0757	-0.6	-18		0805	-0.5	-15		0834	-0.5	-15
	1404	1.7	52		1417	2.2	67		1419	2.1	64		1450	2.6	79		1514	2.7	82		1554	2.8	85
	1958	0.0	0		2017	-0.1	-3		2019	0.3	9		2105	0.4	12		2142	0.5	15		2237	0.5	15
3 W	0218	2.2	67	18 Th	0218	2.2	67	3 F	0157	1.9	58	18 Sa	0214	1.6	49	3 M	0227	1.4	43	18 Tu	0304	1.2	37
	0835	0.0	0		0835	-0.4	-12		0813	-0.3	-9		0828	-0.6	-18		0840	-0.6	-18		0909	-0.4	-12
	1436	1.9	58		1459	2.4	73		1452	2.3	70		1529	2.7	82		1554	2.8	85		1631	2.8	85
	2033	0.0	0		2105	0.0	0		2059	0.3	9		2153	0.4	12		2231	0.5	15		2319	0.5	15
4 Th	0243	2.2	67	19 F	0252	2.1	64	4 Sa	0226	1.8	55	19 Su	0249	1.5	46	4 Tu	0307	1.3	40	19 W	0344	1.1	34
	0858	-0.1	-3		0905	-0.5	-15		0840	-0.4	-12		0900	-0.6	-18		0917	-0.6	-18		0944	-0.3	-9
	1508	2.1	64		1541	2.6	79		1527	2.5	76		1608	2.8	85		1638	2.9	88		1708	2.7	82
	2108	0.1	3		2152	0.1	3		2141	0.4	12		2242	0.5	15		2323	0.5	15		2323	0.5	15
5 F	0308	2.1	64	20 Sa	0324	1.9	58	5 Su	0256	1.6	49	20 M	0324	1.3	40	5 W	0351	1.2	37	20 Th	0002	0.5	15
	0921	-0.2	-6		0936	-0.5	-15		0908	-0.5	-15		0932	-0.5	-15		0957	-0.5	-15		0426	1.1	34
	1541	2.2	67		1623	2.6	79		1605	2.6	79		1648	2.7	82		1724	2.8	85		1020	-0.1	-3
	2144	0.2	6		2241	0.3	9		2226	0.4	12		2331	0.5	15		2331	0.5	15		1746	2.5	76
6 Sa	0333	1.9	58	21 Su	0356	1.6	49	6 M	0327	1.5	46	21 Tu	0400	1.2	37	6 Th	0020	0.5	15	21 F	0048	0.6	18
	0946	-0.2	-6		1007	-0.4	-12		0938	-0.5	-15		1004	-0.3	-9		0441	1.1	34		0514	1.0	30
	1617	2.2	67		1706	2.5	76		1646	2.6	79		1729	2.6	79		1042	-0.4	-12		1058	0.1	3
	2223	0.3	9		2332	0.5	15		2317	0.5	15		2317	0.5	15		1814	2.7	82		1825	2.4	73
7 Su	0359	1.8	55	22 M	0428	1.4	43	7 Tu	0401	1.3	40	22 W	0026	0.6	18	7 F	0122	0.5	15	22 Sa	0136	0.5	15
	1012	-0.3	-9		1038	-0.3	-9		1012	-0.4	-12		0439	1.0	30		0544	1.0	30		0612	1.0	30
	1655	2.3	70		1751	2.4	73		1732	2.6	79		1039	-0.2	-6		1133	-0.1	-3		1139	0.3	9
	2306	0.4	12		2306	0.4	12		2306	0.4	12		1814	2.4	73		1908	2.6	79		1908	2.6	79
8 M	0425	1.6	49	23 Tu	0032	0.6	18	8 W	0017	0.6	18	23 Th	0128	0.6	18	8 Sa	0226	0.4	12	23 Su	0225	0.5	15
	1041	-0.2	-6		0500	1.1	34		0439	1.1	34		0525	0.9	27		0707	0.9	27		0728	1.0	30
	1740	2.2	67		1111	-0.1	-3		1051	-0.3	-9		1117	0.1	3		1235	0.1	3		1228	0.5	15
	2359	0.6	18		1842	2.2	67		1825	2.5	76		1903	2.2	67		2005	2.4	73		1948	2.1	64
9 Tu	0454	1.4	43	24 W	0149	0.7	21	9 Th	0131	0.6	18	24 F	0239	0.6	18	9 Su	0326	0.3	9	24 M	0313	0.4	12
	1114	-0.2	-6		0536	0.9	27		0528	0.9	27		0634	0.8	24		0849	1.1	34		0901	1.1	34
	1833	2.2	67		1148	0.1	3		1138	-0.1	-3		1203	0.3	9		1354	0.4	12		1335	0.8	24
					1943	2.1	64		1927	2.4	73		1958	2.1	64		2102	2.3	70		2031	1.9	58
10 W	0110	0.8	24	25 Th	0338	0.7	21	10 F	0300	0.6	18	25 Sa	0347	0.5	15	10 M	0418	0.1	3	25 Tu	0355	0.3	9
	0527	1.1	34		0638	0.8	24		0648	0.8	24		0821	0.8	24		1025	1.3	40		1029	1.3	40
	1156	-0.1	-3		1238	0.3	9		1240	0.1	3		1309	0.5	15		1529	0.6	18		1508	1.0	30
	1942	2.1	64		2056	1.9	58		2037	2.3	70		2056	2.0	61		2158	2.1	64		2118	1.8	55
11 Th	0300	0.8	24	26 F	0511	0.6	18	11 Sa	0417	0.5	15	26 Su	0437	0.4	12	11 Tu	0501	0.0	0	26 W	0434	0.2	6
	0618	0.9	27		0907	0.7	21		0851	0.8	24		1012	1.0	30		1138	1.7	52		1133	1.6	49
	1255	0.1	3		1405	0.5	15		1408	0.3	9		1441	0.7	21		1702	0.8	24		1646	1.0	30
	2106	2.1	64		2211	1.9	58		2146	2.3	70		2151	1.9	58		2250	1.9	58		2207	1.7	52
12 F	0459	0.7	21	27 Sa	0553	0.5	15	12 Su	0509	0.3	9	27 M	0512	0.3	9	12 W	0540	-0.2	-6	27 Th	0510	0.1	3
	0821	0.8	24		1104	0.9	27		1037	1.1	34		1123	1.2	37		1234	2.0	61		1221	1.9	58
	1425	0.2	6		1554	0.5	15		1547	0.4	12		1615	0.8	24		1821	0.8	24		1807	1.0	30
	2227	2.2	67		2310	1.9	58		2247	2.2	67		2240	1.8	55		2338	1.8	55		2257	1.6	49
13 Sa	0555	0.5	15	28 Su	0619	0.4	12	13 M	0548	0.1	3	28 Tu	0541	0.2	6	13 Th	0617	-0.3	-9	28 F	0546	-0.1	-3
	1034	0.9	27		1200	1.1	34		1148	1.4	43		1211	1.5	46		1321	2.3	70		1302	2.2	67
	1606	0.2	6		1714	0.5	15		1713	0.4	12		1730	0.8	24		1927	0.7	21		1911	0.9	27
	2331	2.3	70		2354	1.9	58		2338	2.2	67		2322	1.8	55		2322	1.8	55		2347	1.5	46
14 Su	0632	0.3	9	29 M	0642	0.2	6	14 Tu	0622	-0.1	-3	29 W	0608	0.0	0	14 F	0023	1.6	49	29 Sa	0623	-0.3	-9
	1151	1.2	37		1239	1.4	43		1241	1.8	55		1249	1.8	55		0652	-0.4	-12		1341	2.5	76
	1727	0.1	3		1811	0.4	12		1822	0.4	12		1830	0.7	21		1402	2.6	79		2004	0.8	24
															2022		0.7	21					
15 M	0021	2.4	73	30 Tu	0029	1.9	58	15 W	0022	2.1	64	30 Th	0000	1.7	52	15 Sa	0105	1.5	46	30 Su	0036	1.4	43
	0704	0.1	3		0703	0.1	3		0655	-0.3	-9		0635	-0.1	-3		0726	-0.5	-15		0701	-0.4	-12
	1246	1.5	46		1313	1.7	52		1327	2.1	64		1325	2.1	64		1441	2.7	82		1421	2.8	85
	1831	0.0	0		1857	0.4	12		1922	0.4	12		1922	0.4	12		1921	0.7	21		2111	0.6	18	2052	0.6	18

Time meridian 150° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Hilo, Hawaii Island, Hawaii, 2019

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	h m	ft	h m	ft	h m	ft	h m	ft	h m	ft
1 Tu	0503 2.7 82 1114 0.6 18 1642 2.0 61 2259 0.0 0	16 W	0436 2.6 79 1048 0.8 24 1600 1.8 55 2216 0.0 0	1 F	0625 2.6 79 1333 1.0 30 1722 1.2 37 2332 0.3 9	16 Sa	0556 2.7 82 1257 0.9 27 1653 1.2 37 2306 0.1 3	1 Su	0645 2.5 76 1413 0.8 24 1814 1.1 34 2348 0.4 12	16 M	0633 2.8 85 1342 0.6 18 1817 1.2 37 2357 0.2 6
2 W	0556 2.6 79 1215 0.9 27 1715 1.7 52 2336 0.1 3	17 Th	0517 2.5 76 1138 0.9 27 1626 1.6 49 2246 0.1 3	2 Sa	0726 2.4 73 1519 0.9 27 1829 1.0 30	17 Su	0653 2.6 79 1422 0.9 27 1801 1.1 34	2 M	0738 2.4 73 1522 0.8 24 1955 1.0 30	17 Tu	0726 2.6 79 1444 0.5 15 1953 1.2 37
3 Th	0656 2.4 73 1338 1.0 30 1750 1.4 43	18 F	0607 2.4 73 1245 1.0 30 1656 1.4 43 2324 0.2 6	3 Su	0023 0.5 15 0838 2.3 70 1650 0.8 24 2057 1.0 30	18 M	0001 0.3 9 0800 2.5 76 1544 0.8 24 1957 1.0 30	3 Tu	0048 0.7 21 0835 2.2 67 1617 0.7 21 2153 1.2 37	18 W	0106 0.5 15 0822 2.4 73 1540 0.4 12 2138 1.4 43
4 F	0019 0.3 9 0811 2.3 70 1551 1.1 34 1845 1.2 37	19 Sa	0710 2.4 73 1430 1.1 34 1739 1.2 37	4 M	0148 0.7 21 0951 2.2 67 1734 0.7 21 2254 1.2 37	19 Tu	0120 0.5 15 0909 2.5 76 1640 0.6 18 2158 1.2 37	4 W	0218 0.9 27 0931 2.1 64 1656 0.5 15 2313 1.4 43	19 Th	0239 0.8 24 0919 2.2 67 1629 0.2 6 2305 1.7 52
5 Sa	0119 0.5 15 0938 2.3 70 1746 0.9 27 2116 1.0 30	20 Su	0018 0.3 9 0831 2.4 73 1635 1.0 30 1932 1.1 34	5 Tu	0337 0.8 24 1051 2.2 67 1803 0.6 18 2351 1.4 43	20 W	0302 0.7 21 1012 2.4 73 1721 0.4 12 2318 1.6 49	5 Th	0359 1.0 30 1022 2.0 61 1727 0.4 12	20 F	0423 0.9 27 1016 2.0 61 1712 0.0 0
6 Su	0253 0.6 18 1055 2.3 70 1827 0.8 24 2313 1.2 37	21 M	0142 0.5 15 0953 2.4 73 1731 0.8 24 2201 1.1 34	6 W	0459 0.8 24 1136 2.2 67 1826 0.5 15	21 Th	0436 0.7 21 1106 2.4 73 1756 0.2 6	6 F	0004 1.7 52 0520 1.0 30 1106 1.9 58 1755 0.3 9	21 Sa	0008 2.1 64 0554 1.0 30 1110 1.9 58 1752 -0.1 -3
7 M	0430 0.6 18 1150 2.3 70 1853 0.7 21	22 Tu	0327 0.5 15 1058 2.5 76 1805 0.6 18 2324 1.4 43	7 Th	0030 1.7 52 0558 0.8 24 1211 2.2 67 1847 0.3 9	22 F	0015 2.0 61 0552 0.7 21 1153 2.3 70 1829 -0.1 -3	7 Sa	0042 2.0 61 0623 1.0 30 1145 1.9 58 1822 0.1 3	22 Su	0059 2.5 76 0706 0.9 27 1200 1.7 52 1831 -0.3 -9
8 Tu	0009 1.4 43 0537 0.6 18 1231 2.4 73 1914 0.6 18	23 W	0454 0.4 12 1150 2.6 79 1836 0.4 12	8 F	0103 2.0 61 0645 0.7 21 1242 2.2 67 1909 0.2 6	23 Sa	0103 2.4 73 0656 0.6 18 1235 2.2 67 1901 -0.2 -6	8 Su	0117 2.3 70 0714 0.9 27 1221 1.8 55 1849 -0.1 -3	23 M	0143 2.7 82 0804 0.8 24 1247 1.6 49 1908 -0.4 -12
9 W	0047 1.6 49 0627 0.5 15 1303 2.4 73 1934 0.4 12	24 Th	0020 1.8 55 0601 0.3 9 1234 2.7 82 1906 0.1 3	9 Sa	0135 2.2 67 0727 0.7 21 1310 2.1 64 1931 0.1 3	24 Su	0147 2.7 82 0752 0.6 18 1314 2.1 64 1934 -0.4 -12	9 M	0150 2.5 76 0800 0.8 24 1257 1.7 52 1919 -0.2 -6	24 Tu	0223 2.9 88 0853 0.7 21 1331 1.5 46 1945 -0.5 -15
10 Th	0120 1.8 55 0707 0.4 12 1331 2.4 73 1954 0.3 9	25 F	0107 2.1 64 0658 0.3 9 1313 2.6 79 1937 -0.1 -3	10 Su	0206 2.4 73 0806 0.7 21 1338 2.1 64 1955 -0.1 -3	25 M	0229 2.9 88 0844 0.6 18 1352 1.9 58 2007 -0.5 -15	10 Tu	0224 2.7 82 0843 0.8 24 1332 1.7 52 1950 -0.3 -9	25 W	0301 3.0 91 0937 0.6 18 1413 1.5 46 2022 -0.4 -12
11 F	0150 2.0 61 0743 0.4 12 1357 2.4 73 2015 0.2 6	26 Sa	0152 2.5 76 0751 0.3 9 1349 2.5 76 2008 -0.2 -6	11 M	0238 2.6 79 0845 0.7 21 1405 2.0 61 2020 -0.2 -6	26 Tu	0309 3.1 94 0933 0.6 18 1429 1.7 52 2041 -0.4 -12	11 W	0259 2.9 88 0925 0.7 21 1409 1.6 49 2023 -0.4 -12	26 Th	0339 3.0 91 1018 0.6 18 1453 1.4 43 2058 -0.4 -12
12 Sa	0221 2.2 67 0818 0.4 12 1422 2.4 73 2037 0.1 3	27 Su	0235 2.7 82 0841 0.3 9 1425 2.4 73 2039 -0.3 -9	12 Tu	0311 2.7 82 0925 0.7 21 1434 1.9 58 2047 -0.2 -6	27 W	0350 3.1 94 1022 0.7 21 1506 1.6 49 2115 -0.4 -12	12 Th	0336 3.0 91 1009 0.7 21 1447 1.5 46 2058 -0.4 -12	27 F	0415 3.0 91 1058 0.6 18 1533 1.4 43 2134 -0.3 -9
13 Su	0252 2.4 73 0853 0.4 12 1446 2.3 70 2059 0.1 3	28 M	0318 2.9 88 0930 0.4 12 1459 2.1 64 2111 -0.3 -9	13 W	0346 2.8 85 1007 0.7 21 1504 1.7 52 2116 -0.2 -6	28 Th	0431 3.0 91 1112 0.7 21 1543 1.4 43 2149 -0.2 -6	13 F	0416 3.0 91 1056 0.7 21 1527 1.4 43 2136 -0.4 -12	28 Sa	0452 2.9 88 1138 0.6 18 1614 1.3 40 2210 -0.1 -3
14 M	0325 2.5 76 0928 0.5 15 1510 2.1 64 2123 0.0 0	29 Tu	0402 3.0 91 1020 0.6 18 1533 1.9 58 2144 -0.3 -9	14 Th	0424 2.8 85 1054 0.8 24 1535 1.6 49 2148 -0.2 -6	29 F	0513 2.9 88 1205 0.8 24 1623 1.3 40 2225 0.0 0	14 Sa	0458 3.0 91 1146 0.7 21 1612 1.3 40 2217 -0.2 -6	29 Su	0528 2.7 82 1220 0.6 18 1658 1.3 40 2247 0.1 3
15 Tu	0359 2.5 76 1006 0.6 18 1535 2.0 61 2148 0.0 0	30 W	0446 2.9 88 1114 0.7 21 1606 1.6 49 2217 -0.2 -6	15 F	0507 2.8 85 1149 0.9 27 1610 1.4 43 2224 -0.1 -3	30 Sa	0557 2.7 82 1305 0.8 24 1710 1.2 37 2304 0.2 6	15 Su	0544 2.9 88 1242 0.7 21 1706 1.2 37 2303 0.0 0	30 M	0605 2.6 79 1304 0.6 18 1750 1.2 37 2325 0.3 9
		31 Th	0533 2.8 85 1215 0.9 27 1641 1.4 43 2252 0.0 0							31 Tu	0643 2.4 73 1351 0.6 18 1856 1.2 37

Time meridian 150° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Johnston Island, 2019

Times and Heights of High and Low Waters

January				February				March			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
<small>h m</small>	<small>ft cm</small>	<small>h m</small>	<small>ft cm</small>	<small>h m</small>	<small>ft cm</small>	<small>h m</small>	<small>ft cm</small>	<small>h m</small>	<small>ft cm</small>	<small>h m</small>	<small>ft cm</small>
1 Tu	0235 2.2 67 0918 0.3 9 1458 1.5 46 2047 0.3 9	16 W	0139 2.1 64 0829 0.4 12 1404 1.4 43 2000 0.2 6	1 F	0347 2.1 64 1029 0.0 0 1628 1.5 46 2204 0.2 6	16 Sa	0316 2.2 67 1001 -0.2 -6 1600 1.6 49 2146 -0.1 -3	1 F	0231 1.7 52 0927 0.2 6 1529 1.2 37 2105 0.4 12	16 Sa	0148 1.9 58 0845 0.0 0 1447 1.4 43 2037 0.1 3
2 W	0322 2.3 70 1004 0.2 6 1552 1.6 49 2133 0.2 6	17 Th	0240 2.3 70 0928 0.1 3 1513 1.5 46 2101 0.1 3	2 Sa	0428 2.2 67 1103 -0.1 -3 1704 1.6 49 2243 0.1 3	17 Su	0411 2.4 73 1046 -0.4 -12 1650 1.8 55 2239 -0.3 -9	2 Sa	0327 1.8 55 1007 0.0 0 1611 1.4 43 2152 0.2 6	17 Su	0258 2.1 64 0938 -0.3 -9 1545 1.7 52 2139 -0.1 -3
3 Th	0404 2.4 73 1043 0.0 0 1637 1.6 49 2215 0.2 6	18 F	0334 2.5 76 1017 -0.1 -3 1610 1.7 52 2156 0.0 0	3 Su	0504 2.3 70 1134 -0.2 -6 1737 1.7 52 2319 0.0 0	18 M	0459 2.6 79 1128 -0.6 -18 1735 2.1 64 2326 -0.4 -12	3 Su	0410 2.0 61 1040 -0.1 -3 1645 1.6 49 2231 0.1 3	18 M	0354 2.2 67 1023 -0.5 -15 1633 2.0 61 2230 -0.3 -9
4 F	0441 2.4 73 1117 -0.1 -3 1715 1.7 52 2252 0.1 3	19 Sa	0424 2.6 79 1102 -0.4 -12 1701 1.8 55 2246 -0.2 -6	4 M	0538 2.3 70 1204 -0.3 -9 1809 1.8 55 ● 2352 0.0 0	19 Tu	0543 2.6 79 1207 -0.7 -21 1818 2.2 67 ○	4 M	0446 2.1 64 1109 -0.2 -6 1716 1.8 55 2305 -0.1 -3	19 Tu	0442 2.4 73 1103 -0.6 -18 1716 2.2 67 2316 -0.4 -12
5 Sa	0517 2.5 76 1150 -0.2 -6 1751 1.7 52 ● 2328 0.1 3	20 Su	0511 2.7 82 1145 -0.5 -15 1748 2.0 61 ○ 2333 -0.3 -9	5 Tu	0609 2.3 70 1233 -0.3 -9 1839 1.9 58	20 W	0012 -0.4 -12 0626 2.6 79 1245 -0.7 -21 1900 2.3 70	5 Tu	0518 2.2 67 1137 -0.3 -9 1745 1.9 58 2338 -0.1 -3	20 W	0526 2.4 73 1140 -0.7 -21 1756 2.4 73 ○
6 Su	0551 2.5 76 1222 -0.2 -6 1824 1.8 55	21 M	0556 2.8 85 1227 -0.6 -18 1834 2.1 64	6 W	0025 0.0 0 0640 2.3 70 1301 -0.3 -9 1910 1.9 58	21 Th	0056 -0.4 -12 0706 2.5 76 1322 -0.6 -18 1941 2.3 70	6 W	0549 2.2 67 1204 -0.4 -12 1814 2.0 61 ●	21 Th	0000 -0.5 -15 0607 2.4 73 1216 -0.7 -21 1835 2.5 76
7 M	0003 0.1 3 0624 2.4 73 1254 -0.2 -6 1858 1.8 55	22 Tu	0020 -0.3 -9 0640 2.8 85 1308 -0.6 -18 1919 2.1 64	7 Th	0058 0.0 0 0710 2.2 67 1328 -0.2 -6 1942 2.0 61	22 F	0140 -0.2 -6 0747 2.3 70 1358 -0.5 -15 2022 2.3 70	7 Th	0010 -0.2 -6 0618 2.2 67 1230 -0.4 -12 1843 2.1 64	22 F	0042 -0.5 -15 0646 2.2 67 1251 -0.6 -18 1912 2.5 76
8 Tu	0037 0.1 3 0657 2.4 73 1325 -0.1 -3 1932 1.8 55	23 W	0106 -0.2 -6 0723 2.6 79 1349 -0.5 -15 2005 2.2 67	8 F	0131 0.1 3 0740 2.1 64 1357 -0.2 -6 2015 2.0 61	23 Sa	0226 -0.1 -3 0827 2.0 61 1434 -0.3 -9 2105 2.2 67	8 F	0042 -0.2 -6 0647 2.1 64 1257 -0.4 -12 1912 2.1 64	23 Sa	0123 -0.4 -12 0725 2.0 61 1325 -0.4 -12 1949 2.4 73
9 W	0111 0.2 6 0730 2.3 70 1357 -0.1 -3 2008 1.8 55	24 Th	0154 -0.1 -3 0807 2.4 73 1430 -0.4 -12 2052 2.1 64	9 Sa	0207 0.2 6 0812 2.0 61 1426 -0.1 -3 2052 2.0 61	24 Su	0314 0.1 3 0909 1.7 52 1511 0.0 0 2151 2.0 61	9 Sa	0114 -0.1 -3 0717 2.0 61 1324 -0.3 -9 1944 2.2 67	24 Su	0205 -0.2 -6 0804 1.8 55 1358 -0.2 -6 2027 2.2 67
10 Th	0147 0.3 9 0803 2.2 67 1430 0.0 0 2048 1.8 55	25 F	0245 0.1 3 0851 2.1 64 1512 -0.2 -6 2143 2.1 64	10 Su	0249 0.3 9 0848 1.8 55 1500 0.0 0 2135 1.9 58	25 M	0411 0.3 9 0958 1.4 43 1553 0.2 6 2244 1.8 55	10 Su	0149 -0.1 -3 0749 1.9 58 1352 -0.2 -6 2018 2.1 64	25 M	0248 -0.1 -3 0844 1.5 46 1432 0.0 0 2107 2.0 61
11 F	0227 0.4 12 0840 2.0 61 1505 0.1 3 2132 1.8 55	26 Sa	0342 0.3 9 0939 1.8 55 1557 0.0 0 2238 2.0 61	11 M	0340 0.4 12 0933 1.6 49 1541 0.1 3 2229 1.9 58	26 Tu	0528 0.5 15 1103 1.2 37 1650 0.4 12 ● 2353 1.7 52	11 M	0228 0.0 0 0825 1.7 52 1425 -0.1 -3 2059 2.0 61	26 Tu	0336 0.1 3 0930 1.3 40 1509 0.2 6 2155 1.8 55
12 Sa	0315 0.5 15 0921 1.8 55 1546 0.2 6 2224 1.8 55	27 Su	0452 0.5 15 1035 1.6 49 1649 0.2 6 ● 2340 1.9 58	12 Tu	0449 0.5 15 1034 1.4 43 1637 0.2 6 ● 2337 1.9 58	27 W	0709 0.5 15 1240 1.0 30 1823 0.5 15	12 Tu	0316 0.1 3 0910 1.5 46 1505 0.0 0 2150 1.9 58	27 W	0439 0.3 9 1032 1.1 34 1600 0.4 12 ● 2257 1.6 49
13 Su	0417 0.6 18 1013 1.7 52 1635 0.3 9 ● 2325 1.8 55	28 M	0621 0.6 18 1147 1.3 40 1754 0.4 12	13 W	0625 0.5 15 1159 1.2 37 1757 0.3 9	28 Th	0115 1.6 49 0833 0.3 9 1423 1.1 34 1959 0.5 15	13 W	0419 0.2 6 1011 1.3 40 1600 0.2 6 2257 1.8 55	28 Th	0611 0.4 12 1204 1.0 30 1735 0.6 18
14 M	0541 0.7 21 1121 1.5 46 1737 0.3 9	29 Tu	0050 1.9 58 0752 0.5 15 1316 1.2 37 1911 0.4 12	14 Th	0056 1.9 58 0800 0.3 9 1337 1.2 37 1929 0.3 9			14 Th	0551 0.3 9 1140 1.1 34 1725 0.3 9 ●	29 F	0023 1.5 46 0746 0.3 9 1350 1.1 34 1932 0.5 15
15 Tu	0032 1.9 58 0714 0.6 18 1242 1.4 43 1850 0.3 9	30 W	0159 1.9 58 0900 0.3 9 1442 1.2 37 2021 0.4 12	15 F	0212 2.1 64 0908 0.0 0 1459 1.4 43 2046 0.1 3			15 F	0023 1.8 55 0732 0.2 6 1324 1.2 37 1914 0.3 9	30 Sa	0150 1.5 46 0847 0.2 6 1457 1.3 40 2043 0.4 12
		31 Th	0259 2.0 61 0950 0.2 6 1543 1.3 40 2118 0.3 9							31 Su	0254 1.6 49 0929 0.0 0 1540 1.5 46 2132 0.2 6

Time meridian 150° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Johnston Island, 2019

Times and Heights of High and Low Waters

April					May					June														
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height											
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm										
1 M	0340	1.8	55		16 Tu	0332	2.0	61		1 W	0338	1.7	52		16 Su	0510	1.6	49						
	1003	-0.1	-3			0952	-0.4	-12			0948	-0.1	-3			0959	-0.3	-9		1050	-0.1	-3		
	1614	1.7	52			1611	2.1	64			1608	2.0	61			1626	2.5	76		1718	2.5	76		
	2211	0.0	0			2218	-0.3	-9			2221	0.0	0			2250	-0.3	-9		2354	-0.3	-9		
2 Tu	0417	1.9	58		17 W	0420	2.1	64		2 Th	0416	1.8	55		17 F	0443	1.8	55		2 Su	0505	1.7	52	
	1033	-0.2	-6			1032	-0.5	-15			1020	-0.2	-6			1037	-0.4	-12			1053	-0.2	-6	
	1645	1.9	58			1652	2.4	73			1640	2.2	67			1704	2.5	76			1720	2.5	76	
	2246	-0.1	-3			2304	-0.4	-12			2257	-0.2	-6			2331	-0.4	-12			2353	-0.4	-12	
3 W	0451	2.0	61		18 Th	0505	2.1	64		3 F	0452	1.8	55		18 Sa	0526	1.8	55		3 M	0547	1.7	52	
	1101	-0.3	-9			1109	-0.6	-18			1051	-0.3	-9			1114	-0.3	-9			1131	-0.2	-6	
	1715	2.1	64			1730	2.5	76			1712	2.3	70			1741	2.6	79			1759	2.6	79	
	2319	-0.2	-6			2346	-0.5	-15			2332	-0.3	-9			0					0			
4 Th	0522	2.0	61		19 F	0546	2.1	64		4 Sa	0528	1.8	55		19 Su	0610	-0.4	-12		4 Tu	0633	-0.4	-12	
	1129	-0.4	-12			1145	-0.5	-15			1122	-0.3	-9			0607	1.7	52			0631	1.7	52	
	1744	2.2	67			1807	2.6	79			1744	2.4	73			1150	-0.2	-6			1212	-0.2	-6	
	2352	-0.3	-9			0					0					1816	2.5	76			1840	2.5	76	
5 F	0553	2.0	61		20 Sa	0626	-0.5	-15		5 Su	0608	-0.4	-12		20 M	0647	-0.4	-12		5 W	0718	1.7	52	
	1156	-0.4	-12			0625	2.0	61			0604	1.8	55			0646	1.6	49			0718	1.7	52	
	1813	2.3	70			1219	-0.4	-12			1154	-0.3	-9			1225	-0.1	-3			1255	-0.1	-3	
	0					1843	2.5	76			1818	2.5	76			1851	2.4	73			1925	2.5	76	
6 Sa	0624	-0.3	-9		21 Su	0105	-0.4	-12		6 M	0645	-0.4	-12		21 Tu	0124	-0.3	-9		6 Th	0202	-0.4	-12	
	0624	2.0	61			0704	1.8	55			0642	1.7	52			0726	1.5	46			0808	1.6	49	
	1224	-0.4	-12			1252	-0.3	-9			1229	-0.3	-9			1300	0.0	0			1343	0.0	0	
	1844	2.3	70			1918	2.4	73			1855	2.4	73			1927	2.2	67			2012	2.3	70	
7 Su	0658	-0.3	-9		22 M	0144	-0.3	-9		7 Tu	0124	-0.4	-12		22 W	0203	-0.2	-6		7 F	0252	-0.3	-9	
	0657	1.9	58			0743	1.6	49			0723	1.6	49			0807	1.4	43			0905	1.6	49	
	1253	-0.3	-9			1325	-0.1	-3			1306	-0.2	-6			1336	0.1	3			1438	0.2	6	
	1916	2.3	70			1954	2.2	67			1935	2.3	70			2005	2.0	61			2105	2.1	64	
8 M	0135	-0.3	-9		23 Tu	0224	-0.2	-6		8 W	0208	-0.3	-9		23 Th	0244	-0.1	-3		8 Sa	0347	-0.2	-6	
	0732	1.7	52			0824	1.4	43			0809	1.5	46			0852	1.3	40			1009	1.6	49	
	1325	-0.2	-6			1400	0.1	3			1348	0.0	0			1417	0.3	9			1545	0.3	9	
	1952	2.2	67			2032	2.0	61			2021	2.2	67			2048	1.9	58			2205	2.0	61	
9 Tu	0215	-0.2	-6		24 W	0307	0.0	0		9 Th	0259	-0.2	-6		24 F	0330	0.1	3		9 Su	0448	-0.1	-3	
	0813	1.6	49			0910	1.3	40			0905	1.4	43			0946	1.3	40			1119	1.7	52	
	1401	-0.1	-3			1438	0.3	9			1438	0.1	3			1507	0.5	15			1709	0.5	15	
	2034	2.1	64			2116	1.8	55			2115	2.0	61			2137	1.7	52			2312	1.8	55	
10 W	0304	-0.1	-3		25 Th	0401	0.2	6		10 F	0400	-0.1	-3		25 Sa	0425	0.2	6		10 M	0553	-0.1	-3	
	0902	1.4	43			1009	1.1	34			1014	1.3	40			1050	1.3	40			1230	1.8	55	
	1445	0.1	3			1529	0.4	12			1545	0.3	9			1616	0.6	18			1839	0.4	12	
	2126	2.0	61			2213	1.6	49			2220	1.9	58			2238	1.6	49			2351	1.5	46	
11 Th	0406	0.1	3		26 F	0514	0.3	9		11 Sa	0514	0.0	0		26 Su	0530	0.2	6		11 Tu	0618	0.2	6	
	1009	1.2	37			1129	1.1	34			1136	1.4	43			1202	1.3	40			1334	2.0	61	
	1545	0.2	6			1653	0.6	18			1717	0.4	12			1748	0.6	18			1958	0.3	9	
	2234	1.8	55			2328	1.4	43			2337	1.7	52			2347	1.5	46			0			
12 F	0532	0.1	3		27 Sa	0640	0.3	9		12 Su	0631	0.0	0		27 M	0635	0.2	6		12 W	0715	1.6	49	
	1139	1.2	37			1259	1.2	37			1257	1.5	46			1308	1.5	46			0752	-0.1	-3	
	1717	0.4	12			1847	0.6	18			1856	0.4	12			1915	0.6	18			1430	2.2	67	
	2359	1.7	52			0					0					2100	0.2	6			2100	0.2	6	
13 Sa	0703	0.1	3		28 Su	0052	1.4	43		13 M	0056	1.7	52		28 Tu	0056	1.5	46		13 Th	0240	1.6	49	
	1315	1.3	40			0747	0.2	6			0737	-0.1	-3			0730	0.2	6			0843	-0.1	-3	
	1906	0.3	9			1408	1.3	40			1405	1.8	55			1402	1.7	52			1518	2.3	70	
	0					2007	0.5	15			2014	0.2	6			2020	0.4	12			2152	0.0	0	
14 Su	0124	1.8	55		29 M	0201	1.5	46		14 Tu	0206	1.7	52		29 W	0158	1.5	46		14 F	0336	1.6	49	
	0814	-0.1	-3			0836	0.1	3			0831	-0.2	-6			0817	0.1	3			0928	-0.1	-3	
	1429	1.6	49			1456	1.6	49			1459	2.0	61			1447	1.9	58			1601	2.4	73	
	2028	0.2	6			2101	0.3	9			2115	0.0	0			2110	0.2	6			2236	-0.1	-3	
15 M	0235	1.9	58		30 Tu	0254	1.6	49		15 W	0306	1.8	55		30 Th	0251	1.6	49		15 Sa	0426	1.6	49	
	0907	-0.3	-9			0914	0.0	0			0917	-0.3	-9			0858	0.0	0			1010	-0.1	-3	
	1525	1.9	58			1534	1.8	55			1545	2.3	70			1527	2.1	64			1641	2.5	76	
	2128	-0.1	-3			2143	0.1	3			2205	-0.2	-6			2154	0.1	3			2316	-0.2	-6	

Time meridian 150° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Johnston Island, 2019

Times and Heights of High and Low Waters

July				August				September													
Time		Height		Time		Height		Time		Height		Time		Height							
h	m	ft	cm	h	m	ft	cm	h	m	ft	cm	h	m	ft	cm						
1	M	0447	1.7	52	16	Tu	0537	1.7	52	1	Th	0004	-0.4	-12	16	F	0017	-0.1	-3		
		1031	-0.1	-3			1113	0.1	3			0608	2.1	64			0623	2.0	61		
		1701	2.6	79			1738	2.4	73			1155	-0.2	-6			1209	0.1	3		
		2338	-0.4	-12			○					1816	2.8	85			1825	2.5	76		
2	Tu	0534	1.7	52	17	W	0012	-0.2	-6	2	F	0045	-0.5	-15	17	Sa	0045	-0.1	-3		
		1117	-0.2	-6			0613	1.7	52			0654	2.2	67			0654	2.1	64		
		1745	2.7	82			1150	0.1	3			1242	-0.1	-3			1242	0.2	6		
							1813	2.4	73			1900	2.7	82			1855	2.4	73		
3	W	0021	-0.4	-12	18	Th	0044	-0.2	-6	3	Sa	0126	-0.4	-12	18	Su	0113	-0.1	-3		
		0622	1.8	55			0649	1.8	55			0740	2.2	67			0726	2.1	64		
		1202	-0.2	-6			1225	0.1	3			1330	0.0	0			1316	0.2	6		
		1829	2.7	82			1847	2.4	73			1944	2.6	79			1925	2.3	70		
4	Th	0104	-0.5	-15	19	F	0116	-0.1	-3	4	Su	0207	-0.3	-9	19	M	0141	0.0	0		
		0710	1.8	55			0724	1.8	55			0828	2.3	70			0759	2.1	64		
		1249	-0.1	-3			1301	0.2	6			1421	0.1	3			1352	0.3	9		
		1915	2.6	79			1920	2.3	70			2029	2.3	70			1957	2.1	64		
5	F	0149	-0.4	-12	20	Sa	0148	-0.1	-3	5	M	0249	-0.2	-6	20	Tu	0211	0.1	3		
		0800	1.9	58			0800	1.8	55			0918	2.2	67			0835	2.1	64		
		1339	0.0	0			1338	0.3	9			1517	0.3	9			1431	0.5	15		
		2001	2.5	76			1954	2.2	67			2117	2.1	64			2032	2.0	61		
6	Sa	0234	-0.4	-12	21	Su	0221	0.0	0	6	Tu	0334	0.0	0	21	W	0243	0.2	6		
		0852	1.9	58			0838	1.8	55			1013	2.2	67			0916	2.1	64		
		1433	0.2	6			1418	0.4	12			1623	0.5	15			1519	0.6	18		
		2050	2.3	70			2029	2.0	61			2212	1.8	55			2114	1.8	55		
7	Su	0323	-0.2	-6	22	M	0255	0.1	3	7	W	0425	0.2	6	22	Th	0321	0.3	9		
		0949	1.9	58			0920	1.8	55			1113	2.1	64			1007	2.0	61		
		1536	0.4	12			1503	0.5	15			1745	0.6	18			1622	0.7	21		
		2143	2.0	61			2109	1.9	58			○	2319	1.5	46			2210	1.6	49	
8	M	0414	-0.1	-3	23	Tu	0332	0.2	6	8	Th	0526	0.4	12	23	F	0413	0.4	12		
		1050	1.9	58			1008	1.8	55			1221	2.1	64			1111	2.0	61		
		1650	0.5	15			1559	0.6	18			1915	0.6	18			1751	0.7	21		
		2243	1.8	55			2155	1.7	52								○	2328	1.4	43	
9	Tu	0511	0.0	0	24	W	0416	0.3	9	9	F	0042	1.4	43	24	Sa	0527	0.5	15		
		1155	2.0	61			1103	1.9	58			0640	0.5	15			1228	2.0	61		
		1816	0.5	15			1712	0.7	21			1330	2.1	64			1928	0.6	18		
		2351	1.6	49			○	2254	1.5	46			2030	0.5	15						
10	W	0612	0.1	3	25	Th	0510	0.3	9	10	Sa	0207	1.4	43	25	Su	0102	1.4	43		
		1300	2.1	64			1205	1.9	58			0754	0.5	15			0658	0.5	15		
		1938	0.5	15			1840	0.7	21			1433	2.1	64			1343	2.2	67		
												2126	0.3	9			2039	0.4	12		
11	Th	0106	1.5	46	26	F	0007	1.4	43	11	Su	0315	1.5	46	26	M	0225	1.5	46		
		0715	0.2	6			0616	0.4	12			0854	0.4	12			0816	0.4	12		
		1400	2.2	67			1310	2.0	61			1526	2.2	67			1448	2.4	73		
		2046	0.3	9			1959	0.5	15			2209	0.2	6			2133	0.1	3		
12	F	0219	1.4	43	27	Sa	0127	1.4	43	12	M	0405	1.6	49	27	Tu	0328	1.8	55		
		0813	0.2	6			0727	0.3	9			0943	0.3	9			0918	0.2	6		
		1454	2.3	70			1412	2.2	67			1609	2.3	70			1543	2.6	79		
		2139	0.2	6			2102	0.3	9			2245	0.1	3			2219	-0.1	-3		
13	Sa	0322	1.5	46	28	Su	0239	1.5	46	13	Tu	0445	1.7	52	28	W	0420	2.0	61		
		0906	0.2	6			0831	0.2	6			1025	0.2	6			1010	0.0	0		
		1541	2.3	70			1508	2.4	73			1647	2.4	73			1631	2.7	82		
		2224	0.0	0			2153	0.1	3			2318	0.0	0			2301	-0.3	-9		
14	Su	0414	1.5	46	29	M	0340	1.6	49	14	W	0519	1.8	55	29	Th	0506	2.2	67		
		0952	0.2	6			0927	0.1	3			1102	0.2	6			1059	-0.1	-3		
		1623	2.4	73			1559	2.6	79			1722	2.4	73			1716	2.8	85		
		2303	-0.1	-3			2239	-0.2	-6			2348	-0.1	-3			2340	-0.4	-12		
15	M	0458	1.6	49	30	Tu	0433	1.8	55	15	Th	0552	1.9	58	30	F	0549	2.4	73		
		1034	0.1	3			1019	0.0	0			1136	0.1	3			1145	-0.2	-6		
		1702	2.4	73			1647	2.7	82			1754	2.5	76			1759	2.8	85		
		2338	-0.2	-6			2322	-0.3	-9			○					○				
							31	W	0522	1.9	58	31	Sa	0019	-0.4	-12	31	Su	0019	-0.4	-12
									1107	-0.1	-3								0632	2.6	79
									1732	2.8	85							1230	-0.2	-6	
																		1841	2.7	82	

Time meridian 150° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

EXTRA TIDES, 2019

**Punta Arenas,
Chile****January**

	h m	ft	cm
21	1904	1.1	37
22	1959	1.0	32
23	2049	0.9	31
24	2136	1.1	35

February

	h m	ft	cm
1	2339	6.0	196
3	1834	1.3	42
19	1900	1.3	44
20	1956	1.2	39

April

	h m	ft	cm
1	1535	2.9	95
	1703	2.7	90
	2335	5.6	185
16	2256	5.7	187

May

	h m	ft	cm
8	2201	2.9	94

June

	h m	ft	cm
6	2159	3.0	97
17	2318	3.7	122

July

	h m	ft	cm
4	2337	4.2	137
7	2311	2.3	75
14	2313	3.8	125
16	2307	3.4	110

August

	h m	ft	cm
4	2206	2.1	68
12	2248	3.4	111
13	2352	3.4	113
30	2330	3.8	124

September

	h m	ft	cm
10	2244	3.3	109
11	2347	3.7	121
26	2242	3.4	112

October

	h m	ft	cm
9	2236	3.6	119
18	2103	0.9	28

December

	h m	ft	cm
14	2004	0.9	30
15	1936	0.9	28
27	1945	0.5	18

**Cape
Krusenstern,
Alaska****February**

	h m	ft	cm
13	154	1	0

TABLE 2. — TIDAL DIFFERENCES AND OTHER CONSTANTS

EXPLANATION OF TABLE

The publication of full daily predictions is necessarily limited to a comparatively small number of stations. Tide predictions for many other places, however, can be obtained by applying certain differences to the predictions for the reference stations in Table 1. The following pages list the places called "subordinate stations" for which such predictions can be made, and the differences or ratios to be used. These differences or ratios are to be applied to the predictions for the proper reference station which is listed in Table 2 in boldface type above the differences for the subordinate station. The stations in this table are arranged in geographical order. The index to stations at the end of this volume will assist in locating a particular station.

Caution.—The time and height differences listed in Table 2 are average difference derived from comparisons of simultaneous tide observations at the subordinate location and its reference station. Because these figures are constant, they may not always provide for the daily variations of the actual tide, especially if the subordinate station is some distance from the reference station. Therefore, although the application of the time and height differences will generally provide reasonable accurate approximations, they cannot result in predictions as accurate as those listed for the reference stations which are based upon much larger periods of analyses and which do provide for daily variations.

Time differences.—To determine the time of high water or low water at any station listed in this table there is given in the columns headed "Differences, Time" the hours and minutes to be added to or subtracted from the time of high or low water at some reference station. A plus (+) sign indicates that the tide at the subordinate station is later than at the reference station and the difference should be added; a minus (–) sign indicates that it is earlier and should be subtracted.

To obtain the tide at a subordinate station on any date, apply the difference to the tide at the reference station for that same date. In some cases, however, to obtain an a.m. tide it may be necessary to use the preceding day's p.m. tide at the reference station (or to obtain a p.m. tide it may be necessary to use the following day's a.m. tide). For example, if a high water at a reference station occurs at 0200 on July 17, and the tide at the subordinate station occurs 5 hour earlier, the high water at the subordinate station will occur at 2100 on July 16. For the second case, if a high water occurs at a reference station at 2200 on July 2, and the tide at the subordinate station occurs 3 hours later, then high water will occur at 0100 on July 3 at the subordinate station. The necessary allowance for change in date when the international date line is crossed is included in the time difference. In such cases use the same date at the reference station as desired for the subordinate station as explained above.

The results obtained by the application of the time differences will be in the kind of time indicated by the time meridian shown above the name of the subordinate station. Differences in time meridians between a subordinate station and its reference station have been accounted for and no further adjustment by the reader is necessary. Summer or daylight-saving time is not used in the tide tables.

Height differences.—The height of the tide, referred to the datum of charts, is obtained by means of the height differences or ratios. A plus (+) sign indicates that the difference should be added to the height at the reference station, and a minus (–) sign indicates that it should be subtracted. All height differences, ranges, and levels in Table 2 are in feet but may be converted to centimeters by the use of Table 7.

Ratio.—For some stations, use of predicted height difference would give unsatisfactory predictions. In such cases they have been omitted and one or two ratios are given (*). Where two ratios are given, one in the "height of high water" column and one in the "height of low water" column, the high waters and low waters at the reference station should be multiplied by these respective ratios. Where only one is given, the omitted ratio is either unreliable or unknown.

For some subordinate stations there is given in parentheses a ratio as well as a correction in feet. In those instances, each predicted high and low water at the reference station should first be multiplied by the ratio and then the correction in feet is added to or subtracted from each product as indicated.

TABLE 2. — TIDAL DIFFERENCES AND OTHER CONSTANTS

As an example, at Treadwell Bay, British Columbia, the values in the time and height difference columns in Table 2 are given as +0 34, +0 46, and (*0.48 + 2.8) as referred to the reference station at Ketchikan, Alaska. If we assume that the tide predictions in column (1) below are those of Ketchikan on a particular day, application of the time and height correction in columns (2) and (3) would result in the tide predictions for Treadwell Bay in column (4).

(1)		(2)	(3)	(4)		
<i>Time h.m.</i>	<i>Height ft.</i>	<i>Time Corrections</i>	<i>Height Corrections</i>	<i>Time h.m.</i>	<i>Height ft.</i>	<i>Height centimeters</i>
0313	3.8	+0 ^h 46 ^m	x0.48 + 2.8	0359	4.6	140
0921	15.2	+0 ^h 34 ^m	x0.48 + 2.8	0955	10.1	308
1601	-0.4	+0 ^h 46 ^m	x0.48 + 2.8	1647	2.6	79
2230	14.1	+0 ^h 34 ^m	x0.48 + 2.8	2304	9.6	293

Range.—The mean range is the difference in height between mean high water (MHW) and mean low water (MLW). The spring range is the average semidiurnal range occurring semimonthly as a result of the Moon being new or full. It is larger than the mean range where the type of tide is either semidiurnal or mixed, and is of not practical significance where the type of tide is diurnal. Where the tide is chiefly of the diurnal type the table gives the diurnal range, which is the difference in height between mean higher high water and mean lower low water.

Datum.—The datum of the predictions obtained through the height differences or ratios is also the datum of the largest scale chart for the locality. To obtain the depth at the time of high or low water, the predicted height should be added to the depth on the chart unless such height is negative (–), when it should be subtracted. To find the height at times between high and low water see Table 3. On some charts the depths are given in meters or centimeters and in such cases the heights of the tide can be converted to other units by the use of Table 7. Chart datums for the portion of the world covered by these tables are approximately as follows: Mean lower low water for the Pacific coast of the United States, Alaska, and the Hawaiian Islands, mean low water springs for Central American and Mexico. For the rest of the area covered by these tables the datums generally used are approximately mean low water springs, Indian spring low water, or the lowest possible low water.

Mean Tide Level (Half-Tide Level). — The mean tide level is a plane midway between mean low water and mean high water. Tabular values are reckoned from chart depth.

Observations Supporting Predictions.— All tidal predictions made by the National Ocean Service are based upon observations taken at the location in question. For most reference stations these observations often are of a continuing nature. As such, they are used to quality control the predictions and to update the harmonic constants used in generating annual predictions. For subordinate stations, the age and duration of their observations vary from a few days of observation taken decades ago to the most recent survey data.

The precision with which the position, ranges and mean tide level are reported in Table 2 is an indication of the age and analytical history of the supporting observation. Stations whose position is reported to the nearest tenth minute of latitude and longitude and whose ranges and mean tide level are reported to the nearest hundredth foot are supported by the most recent observations, analyzed with regard to current chart datums and the 1983-2001 National Tidal Datum Epoch. Stations whose position is reported to the nearest tenth minute but whose ranges and mean tide level are reported to the nearest tenth foot are typically supported by observations taken in the 1960's and 1970's with analysis based upon previous National Tidal Datum Epochs. Finally, stations whose positions is reported to the nearest minute and whose ranges and mean tide level are reported to the nearest tenth foot indicated either older supporting observations or simply data not yet reviewed and entered into the Tables with full published precision. NOS is in the continuous process of updating the Tables with all available data.

TABLE 2. — TIDAL DIFFERENCES AND OTHER CONSTANTS

Old observations are not in and of themselves an indication of poor present predictions. Certain coastal areas do not undergo much human or natural modification while other coastal areas are subject to nearly constant modification by both agents. Local knowledge of conditions is still very important to the wise use of these astronomical predictions.

NOTE. — Dashes are entered in the place of data which are unknown, unreliable, or not applicable.

TABLE 2. – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Latitude	Longitude	Time		Height		Mean	Spring	
				High Water	Low Water	High Water	Low Water			
	ARGENTINA Tierra del Fuego <1>-cont. Time meridian, 60° W	South	West	h	m	h	m	ft	ft	ft
				on Cabo de Hornos, p.4						
1	Bahia Buen Suceso	54° 49'	65° 13'	+0 55	+0 54	+0.9	+0.3	4.8	5.8	5.0
3	Bahia Aguirre	54° 55'	65° 58'	+0 28	+0 28	-0.9	-0.4	3.7	4.5	3.7
5	Bahia Ushuaia, Beagle Channel	54° 49'	68° 13'	+0 08	+0 02	-0.9	-0.6	3.9	4.4	3.6
	CHILE Magellan Strait			on Puerto Montt, p.12						
7	Dungeness	52° 24'	68° 26'	-5 05	-5 05	*1.56	*0.94	23.8	29.8	16.8
9	Punta Catalina	52° 32'	68° 46'	-4 58	-4 58	*1.53	*1.04	22.8	28.5	16.8
11	Bahia Posesion	52° 16'	69° 10'	-4 31	-4 33	*1.83	*1.19	27.5	33.4	19.9
13	Banco Direccion	52° 24'	69° 26'	-4 21	-4 21	*1.90	*1.35	28.0	34.0	21.0
15	Bahia Santiago	52° 31'	69° 52'	-3 49	-3 45	-0.8	-1.6	14.0	17.8	10.6
17	Bahia Felipe	52° 57'	69° 47'	-3 48	-3 44	-2.9	-1.7	12.0	15.1	9.5
19	Segunda Angostura	52° 45'	70° 18'	-3 11	-3 03	+2.4	-0.4	16.0	20.3	12.8
				on Punta Arenas, p.8						
21	Puerto Zenteno	52° 47'	70° 46'	-1 45	-1 45	+0.7	0.0	4.5	5.8	4.4
23	Bahia Gente Grande	53° 03'	70° 16'	-0 04	-0 22	+2.3	-0.2	6.3	7.4	5.0
25	PUNTA ARENAS	53° 09'	70° 54'	<i>Daily predictions</i>				3.8	4.9	4.0
27	Puerto del Hambre	53° 38'	70° 55'	+0 15	+0 10	0.0	0.0	3.6	4.7	3.9
29	Puerto San Antonio	53° 54'	70° 54'	+0 15	+0 15	+0.5	+0.5	3.8	5.0	4.5
31	Bahia Snug	53° 51'	71° 25'	+1 25	+1 25	+1.4	+0.9	4.3	5.6	5.2
33	Bahia Wood	53° 49'	71° 38'	+1 20	+1 20	+1.4	+0.9	4.3	5.6	5.2
35	Puerto Gallant	53° 42'	72° 00'	+1 20	+1 20	+1.4	+0.9	4.3	5.6	5.2
				on Cabo de Hornos, p.4						
37	Bahia Borja	53° 32'	72° 30'	-2 00	-2 00	-1.8	-2.1	4.5	5.0	2.4
39	Bahia Swallow	53° 30'	72° 47'	-1 55	-1 55	-1.8	-2.1	4.5	5.0	2.4
41	Caleta Playa Parda	53° 19'	73° 01'	-2 05	-2 05	-2.8	-2.1	3.5	4.0	1.9
43	Puerto Angosto	53° 14'	73° 22'	-2 30	-2 30	-2.7	-2.1	3.6	4.0	2.0
45	Caleta Sylvia	52° 58'	73° 33'	-2 11	-2 12	-2.4	-2.0	3.8	4.3	2.2
47	Puerto Tamar	52° 56'	73° 46'	-1 30	-1 30	-0.8	-0.7	4.1	4.6	3.7
49	Islote Pollo, Canal Smyth	52° 23'	73° 41'	-2 06	-2 06	-1.7	-0.9	3.4	4.3	3.1
51	Punta Ancud, Canal Smyth	52° 43'	73° 49'	-1 36	-1 36	-1.7	-0.9	3.4	4.1	3.1
53	Bahia Tuesday	52° 51'	74° 27'	-2 23	-2 24	-0.9	-0.7	4.0	4.5	3.6
55	Cabo Pilar	52° 43'	74° 42'	-2 34	-2 34	-2.7	-2.1	3.6	4.0	2.0
	Pacific Coast									
57	Paso Goree, Bahia Nassau	55° 19'	67° 14'	+0 13	+0 13	+1.2	-0.6	6.0	6.7	4.7
59	Caleta Saint Martin, Isla Hermite	55° 51'	67° 34'	+0 08	-0 03	+0.6	+0.4	4.4	5.0	4.9
61	CABO de HORNOS	55° 31'	68° 05'	<i>Daily predictions</i>				4.2	4.8	4.4
63	Isla Diego Ramirez	56° 28'	68° 43'	+0 19	+0 19	-0.8	-1.1	4.5	5.0	3.4
65	Bahia India, Seno Ano Nuevo	55° 30'	69° 06'	+0 30	+0 30	+0.4	+0.1	4.5	5.0	4.6
67	Isla Noir	54° 29'	73° 00'	-0 53	-0 53	-2.0	-2.1	4.3	4.8	2.3
69	Islas Week	53° 12'	74° 21'	-1 17	-1 17	-2.0	-2.0	4.2	4.7	2.4
71	Evangelistas	52° 24'	75° 06'	-2 09	-2 09	-1.8	-1.5	3.9	4.4	2.7
73	Angostura Guia	50° 45'	74° 24'	-2 25	-2 25	--	--	--	7.9	--
75	Puerto Henry, Golfo Trinidad	50° 00'	75° 20'	-3 05	-3 05	-1.8	-2.1	4.5	5.0	2.4
77	Angostura Inglesa	48° 59'	74° 24'	-2 50	-2 50	-0.9	-2.0	5.3	6.0	2.9
79	Puerto Barbara, Canal Fallos	48° 02'	75° 24'	-2 48	-2 46	-0.9	-2.0	5.3	6.0	2.9
81	Puerto Barroso, Golfo de Penas	46° 49'	75° 17'	-3 50	-3 50	-0.9	-2.0	5.3	6.0	2.9
83	Puerto Slight, Golfo Tres Montes	46° 49'	75° 33'	-3 31	-3 31	*0.63	*0.57	2.8	3.8	2.7
85	Caleta Pascuas, Bahia San Andres	46° 36'	75° 31'	-2 15	-2 15	-2.0	-2.1	4.3	4.8	2.3
87	Puerto Refugio	45° 52'	74° 47'	-2 20	-2 20	-1.9	-2.0	4.3	4.9	2.4
89	Puerto Yates	45° 26'	74° 26'	-2 30	-2 30	+2.4	+0.3	6.3	8.0	5.7
91	Rada Vallendar	45° 19'	74° 32'	-2 50	-2 50	-1.1	-1.7	4.8	6.0	3.0
93	Puerto Italiano, Canal Darwin	45° 22'	74° 08'	-2 50	-2 50	-0.9	-1.7	5.0	6.2	3.1
95	Puerto Lagunas	45° 17'	73° 46'	-2 00	-2 00	-0.2	-1.6	5.6	7.1	3.5
97	Puerto Americano	45° 03'	73° 45'	-1 45	-1 45	-0.7	-1.7	5.2	6.5	3.2
99	Isla Guambin	44° 49'	75° 02'	-3 45	-3 45	+0.5	-1.7	6.4	7.7	3.8
101	Isla Guafu	43° 37'	74° 36'	-4 00	-4 00	+0.2	-1.5	5.9	7.5	3.8
	<i>Golfo de Corcovado</i>									
103	Puerto Low	43° 49'	74° 01'	-2 55	-2 55	+0.6	-1.6	6.4	7.9	3.9
105	Puerto Melinka	43° 54'	73° 45'	-3 20	-3 20	+0.9	-1.6	6.7	8.2	4.0
107	Bahia Tictoc	43° 37'	72° 56'	-3 00	-3 00	+1.9	-0.9	7.0	8.6	4.9
109	Puerto San Pedro	43° 20'	73° 42'	-2 20	-2 20	+1.7	-1.3	7.2	8.8	4.6
				on Puerto Montt, p.12						
111	Puerto Quellon	43° 07'	73° 38'	+0 15	+0 15	-4.0	-3.3	12.5	15.7	8.2
113	Puerto Queilen	42° 54'	73° 29'	+0 30	+0 30	-3.7	-3.5	13.0	16.4	8.2
115	Castro	42° 29'	73° 46'	-0 05	-0 05	-1.9	-3.3	14.6	18.4	9.2
	<i>Golfo de Ancud</i>									
117	Puerto Quemchi	42° 09'	73° 29'	+0 15	+0 15	+1.1	-1.5	15.8	19.7	11.6
119	Bahia Linao	41° 56'	73° 33'	+0 20	+0 20	-3.4	-3.2	13.0	16.9	8.5
121	Paso Lagartija	41° 50'	73° 19'	+0 20	+0 20	-3.9	-3.2	12.5	16.5	8.2
123	Paso Tautil	41° 44'	73° 04'	+0 05	+0 05	-0.8	-0.6	13.0	17.7	11.1
125	PUERTO MONTT, Seno Reloncavi	41° 29'	72° 58'	<i>Daily predictions</i>				13.2	18.0	11.8
127	Roca Remolinos, Canal Chacao	41° 48'	73° 32'	+0 25	+0 25	-3.9	-3.2	12.5	16.9	8.3

Endnotes can be found at the end of table 2.

TABLE 2. – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Latitude	Longitude	Time		Height		Mean	Spring	
				High Water	Low Water	High Water	Low Water			
	CHILE Pacific Coast-cont. Time meridian, 60° W	South	West	h m	h m	ft	ft	ft	ft	ft
				on Valparaiso, p.16						
129	Ancud	41° 52'	73° 50'	+2 00	+1 59	+1.4	-0.2	4.6	6.0	3.6
131	Caremapu, Canal Chacao	41° 45'	73° 42'	+3 12	+3 10	*1.93	*1.20	6.9	8.8	5.3
133	Maulin, Rio Maulin	41° 37'	73° 36'	+3 15	+3 15	+2.5	-0.6	6.1	7.9	3.9
135	Corral, Bahia Corral	39° 52'	73° 26'	+0 56	+0 55	+1.4	+1.2	3.2	4.0	4.3
137	Valdivia, Rio Valdivia	39° 49'	73° 15'	+1 55	+1 55	-1.0	-1.0	3.0	3.9	2.0
139	Queule	39° 23'	73° 14'	+0 45	+0 45	-0.2	-1.0	3.8	4.9	2.4
141	Rio Imperial entrance	38° 48'	73° 23'	+0 30	+0 30	-0.2	-1.0	3.8	4.9	2.4
143	Caleta La Hacienda, Isla Mocha	38° 20'	73° 56'	+0 25	+0 25	+0.1	-0.9	4.0	5.2	2.6
145	Puerto Lebu	37° 37'	73° 41'	+0 40	+0 40	+0.1	-0.7	3.8	4.9	2.7
147	Puerto Yana	37° 22'	73° 40'	+0 35	+0 35	-0.2	-1.0	3.8	4.9	2.4
149	Isla Santa Maria	36° 59'	73° 32'	+0 30	+0 30	+1.0	-0.8	4.8	6.2	3.1
151	Bahia Lota, Bahia Arauco	37° 06'	73° 10'	+0 20	+0 20	-0.2	-1.0	3.8	4.9	2.4
153	Talcahuano, Bahia Concepcion	36° 42'	73° 06'	+0 24	+0 23	+0.1	-0.1	3.2	4.3	3.0
155	Bahia Collumo	36° 32'	72° 58'	+0 30	+0 30	-0.2	-1.0	3.8	4.9	2.4
157	Buchupureo	36° 04'	72° 47'	+0 30	+0 30	*0.42	*0.13	1.7	2.1	1.0
159	Curanipe	35° 49'	72° 36'	+0 50	+0 50	-1.0	-1.0	3.0	3.9	2.0
161	Constitucion, Rio Maule entrance	35° 19'	72° 24'	+0 25	+0 25	-0.2	-1.0	3.8	4.9	2.4
163	Llico	34° 45'	72° 07'	+0 15	+0 15	-0.2	-1.0	3.8	4.9	2.4
165	Rada Pichilemu	34° 23'	71° 59'	+0 10	+0 10	-0.1	-1.0	3.9	5.0	2.4
167	Rada Topocalma	34° 07'	72° 00'	+0 05	+0 05	+0.4	-0.4	3.8	4.9	3.0
169	San Antonio	33° 35'	71° 38'	-0 05	-0 05	-0.1	-1.0	3.9	5.0	2.4
171	Algarrobo	33° 21'	71° 41'	+0 00	+0 00	0.0	0.0	3.0	3.9	3.0
173	Rada Quintay	33° 11'	71° 42'	-0 05	-0 05	-0.1	-1.0	3.9	5.0	2.4
175	VALPARAISO	33° 02'	71° 38'	<i>Daily predictions</i>				3.0	3.9	3.0
177	Quintero	32° 46'	71° 32'	-0 05	-0 05	+1.5	+0.7	3.8	4.9	4.1
179	Zapallar	32° 32'	71° 29'	-0 25	-0 25	-0.2	-1.0	3.8	4.9	2.4
181	Papudo	32° 30'	71° 28'	-0 25	-0 25	-0.2	-1.0	3.8	4.9	2.4
183	Pichidangui	32° 09'	71° 33'	-0 30	-0 30	-0.2	-1.0	3.8	4.9	2.4
185	Los Vilos	31° 54'	71° 32'	-0 20	-0 20	+1.0	+0.4	3.6	4.6	3.7
187	Caleta Oscuro	31° 25'	71° 37'	-0 25	-0 25	-0.3	-0.9	3.6	4.6	2.4
189	Bahia Tongoy	30° 15'	71° 31'	-0 40	-0 40	-0.2	-1.0	3.8	4.9	2.4
191	Coquimbo	29° 56'	71° 20'	-0 21	-0 23	-0.2	-0.1	2.9	3.8	2.9
193	Caleta Totoraillo	29° 29'	71° 20'	-0 50	-0 50	-0.2	-1.0	3.8	4.9	2.4
				on Antofagasta, p.20						
195	Huasco	28° 28'	71° 14'	+0 19	+0 18	-0.3	-0.4	2.7	3.5	2.3
197	Carrizal Bajo	28° 04'	71° 11'	+0 00	-0 01	*0.77	*0.54	2.3	2.9	1.9
199	Caleta Barranquillas	27° 31'	70° 56'	+0 00	+0 00	*0.90	*0.92	2.3	2.9	2.4
201	Caldera	27° 04'	70° 50'	+0 17	+0 16	+0.5	+0.3	2.8	3.6	3.0
203	Puerto Flamenco	26° 34'	70° 44'	+0 10	+0 09	+0.1	0.0	2.7	3.5	2.7
205	Chanaral de las Animas	26° 21'	70° 38'	+0 22	+0 23	+0.1	+0.1	2.6	3.4	2.7
207	Taltal	25° 25'	70° 29'	+0 15	+0 15	0.0	0.0	2.6	3.4	2.6
209	Paposo	25° 02'	70° 28'	+0 15	+0 15	0.0	0.0	2.6	3.4	2.6
211	Blanco Encalada	24° 22'	70° 32'	+0 10	+0 10	+0.1	0.0	2.7	3.5	2.7
213	ANTOFAGASTA	23° 39'	70° 25'	<i>Daily predictions</i>				2.6	3.4	2.6
215	Mejillones del Sur	23° 06'	70° 28'	+0 00	+0 00	+0.3	-0.7	3.6	4.7	2.4
217	Cobija	22° 34'	70° 18'	-0 05	-0 05	-0.4	-0.8	3.0	3.9	2.0
219	Tocopilla	22° 06'	70° 14'	-0 05	-0 05	+0.1	-0.3	3.0	3.9	2.5
221	Caleta Lobos	21° 05'	70° 11'	-0 25	-0 25	+0.4	+0.1	2.9	3.8	2.9
223	Iquique	20° 12'	70° 10'	-0 22	-0 15	+0.3	+0.5	2.4	3.1	3.0
225	Caleta Junin	19° 40'	70° 12'	-0 31	-0 13	-0.3	-0.1	2.4	3.1	2.4
227	Pisagua	19° 35'	70° 14'	-0 20	-0 20	+0.7	+0.3	3.0	3.9	3.1
229	Arica	18° 28'	70° 20'	-0 18	-0 19	*0.97	*1.08	2.4	3.1	2.6
	PERU Time meridian, 75° W			on Matarani, p.24						
231	Ilo	17° 38'	71° 21'	+0 02	-0 02	+0.2	0.0	2.3	2.9	1.5
233	MATARANI	17° 00'	72° 07'	<i>Daily predictions</i>				2.1	2.7	1.4
235	Puerto San Juan	15° 21'	75° 09'	-0 34	-0 37	-0.3	0.0	1.8	2.4	1.2
				on Callao, p.28						
237	Pisco	13° 43'	76° 14'	+0 36	+0 29	-0.4	-0.5	1.9	2.5	1.3
239	CALLAO	12° 03'	77° 09'	<i>Daily predictions</i>				1.8	2.4	1.7
241	Huacho	11° 07'	77° 37'	-0 24	-0 31	-0.3	-0.5	2.0	2.6	1.3
243	Bahia Huarmey	10° 06'	78° 10'	-0 46	-0 55	0.0	-0.4	2.2	2.9	1.5
245	Chimbote	9° 05'	78° 38'	-0 58	-1 05	+0.7	+0.2	2.3	3.1	2.2
247	Puerto Chicama	7° 42'	79° 27'	-1 21	-1 33	+0.5	-0.4	2.7	3.5	1.7
249	Punta Eten	6° 57'	79° 52'	-1 29	-1 41	+0.8	-0.4	3.0	3.9	1.9
				on Talara, p.32						
251	Bayovar	5° 50'	81° 03'	+0 21	+0 17	-0.6	-0.1	3.5	4.5	2.2
253	Paíta	5° 05'	81° 07'	+0 12	+0 08	-0.3	-0.1	3.8	4.9	2.4
255	TALARA	4° 35'	81° 17'	<i>Daily predictions</i>				4.0	5.2	2.6
257	Caleta Lobitos	4° 27'	81° 17'	+0 02	-0 02	+0.1	0.0	4.1	5.3	2.6
259	Zorritos	3° 40'	80° 40'	+0 35	+0 51	+0.8	+0.1	4.7	6.0	3.0

Endnotes can be found at the end of table 2.

TABLE 2. – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Latitude	Longitude	Time		Height		Mean	Spring	
				High Water	Low Water	High Water	Low Water			
	ECUADOR Time meridian, 75° W	South	West	h m	h m	ft	ft	ft	ft	ft
				on La Libertad, p.40						
261	Puerto Bolivar	3° 16'	80° 01'	+1 01	+0 43	*1.34	*1.25	7.3	9.4	4.7
263	Puna	2° 44'	79° 55'	+1 37	+1 49	*1.76	*1.75	9.5	12.3	6.2
265	GUAYAQUIL	2° 12'	79° 52'	<i>Daily predictions, p.36</i>				10.8	12.1	6.0
267	LA LIBERTAD, Bahia de Santa Elena	2° 13'	80° 55'	<i>Daily predictions</i>				5.4	7.0	3.5
269	Puerto de Cayo	1° 21'	80° 45'	-0 11	-0 09	*1.11	*1.11	6.0	7.7	3.9
271	Bahia Manta	0° 57'	80° 44'	-0 16	-0 11	*1.15	*1.00	6.3	8.0	4.0
273	Rio Chone	0° 35'	80° 26'	+0 08	+0 11	*1.24	*1.13	6.8	8.6	4.3
275	Cabo Pasado	0° 21'	80° 31'	+0 04	+0 05	*1.19	*1.00	6.6	8.2	4.1
		North	West							
277	Rio Santiago	1° 13'	79° 07'	+0 07	+0 10	*1.45	*1.25	8.0	10.0	5.0
279	San Lorenzo	1° 15'	78° 50'	+0 17	+0 09	*1.60	*1.25	8.9	11.0	5.5
	Galapagos Islands	South	West	on San Cristobal, p.44						
281	SAN CRISTOBAL	0° 54'	89° 37'	<i>Daily predictions</i>				4.8	6.1	3.1
283	Isla Santa Maria	1° 14'	90° 27'	-0 02	-0 07	*0.83	*0.83	4.0	5.0	2.5
285	Bahia Isabela, Isla Isabela	0° 36'	91° 05'	-0 06	-0 06	*0.80	*0.83	3.8	4.8	2.4
287	Caleta Tagus, Isla Isabela	0° 15'	91° 22'	-0 11	-0 12	*0.85	*0.83	4.1	5.2	2.5
289	Bahia de Perry, Isla Isabela	0° 34'	90° 58'	-0 06	-0 16	*0.96	*1.00	4.6	5.8	2.9
291	Caleta Aeolian, Isla Baltra	0° 26'	90° 17'	-0 02	-0 00	*1.02	*1.00	4.9	6.2	3.0
		North	West							
293	Bahia de Darwin, Isla Genovesa	0° 19'	89° 57'	-0 07	-0 05	*1.06	*1.00	5.1	6.4	3.1
	COLOMBIA <2>			on Buenaventura, p.48						
295	Tumaco	1° 50'	78° 44'	-0 19	-0 04	*0.79	*0.79	8.2	10.2	5.1
297	BUENAVENTURA	3° 54'	77° 05'	<i>Daily predictions</i>				10.4	12.9	6.5
299	Los Negritos	3° 54'	77° 24'	-0 10	-0 01	-0.4	0.0	10.0	12.5	6.3
301	Rio San Juan	4° 17'	77° 30'	-0 09	+0 00	-0.4	0.0	10.0	12.5	6.3
303	Bahia Cuevita	5° 28'	77° 31'	-0 09	+0 00	-0.3	+0.1	10.0	12.8	6.4
305	Ensenada Utria	6° 00'	77° 21'	-0 10	-0 01	-0.3	+0.1	10.0	12.8	6.4
307	Bahia Solano	6° 14'	77° 24'	-0 28	-0 09	*0.78	*0.78	8.3	10.3	5.1
309	Bahia Cupica	6° 41'	77° 30'	-0 19	-0 10	-0.1	+0.2	10.1	13.0	6.5
311	Bahia Octavia	6° 52'	77° 40'	-0 23	-0 09	-0.1	+0.2	10.1	13.0	6.5
	PANAMA <2>			on Balboa, p.52						
313	Bahia Pina	7° 34'	78° 11'	+0 00	-0 11	-2.4	-0.3	10.5	13.7	6.8
315	Punta Garachine	8° 05'	78° 25'	+0 00	-0 08	-2.0	-0.3	10.9	14.2	7.0
317	Isla del Rey	8° 18'	78° 54'	-0 03	-0 04	-2.2	-0.3	10.7	13.9	6.9
319	Rio Chepo	8° 59'	79° 07'	-0 01	-0 02	-0.1	0.0	12.5	16.2	8.1
321	BALBOA	8° 57'	79° 34'	<i>Daily predictions</i>				12.6	16.4	8.2
323	Naos Island	8° 55'	79° 32'	+0 01	+0 00	-0.5	-0.3	12.4	15.6	7.8
325	Taboga	8° 48'	79° 33'	-0 05	-0 06	-0.1	0.0	12.5	16.2	8.1
327	Bahia de Chame	8° 41'	79° 45'	-0 02	-0 03	-0.1	0.0	12.5	16.2	8.1
329	Punta Mala	7° 28'	80° 00'	+0 03	-0 12	*0.64	*0.63	8.1	10.5	5.2
331	Isla Cebaco	7° 31'	81° 13'	-0 06	-0 05	*0.65	*0.63	8.3	10.8	5.3
333	Bahia Honda	7° 46'	81° 31'	-0 04	-0 03	*0.65	*0.63	8.3	10.8	5.3
335	Isla Parida	8° 08'	82° 19'	+0 00	-0 09	*0.63	*0.47	8.2	10.0	5.0
				on Puntarenas, p.56						
337	Puerto Armuelles	8° 16'	82° 52'	+0 55	+0 59	+0.3	+0.2	7.6	9.6	4.8
	COSTA RICA <2> Time meridian, 90° W									
339	Golfito, Golfo Dulce	8° 39'	83° 11'	-0 13	+0 02	+1.3	+1.1	7.7	9.5	5.8
341	Bahia Uvita	9° 09'	83° 45'	-0 25	-0 20	0.0	0.0	7.5	9.2	4.5
343	Quepos	9° 24'	84° 10'	-0 13	-0 04	-0.7	0.0	6.8	8.4	4.2
345	Puerto Herradura	9° 39'	84° 40'	-0 06	-0 01	0.0	0.0	7.5	9.2	4.5
347	PUNTARENAS	9° 58'	84° 50'	<i>Daily predictions</i>				7.5	9.2	4.6
349	Bahia de Culebra	10° 38'	85° 40'	-0 02	-0 02	0.0	0.0	7.5	9.0	4.5
351	Golfo Elena	10° 56'	85° 49'	-0 02	-0 02	-0.1	-0.1	7.5	8.8	4.4
353	Cocos Island	5° 33'	86° 59'	-0 25	-0 25	-0.5	0.0	7.0	8.5	4.3
	NICARAGUA <2>									
355	Puerto Somoza	12° 12'	86° 46'	+0 11	+0 22	-1.7	-0.1	5.9	7.3	3.6
				on La Union, p.60						
357	San Juan del Sur	11° 15'	85° 53'	-0 27	-0 05	*0.77	*0.77	6.2	7.6	3.8
359	Corinto (Isla Cardon)	12° 29'	87° 10'	-0 18	+0 00	-2.1	-0.1	6.1	7.5	3.8
	HONDURAS <2>									
361	Amapala	13° 18'	87° 39'	-0 07	-0 06	-0.1	0.0	8.0	9.8	4.9
	EL SALVADOR									
363	LA UNION (Cutuco)	13° 20'	87° 49'	<i>Daily predictions</i>				8.1	10.0	5.0
365	La Libertad	13° 29'	89° 19'	-0 26	+0 00	*0.67	*0.67	5.4	6.7	3.3
367	Acajutla	13° 35'	89° 51'	-0 25	-0 03	*0.64	*0.64	5.2	6.4	3.2

Endnotes can be found at the end of table 2.

TABLE 2. – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Latitude	Longitude	Time		Height		Mean	Spring	
				High Water	Low Water	High Water	Low Water			
	GUATEMALA <2> Time meridian, 90° W	North	West	h m	h m	ft	ft	ft	ft	ft
				on La Union, p.60						
369	Puerto de San Jose	13° 55'	90° 50'	-0 27	-0 03	*0.61	*0.61	5.0	6.1	3.0
371	Champerico	14° 18'	91° 56'	-0 27	-0 03	*0.61	*0.61	5.0	6.1	3.0
	MEXICO <2>			on Salina Cruz, p.64				MeanDiurnal		
373	Puerto Angel	15° 39'	96° 30'	-0 04	-0 04	-0.7	0.0	2.9	3.4	1.6
375	SALINA CRUZ	16° 10'	95° 12'	<i>Daily predictions</i>				3.6	4.1	1.9
377	Acapulco	16° 50'	99° 55'	-0 25	-0 24	-1.9	+0.1	1.6	2.1	1.0
				on San Diego, p.72						
379	Manzanillo	19° 03'	104° 20'	+0 37	+0 45	-2.9	-0.5	1.7	2.3	1.3
381	Puerto Vallarta	20° 37'	105° 15'	+0 22	+0 31	*0.62	*0.56	2.6	3.5	1.8
	Time meridian, 105° W									
383	Isla Socorro	18° 44'	111° 01'	-0 38	-0 29	-1.9	-0.5	2.7	3.5	1.8
385	Mazatlan	23° 12'	106° 25'	-0 38	-0 29	*0.70	*0.56	3.0	3.8	2.0
	Gulf of California									
387	Topolobampo	25° 36'	109° 03'	+0 49	+0 57	*0.68	*0.78	2.7	3.7	2.0
389	Puerto Penasco	31° 18'	113° 33'	+4 59	+5 08	*2.58	*1.33	11.7	14.1	7.0
				on Guaymas, p.68						
391	GUAYMAS #	27° 56'	110° 54'	<i>Daily predictions</i>				--	2.6	1.3
393	Tepoca Bay	30° 16'	112° 52'	---	---	--	--	--	13.0	6.5
395	Colorado River entrance <3>	31° 46'	114° 44'	---	---	--	--	--	23.0	--
397	La Paz #	24° 10'	110° 21'	+0 56	-0 47	+0.8	0.0	--	3.4	1.7
	Baja California			on San Diego, p.72						
399	San Carlos	24° 47'	112° 07'	-0 09	+0 00	0.0	-0.2	4.3	5.6	2.9
	Time meridian, 120° W									
401	Isla Guadalupe	28° 53'	116° 18'	-0 30	-0 21	*0.78	*0.78	3.2	4.6	2.3
403	Ensenada, Todos Santos Bay	31° 51'	116° 38'	-0 19	-0 11	*0.92	*0.89	3.8	5.3	2.7
	CALIFORNIA									
405	Imperial Beach	32° 34.7'	117° 08.1'	+0 00	-0 03	*0.93	*0.96	3.74	5.37	2.75
407	Point Loma	32° 40'	117° 14'	-0 09	-0 02	*0.92	*0.92	3.7	5.3	2.8
409	Ballast Point, San Diego Bay	32° 41.2'	117° 14.0'	-0 03	-0 04	*0.96	*0.91	3.91	5.49	2.81
411	San Diego, Quarantine Station	32° 42'	117° 14'	-0 04	+0 02	*0.96	*0.96	3.9	5.6	2.9
413	SAN DIEGO (Broadway)	32° 42.8'	117° 10.4'	<i>Daily predictions</i>				4.05	5.73	2.96
415	National City, San Diego Bay	32° 40'	117° 07'	+0 04	+0 10	+0.2	0.0	4.3	5.9	3.0
417	Sweetwater Channel, San Diego Bay	32° 38.9'	117° 06.7'	+0 00	-0 01	*1.02	*0.93	4.20	5.80	2.97
419	Quivira Basin, Mission Bay	32° 46'	117° 14'	+0 05	+0 04	*0.95	*0.95	3.8	5.4	2.8
421	Crown Point, Mission Bay	32° 46.8'	117° 14.1'	-0 03	+0 16	*0.96	*0.96	3.9	5.5	2.8
423	La Jolla (Scripps Institution Wharf)	32° 52.0'	117° 15.5'	+0 00	-0 04	*0.92	*0.97	3.70	5.33	2.75
425	San Clemente	33° 25'	117° 37'	-0 15	-0 11	*0.92	*0.92	3.7	5.3	2.7
	San Pedro Channel			on Los Angeles, p.76						
427	Newport Bay Entrance, Corona del Mar	33° 36.2'	117° 53.0'	-0 03	-0 04	*0.98	*0.98	3.76	5.41	2.77
429	Balboa Pier, Newport Beach	33° 35.9'	117° 54.0'	-0 09	+0 00	*0.96	*0.96	3.65	5.33	2.74
431	Santa Ana River entrance (inside)	33° 38'	117° 57'	+0 23	+1 47	*0.54	*0.20	2.4	3.3	1.4
433	Los Patos (highway bridge)	33° 43'	118° 03'	+1 00	+1 12	*0.83	*0.60	3.4	4.7	2.3
435	Long Beach, Terminal Island	33° 45.1'	118° 13.7'	-0 01	+0 00	*1.01	*1.01	3.9	5.6	2.9
437	Long Beach, Inner Harbor	33° 46.3'	118° 12.6'	+0 04	+0 05	*0.96	*0.96	3.7	5.3	2.7
439	Cabrillo Beach	33° 42.4'	118° 16.4'	+0 00	+0 00	*1.00	*1.00	3.81	5.48	2.82
441	LOS ANGELES (Outer Harbor)	33° 43.2'	118° 16.3'	<i>Daily predictions</i>				3.81	5.49	2.85
443	Los Angeles Harbor, Mormon Island	33° 45'	118° 16'	+0 04	+0 02	-0.1	0.0	3.8	5.4	2.8
445	King Harbor, Santa Monica Bay	33° 50.8'	118° 23.9'	+0 08	+0 07	*0.96	*1.00	3.64	5.32	2.76
447	El Segundo, Santa Monica Bay	33° 55'	118° 26'	+0 13	+0 13	*0.96	*0.96	3.7	5.3	2.7
449	Santa Monica, Municipal Pier	34° 00.5'	118° 30.0'	+0 03	+0 03	*0.99	*0.99	3.76	5.43	2.81
	Santa Barbara Channel									
451	Mugu Lagoon (ocean pier)	34° 06'	119° 06'	+0 03	+0 11	*0.96	*0.96	3.7	5.3	2.7
453	Port Hueneme	34° 09'	119° 12'	+0 10	+0 13	-0.1	0.0	3.7	5.4	2.8
455	Ventura	34° 16'	119° 17'	+0 09	+0 16	-0.1	0.0	3.7	5.4	2.8
457	Rincon Island, Mussel Shoals	34° 20.9'	119° 26.6'	+0 20	+0 18	*0.99	*1.05	3.72	5.46	2.83
459	Santa Barbara	34° 24.5'	119° 41.1'	+0 23	+0 21	*0.98	*1.04	3.66	5.39	2.79
461	Gaviota State Park	34° 28.1'	120° 13.7'	+0 27	+0 25	*0.96	*1.04	3.58	5.29	2.76
463	Oil Platform Harvet	34° 28.1'	120° 40.4'	+0 37	+0 35	*0.95	*1.06	3.51	5.24	2.75
	Channel Islands									
465	Wilson Cove, San Clemente Island	33° 00.3'	118° 33.4'	-0 01	-0 03	*0.95	*0.95	3.60	5.24	2.67
467	Catalina Harbor, Santa Catalina Island	33° 26'	118° 30'	+0 11	+0 17	*0.94	*0.94	3.6	5.2	2.7
469	Avalon, Santa Catalina Island	33° 21'	118° 19'	+0 06	+0 09	*0.96	*0.96	3.7	5.3	2.7
471	Santa Barbara Island	33° 29'	119° 02'	-0 02	+0 04	*0.92	*0.92	3.5	5.1	2.6
473	San Nicolas Island	33° 16'	119° 30'	+0 10	+0 21	*0.88	*0.88	3.3	4.9	2.5

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TABLE 2. – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Latitude	Longitude	Time		Height		Mean	Diurnal	
				High Water	Low Water	High Water	Low Water			
	CALIFORNIA Channel Islands-cont. Time meridian, 120° W	North	West	h	m	h	m	ft	ft	ft
				on Los Angeles, p.76						
475	Prisoners Harbor, Santa Cruz Island	34° 01.2'	119° 41.0'	+0 19	+0 18	*0.94	*1.01	3.54	5.25	2.72
477	Bechers Bay, Santa Rosa Island	34° 00.5'	120° 02.8'	+0 27	+0 27	*0.93	*1.03	3.45	5.14	2.69
479	Cuyler Harbor, San Miguel Island	34° 03'	120° 21'	+0 33	+0 34	*0.94	*0.94	3.5	5.2	2.7
	Outer Coast			on Port San Luis, p.80						
481	Point Arguello	34° 35'	120° 39'	-0 03	-0 08	*0.96	*0.96	3.5	5.2	2.7
483	PORT SAN LUIS	35° 10.1'	120° 45.1'	<i>Daily predictions</i>				3.58	5.33	2.83
485	San Simeon	35° 38'	121° 11'	+0 08	+0 07	*0.99	*1.00	3.6	5.3	2.8
487	Mansfield Cone	35° 57.0'	121° 28.9'	+0 16	+0 16	*0.98	*0.99	3.50	5.24	2.78
				on Monterey, p.84						
489	Carmel Cove, Carmel Bay	36° 31'	121° 56'	-0 03	-0 04	*0.97	*0.99	3.5	5.2	2.8
	<i>Monterey Bay</i>			<i>Daily predictions</i>						
491	MONTEREY, MONTEREY BAY	36° 36.3'	121° 53.3'	+0 01	+0 01	*0.98	*0.95	3.54	5.34	2.86
493	General Fish Company Pier	36° 48.1'	121° 47.2'	-0 01	-0 01	*0.95	*0.90	3.56	5.31	2.84
495	Moss Landing, Ocean Pier	36° 48'	121° 47'	+0 00	+0 02	*0.97	*0.95	3.5	5.2	2.8
497	Elkhorn Yacht Club	36° 48.8'	121° 47.2'	+0 00	+0 02	*0.97	*0.95	3.52	5.27	2.82
499	Elkhorn Slough, Highway 1 Bridge	36° 48.6'	121° 47.1'	+0 03	-0 02	*0.95	*0.90	3.5	5.2	2.8
501	Pacific Maniculture Dock	36° 49'	121° 46'	+0 15	+0 07	*1.00	*0.98	3.6	5.4	2.9
503	Elkhorn, Elkhorn Slough	36° 49.1'	121° 44.8'	+0 23	+0 13	*1.01	*0.94	3.63	5.37	2.85
505	Kirby Park, Elkhorn Slough	36° 50'	121° 45'	+0 26	+0 08	*1.02	*0.96	3.7	5.5	2.9
507	Elkhorn Slough railroad bridge	36° 51.4'	121° 45.3'	+0 33	+0 08	*1.02	*0.96	3.74	5.52	2.94
509	Santa Cruz, Monterey Bay	36° 58'	122° 01'	-0 06	-0 11	*0.97	*0.99	3.5	5.3	2.8
				on San Francisco, p.88						
511	Ano Nuevo Island	37° 06'	122° 20'	-1 24	-1 04	-0.7	-0.1	3.5	5.2	2.7
513	Pillar Point Harbor, Half Moon Bay	37° 30.1'	122° 28.9'	-1 04	-0 43	*0.95	*0.97	3.85	5.60	3.03
515	Southeast Farallon Island	37° 42'	123° 00'	-0 39	-0 19	-0.3	0.0	3.8	5.6	3.0
517	San Francisco Bar	37° 46'	122° 38'	-0 35	-0 31	-0.2	0.0	3.9	5.6	3.0
519	Ocean Beach, outer coast	37° 46'	122° 31'	-0 49	-0 35	+0.1	0.0	4.2	6.0	3.2
	San Francisco Bay									
521	Point Bonita, Bonita Cove	37° 49'	122° 32'	-0 17	-0 10	+0.3	0.0	4.3	6.0	3.3
523	SAN FRANCISCO (Golden Gate)	37° 48.4'	122° 27.9'	<i>Daily predictions</i>				4.10	5.84	3.18
525	Alcatraz Island	37° 50'	122° 25'	+0 14	+0 18	0.0	0.0	4.1	5.8	3.1
527	San Francisco, North Point, Pier 41	37° 49'	122° 25'	+0 13	+0 11	+0.2	0.0	4.3	6.1	3.3
529	Rincon Point, Pier 22 1/2	37° 47'	122° 23'	+0 23	+0 25	+0.4	0.0	4.6	6.3	3.4
531	Yerba Buena Island	37° 48.6'	122° 21.6'	+0 25	+0 33	*1.06	*0.99	4.43	6.16	3.34
533	Oakland, Matson Wharf	37° 49'	122° 20'	+0 28	+0 36	+0.3	0.0	4.4	6.2	3.3
535	Oakland Middle Harbor	37° 48.3'	122° 20.3'	+0 21	+0 31	*1.07	*0.96	4.52	6.22	3.36
537	Oakland Pier	37° 48'	122° 20'	+0 33	+0 48	+0.2	0.0	4.3	6.0	3.2
539	Oakland Inner Harbor	37° 47.7'	122° 16.9'	+0 24	+0 31	*1.12	*0.99	4.71	6.45	3.49
541	Alameda Naval Air Station	37° 47.6'	122° 18.9'	+0 24	+0 33	*1.11	*1.00	4.65	6.40	3.46
543	Alameda	37° 46.3'	122° 17.9'	+0 29	+0 39	*1.11	*0.99	4.84	6.60	3.55
545	Oakland Harbor, Grove Street	37° 48'	122° 17'	+0 33	+0 42	+0.4	0.0	4.5	6.2	3.3
547	Oakland Harbor, Park Street Bridge	37° 46.3'	122° 14.1'	+0 24	+0 32	*1.13	*0.98	4.77	6.51	3.50
549	San Leandro Channel, San Leandro Bay	37° 44.9'	122° 14.1'	+0 42	+0 52	*1.16	*0.98	4.98	6.69	3.60
551	Oakland Airport	37° 43.9'	122° 12.5'	+0 40	+0 45	*1.15	*0.96	4.95	6.65	3.56
553	Potrero Point	37° 46'	122° 23'	+0 33	+0 46	+0.5	0.0	4.6	6.3	3.4
555	Hunters Point	37° 43.8'	122° 21.4'	+0 28	+0 43	*1.18	*1.00	5.03	6.80	3.66
557	San Leandro Marina	37° 41.7'	122° 11.5'	+0 54	+1 23	*1.28	*1.01	5.55	7.31	3.92
559	Roberts Landing, 1.3 miles west of	37° 40'	122° 12'	+0 52	+1 28	+1.4	+0.1	5.4	7.2	3.9
561	South San Francisco	37° 40'	122° 23'	+0 38	+0 56	+1.2	0.0	5.3	7.0	3.8
563	Oyster Point Marina	37° 39.9'	122° 22.6'	+0 41	+1 00	*1.23	*1.00	5.30	7.06	3.78
565	Point San Bruno	37° 39'	122° 23'	+0 38	+1 10	+1.1	+0.1	5.1	6.9	3.7
567	Seaplane Harbor	37° 38'	122° 23'	+0 42	+1 03	+1.4	0.0	5.4	7.2	3.9
569	Coyote Point Marina	37° 35.5'	122° 18.8'	+0 42	+1 08	*1.29	*1.01	5.61	7.37	3.94
571	San Mateo Bridge (west end)	37° 34.8'	122° 15.2'	+0 44	+1 11	*1.36	*1.04	5.90	7.72	4.11
573	San Mateo Bridge (east end)	37° 36'	122° 11'	+0 48	+1 19	+1.8	0.0	5.9	7.7	4.1
575	Alameda Creek	37° 35.7'	122° 08.7'	+0 57	+2 25	*1.05	*0.27	5.20	6.12	2.91
577	Coyote Hills Slough entrance	37° 33.8'	122° 07.7'	+0 52	+2 21	*1.17	*0.45	5.63	6.74	3.33
579	Bay Slough, west end	37° 33.1'	122° 14.6'	+0 48	+1 28	*1.35	*1.00	5.91	7.66	4.09
581	Bay Slough, east end	37° 32.7'	122° 13.3'	+0 49	+1 52	*1.27	*0.77	5.79	7.28	3.77
583	Redwood Creek Marker 8	37° 32'	122° 12'	+0 53	+1 28	*1.41	*1.05	6.2	8.0	4.3
585	Redwood Creek entrance (inside)	37° 31'	122° 12'	+1 06	+1 38	+2.1	+0.1	6.1	7.9	4.2
587	South Bay Wreck	37° 33'	122° 10'	+1 02	+1 37	+2.2	+0.1	6.2	8.0	4.3
589	Corkscrew Slough	37° 30'	122° 13'	+1 03	+1 42	+2.2	+0.1	6.2	8.0	4.3
591	Redwood City, Wharf 5	37° 30.4'	122° 12.6'	+0 48	+1 15	*1.45	*1.05	6.39	8.22	4.41
593	West Point Slough	37° 30.3'	122° 11.5'	+0 56	+1 30	*1.44	*1.04	6.33	8.14	4.34
595	Smith Slough	37° 30'	122° 14'	+1 15	+1 58	+2.1	0.0	6.2	7.9	4.2
597	Newark Slough	37° 31'	122° 05'	+1 11	+1 58	+2.6	+0.1	6.6	8.4	4.2
599	Dumbarton Highway Bridge	37° 30.4'	122° 06.9'	+0 47	+1 14	*1.53	*1.10	6.74	8.61	4.63
601	Ravenswood Slough <17>	37° 29.8'	122° 10.3'	+0 58	---	---	---	---	---	---
603	Granite Rock, Redwood Creek	37° 29.7'	122° 12.8'	+0 55	+1 31	*1.43	*1.04	6.28	8.08	4.32
605	Palo Alto Marker 8 <18>	37° 28.1'	122° 05.8'	+1 01	---	---	---	---	---	---
607	Palo Alto Yacht Harbor	37° 27.5'	122° 06.3'	+0 59	+2 14	*1.34	*0.68	6.22	7.62	3.88
609	Mowry Slough	37° 30'	122° 02'	+1 12	+2 07	+2.6	0.0	6.7	8.4	4.4
611	Calaveras Point, west of	37° 28'	122° 04'	+1 05	+1 49	+2.8	+0.1	6.8	8.5	4.6
613	Mud Slough railroad bridge <18>	37° 28.1'	121° 59.2'	+1 12	---	---	---	---	---	---
615	Guadalupe Slough	37° 27.2'	122° 02.0'	+1 06	---	---	---	---	---	---

Endnotes can be found at the end of table 2.

TABLE 2. – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Latitude	Longitude	Time		Height		Mean	Diurnal	
				High Water	Low Water	High Water	Low Water			
	CALIFORNIA San Francisco Bay-cont. Time meridian, 120° W	North	West	h	m	h	m	ft	ft	ft
				on San Francisco, p.88						
617	Upper Guadalupe Slough	37° 26.1'	122° 00.4'	+1 14	+2 13	*1.66	*1.13	7.40	9.29	4.98
619	Coyote Creek, Alviso Slough	37° 27.8'	122° 01.4'	+0 59	+1 49	*1.61	*1.09	7.18	9.00	4.83
621	Gold Street Bridge, Alviso Slough	37° 25.4'	121° 58.5'	+1 03	+2 21	*1.67	*0.96	7.62	9.28	4.90
623	Coyote Creek, Tributary no.1	37° 27'	121° 58'	+1 21	+2 45	+2.6	-0.3	7.0	8.4	4.3
625	Coyote Creek, Tributary no.2 <18>	37° 27.6'	121° 57.2'	+1 18	---	---	---	---	---	---
627	Coyote Creek, Tributary no.3 <18>	37° 27.7'	121° 57.1'	+1 15	---	---	---	---	---	---
629	Sausalito	37° 50.8'	122° 28.6'	+0 10	+0 14	*0.97	*1.00	3.95	5.69	3.12
631	Sausalito, Corps of Engineers Dock	37° 51.9'	122° 29.6'	+0 10	+0 21	*0.98	*1.00	4.01	5.73	3.13
633	Angel Island (west side)	37° 52'	122° 27'	+0 13	+0 21	-0.2	0.0	3.9	5.6	3.0
635	Angel Island, East Garrison	37° 51.8'	122° 25.1'	+0 16	+0 20	*1.02	*1.04	4.16	5.92	3.25
637	Point Chauncey	37° 53.5'	122° 26.6'	+0 28	+0 32	*0.98	*0.96	4.05	5.72	3.10
639	Berkeley	37° 51.9'	122° 18.4'	+0 21	+0 26	*1.05	*1.00	4.34	6.11	3.31
641	Point Isabel	37° 54'	122° 19'	+0 23	+0 33	+0.1	0.0	4.2	5.9	3.2
643	Richmond Inner Harbor	37° 54.6'	122° 21.5'	+0 16	+0 30	*1.04	*0.98	4.30	6.04	3.27
645	Chevron Oil Company Pier, Richmond	37° 55.7'	122° 24.0'	+0 24	+0 38	*1.04	*0.98	4.32	6.05	3.25
647	Point Orient	37° 57.5'	122° 25.5'	+0 50	+0 52	*1.03	*0.96	4.28	5.98	3.24
649	Corte Madera Creek	37° 56.6'	122° 30.8'	+0 36	+0 51	*0.99	*0.95	4.12	5.80	3.14
651	Point San Quentin	37° 56.7'	122° 28.4'	+0 42	+0 50	*0.99	*0.93	4.11	5.78	3.12
	San Pablo Bay									
653	Point San Pedro	37° 59.6'	122° 26.8'	+1 02	+1 07	*1.01	*0.92	4.22	5.87	3.16
655	Pinole Point	38° 00.9'	122° 21.7'	+1 16	+1 25	*1.03	*0.89	4.34	5.98	3.20
657	Hercules, Refugio Landing	38° 01.4'	122° 17.5'	+1 15	+1 39	*1.05	*0.85	4.52	6.08	3.23
659	Petaluma River entrance	38° 06.7'	122° 29.9'	+1 23	+2 08	*1.06	*0.86	4.55	6.13	3.28
661	Lakeville, Petaluma River	38° 12'	122° 34'	+1 59	+2 50	*1.11	*0.81	4.9	6.3	3.4
663	Upper drawbridge, Petaluma River	38° 13.7'	122° 36.8'	+2 11	+2 59	*1.15	*0.82	5.10	6.59	3.47
665	Gallinas, Gallinas Creek	38° 00.9'	122° 30.2'	+1 18	+1 25	*1.02	*0.89	4.30	5.92	3.16
667	Hog Island, San Antonio Creek	38° 09.4'	122° 33.0'	+1 47	+2 36	*1.07	*0.79	4.68	6.08	3.23
669	Sonoma Creek Entrance	38° 09.4'	122° 24.4'	+1 22	+2 46	*0.93	*0.59	4.17	5.43	2.75
671	Wingo, Sonoma Creek	38° 13'	122° 26'	+2 12	+3 11	+0.1	-0.3	4.5	5.9	3.1
	Carquinez Strait									
673	Mare Island	38° 04.2'	122° 15.0'	+1 34	+1 57	*0.99	*0.84	4.24	5.76	3.07
675	Vallejo, Mare Island Strait	38° 06.7'	122° 16.4'	+1 47	+2 12	*1.02	*0.84	4.41	5.92	3.15
677	Edgerley Island, Napa River	38° 11.6'	122° 18.8'	+2 02	+2 29	*1.06	*0.76	4.69	6.13	3.20
679	Brazos Drawbridge, Napa River	38° 12.5'	122° 18.2'	+2 02	+2 29	*1.14	*0.86	4.98	6.50	3.46
681	Napa, Napa River	38° 17.9'	122° 16.8'	+2 05	+2 37	*1.22	*0.90	5.35	6.86	3.71
683	Selby	38° 03'	122° 15'	+1 29	+2 04	+0.6	0.0	4.7	6.3	3.4
	on Port Chicago, p.92									
685	Crockett	38° 03.5'	122° 13.4'	-0 58	-1 05	*1.22	*1.31	4.40	5.94	3.17
687	Benicia	38° 02.6'	122° 07.8'	-0 24	-0 33	*1.09	*1.18	3.93	5.33	2.93
689	Martinez - Amoroco Pier	38° 02.0'	122° 07.5'	-0 26	-0 30	*1.09	*1.18	3.93	5.31	2.83
	Suisun Bay									
691	Suisun Slough entrance	38° 07.3'	122° 04.4'	+0 13	+0 26	*0.97	*0.93	3.53	4.72	2.45
693	Pierce Harbor, Goodyear Slough	38° 07.6'	122° 06.0'	+0 27	+0 41	*1.00	*0.96	3.72	4.92	2.57
695	Joice Island, Suisun Slough	38° 10.8'	122° 02.7'	+0 21	+0 41	*1.07	*1.00	3.97	5.21	2.73
697	Suisun City, Suisun Slough	38° 14.2'	122° 01.8'	+0 36	+1 01	*1.11	*1.00	4.17	5.40	2.82
699	PORT CHICAGO, SUISUN BAY	38° 03.4'	122° 02.3'			<i>Daily predictors</i>		3.67	4.91	2.57
701	Montezuma Slough Bridge	38° 11.2'	121° 58.8'	+0 37	+0 46	*1.01	*0.95	3.71	4.91	2.56
703	Bradmoor Island, Nurse Slough	38° 11.0'	121° 55.4'	+0 59	+1 06	*1.07	*0.99	3.92	5.17	2.69
705	Meins Landing, Montezuma Slough	38° 08.2'	121° 54.4'	+0 57	+1 11	*1.01	*0.93	3.70	4.90	2.54
707	Montezuma Slough	38° 04.6'	121° 53.1'	+1 16	+1 27	*0.84	*0.82	3.06	4.15	2.14
709	Point Buckler	38° 06.0'	122° 01.0'	+0 13	+0 22	*1.12	*1.08	4.10	5.50	2.80
711	Mallard Island Ferry Wharf	38° 02.6'	121° 55.1'	+0 54	+0 57	*0.83	*0.81	3.01	4.10	2.10
713	Pittsburg, New York Slough	38° 02.1'	121° 52.8'	+0 59	+1 05	*0.83	*0.84	3.02	4.14	2.13
	San Joaquin River									
715	Antioch	38° 01.2'	121° 48.9'	+1 12	+1 26	*0.77	*0.78	2.82	3.88	2.03
717	Threemile Slough entrance	38° 05.0'	121° 41.0'	+2 27	+2 52	*0.71	*0.68	2.60	3.60	1.80
719	Prisoners Point	38° 03.7'	121° 33.3'	+3 25	+3 29	*0.73	*0.69	2.71	3.66	1.86
721	Wards Island, Little Connection Slough	38° 03.0'	121° 29.8'	+3 45	+3 51	*0.68	*0.61	2.50	3.37	1.70
723	BlacksloUGH Landing	37° 59.7'	121° 25.3'	+4 00	+4 15	*0.75	*0.62	2.82	3.73	1.87
725	Stockton	37° 57.5'	121° 17.4'	+4 06	+4 33	*0.81	*0.66	3.06	3.98	2.02
	Mokelumne River									
727	Georgiana Slough entrance	38° 07.6'	121° 34.7'	+3 29	+3 41	*0.67	*0.59	2.46	3.34	1.67
729	Terminus, South Fork	38° 06.6'	121° 29.9'	+3 53	+4 11	*0.70	*0.59	2.62	3.50	1.75
731	New Hope Bridge <4>	38° 14.0'	121° 29.0'	+4 22	+4 56	*0.73	*0.68	2.70	3.60	1.80
733	Bishop Cut, Disappointment Slough	38° 02.6'	121° 25.1'	+4 12	+4 12	*0.79	*0.66	2.94	3.86	1.96
735	False River	38° 03.3'	121° 39.3'	+2 45	+2 45	*0.66	*0.64	2.40	3.31	1.67
737	Dutch Slough	38° 00.7'	121° 38.3'	+2 33	+2 46	*0.68	*0.72	2.46	3.45	1.76
739	Irish Landing, Sand Mound Slough	38° 02.0'	121° 35.0'	+3 29	+3 34	*0.73	*0.68	2.70	3.60	1.80
741	Orwood, Old River	37° 56.0'	121° 34.0'	+4 32	+4 33	*0.76	*0.68	2.80	3.70	1.90
743	Holt, Whiskey Slough	37° 56.0'	121° 26.0'	+4 18	+4 39	*0.80	*0.68	3.00	3.90	2.00
745	Borden Highway Bridge, Old River	37° 53.4'	121° 34.2'	+4 40	+4 35	*0.64	*0.61	2.33	3.18	1.61

Endnotes can be found at the end of table 2.

TABLE 2. – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level			
		Latitude	Longitude	Time		Height		Mean	Diurnal				
				High Water	Low Water	High Water	Low Water						
	CALIFORNIA San Joaquin River-cont. Time meridian, 120° W	North	West	h	m	h	m	ft	ft	ft			
				on Port Chicago, p.92									
747	Borden Highway Bridge, Middle River	37° 53.5'	121° 29.3'	+4	50	+4	54	*0.67	*0.62	2.51	3.37	1.72	
749	Borden Highway Bridge, San Joaquin River	37° 56.2'	121° 20.0'	+4	28	+4	48	*0.78	*0.64	2.95	3.85	1.95	
751	Grant Line Canal (drawbridge)	37° 49.0'	121° 27.0'	+6	14	+6	20	*0.76	*0.68	2.80	3.70	1.90	
	Sacramento River												
753	Collinsville	38° 04.4'	121° 50.9'	+1	11	+1	20	*0.80	*0.80	2.89	3.96	2.03	
755	Threemile Slough	38° 06.4'	121° 42.0'	+1	49	+1	58	*0.82	*0.78	3.01	4.05	2.08	
757	Rio Vista	38° 08.8'	121° 41.4'	+1	51	+2	02	*0.88	*0.78	3.25	4.31	2.20	
759	Steamboat Slough, Snug Harbor Marina	38° 12.0'	121° 36.7'	+2	24	+2	48	*0.80	*0.65	3.02	3.96	1.99	
761	Snodgrass Slough	38° 16.5'	121° 29.2'	+5	00	+5	36	*0.49	*0.39	1.83	2.48	1.21	
763	Clarksburg <4>	38° 25.0'	121° 31.0'	+3	58	+5	02	*0.60	*0.41	2.30	2.90	1.40	
765	Sacramento <4>	38° 35.0'	121° 30.0'	+5	07	+6	32	*0.60	*0.41	2.30	2.90	1.40	
	Outer Coast												
				on San Francisco, p.88									
767	Bolinas Lagoon	37° 54.4'	122° 40.7'	+0	01	+0	34	*0.74	*0.71	3.05	4.48	2.34	
769	Point Reyes	37° 59.8'	122° 58.5'	-0	51	-0	31	*0.98	*1.04	3.91	5.77	3.14	
	Tomaes Bay												
771	Tomaes Bay entrance	38° 14'	122° 59'	-0	12	+0	20	*0.87	*0.91	3.5	5.2	2.7	
773	Sand Point, Tomaes Bay	38° 13.9'	122° 58.0'	-0	04	+0	17	*0.85	*0.86	3.47	5.16	2.71	
775	Blakes Landing, Tomaes Bay	38° 11.4'	122° 55.0'	+0	32	+1	15	*0.86	*0.79	3.63	5.22	2.70	
777	Marshall, Tomaes Bay	38° 10'	122° 54'	+0	38	+1	16	-0.6	-0.1	3.6	5.4	2.8	
779	Reynolds, Tomaes Bay	38° 08.8'	122° 53.0'	+0	26	+1	59	*0.89	*0.83	3.73	5.41	2.82	
781	Inverness, Tomaes Bay	38° 06.8'	122° 52.1'	+0	29	+1	08	*0.94	*0.91	3.89	5.66	2.98	
783	Bodega Harbor entrance	38° 18'	123° 03'	-0	38	-0	16	-0.2	+0.1	3.8	5.7	3.1	
785	Fort Ross	38° 31'	123° 15'	-0	51	-0	30	*0.96	*0.96	3.9	5.7	3.0	
				on Arena Cove, p.96									
787	Green Cove	38° 42.2'	123° 26.9'	+0	01	-0	01	*0.88	*0.81	3.63	5.23	2.62	
789	ARENA COVE	38° 54.8'	123° 42.5'	<i>Daily predictions</i>							4.05	5.88	3.19
791	Point Arena	38° 57'	123° 44'	+0	03	+0	01	*0.98	*0.95	4.0	5.8	3.1	
793	Mendocino, Mendocino Bay	39° 18'	123° 48'	+0	07	+0	01	*0.98	*0.95	4.0	5.8	3.1	
795	Noyo Harbor	39° 25.5'	123° 48.3'	+0	03	+0	03	*1.04	*1.04	4.22	6.11	3.33	
797	Westport	39° 38'	123° 47'	+0	14	+0	00	*0.98	*0.95	4.0	5.8	3.1	
799	Shelter Cove	40° 01.5'	124° 03.5'	+0	12	+0	11	*1.05	*1.04	4.28	6.14	3.35	
				on Humboldt Bay, p.100									
801	Cockrobin Island Bridge, Eel River	40° 38.2'	124° 16.9'	-0	01	+0	25	*0.90	*0.90	4.40	6.22	3.33	
	Humboldt Bay												
803	HUMBOLDT BAY (North Spit)	40° 46.0'	124° 13.0'	<i>Daily predictions</i>							4.89	6.86	3.70
805	Fields Landing	40° 43.4'	124° 13.3'	-0	03	+0	14	*1.00	*0.99	4.92	6.85	3.69	
807	Hookton Slough	40° 41.2'	124° 13.3'	+0	06	+0	15	*1.01	*0.98	4.98	6.94	3.72	
809	Elk River Railroad Bridge <18>	40° 45.4'	124° 11.6'	+0	19	+1	32	*0.71	*0.31	4.01	5.10	2.39	
811	Bucksport	40° 46.7'	124° 11.8'	+0	17	+0	16	*1.01	*1.00	4.98	6.97	3.75	
813	Eureka	40° 48.4'	124° 10.0'	+0	26	+0	13	*1.06	*1.03	5.33	7.32	3.94	
815	Eureka Slough Bridge	40° 48.4'	124° 08.5'	+0	33	+0	19	*1.08	*1.02	5.37	7.40	3.97	
817	Samoa	40° 49.6'	124° 10.8'	+0	22	+0	11	*1.07	*1.04	5.31	7.34	3.96	
819	Arcata Wharf	40° 51'	124° 07'	+0	48	+0	54	+0.1	+0.1	5.0	7.0	3.8	
821	Mad River Slough, Arcata Bay	40° 51.9'	124° 08.9'	+0	43	+0	35	*1.12	*1.07	5.56	7.63	4.13	
				on Crescent City, p.104									
823	Trinidad Harbor	41° 03.4'	124° 08.8'	-0	02	-0	03	*0.97	*0.98	4.83	6.73	3.63	
825	Requa Dock, Klamath River	41° 32.7'	124° 04.2'	+0	36	+1	50	*0.57	*0.38	3.08	4.16	2.01	
827	CRESCENT CITY	41° 44.7'	124° 11.0'	<i>Daily predictions</i>							4.99	6.87	3.74
829	Pyramid Point, Smith River	41° 56.7'	124° 12.0'	+0	12	+0	11	*0.93	*0.90	4.68	6.41	3.46	
	OREGON												
831	Brookings, Chetco Cove	42° 03'	124° 17'	+0	01	+0	04	*1.00	*1.00	5.1	6.9	3.7	
833	Gold Beach, Rogue River	42° 25.3'	124° 25.1'	+0	15	+0	16	*1.04	*1.09	5.13	7.16	3.93	
835	Wedderburn, Rogue River	42° 26'	124° 25'	+0	09	+0	16	*0.95	*0.92	4.9	6.7	3.6	
837	Port Orford	42° 44.4'	124° 29.8'	+0	13	+0	11	*1.06	*1.09	5.21	7.28	3.97	
				on Charleston, p.108									
839	Bandon, Coquille River	43° 07.2'	124° 24.8'	-0	05	+0	02	*0.92	*0.94	5.18	7.10	3.78	
841	Rink Creek Entrance, Coquille River	43° 09.5'	124° 10.9'	+2	12	+3	00	*0.65	*0.41	3.98	5.22	2.51	
	Coos Bay												
843	CHARLESTON	43° 20.7'	124° 19.3'	<i>Daily predictions</i>							5.69	7.62	4.11
845	Sitka Dock	43° 22.6'	124° 17.8'	+0	07	+0	08	*1.01	*1.01	5.78	7.72	4.17	
847	Empire	43° 24'	124° 17'	+0	37	+0	50	*0.86	*0.88	4.9	6.7	3.5	
849	Coos Bay	43° 23'	124° 13'	+1	26	+1	28	*0.96	*0.88	5.6	7.3	3.9	
	Umpqua River												
851	Entrance, Half Moon Bay	43° 40.5'	124° 11.5'	+0	11	+0	15	*0.93	*0.95	5.29	7.14	3.85	
853	Gardiner	43° 44'	124° 07'	+0	56	+1	09	*0.88	*0.80	5.1	6.7	3.5	
855	Reedsport	43° 42.3'	124° 05.7'	+1	00	+1	08	*0.97	*0.88	5.65	7.42	3.94	

Endnotes can be found at the end of table 2.

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No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Latitude	Longitude	Time		Height		Mean	Diurnal	
				High Water	Low Water	High Water	Low Water			
	OREGON Time meridian, 120° W	North	West	h	m	h	m	ft	ft	ft
				on Charleston, p.108						
857	<i>Siuslaw River</i>									
	Entrance	44° 01'	124° 08'	-0 06	+0 03	*0.96	*0.96	5.5	7.3	4.0
859	Florence, USCG pier	44° 00.1'	124° 07.4'	+0 10	+0 15	*0.97	*0.98	5.53	7.41	4.01
861	Florence	43° 58'	124° 06'	+0 44	+0 58	*0.86	*0.80	5.0	6.6	3.5
863	Cushman	43° 59.1'	124° 02.7'	+0 49	+0 59	*0.97	*0.85	5.67	7.41	3.91
865	Waldport, Alsea Bay	44° 26.1'	124° 03.5'	+0 34	+0 45	*0.99	*0.98	5.62	7.59	4.07
867	Drift Creek, Alsea River	44° 24.8'	123° 59.4'	+0 44	+1 51	*0.83	*0.53	5.10	6.45	3.21
				on Crescent City, p.104						
	<i>Yaquina Bay and River</i>									
869	Newport, Yaquina USCG Station	44° 37.6'	124° 03.3'	+0 39	+0 35	*1.22	*1.11	6.22	8.21	4.49
871	Southbeach	44° 37.5'	124° 02.6'	+0 41	+0 34	*1.23	*1.10	6.27	8.34	4.51
873	Weiser Point	44° 35.6'	124° 00.4'	+0 46	+0 40	*1.25	*1.07	6.46	8.47	4.57
875	Toledo	44° 37.0'	123° 56.2'	+1 02	+1 17	*1.31	*1.02	6.87	8.83	4.71
877	Depoe Bay	44° 48.6'	124° 03.5'	+0 27	+0 27	*1.21	*1.10	6.16	8.24	4.45
879	Taft, Siletz Bay	44° 56'	124° 01'	+0 48	+1 13	*0.94	*0.75	5.0	6.6	3.4
881	Kernville, Siletz River	44° 54'	124° 00'	+1 24	+1 53	*0.86	*0.67	4.6	6.1	3.1
883	Chinook Bend, Siletz River	44° 52.8'	123° 57.8'	+1 45	+2 29	*0.76	*0.50	4.21	5.52	2.73
885	Cascade Head, Salmon River	45° 02.8'	124° 00.4'	+0 35	+1 02	*1.03	*0.77	5.47	7.13	3.71
887	Nestucca Bay entrance	45° 10'	123° 58'	+0 55	+1 12	*1.10	*0.92	5.8	7.6	4.0
889	Netarts, Netarts Bay	45° 25.8'	123° 56.7'	+1 17	+1 38	*0.98	*0.85	5.02	6.86	3.58
	<i>Tillamook Bay</i>									
891	North Jetty	45° 34.2'	123° 57.9'	+0 47	+0 36	*1.18	*1.07	6.07	8.03	4.35
893	Barview	45° 34'	123° 57'	+0 42	+0 56	*1.08	*0.92	5.7	7.5	3.9
895	Garibaldi	45° 33.3'	123° 55.1'	+1 12	+0 59	*1.22	*1.09	6.24	8.31	4.48
897	Miami Cove	45° 33'	123° 54'	+1 15	+1 26	*1.06	*0.92	5.6	7.4	3.9
899	Bay City	45° 31'	123° 54'	+1 33	+2 00	*1.02	*0.83	5.4	7.1	3.7
901	Dick Point	45° 28.9'	123° 54.1'	+1 29	+2 19	*1.00	*0.57	5.54	6.95	3.48
903	Tillamook, Hoquarten Slough	45° 28'	123° 51'	+1 52	+3 15	*0.94	*0.58	5.2	6.6	3.3
	<i>Nehalem River</i>									
905	Brighton	45° 40'	123° 56'	+0 51	+0 54	*1.13	*1.00	5.9	7.8	4.1
907	Nehalem	45° 43'	123° 53'	+1 17	+1 56	*1.03	*0.75	5.6	7.2	3.7
909	North Fork	45° 44.0'	123° 52.6'	+1 15	+1 41	*1.26	*0.93	6.65	8.52	4.49
	OREGON and WASHINGTON Columbia River <5>									
				on Astoria, p.112						
911	Columbia River entrance (N. Jetty)	46° 16'	124° 04'	-0 44	-1 00	-1.0	+0.1	5.6	7.5	4.0
913	Cape Disappointment	46° 16.8'	124° 02.8'	-0 31	-0 48	*0.89	*1.03	5.87	7.76	4.15
915	Fort Canby, Jetty 'A', Wash.	46° 16.1'	124° 02.2'	-0 41	-1 05	*0.97	*1.22	6.31	8.48	4.58
917	Ilwaco, Baker Bay, Wash.	46° 18'	124° 02'	-0 13	+0 01	-0.8	-0.1	6.0	7.6	4.0
919	Chinook, Baker Bay, Wash.	46° 16'	123° 57'	-0 30	-0 52	*0.95	*1.12	6.1	8.1	4.3
921	Hungry Harbor, Wash.	46° 16'	123° 51'	+0 04	-0 09	-0.2	+0.1	6.4	8.2	4.4
923	Point Adams, Oreg.	46° 12'	123° 57'	-0 25	-0 38	-0.2	+0.1	6.4	8.3	4.4
925	Hammond, Oreg.	46° 12.1'	123° 56.7'	-0 38	-0 30	*0.96	*1.08	6.38	8.32	4.45
927	Warrenton, Skipanon River, Oreg.	46° 10'	123° 55'	-0 13	-0 19	-0.1	+0.1	6.5	8.3	4.4
929	Astoria, Youngs Bay, Oreg.	46° 10'	123° 50'	-0 13	-0 14	+0.1	+0.1	6.7	8.6	4.5
931	Cathcart Landing, Youngs River, Oreg.	46° 07.5'	123° 48.3'	-0 08	-0 06	*1.03	*0.98	7.00	8.83	4.64
933	Astoria (Port Docks), Oreg.	46° 11'	123° 52'	-0 08	-0 03	-0.5	0.0	6.2	8.0	4.2
935	ASTORIA (Tongue Point), Oreg.	46° 12.5'	123° 46.0'					6.77	8.61	4.55
937	Knappa, Knappa Slough	46° 11'	123° 35'	+0 29	+0 58	*0.97	*0.86	6.5	8.2	4.2
939	Settlers Point, Oreg.	46° 10'	123° 41'	+0 22	+0 53	-0.5	-0.1	6.3	8.0	4.1
941	Harrington Point, Wash.	46° 16'	123° 39'	+0 21	+0 52	-0.8	-0.2	6.1	7.7	3.9
943	Skamokawa, Steamboat Slough, Wash.	46° 16.0'	123° 27.1'	+0 45	+1 22	--	--	6.12	7.56	3.86
945	Cathlamet, Wash.	46° 12'	123° 23'	+1 15	+2 15	--	--	5.2	6.4	--
947	Wauna, Oreg.	46° 09.6'	123° 24.3'	+1 03	+1 45	--	--	5.77	7.06	3.57
949	Cape Horn, Wash.	46° 09.1'	123° 17.4'	+1 20	+2 18	--	--	5.19	6.36	3.18
951	Eagle Cliff, Wash.	46° 10'	123° 14'	+1 43	+3 01	--	--	4.5	5.5	--
953	Stella, Wash.	46° 11'	123° 07'	+2 01	+3 30	--	--	4.0	4.9	--
955	Barlow Point, Wash.	46° 09.1'	123° 02.3'	+1 49	+3 15	--	--	4.13	5.05	2.48
957	Longview, Wash.	46° 06.4'	122° 57.3'	+1 59	+3 31	--	--	3.78	4.61	2.24
959	TEMCO Kalama Terminal, Wash.	45° 59.2'	122° 50.20'	+2 33	+4 18	--	--	2.87	3.62	1.73
961	Saint Helens, Oreg.	45° 51.9'	122° 47.8'	+3 19	+4 49	--	--	2.60	3.33	1.54
963	Knapp Landing, Wash.	45° 44.5'	122° 45.3'	+4 13	+5 39	--	--	2.35	3.14	1.44
965	Rocky Point, Multnomah Channel, Oreg.	45° 41.8'	122° 50.1'	+4 19	+6 02	--	--	2.52	3.32	1.49
967	Kelley Point, Oreg.	45° 39'	122° 46'	+5 26	+7 16	--	--	1.4	2.0	--
969	St. Johns, Willamette River, Oreg.	45° 35'	122° 46'	+5 08	+7 26	--	--	1.7	2.2	--
971	Portland, Willamette River, Oreg.	45° 30.6'	122° 40.4'	+4 21	+6 33	--	--	2.85	3.62	1.68
973	Vancouver, Wash.	45° 37.9'	122° 41.8'	+4 32	+6 14	--	--	2.57	3.33	1.51
975	Ellsworth, Wash.	45° 36'	122° 33'	+6 11	+8 03	--	--	1.0	1.4	--
977	Washougal, Wash.	45° 34.7'	122° 22.9'	+6 04	+7 42	--	--	1.19	1.85	0.88
979	Beacon rock State Park, Wash.	45° 37.2'	122° 01.2'	+7 29	+9 25	--	--	1.02	1.74	0.83
981	Warrendale, Oreg.	45° 37'	122° 00'	---	---	--	--	0.4	0.6	--
	WASHINGTON									
				on Toke Point, p.116						
	<i>Willapa Bay</i>									
983	Nahcotta	46° 30.1'	124° 01.8'	+0 29	+0 28	*1.13	*1.01	7.89	10.03	5.33
985	Tarlatt Slough	46° 22.2'	124° 00.3'	+0 45	+1 14	*1.05	*1.05	7.9	9.4	4.6
987	Greenhead Slough	46° 22.3'	123° 57.0'	+0 59	+1 08	*1.22	*0.86	8.76	10.70	5.56
989	Paradise Point, Long Island	46° 28.1'	123° 56.7'	+0 43	+0 41	*1.15	*1.04	8.0	10.2	5.4
991	Naselle River, swing bridge	46° 25.8'	123° 54.2'	+0 42	+0 37	*1.22	*1.08	8.48	10.72	5.72
993	Naselle River, 4 miles above swing bridge	46° 23.3'	123° 50.4'	+1 02	+1 02	*1.22	*0.93	8.68	10.75	5.62
995	Bay Center, Palix River	46° 37.4'	123° 56.7'	+0 09	+0 22	*1.04	*1.03	7.07	9.21	4.94

Endnotes can be found at the end of table 2.

TABLE 2. – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Latitude	Longitude	Time		Height		Mean	Diurnal	
				High Water	Low Water	High Water	Low Water			
	WASHINGTON Time meridian, 120° W	North	West	h m	h m	ft	ft	ft	ft	ft
	<i>Willapa Bay-cont.</i>			on Toke Point, p.116						
997	Palix River, south fork	46° 35.2'	123° 54.6'	+0 25	+0 31	*1.04	*0.96	7.17	9.28	4.90
999	TOKE POINT	46° 42.5'	123° 57.9'	<i>Daily predictions</i>				6.81	8.92	4.78
1001	Mailboat Slough, Willapa River	46° 41.3'	123° 49.0'	+0 18	+0 11	*1.07	*1.02	7.36	9.52	5.08
1003	South Bend, Willapa River	46° 39.8'	123° 47.9'	+0 14	+0 15	*1.11	*1.05	7.66	9.82	5.27
1005	Raymond, Willapa River	46° 41.0'	123° 45.3'	+0 27	+0 17	*1.13	*1.04	7.85	10.01	5.30
	<i>Grays Harbor</i>			<i>Daily predictions, p.120</i>						
1007	Westport, Point Chehalis	46° 54.5'	124° 06.6'	-0 18	-0 33	*1.03	*1.02	7.02	9.15	4.91
1009	Point Brown	46° 56.9'	124° 07.7'	-0 09	-0 24	*1.06	*1.04	7.22	9.38	5.04
1011	Bay City, South Bay	46° 51.7'	124° 04.0'	-0 01	-0 26	*1.10	*1.13	7.41	9.69	5.25
1013	Markham	46° 54.4'	123° 59.9'	+0 05	-0 15	*1.06	*1.02	7.3	9.4	5.1
1015	ABERDEEN	46° 58.1'	123° 51.2'	<i>Daily predictions, p.120</i>				7.94	10.11	5.44
1017	Cosmopolis, Chehalis River	46° 58.0'	123° 46.7'	+0 26	+0 15	*1.23	*1.12	8.53	10.73	5.80
1019	Montesano, Chehalis River	46° 58.1'	123° 36.0'	+1 34	+1 45	*0.94	*0.94	6.78	8.23	4.27
1021	Point Grenville	47° 18.2'	124° 16.2'	-0 37	-0 44	*0.92	*0.90	6.30	8.19	4.38
1023	Destruction Island	47° 40'	124° 29'	-0 37	-0 43	*0.98	*1.02	6.6	8.7	4.7
1025	James Island	47° 54.4'	124° 38.8'	-0 39	-0 32	*0.92	*0.96	6.22	8.21	4.42
1027	La Push, Quillayute River	47° 54.8'	124° 38.2'	-0 37	-0 35	*0.94	*1.00	6.37	8.44	4.55
1029	Tskawahyah Island, Cape Alava	48° 10.2'	124° 44.2'	-0 30	-0 32	*0.97	*1.07	6.51	8.71	4.71
1031	Makah Bay	48° 17.8'	124° 40.3'	-0 25	-0 28	*0.99	*1.10	6.56	8.83	4.79
	Strait of Juan de Fuca <6>			on Neah Bay, p.124						
1033	Tatoosh Island, Cape Flattery	48° 23.5'	124° 44.2'	-0 08	-0 10	*1.01	*0.96	5.63	8.00	4.35
1035	NEAH BAY	48° 22.1'	124° 37.0'	<i>Daily predictions</i>				5.52	7.96	4.35
1037	Seki, Clallam Bay	48° 15.8'	124° 17.8'	+0 23	+0 17	*0.93	*1.12	4.88	7.50	4.22
1039	Jim Creek	48° 11.2'	124° 03.8'	+0 48	+0 41	*0.92	*0.99	4.92	7.18	4.05
1041	Twin Rivers	48° 10.5'	123° 57.0'	+0 47	+0 59	*0.89	*1.20	4.41	7.01	4.12
				on Port Townsend, p.128						
1043	Crescent Bay	48° 10'	123° 44'	-2 41	-2 02	*0.80	*0.80	4.1	6.7	4.1
1045	Port Angeles	48° 07.5'	123° 26.4'	-1 45	-1 14	*0.83	*0.77	4.60	7.06	4.22
1047	Ediz Hook, Port Angeles	48° 08.4'	123° 24.8'	-1 37	-1 13	*0.81	*0.90	4.08	7.01	4.28
1049	Dungeness	48° 10'	123° 07'	-0 54	-0 38	*0.90	*0.90	4.4	7.6	4.7
1051	Sequim Bay entrance	48° 05'	123° 03'	-0 39	-0 07	*0.94	*0.94	4.8	7.9	4.8
1053	Gardiner, Discovery Bay	48° 04'	122° 55'	-0 47	-0 17	*0.94	*0.94	4.8	7.9	4.8
1055	Smith Island	48° 19'	122° 50'	-0 13	-0 25	*0.83	*0.83	4.2	7.0	4.5
1057	Point Partridge, Whidbey Island	48° 14'	122° 46'	-0 11	-0 15	*0.92	*0.92	4.5	7.7	4.7
1059	Sunset Beach, Whidbey Island	48° 17.0'	122° 43.7'	-0 27	-0 16	*0.87	*0.95	4.30	7.39	4.71
1061	Naval Air Station, Whidbey Island	48° 20.6'	122° 41.1'	-0 22	-0 05	*0.87	*0.88	4.63	7.44	4.50
	Admiralty Inlet			on Seattle, p.132						
1063	Admiralty Head	48° 10'	122° 40'	-0 11	+0 20	0.0	-0.1	5.2	8.4	5.1
1065	PORT TOWNSEND	48° 06.7'	122° 45.5'	<i>Daily predictions</i>				5.34	8.52	5.17
1067	Marrowstone Point	48° 06'	122° 41'	+0 02	+0 05	+0.4	-0.1	5.6	8.8	5.3
1069	Mystery Bay, Marrowstone Island	48° 03.5'	122° 41.5'	+0 15	+0 52	*0.95	*0.99	5.01	8.19	4.97
1071	Bush Point, Whidbey Island	48° 02.0'	122° 36.4'	+0 10	+0 45	*1.09	*1.08	5.87	9.35	5.64
	Hood Canal			on Seattle, p.132						
1073	Port Ludlow	47° 55.5'	122° 40.8'	-0 14	-0 14	*0.87	*0.95	6.4	9.9	5.9
1075	Foulweather Bluff, Twin Spit	47° 55.6'	122° 37.0'	-0 16	-0 14	*0.88	*0.95	6.46	10.00	5.95
1077	Port Gamble	47° 51.5'	122° 34.8'	-0 09	-0 05	*0.90	*0.95	6.7	10.3	6.1
1079	Lofall	47° 48.9'	122° 39.4'	-0 08	-0 06	*0.94	*1.01	6.96	10.71	6.34
1081	Bangor Wharf	47° 44.9'	122° 43.6'	-0 06	+0 01	*0.97	*1.03	7.31	11.13	6.57
1083	Zelatched Point, Dabob Bay	47° 42.7'	122° 49.3'	-0 09	-0 05	*1.00	*1.02	7.6	11.5	6.7
1085	Whitney Point, Dabob Bay	47° 45.7'	122° 51.0'	-0 05	+0 02	*1.01	*1.06	7.59	11.55	6.80
1087	Quilcene, Quilcene Bay, Dabob Bay	47° 48.0'	122° 51.5'	-0 08	-0 02	*1.00	*1.04	7.59	11.38	6.74
1089	Seabeck, Seabeck Bay	47° 38.5'	122° 49.7'	-0 04	+0 01	*1.01	*1.06	7.58	11.53	6.79
1091	Pleasant Harbor	47° 39.9'	122° 54.7'	-0 14	-0 01	*1.01	*1.02	7.7	11.6	6.8
1093	Triton Head	47° 36.2'	122° 58.9'	-0 06	+0 06	*1.00	*1.02	7.61	11.38	6.69
1095	Ayock Point	47° 30.5'	123° 03.2'	-0 03	+0 05	*0.99	*1.07	7.38	11.37	6.73
1097	Union	47° 21.5'	123° 05.9'	+0 01	+0 10	*1.04	*1.06	7.86	11.84	6.93
1099	Lynch Cove Dock	47° 25.1'	122° 54.1'	+0 00	+0 06	*1.07	*1.08	8.04	12.11	7.08
	Puget Sound			on Seattle, p.132						
1101	Hansville	47° 55.1'	122° 32.7'	-0 07	-0 08	*0.92	*0.98	6.83	10.44	6.19
1103	Edmonds	47° 48.8'	122° 23.0'	+0 00	-0 04	*0.96	*0.99	7.26	10.91	6.43
1105	Kingston, Appletree Cove	47° 47.8'	122° 29.7'	-0 05	-0 05	*0.97	*1.00	7.32	10.99	6.48
1107	Port Jefferson	47° 44.7'	122° 28.6'	-0 03	-0 04	*0.95	*0.98	7.20	10.83	6.37
1109	Port Madison	47° 42.3'	122° 31.5'	+0 09	-0 03	*1.00	*0.99	7.7	11.4	6.6
1111	Meadow Point, Shilshole Bay	47° 41.3'	122° 24.2'	+0 00	-0 01	*0.98	*0.99	7.51	11.18	6.57
1113	Poulsbo, Liberty Bay	47° 43.5'	122° 38.3'	+0 05	+0 12	*1.03	*1.01	7.99	11.73	6.85
1115	Brownsville, Port Orchard	47° 39.2'	122° 36.9'	+0 07	+0 09	*1.04	*1.03	8.04	11.82	6.93
1117	SEATTLE (Madison St.), Elliott Bay	47° 36.3'	122° 20.3'	<i>Daily predictions</i>				7.66	11.36	6.67
1119	Lockheed Shipyard, Harbor Island	47° 35.1'	122° 21.7'	-0 01	-0 01	*1.00	*1.00	7.67	11.39	6.68
1121	Duwamish Waterway, Eighth Ave. South	47° 32.1'	122° 19.3'	+0 10	+0 11	*0.97	*0.95	7.5	11.1	6.4
1123	Eagle Harbor, Bainbridge Island	47° 37.2'	122° 30.9'	+0 04	+0 05	*1.00	*1.02	7.6	11.3	6.7
1125	Port Blakely	47° 35.8'	122° 30.6'	+0 04	+0 04	*1.01	*0.99	7.8	11.5	6.7
1127	Clam Bay, Rich Passage	47° 34.5'	122° 32.6'	+0 03	+0 04	*1.01	*1.00	7.78	11.46	6.71
1129	Bremerton, Sinclair Inlet, Port Orchard	47° 33.7'	122° 37.4'	+0 11	+0 18	*1.04	*1.00	8.01	11.74	6.85
1131	Tracyton, Dyes Inlet	47° 36.6'	122° 39.6'	+0 28	+0 53	*1.06	*0.95	8.4	12.0	6.9

Endnotes can be found at the end of table 2.

TABLE 2. – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Latitude	Longitude	Time		Height		Mean	Diurnal	
				High Water	Low Water	High Water	Low Water			
	WASHINGTON Puget Sound-cont. Time meridian, 120° W	North	West	h	m	h	m	ft	ft	ft
				on Seattle, p.132						
1133	Harper, Yukon Harbor	47° 31.4'	122° 31.0'	-0 06	-0 01	*1.02	*0.99	7.9	11.6	6.7
1135	Point Vashon, Vashon Island	47° 30.7'	122° 27.8'	+0 02	+0 02	*1.02	*1.01	7.80	11.53	6.76
1137	Des Moines, East Passage	47° 24.0'	122° 19.7'	+0 05	+0 08	*1.03	*1.01	7.91	11.66	6.82
1139	Burton, Quartermaster Hbr. (inside), Vashon I.	47° 23.7'	122° 27.8'	+0 01	+0 03	*1.06	*1.02	8.26	12.05	7.01
1141	Tahlequah, Neil Pt., Dalco Passage, Vashon I.	47° 19.9'	122° 30.4'	+0 04	+0 05	*1.05	*1.01	8.15	11.89	6.93
1143	Gig Harbor	47° 20.4'	122° 35.3'	+0 18	+0 22	*1.05	*0.99	8.2	11.8	6.9
1145	Tacoma, Commencement Bay, Sitcum Waterway	47° 16.0'	122° 24.8'	+0 04	+0 04	*1.04	*1.00	8.09	11.83	6.90
1147	Tacoma Narrows Bridge	47° 16.3'	122° 33.1'	+0 28	+0 23	*1.11	*1.02	8.79	12.59	7.30
1149	Arlotta, Hale Passage	47° 16.8'	122° 39.1'	+0 31	+0 40	*1.18	*1.04	9.46	13.31	7.67
1151	Horsehead Bay, Carr Inlet	47° 18.1'	122° 40.9'	+0 38	+0 46	*1.20	*1.05	9.58	13.48	7.76
1153	Wauna, Carr Inlet	47° 22.7'	122° 38.0'	+0 35	+0 43	*1.20	*1.04	9.63	13.50	7.75
1155	Home, Von Geldern Cove, Carr Inlet	47° 16.5'	122° 45.5'	+0 37	+0 45	*1.19	*1.04	9.54	13.42	7.72
1157	Steilacoom, Cormorant Passage	47° 10.4'	122° 36.2'	+0 37	+0 45	*1.20	*1.05	9.59	13.48	7.77
1159	Yoman Point, Anderson Island, Balch Passage	47° 10.8'	122° 40.5'	+0 33	+0 41	*1.20	*1.04	9.61	13.47	7.75
1161	Sandy Point, Anderson Island	47° 09.2'	122° 40.5'	+0 35	+0 43	*1.10	*0.89	8.23	11.56	6.64
1163	Dupont Wharf, Nisqually Reach	47° 07.1'	122° 40.0'	+0 41	+0 49	*1.20	*1.04	9.63	13.51	7.77
1165	Longbranch, Filucy Bay	47° 12.6'	122° 45.2'	+0 38	+0 47	*1.20	*1.02	9.7	13.5	7.7
1167	Devils Head, Drayton Passage	47° 10.0'	122° 45.8'	+0 40	+0 50	*1.25	*1.10	9.98	14.18	8.09
1169	Henderson Inlet	47° 09.3'	122° 50.3'	+0 47	+0 58	*1.24	*1.06	10.0	14.0	8.0
1171	McMicken Island, Case Inlet	47° 14.8'	122° 51.7'	+0 40	+0 52	*1.24	*1.06	10.00	13.96	8.01
1173	Vaughn, Case Inlet	47° 20.5'	122° 46.5'	+0 51	+0 57	*1.26	*1.06	10.2	14.1	8.1
1175	Allyn, Case Inlet	47° 23.0'	122° 49.4'	+0 48	+0 59	*1.26	*1.07	10.20	14.16	8.13
1177	Walkers Landing, Pickering Passage	47° 16.9'	122° 55.4'	+0 44	+0 55	*1.26	*1.07	10.20	14.15	8.12
1179	Shelton, Oakland Bay	47° 12.9'	123° 05.0'	+1 26	+2 05	*1.26	*0.92	10.6	14.2	7.9
1181	Arcadia, Totten Inlet	47° 11.8'	122° 56.3'	+0 49	+1 05	*1.28	*1.06	10.4	14.4	8.2
1183	Barron Point, Little Snookum Inlet Entrance	47° 09.4'	123° 00.5'	+0 50	+0 59	*1.29	*1.06	10.53	14.52	8.28
1185	Burns Point, Totten Inlet	47° 07.3'	123° 03.4'	+0 54	+1 07	*1.33	*1.06	11.0	15.0	8.5
1187	Rocky Point, Eld Inlet	47° 04.9'	123° 00.3'	+0 39	+0 56	*1.31	*1.10	10.6	14.7	8.4
1189	Dofflemeyer Point, Boston Hbr., Budd Inlet	47° 08.5'	122° 54.2'	+0 44	+0 57	*1.28	*1.09	10.35	14.37	8.27
1191	Budd Inlet, Olympia Shoal	47° 05.9'	122° 53.7'	+0 43	+0 55	*1.29	*1.08	10.46	14.48	8.30
1193	Olympia, Budd Inlet	47° 03.6'	122° 54.2'	+0 45	+0 57	*1.29	*1.08	10.48	14.56	8.31
	Possession Sound and Port Susan									
1195	Glendale, Whidbey Island	47° 56.4'	122° 21.4'	+0 01	-0 03	*0.97	*0.99	7.38	11.02	6.50
1197	Everett	47° 58.8'	122° 13.4'	+0 01	-0 01	*0.97	*0.99	7.41	11.09	6.51
1199	Marysville, Quilceda Creek	48° 02.7'	122° 12.7'	+0 09	+0 29	*0.95	*0.89	7.47	10.83	6.25
1201	Priest Point	48° 02.1'	122° 13.6'	+0 05	+0 15	*0.96	*0.95	7.41	10.95	6.39
1203	Tulalip, Tulalip Bay	48° 03.9'	122° 17.3'	+0 01	-0 02	*0.97	*0.98	7.44	11.06	6.50
1205	Spee-bi-dah	48° 05.3'	122° 19.3'	-0 01	-0 02	*0.99	*0.99	7.56	11.22	6.58
1207	Tulare Beach	48° 06.4'	122° 20.8'	-0 02	-0 03	*0.97	*0.97	7.48	11.08	6.48
1209	Kayak Point	48° 08.2'	122° 22.1'	+0 00	-0 02	*0.99	*0.99	7.56	11.24	6.58
1211	Stanwood, Stillaguamish River <7>	48° 14'	122° 22'	+0 23	+2 14	*0.62	*0.29	5.7	7.4	3.6
	Saratoga Passage and Skagit Bay									
1213	Sandy Point, Whidbey Island	48° 02.1'	122° 22.6'	+0 03	-0 01	*0.99	*1.00	7.56	11.25	6.60
1215	Holly Farms Harbor, Holmes Harbor, Whidbey I.	48° 01.6'	122° 32.1'	+0 01	-0 04	*1.01	*0.99	7.76	11.44	6.67
1217	Greenbank, Whidbey Island	48° 06.3'	122° 34.2'	+0 02	-0 04	*1.00	*0.99	7.70	11.36	6.63
1219	Crescent Harbor, N. Whidbey Island	48° 17'	122° 37'	+0 04	-0 04	*1.03	*0.99	8.0	11.6	6.8
1221	Coupeville, Penn Cove, Whidbey Island	48° 13.4'	122° 41.4'	+0 15	+0 09	*1.01	*0.99	7.8	11.5	6.7
1223	La Conner, Swinomish Channel <8>	48° 23.5'	122° 29.8'	+0 21	+0 39	*0.90	*0.95	6.74	10.34	6.06
1225	Sneeoosh Point	48° 24.0'	122° 32.9'	+0 32	+0 39	*0.97	*0.90	7.64	11.05	6.38
1227	Turner Bay, Similk Bay	48° 26.7'	122° 33.3'	+0 34	+0 36	*0.90	*0.88	6.98	10.34	5.99
1229	Ala Spit, Whidbey Island	48° 23.8'	122° 35.2'	+0 12	+0 26	*0.92	*0.95	6.9	10.5	6.1
1231	Yokeko Point, Deception Pass	48° 24.8'	122° 36.9'	+0 26	+0 38	-1.0	-0.2	6.9	10.5	6.1
1233	Cornet Bay, Deception Pass	48° 24.1'	122° 37.4'	+0 15	+0 26	*0.89	*0.95	6.6	10.2	6.0
	Rosario Strait, etc.									
				on Port Townsend, p.128						
1235	Deception Pass St. Park, Bowman Bay, Fidalgo I.	48° 24.9'	122° 39.1'	-0 18	+0 00	*0.90	*0.98	4.62	7.72	4.76
1237	Aleck Bay, Lopez Island	48° 26'	122° 51'	-0 18	-0 08	*0.88	*0.88	4.2	7.4	4.6
1239	Telegraph Bay, Lopez Island	48° 26.6'	122° 48.3'	-0 01	+0 01	*0.73	*0.74	3.87	6.22	3.80
1241	Burrows Bay (Allan Island)	48° 28'	122° 42'	+0 09	+0 03	*0.95	*0.88	5.0	8.1	4.8
1243	Ship Harbor, Fidalgo Island	48° 30.4'	122° 40.6'	+0 18	+0 29	*0.93	*1.02	4.75	8.05	4.93
1245	Anacortes, Guemes Channel	48° 31'	122° 37'	+0 22	+0 33	*0.96	*1.00	4.8	8.2	5.0
1247	Swinomish, Channel ent., Padilla Bay	48° 27.5'	122° 30.8'	+0 37	+1 15	*1.01	*1.00	5.46	8.74	5.23
1249	Armitage Island, Thatcher Pass	48° 32.1'	122° 47.8'	+0 22	+0 29	*0.92	*0.93	4.91	7.84	4.78
1251	Strawberry Bay, Cypress Island	48° 34'	122° 43'	+0 34	+0 52	*0.95	*0.95	4.8	8.0	4.9
1253	Peavine Pass	48° 36'	122° 48'	+0 34	+0 18	*0.98	*0.92	5.0	8.2	4.9
1255	Tide Point, Cypress Island	48° 35.2'	122° 44.2'	+0 31	+0 41	*0.94	*0.95	4.88	8.08	4.86
	Bellingham Bay									
1257	Chuckanut Bay	48° 40'	122° 30'	+0 33	+0 53	0.0	-0.1	5.2	8.4	5.1
1259	Bellingham	48° 44.7'	122° 29.7'	+0 43	+1 11	*0.99	*0.94	5.44	8.51	5.07
	Hale Passage									
1261	Gooseberry Point	48° 43.9'	122° 40.2'	+0 41	+1 10	*1.04	*0.97	5.57	8.83	5.26
1263	Point Migley	48° 45'	122° 43'	+0 56	+0 51	+0.1	0.0	5.2	8.6	5.2
1265	Village Point, Lummi Island	48° 43.0'	122° 42.5'	+0 44	+1 12	*1.01	*1.02	5.22	8.62	5.20
1267	Sandy Point, Lummi Bay	48° 47.4'	122° 42.5'	+0 52	+1 24	*1.05	*1.03	5.50	8.97	5.18
1269	Rosario, East Sound, Orcas Island	48° 38.8'	122° 52.2'	+0 26	+0 41	*0.92	*0.92	4.94	7.88	4.77
1271	Upright Head, Lopez Island	48° 34.3'	122° 53.1'	+0 26	+0 42	*0.92	*0.92	4.89	7.84	4.75
1273	Orcas, Orcas Island	48° 36'	122° 57'	+0 33	+0 56	*0.90	*0.90	4.5	7.6	4.7

Endnotes can be found at the end of table 2.

TABLE 2. – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Latitude	Longitude	Time		Height		Mean	Diurnal	
				High Water	Low Water	High Water	Low Water			
	WASHINGTON Rosario Strait, etc.-cont. Time meridian, 120° W	North	West	h	m	h	m	ft	ft	ft
				on Port Townsend, p.128						
	<i>San Juan Channel</i>									
1275	Richardson, Lopez Island	48° 26.8'	122° 54.0'	-0 27	-0 12	*0.85	*0.84	4.55	7.17	4.36
1277	Shaw Island, Ferry Terminal, Harney Channel	48° 35.1'	122° 55.7'	+0 31	+0 56	*0.90	*0.99	4.40	7.63	4.73
1279	Friday Harbor, San Juan Island	48° 32.8'	123° 00.6'	+0 33	+0 51	*0.91	*0.92	4.82	7.76	4.70
	<i>Strait of Georgia</i>									
1281	Echo Bay, Sucia Islands	48° 45'	122° 54'	+1 01	+1 34	+0.1	0.0	5.2	8.6	5.2
1283	Ferndale	48° 50'	122° 43'	+0 49	+1 20	+0.5	0.0	5.6	9.0	5.4
1285	CHERRY POINT	48° 51.8'	122° 45.5'	<i>Daily predictions, p.136</i>				5.71	9.15	5.47
1287	Blaine, Semiahmoo Bay	48° 59.5'	122° 45.9'	+0 54	+1 27	*1.11	*1.06	6.01	9.53	5.67
1289	Point Roberts	48° 58.5'	123° 05.0'	+1 01	+1 33	*1.14	*1.08	6.21	9.79	5.82
	<i>Haro Strait</i>									
1291	Kanaka Bay, San Juan Island	48° 29.1'	123° 05.0'	-0 19	-0 04	*0.86	*0.89	4.53	7.32	4.48
1293	Hanbury Point, Mosquito Pass, San Juan I.	48° 34.7'	123° 10.4'	+0 12	+0 28	*0.89	*0.93	4.64	7.63	4.65
1295	Roche Harbor, San Juan Island	48° 36.6'	123° 09.1'	+0 33	+0 47	*0.90	*0.99	4.47	7.60	4.76
1297	Waldron, Waldron Island	48° 41.2'	123° 02.3'	+0 58	+1 07	*0.82	*0.78	4.48	7.02	4.20
	<i>Boundary Pass</i>									
1299	Patos Island Wharf	48° 47'	122° 58'	+1 03	+1 30	+0.2	0.0	5.3	8.6	5.2
	BRITISH COLUMBIA Passages inside Vancouver Island <16>									
				on Victoria, p.140						
1301	Sooke, Vancouver Island	48° 22'	123° 44'	-0 11	-0 33	+0.8	+0.5	--	6.4	6.6
1303	Esquimalt, Vancouver Island	48° 26'	123° 26'	+0 12	+0 17	0.0	-0.1	--	6.2	6.3
1305	VICTORIA, Vancouver Island	48° 26'	123° 23'	<i>Daily predictions</i>				--	6.1	6.3
				on Vancouver, p.144						
1307	Sidney, Haro Strait	48° 39'	123° 24'	-1 01	-1 12	*0.71	*0.61	--	7.8	7.1
1309	Fulford Harbor, Saltspring Island	48° 46'	123° 27'	-0 55	-1 08	-3.5	-1.0	--	8.0	7.6
1311	Active Pass, Mayne Island	48° 52'	123° 20'	-0 16	-0 30	-1.5	-0.8	--	9.8	8.6
1313	Cowichan Bay	48° 45'	123° 37'	-0 53	-1 09	-3.0	-0.6	--	8.0	8.1
1315	Chemainus, Stuart Channel	48° 55'	123° 42'	-0 51	-1 03	-2.2	-1.0	--	9.3	8.3
1317	Ladysmith	48° 59'	123° 47'	-0 53	-1 02	-2.3	-0.8	--	9.0	8.4
1319	Sand Heads, Fraser River	49° 07'	123° 18'	-0 25	-0 27	-1.2	-1.1	--	10.4	8.7
1321	Atkinson Point, Burrard Inlet	49° 19'	123° 15'	-0 25	-0 27	-1.2	-1.1	--	10.4	8.7
1323	VANCOUVER, Burrard Inlet	49° 18'	123° 07'	<i>Daily predictions</i>				--	10.5	9.9
1325	Squamish, Howe Sound	49° 41'	123° 10'	-0 24	-0 24	-0.8	-1.2	--	10.9	8.9
1327	Nanaimo	49° 10'	123° 57'	-0 20	-0 20	0.0	+0.1	--	10.4	10.0
1329	Pender Harbor, Malaspina Strait	49° 38'	124° 02'	-0 22	-0 22	-1.1	-1.2	--	10.6	8.8
1331	Comox, Baynes Sound	49° 40'	124° 55'	-0 18	-0 20	-0.4	-1.5	--	11.6	9.0
1333	Whaletown, Cortes Island	50° 06'	125° 03'	-0 15	-0 17	+0.5	-0.2	--	11.2	10.0
1335	Duncan Bay, Discovery Passage	50° 05'	125° 18'	-1 03	-1 16	-3.7	-1.5	--	8.3	7.4
1337	Redonda Bay, Deer Passage	50° 16'	124° 59'	-0 07	-0 08	+1.2	+0.5	--	11.2	10.8
1339	Yuculta, Cordero Channel	50° 24'	125° 08'	-0 59	-0 36	-0.2	+1.0	--	9.3	10.4
1341	Waddington Harbor, Bute Inlet	50° 56'	124° 51'	-0 12	-0 08	+0.6	-0.4	--	11.5	10.1
1343	Gowlland Harbor, Discovery Passage	50° 04'	125° 14'	-1 09	-1 18	-3.0	-0.9	--	8.4	8.0
1345	Seymour Narrows (Canoe Pass)	50° 08'	125° 21'	-2 30	-3 30	0.0	+0.5	--	10.0	10.0
1347	Owen Bay, Okisollo Channel	50° 19'	125° 13'	-3 01	-3 02	-1.4	-0.2	--	9.3	8.9
				on Sitka, p.156						
1349	Turn Island, Johnstone Strait	50° 21'	125° 29'	+1 56	+2 02	+0.6	+0.9	--	9.6	6.3
1351	Knox Bay, West Thurlow Island	50° 24'	125° 36'	+1 30	+1 40	+2.9	+3.1	--	9.7	8.5
1353	Kelsey Bay, Johnstone Strait	50° 24'	125° 58'	+0 54	+1 05	+4.3	+3.6	--	10.6	9.4
1355	Port Neville, Johnstone Strait	50° 30'	126° 05'	+0 54	+0 59	+5.1	+3.8	--	11.2	9.8
1357	Port Harvey, Johnstone Strait	50° 34'	126° 17'	+0 38	+0 47	+4.0	+3.2	--	10.7	8.9
1359	Chatham Channel (Root Point)	50° 35'	126° 12'	+0 43	+0 57	+5.1	+3.4	--	11.6	9.5
1361	Glendale Cove, Knight Inlet	50° 40'	125° 44'	+0 21	+0 31	+6.6	+3.7	--	12.8	10.6
1363	Farewell Harbor, Blackfish Sound	50° 36'	126° 42'	+0 37	+0 58	+3.9	+2.9	--	10.9	8.5
1365	Blunden Harbor	50° 54'	127° 17'	+0 19	+0 20	+4.9	+3.3	--	11.5	9.4
1367	Alert Bay, Cormorant Island	50° 35'	126° 56'	+0 29	+0 35	+4.8	+3.3	--	11.4	9.4
1369	Port Hardy, Vancouver Island	50° 43'	127° 29'	+0 08	+0 14	+4.7	+3.3	--	11.3	9.4
1371	Shushartie Bay, Goletas Channel	50° 51'	127° 52'	+0 02	+0 08	+4.0	+2.7	--	11.2	8.7
	Vancouver Island, Southwest Coast									
1373	Port San Juan	48° 33'	124° 25'	-0 11	-0 10	(*0.65+3.4)		5.0	7.2	6.8
1375	Carmanah Point	48° 37'	124° 45'	-0 16	-0 14	(*0.75+2.3)		6.0	7.4	6.2
1377	Bamfield, Barkley Sound	48° 50'	125° 08'	-0 29	-0 23	(*0.86+2.5)		6.6	8.7	7.1
1379	Port Alberni	49° 14'	124° 49'	-0 20	-0 19	(*0.87+2.5)		6.7	8.6	7.1
1381	Clayoquot	49° 09'	125° 55'	-0 16	-0 11	+1.7	+2.4	7.0	8.8	7.3
1383	Riley Cove	49° 23'	126° 13'	-0 14	-0 09	+1.5	+2.3	6.9	8.8	7.2
1385	Nootka Sound	49° 37'	126° 37'	-0 14	-0 13	+1.2	+2.0	6.9	8.9	6.9
1387	Esperanza Inlet	49° 52'	126° 43'	-0 16	-0 11	+2.0	+1.9	7.8	9.4	7.2
1389	Kyuquot Sound	50° 08'	127° 18'	-0 11	-0 06	+1.8	+2.5	7.0	8.8	7.4
1391	Nasparti Inlet	50° 06'	127° 43'	-0 09	-0 05	+2.1	+2.6	7.2	9.1	7.6
1393	Klaskish Inlet	50° 15'	127° 44'	-0 06	-0 03	+2.1	+2.6	7.2	9.1	7.6
1395	Bergh Cove, Quatsino Sound	50° 32'	127° 37'	-0 06	-0 01	+2.7	+3.1	7.3	9.4	8.2
	Prince Rupert									
				on Ketchikan, p.148						
1397	Treadwell Bay, Slingsby Channel	51° 06'	127° 32'	+0 34	+0 46	(*0.48+2.8)		6.3	7.9	6.6
1399	Wadhams, Rivers Inlet	51° 31'	127° 31'	+0 08	+0 15	(*0.68+3.3)		8.9	11.3	8.7

Endnotes can be found at the end of table 2.

TABLE 2. – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level	
		Latitude	Longitude	Time		Height		Mean	Spring		
				High Water	Low Water	High Water	Low Water				
	BRITISH COLUMBIA Prince Rupert-cont. Time meridian, 120° W	North	West	h	m	h	m	ft	ft	ft	
	<i>Fitz Hugh Sound</i>										
1401	Namu Harbor	51° 52'	127° 52'	+0 18	+0 21			(*0.69+3.0)	9.0	11.3	8.5
1403	Addenbroke Island	51° 36'	127° 49'	+0 09	+0 21			(*0.66+3.4)	8.6	10.9	8.7
1405	Ocean Falls, Fisher Channel	52° 21'	127° 41'	+0 09	+0 21			(*0.74+3.7)	9.5	12.0	9.6
1407	Bella Bella, Lama Passage, Campbell Island	52° 08'	128° 08'	+0 11	+0 17			(*0.70+3.7)	9.1	11.8	9.3
1409	Port Blackney, Milbanke Sound	52° 19'	128° 21'	+0 11	+0 19			(*0.72+3.1)	9.3	11.8	8.9
1411	Bella Coola, North Bentinck Arm	52° 23'	126° 48'	+0 14	+0 23			(*0.78+3.1)	10.1	13.0	9.3
	<i>Finlayson Channel</i>										
1413	Klemtu Passage	52° 36'	128° 31'	+0 14	+0 25			(*0.72+3.8)	9.3	11.6	9.6
1415	Carter Bay	52° 50'	128° 24'	+0 17	+0 23			(*0.78+3.1)	10.1	13.2	9.3
1417	Barnard Harbor, Whale Channel	53° 05'	129° 07'	+0 24	+0 35	+0.7	+2.8		10.9	13.9	9.8
1419	Hartley Bay, Wright Sound	53° 26'	129° 15'	+0 20	+0 31	+1.6	+3.4		11.2	14.3	10.5
1421	Kitimat, Douglas Channel	53° 59'	128° 42'	+0 24	+0 40	+2.4	+3.6		11.8	15.1	11.0
1423	Kemano Bay, Gardner Canal	53° 31'	128° 07'	+0 24	+0 40	+2.7	+3.6		12.1	15.5	11.2
1425	Lowe Inlet, Grenville Channel	53° 33'	129° 35'	+0 32	+0 44	+2.8	+4.0		11.8	14.9	11.4
	<i>Principe Channel, etc.</i>										
1427	Port Stephens	53° 21'	129° 43'	+0 22	+0 32	+0.5	+3.2		10.3	13.2	9.9
1429	Port Canaverl	53° 35'	130° 09'	+0 29	+0 38	+0.5	+3.2		10.3	13.2	9.9
1431	Beaver Passage	53° 48'	130° 21'	+0 38	+0 50	+3.7	+3.5		13.2	17.1	11.6
	<i>Chatham Sound</i>										
1433	Porcher Island	54° 05'	130° 24'	+0 34	+0 46	+3.6	+4.6		12.0	15.2	12.1
1435	Qlawdzeit Anchorage	54° 12'	130° 46'	+0 43	+0 49	+4.2	+4.3		12.9	16.6	12.3
1437	Prince Rupert	54° 19'	130° 20'	+0 51	+0 57	+4.6	+4.3		13.3	17.3	12.5
1439	Port Simpson	54° 34'	130° 26'	+0 51	+0 57	+3.9	+4.2		12.7	16.5	12.1
	<i>Queen Charlotte Island</i>										
1441	Skidegate Inlet	53° 15'	132° 04'	+1 01	+1 07	+5.5	+4.8		13.7	17.7	13.2
1443	Tasu Sound	52° 45'	132° 01'	+0 22	+0 29			(*0.58+3.6)	7.5	9.4	8.2
	BRITISH COLUMBIA and ALASKA Dixon Entrance										
	<i>Graham Island, B.C.</i>										
1445	Parry Passage	54° 11'	132° 59'	+0 20	+0 30			(*0.68+4.2)	8.9	11.2	9.6
1447	Wiah Point	54° 07'	132° 19'	+0 36	+0 40			(*0.79+3.8)	10.3	12.9	10.1
1449	Masset Harbor	53° 59'	132° 08'	+1 01	+1 13			(*0.58+2.0)	7.6	9.5	6.6
	Time meridian, 135° W										
									Mean	Diurnal	
1451	Cape Muzon, Dall Island, Alaska	54° 40.6'	132° 40.1'	-0 14	-0 08	*0.78	*0.93		9.9	12.1	6.40
1453	Kelp Island Passage, Duke Island	54° 52.6'	131° 18.0'	-0 04	+0 03	*0.94	*0.96		12.2	14.6	7.60
1455	Nakat Harbor, Alaska	54° 49.2'	130° 42.0'	+0 01	+0 09	*0.95	*0.89		12.4	14.7	7.60
	Time meridian, 120° W										
1457	Haystack Island, B.C. <9>	54° 43'	130° 37'	+0 45	+0 49	-0.4	0.0		12.6	15.0	7.8
	Portland Canal, etc.										
1459	Wales Island (Cannery), Pearse Canal <9>	54° 47'	130° 33'	+0 57	+1 04	-0.1	0.0		12.9	15.3	7.9
1461	Kumeon Bay, B.C. <9>	54° 43'	130° 14'	+0 53	+0 56	+0.2	0.0		13.2	15.6	8.1
1463	Mill Bay, Nass River, B.C. <9>	55° 00'	129° 54'	+0 51	+1 17	+0.1	-0.1		13.2	15.5	8.0
1465	Stewart, B.C. <9>	55° 55'	129° 48'	+0 53	+0 56	+1.4	+0.1		14.3	16.8	8.7
	Time meridian, 135° W										
1467	Davis River entrance, Alaska <9>	55° 45.6'	130° 10.6'	-0 02	+0 00	*1.08	*0.96		14.2	16.6	8.60
	ALASKA Revillagigedo Channel										
1469	Morse Cove, Duke Island	54° 55.2'	131° 15.3'	+0 03	+0 15	*0.96	*0.96		12.43	14.80	7.70
1471	Kah Shakes Cove	55° 02.5'	130° 58.8'	+0 00	+0 06	*0.97	*0.96		12.60	14.98	7.80
1473	Boca de Quadra	55° 07.0'	130° 47.9'	+0 00	+0 02	*0.98	*0.98		12.72	15.14	7.70
1475	Custom House Cove, Mary Island	55° 06.0'	131° 13.0'	+0 00	-0 01	*0.99	*0.99		12.78	15.24	7.95
1477	Mop Point, Thorne Arm	55° 23.0'	131° 14.1'	-0 05	-0 03	*0.98	*0.98		12.80	15.20	7.90
1479	Coon Island, George Inlet	55° 27.7'	131° 30.3'	-0 03	-0 07	*0.99	*0.96		12.90	15.30	7.90
	Tongass Narrows										
1481	KETCHIKAN	55° 20.0'	131° 37.5'						12.97	15.45	8.06
1483	Ward Cove	55° 23.9'	131° 43.6'	-0 05		<i>Daily predictions</i> -0 03	*1.02	*0.96	13.28	15.70	8.10
	Behm Canal										
1485	Alva Bay, Revillagigedo Island	55° 14.0'	131° 08.0'	-0 05	-0 03	*0.98	*0.96		12.80	15.20	7.90
1487	Vallenar Point	55° 25.6'	131° 50.8'	-0 01	-0 06	*0.99	*0.96		12.90	15.30	7.90
1489	Rudyard Bay	55° 38.5'	130° 38.7'	+0 01	+0 02	*1.02	*0.96		13.30	15.70	8.10
1491	Fitzgibbon Cove	55° 59.0'	131° 10.5'	-0 05	-0 01	*1.02	*0.96		13.40	15.80	8.20
1493	Burroughs Bay, Behm Canal	55° 02.3'	131° 05.7'	-0 01	+0 00	*1.03	*0.99		13.45	15.90	8.28
1495	Yes Cannery, Yes Bay	55° 54.8'	131° 47.8'	+0 00	+0 01	*1.02	*0.96		13.30	15.70	8.10
1497	Loring, Naha Bay	55° 36.1'	131° 37.9'	-0 02	-0 06	*1.02	*0.96		13.16	15.70	8.20
1499	Tamgas Harbor, Annette Island	55° 04.0'	131° 32.5'	-0 09	-0 08	*0.98	*0.89		12.80	15.00	7.80
1501	Ingraham Bay, Prince of Wales Island	54° 58.8'	132° 00.4'	+0 03	+0 04	*0.93	*0.96		12.00	14.40	7.50

Endnotes can be found at the end of table 2.

TABLE 2. – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Latitude	Longitude	Time		Height		Mean	Diurnal	
				High Water	Low Water	High Water	Low Water			
	ALASKA Behm Canal-cont. Time meridian, 135° W	North	West	h	m	h	m	ft	ft	ft
on Ketchikan, p.148										
1503	Menefee Anch., Prince of Wales Island	55° 01.6'	132° 00.8'	-0 02	+0 01	*0.94	*0.89	12.20	14.40	7.50
1505	Niblack Anchorage, Moira Sound	55° 04.0'	132° 07.2'	+0 03	+0 09	*0.94	*0.96	12.20	14.60	7.60
1507	Metlakatla, Port Chester	55° 07.7'	131° 34.3'	-0 04	-0 02	*0.96	*0.99	12.43	14.87	7.77
Clarence Strait										
1509	Nehenta Bay, Gravina Island	55° 10.0'	131° 47.8'	-0 01	-0 01	*0.95	*0.96	12.30	14.70	7.70
1511	Lancaster Cove, Cholmondeley Sound	55° 12.8'	132° 05.7'	+0 05	+0 03	*0.98	*0.96	12.70	15.10	7.90
1513	Divide Head, Cholmondeley Sound	55° 15.1'	132° 18.0'	-0 05	-0 08	*0.98	*0.96	12.70	15.10	7.90
Kasaan Bay										
1515	Saltery Cove, Skowl Arm	55° 24.1'	132° 19.7'	+0 04	+0 02	*1.01	*1.01	13.07	15.57	8.13
1517	Kasaan	55° 32.1'	132° 23.8'	+0 05	+0 03	*1.02	*1.01	13.20	15.69	7.84
1519	Lindeman Cove	55° 36.1'	132° 30.7'	+0 06	+0 03	*1.02	*1.01	13.27	15.75	8.22
1521	Hollis Anchorage	55° 28.8'	132° 38.7'	+0 06	+0 02	*1.03	*1.01	13.39	15.88	7.94
1523	Bradfield Canal, Ernest Sound	56° 11.0'	131° 34.3'	+0 11	+0 05	*1.08	*0.99	14.09	16.59	8.60
1525	Ratz Harbor, Prince of Wales Island	55° 52.8'	132° 35.7'	+0 09	+0 00	*1.03	*0.99	13.46	15.90	7.94
1527	Lake Bay	56° 01.0'	132° 55.0'	+0 10	+0 01	*1.03	*0.89	13.60	15.90	8.20
1529	Beck Island	56° 02.8'	132° 51.72'	+0 10	+0 05	*1.05	*1.01	13.65	16.14	8.41
1531	Thorne Island, Whale Passage	56° 03.5'	132° 59.1'	+0 12	+0 01	*1.04	*0.98	13.52	15.93	8.30
1533	Blashke Island	56° 07.6'	132° 53.7'	+0 13	+0 24	*1.03	*0.93	13.46	15.82	8.20
1535	Point Harrington	56° 10.7'	132° 41.8'	+0 09	+0 01	*1.04	*0.97	13.55	15.96	8.29
1537	Thoms Point, Zimovia Strait	56° 07.1'	132° 04.7'	+0 07	+0 01	*1.06	*0.99	13.90	16.33	8.50
1539	Village Rock, Zimovia Strait	56° 13.2'	132° 17.8'	+0 09	+0 01	*1.05	*0.97	13.75	16.13	8.40
1541	Madan Bay	56° 23.5'	132° 10.1'	+0 12	+0 04	*1.05	*0.98	13.81	16.23	8.42
1543	Wrangell, Wrangell Island	56° 28.2'	132° 23.2'	+0 10	+0 01	*1.04	*0.96	13.57	15.96	8.29
Cordova Bay										
on Sitka, p.156										
1545	Minnie Bay	54° 43'	132° 18'	-0 05	+0 00	+2.7	+0.1	10.3	12.7	6.6
1547	Tah Bay	54° 50'	132° 20'	-0 04	+0 03	+2.6	+0.1	10.2	12.5	6.6
1549	Hunter Bay	54° 52'	132° 19'	-0 02	+0 03	+2.7	+0.1	10.3	12.7	6.6
1551	Kassa Inlet entrance	54° 56'	132° 31'	-0 03	+0 01	+2.6	+0.1	10.2	12.5	6.6
1553	Elbow Bay	54° 54'	132° 39'	-0 04	-0 04	+2.6	+0.1	10.2	12.6	6.6
1555	Mabel Island	55° 00'	132° 36'	-0 10	-0 01	+2.8	+0.1	10.4	12.8	6.7
1557	Keete Island, Nutkwa Inlets	55° 03'	132° 35'	-0 13	-0 05	+2.8	+0.1	10.4	12.8	6.7
1559	Keete Inlet	55° 05'	132° 29'	-0 11	-0 01	+2.9	+0.1	10.5	12.9	6.7
Hetta Inlet										
1561	Mud Bay	55° 05'	132° 38'	-0 05	+0 01	+2.8	+0.1	10.4	12.8	6.7
1563	Copper Harbor	55° 13'	132° 37'	-0 10	-0 08	+2.8	+0.1	10.4	12.8	6.7
1565	Sulzer	55° 17'	132° 37'	-0 02	+0 08	+2.9	+0.1	10.5	12.9	6.7
1567	American Bay, Kaigani Strait	54° 51'	132° 50'	+0 01	+0 01	+2.5	0.0	10.2	12.4	6.5
Tievak Strait										
1569	Kasook Inlet, Sukkwan Island	55° 01'	132° 47'	-0 13	-0 05	+2.8	0.0	10.5	12.6	6.6
1571	View Cove	55° 05'	133° 01'	-0 02	+0 02	+2.8	0.0	10.5	12.7	6.6
1573	South Pass, Sukkwan Strait	55° 10'	132° 52'	-0 02	+0 02	+2.9	+0.1	10.5	12.9	6.8
1575	Hydaburg, Sukkwan Strait	55° 12.1'	132° 49.4'	-0 03	-0 03	*1.33	*1.06	10.59	13.04	6.84
1577	Saltery Point	55° 11'	132° 48'	-0 08	-0 05	+2.9	+0.1	10.5	12.9	6.8
1579	North Pass, West End	55° 12'	132° 56'	-0 12	-0 06	+3.0	+0.1	10.6	13.0	6.8
1581	Natalia Point	55° 14'	133° 03'	-0 05	+0 01	+2.9	+0.1	10.5	12.9	6.8
1583	Soda Bay	55° 16'	132° 58'	+0 03	+0 07	+3.0	+0.1	10.6	13.0	6.8
1585	Block Island, Tievak Narrows	55° 15.8'	133° 06.9'	-0 07	-0 02	*1.19	*1.03	9.41	11.75	6.20
Dall Island, west coast										
Cape Muzon (see Index) 54										
1587	Security Cove	54° 45'	132° 51'	-0 20	-0 24	+1.0	0.0	8.7	10.8	5.7
1589	Sakie Bay	55° 04'	133° 12'	+0 01	+0 05	+0.3	0.0	8.0	10.3	5.4
1591	Sea Otter Harbor	55° 07'	133° 10'	-0 04	+0 04	-0.2	-0.1	7.6	9.7	5.1
Bucareli Bay to Davidson Inlet										
Ulloa Channel										
Bucareli Bay										
1593	Craig, Klawock Inlet	55° 29.3'	133° 08.5'	-0 08	-0 08	*1.02	*0.94	7.95	10.15	5.35
1595	Cruz Pass, San Fernando Island	55° 32'	133° 19'	-0 15	-0 12	+0.1	-0.1	7.9	10.1	5.2
Gulf of Esquibel										
1597	Steamboat Bay, Noyes Island	55° 32.0'	133° 38.2'	-0 12	-0 13	*1.04	*0.93	8.16	10.33	5.44
1599	Anguilla Island	55° 41'	133° 35'	-0 18	-0 14	+0.4	-0.1	8.2	10.3	5.4
1601	Nossuk Bay, Tonowek Bay	55° 43.3'	133° 21.0'	-0 14	-0 14	*1.05	*0.94	8.21	10.40	5.48
Davidson Inlet										
1603	Port Alice, Heceta Island	55° 49'	133° 36'	-0 20	-0 14	+0.9	0.0	8.6	10.8	5.7
1605	Tuxekan, 0.5 mile south of	55° 53'	133° 15'	-0 17	-0 07	+0.9	-0.1	8.7	10.9	5.6
1607	El Capitan Island	55° 56'	133° 20'	-0 11	-0 10	+0.9	-0.1	8.7	10.8	5.6
1609	Cyrus Cove, Sea Otter Sound	55° 55'	133° 24'	-0 16	-0 12	+1.1	0.0	8.8	10.9	5.8
1611	Marble Island	56° 00'	133° 28'	-0 19	-0 15	+0.8	-0.1	8.6	10.7	5.6
1613	Edna Bay	55° 57'	133° 40'	-0 20	-0 08	+0.9	0.0	8.6	10.8	5.7
Sumner Strait										
1615	Coronation Island	55° 54'	134° 07'	-0 16	-0 17	+0.8	0.0	8.5	10.7	5.6
1617	Pole Anchorage, Kosciusko Island	55° 57'	133° 49'	-0 22	-0 22	+1.4	-0.1	9.2	11.4	5.9
1619	Port McArthur, Kuiu Island	56° 04'	134° 07'	-0 11	-0 07	+0.6	-0.1	8.4	10.6	5.5
1621	Affleck Canal entrance, Kuiu Island	56° 02.2'	134° 06.9'	-0 09	-0 06	*1.09	*0.95	8.63	10.73	5.70
1623	Kell Bay, Affleck Canal, Kuiu Island	56° 09'	134° 08'	+0 01	+0 01	+1.3	0.0	9.0	11.2	5.9

Endnotes can be found at the end of table 2.

TABLE 2. – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Latitude	Longitude	Time		Height		Mean	Diurnal	
				High Water	Low Water	High Water	Low Water			
	ALASKA Sumner Strait-cont. Time meridian, 135° W	North	West	h	m	h	m	ft	ft	ft
				on Sitka, p.156						
1625	Point St. Albans	56° 05'	133° 58'	-0 17	-0 13	+1.4	0.0	9.1	11.3	5.9
1627	Shakan Bay Entrance	56° 08'	133° 37'	-0 13	-0 12	+1.8	0.0	9.5	11.7	6.2
1629	Shakan Strait, Kosciusko Island	56° 08.9'	133° 27.6'	-0 07	-0 10	*1.16	*0.95	9.28	11.49	6.02
	<i>El Capitan Passage</i>									
1631	South of Devilfish Bay	56° 04'	133° 19'	-0 05	+0 02	+0.9	-0.1	8.7	10.8	5.6
1633	West of Aneskett Point	56° 09.7'	133° 19.2'	-0 08	-0 09	*1.13	*0.95	8.95	11.16	5.86
1635	Dry Pass	56° 09.8'	133° 24.9'	-0 01	-0 01	*1.19	*0.96	9.53	11.75	6.16
1637	Port Beauclerc, Kuiu Island	56° 17'	133° 57'	-0 14	-0 12	+1.9	-0.1	9.7	11.9	6.2
1639	Port Protection, Prince of Wales Island	56° 19'	133° 36'	-0 13	-0 11	+2.4	0.0	10.1	12.4	6.4
1641	Reid Bay	56° 23'	133° 53'	-0 11	-0 19	+2.5	0.0	10.2	12.4	6.5
1643	Sumner Island	56° 25'	133° 48'	-0 19	-0 12	+2.6	0.0	10.3	12.6	6.6
				on Ketchikan, p.148						
1645	Bushy Island, Snow Passage	56° 16.6'	132° 59.1'	+0 03	+0 01	*0.95	*0.93	12.41	14.74	7.66
1647	Reef Point, Stikine Strait	56° 21.2'	132° 33.2'	+0 09	+0 02	*1.04	*0.96	13.57	15.96	8.28
1649	Greys Island	56° 31.3'	132° 32.5'	+0 11	+0 05	*1.01	*0.94	13.20	15.57	8.08
	Wrangell Narrows									
1651	Point Lockwood, Woewodski Island	56° 33.5'	132° 57.8'	+0 15	+0 08	*0.98	*0.98	12.67	15.09	7.87
1653	Beecher Pass	56° 35.7'	132° 59.2'	+0 22	+0 14	*1.00	*0.98	13.05	15.47	8.06
1655	Anchor Point	56° 38.3'	132° 55.6'	+0 31	+0 40	*1.04	*0.99	13.56	15.99	8.00
1657	Papke's Landing	56° 40.6'	132° 55.9'	+0 33	+0 50	*1.00	*1.01	13.92	16.39	8.54
1659	Turn Point	56° 48.0'	132° 58.8'	+0 25	+0 38	*1.04	*0.96	13.68	16.07	8.34
1661	Petersburg	56° 48.9'	132° 57.4'	+0 28	+0 37	*1.04	*0.97	13.56	15.99	8.00
	Keku Strait									
1663	Monte Carlo Island	56° 32.1'	133° 45.9'	+0 03	+0 03	*0.80	*0.89	10.30	12.50	6.60
1665	The Summit	56° 40.9'	133° 44.1'	+0 19	+0 23	*0.98	*0.99	12.63	15.04	7.86
1667	Entrance Island	56° 48.7'	133° 47.2'	+0 18	+0 20	*0.94	*0.98	12.17	14.56	7.62
1669	Kake Harbor	56° 56.9'	133° 53.6'	+0 16	+0 20	*0.92	*0.97	11.81	14.24	7.43
	Frederick Sound									
				on Juneau, p.152						
1671	Dry Strait	56° 37'	132° 34'	-0 18	-0 03	-0.2	0.0	13.5	16.1	8.3
1673	Cosmos Point	56° 39.8'	132° 37.0'	-0 05	-0 05	*0.98	*0.99	13.47	16.00	8.43
1675	Ideal Cove, Mitkof Island	56° 40'	132° 38'	-0 09	-0 05	-0.2	0.0	13.5	16.1	8.3
1677	Leconte Bay	56° 47.3'	132° 30.1'	-0 01	+0 02	*0.98	*0.99	13.47	16.01	8.31
1679	Brown Cove	56° 53'	132° 48'	-0 14	-0 10	-0.3	-0.1	13.5	15.8	8.2
1681	Thomas Bay	57° 00'	132° 47'	+0 07	+0 07	-0.8	-0.1	13.0	15.4	8.0
1683	Portage Bay, Kupreanof Island	57° 00'	133° 19'	-0 19	-0 15	-0.7	0.0	13.0	15.5	8.1
1685	Cleveland Passage, Whitney Island	57° 13'	133° 30'	-0 01	+0 03	-1.2	-0.1	12.6	15.0	7.8
1687	Cannery Cove, Pybus Bay	57° 18.4'	134° 08.0'	-0 08	-0 06	*0.90	*0.94	12.24	14.63	7.60
1689	Eliza Harbor, Liesnoi Island	57° 10'	134° 17'	-0 19	-0 19	-1.9	-0.1	11.9	14.3	7.4
1691	Eliza Harbor, Admiralty Island	57° 11.3'	134° 17.2'	-0 06	-0 04	*0.87	*0.92	11.79	14.10	7.35
1693	Herring Bay	57° 06.8'	134° 22.8'	-0 08	-0 07	*0.84	*0.91	11.44	13.70	7.16
1695	Saginaw Bay, Kuiu Island	56° 54.2'	134° 18.1'	-0 24	-0 21	*0.84	*0.96	11.36	13.73	7.21
	Stephens Passage									
1697	The Brothers	57° 17.7'	133° 47.8'	-0 07	-0 04	*0.91	*0.98	12.34	14.85	7.73
1699	Port Houghton, Robert Islands	57° 18'	133° 28'	-0 21	-0 17	-0.8	-0.1	13.0	15.4	8.0
1701	Hobart Bay	57° 24'	133° 25'	-0 06	+0 03	-1.1	-0.1	12.7	15.1	7.8
1703	Good Island, Gambier Bay	57° 29.2'	133° 53.9'	-0 05	-0 04	*0.93	*0.96	12.77	15.25	7.91
1705	Gambier Bay (cannery wharf)	57° 29.0'	133° 57.6'	-0 01	-0 01	*0.92	*0.96	12.63	15.08	7.86
1707	Upper Endicott Arm, North Shore	57° 31.3'	133° 03.3'	+0 01	+0 06	*0.98	*0.99	13.52	16.04	8.34
1709	Windham Bay	57° 33'	133° 30'	+0 00	+0 00	-1.1	-0.1	12.7	15.1	7.8
1711	Rasp Ledge, Seymour Canal	57° 41'	134° 02'	+0 06	+0 05	-0.7	+0.1	12.9	15.6	8.2
1713	Windfall Harbor, Seymour Canal	57° 52'	134° 16'	+0 14	+0 18	-0.2	0.0	13.5	16.0	8.3
1715	Holkham Bay, Wood Spit	57° 43'	133° 35'	+0 03	+0 06	-0.8	-0.1	13.0	15.4	8.0
1717	Holkham Bay, Tracy Arm Entrance	57° 46.6'	133° 36.2'	+0 01	+0 02	*0.96	*0.96	13.14	15.61	8.11
1719	Sawyer Island, Tracy Arm	57° 52.7'	133° 11.4'	+0 02	+0 06	*0.97	*1.01	13.32	15.83	8.25
1721	Port Snettisham, Point Styleman	57° 58'	133° 53'	-0 12	-0 06	-0.4	-0.1	13.4	15.8	8.2
1723	Port Snettisham, Crib Point	58° 05.7'	133° 44.3'	-0 03	-0 03	*0.98	*0.97	13.40	15.86	8.23
1725	Taku Harbor	58° 04.1'	134° 00.6'	-0 03	-0 04	*0.97	*1.00	13.29	15.71	8.22
1727	Greely Point, Taku Inlet	58° 13'	134° 04'	-0 01	-0 04	-0.6	-0.1	13.2	15.7	8.1
1729	Taku Point, Taku Inlet	58° 24'	134° 01'	+0 14	+0 13	+0.4	0.0	14.1	16.7	8.6
1731	JUNEAU	58° 17.9'	134° 24.7'			<i>Daily predictions</i>		13.74	16.31	8.47
1733	Young Bay	58° 11.0'	134° 35.2'	+0 00	+0 02	*1.00	*1.00	13.80	16.39	8.49
1735	Fritz Cove, Douglas Island	58° 19'	134° 36'	-0 01	+0 05	-0.3	-0.1	13.5	15.9	8.2
1737	Auke Bay	58° 23'	134° 39'	-0 06	-0 03	-0.4	0.0	13.3	15.9	8.2
	Lynn Canal									
1739	Funter, Funter Bay	58° 15'	134° 54'	+0 00	+0 01	-1.1	0.0	12.6	15.1	7.9
1741	Barlow Cove, Mansfield Peninsula	58° 19.3'	134° 52.7'	-0 04	-0 01	*0.96	*0.99	13.22	15.75	8.19
1743	Lincoln Island	58° 29.9'	134° 57.9'	-0 03	+0 01	*0.98	*1.00	13.49	15.98	8.33
1745	William Henry Bay	58° 43'	135° 14'	+0 02	+0 09	-0.5	0.0	13.2	15.7	8.2
1747	Cove Point, Berner's Bay	58° 45.1'	135° 01.7'	-0 02	+0 00	*1.00	*1.02	13.64	16.26	8.45
1749	Chilkat Inlet	59° 10.2'	135° 24.0'	-0 04	-0 01	*1.01	*1.00	13.89	16.49	8.53

Endnotes can be found at the end of table 2.

TABLE 2. – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Latitude	Longitude	Time		Height		Mean	Diurnal	
				High Water	Low Water	High Water	Low Water			
	ALASKA Lynn Canal-cont. Time meridian, 135° W	North	West	h	m	h	m	ft	ft	ft
				on Juneau, p.152						
1751	Haines Inlet	59° 14'	135° 26'	-0 09	-0 06	+0 5	0 0	14.2	16.8	8.7
1753	Taiyasanka Harbor, Taiya Inlet	59° 18.1'	135° 25.7'	-0 04	-0 02	*1.03	*1.01	14.20	16.89	8.72
1755	Skagway, Taiya Inlet	59° 27.0'	135° 19.6'	-0 03	-0 01	*1.03	*1.01	14.11	16.74	8.68
	Chatham Strait			on Sitka, p.156						
1757	Port Alexander, Baranof Island	56° 14.8'	134° 38.8'	+0 07	+0 10	*1.14	*1.01	8.59	10.93	5.76
1759	Port Walter, Baranof Island	56° 23'	134° 40'	+0 04	+0 13	+1.5	+0.1	9.1	11.5	6.0
1761	Table Bay, Kuiu Island	56° 10'	134° 15'	-0 15	-0 13	+1.1	0.0	8.8	11.1	5.8
1763	Port Malmesbury, Kuiu Island	56° 18'	134° 14'	+0 04	+0 13	+1.2	+0.1	8.8	11.2	5.9
1765	Tebenkof Bay, Kuiu Island	56° 25'	134° 08'	+0 04	+0 11	+1.8	+0.1	9.4	11.8	6.2
1767	Red Bluff Bay	56° 51'	134° 43'	-0 02	+0 12	+2.7	+0.2	10.2	12.7	6.7
				on Juneau, p.152						
1769	Frederick Sound (see Index)	- - -	- - -	- - -	- - -	- -	- -	- -	- -	- -
1771	Baranof, Warm Spring Bay	57° 05'	134° 50'	-0 07	-0 04	-2.8	-0.1	11.0	13.4	7.0
1771	Whitewater Bay, Admiralty Island	57° 14'	134° 36'	-0 19	-0 15	-2.0	+0.3	11.4	13.9	7.6
1773	Kasnyku Bay	57° 13'	134° 52'	-0 10	-0 06	-2.4	-0.1	11.4	13.8	7.2
1775	Point Thatcher	57° 25'	134° 51'	-0 15	-0 11	-1.9	+0.2	11.6	14.2	7.6
1777	Peril Strait (see Index)	- - -	- - -	- - -	- - -	- -	- -	- -	- -	- -
1777	Killisnoo	57° 28'	134° 34'	-0 06	-0 04	-2.1	0.0	11.6	14.1	7.4
	Kootznahoo Inlet									
1779	Favorite Bay	57° 29'	134° 33'	+0 11	+0 15	-2.8	+0.3	10.6	13.0	7.2
1781	Mitchell Bay	57° 32'	134° 24'	+1 22	+1 31	*0.67	*0.62	9.2	11.0	5.6
1783	Tenakee Springs, Tenakee Inlet	57° 47'	135° 13'	-0 04	+0 05	-1.5	-0.1	12.3	14.7	7.7
1785	Freshwater Bay, Chichagof Island	57° 51'	135° 01'	-0 08	+0 00	-1.5	+0.3	11.9	14.4	7.8
1787	Hawk Inlet Entrance	58° 05.1'	134° 46.6'	-0 04	-0 01	*0.94	*0.98	12.85	15.29	7.98
	Baranof Island, west coast			on Sitka, p.156						
1789	Dorothy Cove, Necker Bay	56° 43.3'	135° 04.5'	-0 02	-0 02	*0.97	*0.95	7.48	9.61	5.12
1791	Golf Island, Necker Island	56° 47.2'	135° 23.5'	-0 02	-0 01	*0.98	*0.97	7.53	9.70	5.18
	Sitka Sound									
1793	Symonds Bay, Biorka Island	56° 51'	135° 31'	-0 15	-0 16	-0.1	0.0	7.6	9.8	5.2
1795	SITKA	57° 03.1'	135° 20.5'	<i>Daily predictions</i>				7.70	9.94	5.31
1797	Olga Point, Olga Strait	57° 14'	135° 32'	+0 00	+0 14	0.0	0.0	7.7	9.9	5.3
1799	Whitstone Narrows, Neva Strait	57° 14.7'	135° 33.7'	+0 03	+0 06	*1.0	*1.0	7.77	10.03	5.36
	Salisbury Sound and Peril Strait									
1801	Klokachef Island	57° 25'	135° 53'	-0 10	-0 06	-0.1	+0.1	7.5	9.9	5.2
1803	Scraggy Point	57° 20'	135° 43'	-0 09	+0 00	-0.1	+0.1	7.5	9.8	5.2
1805	Scraggy Island	57° 20.4'	135° 42.4'	+0 00	-0 01	*1.00	*1.03	7.62	9.97	5.31
1807	Haley Anchorage, Fish Bay	57° 22'	135° 37'	+0 03	+0 12	+0.2	+0.1	7.8	10.1	5.4
1809	Serguis Narrows	57° 24.6'	135° 37.6'	+0 19	+0 24	*1.33	*1.05	10.62	13.04	6.86
1811	Bear Bay	57° 25'	135° 35'	+0 18	+0 29	+3.7	+0.2	11.2	13.6	7.2
				on Juneau, p.152						
1813	Povorotni Island, Pogibshi Point	57° 31'	135° 33'	-0 09	+0 02	-1.3	-0.1	12.5	14.9	7.7
1815	Nismeni Cove	57° 34'	135° 25'	-0 15	-0 03	-1.3	-0.1	12.5	15.0	7.7
1817	Point Elizabeth	57° 31'	135° 17'	-0 15	-0 05	-1.6	0.0	12.1	14.7	7.6
1819	Lindenbush Head	57° 27'	135° 02'	-0 15	-0 05	-1.8	0.0	11.9	14.5	7.5
1821	Fairway Island	57° 27'	134° 53'	-0 15	-0 05	-2.1	0.0	11.6	14.2	7.4
	Chichagof Island, west coast			on Elfin Cove, p.160						
1823	Falcon Arm, Slocum Arm	57° 33'	135° 56'	-0 05	-0 07	*0.96	*1.10	8.1	10.2	5.6
1825	Elbow Passage, Klag Bay	57° 37'	136° 05'	+0 08	+0 13	*0.98	*1.03	8.4	10.7	5.7
1827	Kimshan Cove, Ogden Passage	57° 41'	136° 06'	+0 05	+0 06	*0.92	*1.03	7.8	10.1	5.4
	Lisianski Strait and Inlet									
1829	Canoe Cove, North Pass	57° 51'	136° 25'	+0 02	-0 01	*0.91	*0.89	7.9	10.1	5.2
1831	Miner Island	58° 01'	136° 20'	-0 08	-0 06	*0.94	*0.96	8.1	10.4	5.5
1833	Pelican Harbor	57° 57.4'	136° 13.6'	+0 02	+0 00	*0.96	*1.00	8.27	10.61	5.31
	Yakobi Island, outer coast									
1835	Takanis Bay	57° 55'	136° 31'	-0 04	-0 01	*0.90	*1.03	7.6	10.1	5.3
1837	Surge Bay	58° 01.0'	136° 31.8'	+0 00	+0 02	*0.88	*0.96	7.5	9.9	5.1
	Cross Sound									
1839	ELFIN COVE, Port Althorp	58° 11.6'	136° 20.5'	<i>Daily predictions</i>				8.68	11.02	5.80
1841	Inian Cove, North Inian Pass	58° 15.8'	136° 19.5'	+0 12	+0 03	*1.05	*1.01	9.12	11.18	6.04
	Icy Strait									
1843	Mud Bay, Goose Island	58° 12.7'	136° 02.1'	+0 06	+0 06	*1.20	*0.96	10.6	12.9	6.7
1845	Point Adolphus	58° 17.2'	135° 48.2'	+0 29	+0 35	*1.31	*1.11	11.62	14.14	7.43
1847	Excursion Inlet Entrance	58° 25.0'	135° 26.8'	+0 15	+0 16	*1.38	*1.05	12.44	14.88	7.76
1849	Excursion Inlet, north end	58° 29.8'	135° 29.3'	+0 26	+0 24	*1.36	*1.07	12.17	14.62	7.64
1851	Hoonah, Port Frederick	58° 06.4'	135° 26.6'	+0 11	+0 19	*1.40	*1.09	12.55	15.08	7.87
1853	Swanson Harbor, Ansley Island	58° 12.3'	135° 06.5'	+0 14	+0 11	*1.41	*1.08	12.70	15.30	7.93

Endnotes can be found at the end of table 2.

TABLE 2. – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Latitude	Longitude	Time		Height		Mean	Diurnal	
				High Water	Low Water	High Water	Low Water			
	ALASKA Icy Strait-cont. Time meridian, 135° W	North	West	h	m	h	m	ft	ft	ft
				on Elfin Cove, p.160						
1855	Glacier Bay									
	Bartlett Cove	58° 27.4'	135° 53.0'	+0 19	+0 22	*1.36	*1.11	12.19	14.72	7.72
1857	Willoughby Island	58° 36.4'	136° 07.2'	+0 41	+0 50	*1.50	*1.16	13.4	16.0	8.4
1859	Muir Inlet	58° 54.8'	136° 06.6'	+0 39	+0 49	*1.55	*1.19	13.97	16.65	8.72
1861	Wachusett Inlet	58° 56.8'	136° 19.9'	+0 39	+0 50	*1.57	*1.20	14.17	16.84	8.83
1863	Composite Island	58° 53.3'	136° 34.4'	+0 45	+0 51	*1.54	*1.20	13.9	16.5	8.6
1865	Tarr Inlet	58° 57.8'	136° 52.6'	+0 41	+0 51	*1.60	*1.20	14.18	16.87	8.38
	Gulf of Alaska									
1867	Graves Harbor	58° 16.6'	136° 40.7'	+0 04	+0 07	*0.91	*1.03	7.6	10.0	5.3
1869	Dixon Harbor	58° 23'	136° 52'	+0 07	+0 07	*0.89	*0.96	7.6	9.9	5.2
1871	Lituya Bay, 2 miles inside entrance	58° 37'	137° 37'	+0 06	+0 36	*0.87	*0.89	7.5	9.7	5.0
				on Yakutat, p.164						
1873	Yakutat, Yakutat Bay	59° 32.9'	139° 44.1'			<i>Daily predictions</i>		7.82	10.07	5.30
1875	Johnstone Passage, Yakutat Bay	59° 34.9'	139° 42.2'	+0 01	+0 03	*1.00	*1.00	7.76	9.97	5.27
1877	Redfield Cove, Yakutat Bay	59° 36.9'	139° 34.8'	+0 01	+0 00	*1.00	*0.92	7.82	9.97	5.19
1879	Point Latouche, Yakutat Bay	59° 54.2'	139° 37.6'	+0 06	+0 03	*1.00	*0.93	7.84	10.00	5.21
1881	Riou Bay, Icy Bay	59° 53.1'	141° 27.4'	+0 02	+0 03	*0.98	*1.01	7.6	9.9	5.2
1883	Tyndall Glacier, Icy Bay	60° 04.7'	141° 16.5'	+0 20	+0 17	*0.96	*0.97	7.50	9.67	5.10
1885	Wingham Island, Controller Bay	60° 03'	144° 24'	+0 05	+0 08	*0.99	*1.01	7.7	10.1	5.2
				on Cordova, p.168						
1887	Copper River Delta									
	Kokinhenik Island <10>	60° 18'	145° 05'	+0 08	---	---	---	---	---	---
1889	Pete Dahl Slough	60° 23'	145° 24'	+0 06	+0 38	-2.4	0.0	7.7	10.0	5.3
1891	Eyak River entrance	60° 28'	145° 40'	+0 14	+0 58	-1.6	-0.1	8.6	10.8	5.7
1893	Middleton Island (north end)	59° 27.6'	146° 18.6'	-0 21	-0 14	-2.2	-0.1	8.0	10.3	5.4
	Prince William Sound									
	Orca Inlet									
1895	Shag Rock	60° 28'	145° 59'	-0 11	-0 16	-1.1	-0.1	9.1	11.4	6.0
1897	Gravel Point	60° 28'	145° 58'	+0 01	+0 31	-0.1	0.0	10.0	12.3	6.5
1899	CORDOVA	60° 33.5'	145° 45.2'			<i>Daily predictions</i>		10.17	12.59	6.59
1901	Orca	60° 35'	145° 43'	+0 01	+0 01	-0.2	0.0	9.9	12.4	6.4
1903	Windy Bay, Hawkins Island	60° 34'	145° 58'	-0 08	-0 01	-0.5	0.0	9.6	12.1	6.3
1905	Comfort Cove, Port Gravina	60° 43'	146° 05'	-0 16	-0 06	-0.7	-0.1	9.5	11.8	6.2
	Hinchinbrook Island									
1907	Johnstone Point	60° 29'	146° 37'	-0 07	+0 02	-0.8	-0.1	9.4	11.8	6.1
1909	Port Etches	60° 19.7'	146° 33'	-0 09	+0 01	-1.3	-0.2	9.0	11.2	5.8
1911	Cape Hinchinbrook	60° 14.3'	146° 38.9'	-0 10	-0 03	*0.88	*0.98	8.85	11.24	5.91
	Montague Island									
1913	Wooded Islands	59° 52.5'	147° 24.2'	-0 02	+0 00	*0.80	*0.95	7.90	10.24	5.39
1915	Patton Bay	59° 54'	147° 26'	-0 12	-0 05	-2.3	-0.1	7.9	10.2	5.3
1917	MacLeod Harbor	59° 53.4'	147° 46.7'	+0 10	-0 04	*0.89	*0.96	8.90	11.19	5.90
1919	Hanning Bay	59° 57'	147° 41'	-0 08	-0 05	-1.0	-0.1	9.2	11.5	6.0
1921	5 miles NE of Point Brazil	59° 01.5'	147° 35.5'	-0 02	+0 00	*0.91	*0.96	9.14	11.51	6.02
1923	Perch Point	60° 07.6'	147° 23.7'	-0 08	-0 03	*0.92	*0.94	9.31	11.72	6.08
1925	Port Chalmers	60° 14.5'	147° 14.9'	-0 02	-0 01	*0.94	*0.97	9.53	11.91	6.22
1927	Gibbon Anchorage, Green Island	60° 16'	147° 26'	-0 21	-0 06	-0.8	-0.2	9.5	11.5	6.1
1929	Seal Island	60° 25.5'	147° 24.6'	-0 01	+0 02	*0.93	*0.98	9.40	11.79	6.18
1931	Latouche, Latouche Island	60° 03'	147° 54'	-0 05	-0 02	-1.0	0.0	9.1	11.5	6.0
1933	Guguak	60° 06.0'	148° 02.2'	-0 07	-0 03	*0.91	*0.95	9.19	11.57	6.04
1935	Sawmill Bay, Evans Island	60° 03'	148° 04'	-0 03	+0 03	-1.2	0.0	8.9	11.3	5.9
1937	Point Erlington, Erlington Island	59° 56.3'	148° 13.6'	-0 13	-0 02	*0.84	*0.94	8.44	10.83	5.64
	Knight Island									
1939	Point Helen	60° 09.2'	147° 47.0'	-0 03	-0 01	*0.92	*1.00	9.21	11.63	6.11
1941	Snug Harbor	60° 15.0'	147° 43.0'	-0 03	+0 00	*0.91	*0.97	9.17	11.54	6.06
1943	Bay of Isles, South Arm	60° 22.0'	147° 42.0'	+0 00	+0 02	*0.94	*1.01	9.43	11.88	6.24
1945	Port Audrey	60° 20.6'	147° 46.1'	+0 00	+0 03	*0.92	*0.95	9.27	11.58	6.07
1947	Louis Bay	60° 27.7'	147° 40.3'	+0 00	+0 03	*0.96	*1.04	9.61	12.06	6.37
1949	Herring Point	60° 28.5'	147° 47.5'	-0 04	+0 01	*0.95	*1.01	9.55	11.95	6.26
1951	Smith Island	60° 32'	147° 19'	-0 05	-0 04	-0.8	-0.1	9.4	11.8	6.1
1953	Snug Corner Cove, Port Fidalgo	60° 44'	146° 39'	-0 07	-0 06	-0.6	0.0	9.5	12.0	6.2
1955	Landlocked Bay, Port Fidalgo	60° 51'	146° 32'	-0 12	-0 08	-0.7	-0.1	9.5	11.9	6.1
				on Valdez, p.172						
1957	Valdez Arm									
	Busby Island	60° 53.9'	146° 46.9'	-0 02	-0 02	*0.98	*0.98	9.54	11.89	6.25
1959	Rocky Point	60° 56.8'	146° 45.3'	+0 00	-0 03	*0.99	*0.99	9.60	12.10	6.30
1961	Jack Bay	61° 02.4'	146° 36.9'	-0 01	-0 02	*0.99	*0.99	9.63	12.10	6.30
1963	VALDEZ, Port Valdez	61° 07.5'	146° 21.7'			<i>Daily predictions</i>		9.70	12.15	6.36
				on Cordova, p.168						
1965	Columbia Glacier, Columbia Bay	61° 01.4'	147° 05.1'	-0 01	+0 01	*0.95	*0.99	9.60	12.01	6.30
1967	Jackson Cove, Glacier Island	60° 53'	147° 14'	-0 10	-0 02	-0.6	0.0	9.5	11.9	6.2
1969	Naked Island, McPherson Passage	60° 40'	147° 24'	-0 18	-0 08	-0.7	-0.1	9.5	11.8	6.1
1971	Kings Bay, Port Nellie Juan	60° 32'	148° 28'	-0 01	+0 09	-0.6	0.0	9.5	11.9	6.2
1973	Culross Bay, Wells Passage	60° 44'	148° 11'	-0 15	-0 01	-0.4	0.0	9.7	12.1	6.3
1975	Long Bay Entrance, Culross Passage	60° 42'	148° 16'	+0 03	+0 09	-0.9	-0.1	9.3	11.6	6.1

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No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Latitude	Longitude	Time		Height		Mean	Diurnal	
				High Water	Low Water	High Water	Low Water			
	ALASKA Prince William Sound-cont. Time meridian, 135° W	North	West	h	m	h	m	ft	ft	ft
				on Cordova, p.168						
1977	Whittier, Passage Canal	60° 47'	148° 40'	-0 05	+0 01	-0.3	0.0	9.8	12.3	6.4
1979	Applegate Island	60° 38'	148° 10'	-0 01	+0 06	-0.6	0.0	9.5	11.9	6.2
1981	Perry Island, South Bay	60° 40.3'	147° 55.9'	-0 02	-0 01	*0.94	*0.98	9.53	11.96	6.24
1983	Eshamy Bay, Knight Island Passage	60° 27'	147° 59'	+0 01	+0 04	-0.4	0.0	9.7	12.1	6.4
1985	Eshamy Lagoon	60° 27.7'	147° 02.7'	-0 11	+0 00	*0.92	*1.03	9.11	11.51	6.06
1987	Chenega Island, Dangerous Passage	60° 20'	148° 09'	-0 01	+0 06	-0.9	0.0	9.2	11.6	6.1
1989	Chenega Island, southwest end	60° 17.2'	148° 07.2'	-0 03	+0 00	*0.94	*1.00	9.37	11.71	6.14
1991	Bainbridge Point, Bainbridge Island	60° 11.8'	148° 02.5'	-0 06	+0 01	*0.93	*0.98	9.36	11.79	6.16
1993	Hogg Bay, Port Bainbridge	60° 04'	148° 12'	-0 12	-0 03	-1.9	-0.1	8.3	10.6	5.5
	Kenai Peninsula, outer coast			on Seward, p. 176						
1995	Day Harbor	60° 00.6'	149° 03.7'	-0 02	+0 00	*0.99	*1.01	8.2	10.5	5.5
1997	SEWARD, Resurrection Bay	60° 07.2'	149° 25.6'	<i>Daily predictions</i>				8.33	10.62	5.55
1999	Aialik Bay, North end	59° 57.2'	149° 42.9'	+0 00	+0 02	*1.00	*0.99	8.38	10.62	5.53
2001	Aialik Sill, Aialik Bay	59° 53.1'	149° 43.1'	+0 01	+0 01	*1.00	*0.98	8.38	10.65	5.55
2003	Bear Cove, Aialik Peninsula	59° 48.1'	149° 36.9'	+0 01	+0 01	*1.00	*0.97	8.34	10.57	5.51
2005	Agnes Cove, Aialik Peninsula	59° 46.4'	149° 35.3'	+0 00	+0 01	*1.01	*1.00	8.39	10.69	5.57
2007	Camp Cove, Aialik Bay	59° 41.6'	149° 44.9'	+0 00	+0 01	*1.01	*0.98	8.40	10.66	5.57
2009	Crater Bay, Harris Bay	59° 42.8'	149° 47.2'	+0 03	+0 02	*1.01	*0.95	8.49	10.72	5.56
2011	Upper Northwestern Fiord, Harris Bay	59° 47.4'	150° 01.9'	+0 07	+0 12	*1.02	*0.99	8.59	10.84	5.65
2013	Two Arm Bay, Harris Bay	59° 39.7'	150° 06.5'	-0 10	-0 05	*1.03	*0.94	8.7	11.0	5.7
2015	Chance Cove (Lagoon)	59° 29.3'	150° 18.7'	+0 00	+0 01	*1.04	*1.01	8.7	11.0	5.7
2017	Beauty Bay, Nuka Bay	59° 31.6'	150° 37.7'	+0 12	+0 14	*1.08	*1.01	9.1	11.4	5.9
2019	Nuka Passage	59° 24.5'	150° 40.0'	+0 11	+0 12	*1.09	*1.01	9.2	11.5	6.0
2021	Takoma Cove, Port Dick	59° 15.7'	150° 58.9'	+0 23	+0 18	*1.15	*1.01	9.8	12.1	6.3
2023	Picnic Harbor, Rocky Bay	59° 15'	151° 26'	+0 17	+0 19	+0.3	-0.1	10.5	12.7	6.6
	Cook Inlet			on Seldovia, p.180						
2025	Ushagat Island, Barren Islands	58° 57'	152° 16'	-0 08	-0 04	*0.76	*0.76	11.4	13.7	7.2
2027	Port Chatham	59° 13'	151° 44'	-0 28	-0 34	*0.78	*0.92	11.9	14.3	7.5
2029	Port Graham	59° 21'	151° 49'	-0 08	-0 14	-1.0	0.0	14.5	16.9	8.9
	Kachemak Bay			<i>Daily predictions</i>						
2031	SELDOVIA	59° 26.4'	151° 43.2'	+0 01	+0 01	*1.01	*0.99	15.54	18.04	9.46
2033	Kasitsna Bay	59° 28.1'	151° 33.9'	-0 01	-0 01	+0.2	0.0	15.66	18.15	9.52
2035	Tutka Bay	59° 26'	151° 21'	-0 04	-0 04	+0.1	-0.1	15.6	18.0	9.4
2037	Sadie Cove	59° 29'	151° 22'	-0 03	-0 05	+0.7	0.0	16.2	18.7	9.7
2039	Halibut Cove	59° 36'	151° 13'	+0 05	+0 03	*1.01	*0.97	15.83	18.32	9.57
2041	Homer	59° 44'	151° 01'	-0 04	-0 05	+0.4	-0.1	16.0	18.4	9.6
2043	Bear Cove	59° 46.3'	151° 52.0'	+0 26	+0 18	*1.02	*1.03	15.86	18.38	9.68
2045	Anchor Point	60° 01'	151° 43'	+0 41	+0 54	+1.2	+0.2	16.5	19.1	10.1
2047	Cape Ninilichik	60° 04.1'	151° 42.3'	+1 04	+1 11	*1.07	*1.15	16.50	19.16	10.20
2049	Ninilichik	60° 20.2'	151° 22.8'	+1 31	+1 54	*1.12	*1.18	17.27	19.95	10.64
2051	Cape Kasilof	60° 30.2'	151° 16.9'	+1 54	+2 22	*1.17	*1.25	18.02	20.88	11.12
2053	Chinulna Point	60° 33'	151° 17'	+1 52	+2 18	+2.7	+0.5	17.7	20.7	11.0
2055	Kenai River entrance	60° 33'	151° 14'	+1 54	+2 55	+1.9	-0.1	17.5	19.8	10.4
2057	Kenai City Pier	60° 41.0'	151° 23.9'	<i>Daily predictions, p.184</i>				17.63	20.42	10.86
2059	NIKISKI	60° 43'	151° 25'	+2 37	+2 58	+3.0	+0.5	18.0	21.0	11.2
	East Foreland			on Anchorage, p.188						
2063	North Foreland	61° 02.6'	151° 09.7'	-1 02	-1 27	*0.71	*0.96	18.14	20.99	11.23
2065	Point Possession	61° 02.2'	150° 24.7'	-0 41	-0 49	*0.89	*0.98	23.15	26.04	13.79
2067	Fire Island	61° 10.4'	150° 12.2'	-0 17	-0 27	*0.92	*0.98	23.97	26.91	14.20
2069	ANCHORAGE, Knik Arm	61° 14.3'	149° 53.4'	<i>Daily predictions</i>				26.19	29.16	15.34
2071	Port MacKenzie	61° 16.1'	149° 55.0'	+0 07	+0 03	*1.00	*0.99	26.15	29.10	15.30
2073	Goose Creek	61° 23.5'	149° 51.0'	+0 22	+0 38	*1.06	*0.99	28.03	31.02	16.25
				on Seldovia, p.180						
2075	Kalgin Island (north end)	60° 30.7'	151° 57.1'	+1 48	+1 55	*1.04	*1.17	16.00	18.74	10.00
2077	Drift River Terminal	60° 34'	152° 08'	+1 39	+2 04	*1.01	*1.18	15.4	18.1	9.7
2079	Tuxedni Channel	60° 09.2'	152° 38.1'	+1 09	+1 15	*0.90	*1.05	13.80	16.34	8.68
2081	Snug Harbor	60° 06'	152° 34'	+1 04	+1 15	-2.3	0.0	13.2	15.7	8.3
2083	Oil Bay, Kamishak Bay	59° 38'	153° 16'	+1 15	+1 16	*0.77	*0.83	12.6	13.9	7.3
2085	Iliamna Bay	59° 37'	153° 35'	+0 12	+0 16	*0.80	*0.82	12.3	14.5	7.5
2087	Nordyke Island, Kamishak Bay	59° 11'	154° 05'	+0 10	+0 22	-2.8	-0.2	12.9	15.2	8.0
	Kodiak and Afognak Islands			on Kodiak, p.192						
2089	Tonki Bay	58° 19.0'	152° 04.0'	+0 14	+0 21	*1.30	*1.18	8.90	11.20	5.75
2091	Kizhuyak Point	57° 54'	152° 39'	+0 05	+0 09	+0.6	+0.1	7.3	9.4	4.8
2093	Port Lions	57° 52.4'	152° 52.0'	-0 03	-0 01	*1.07	*1.05	7.28	9.36	4.80
2095	Ouzinkie, Spruce Island	57° 55.3'	152° 29.8'	-0 08	-0 10	*1.02	*1.03	6.93	8.90	4.59
2097	Kodiak, Port of Kodiak	57° 47.0'	152° 25.7'	-0 03	-0 02	0.0	0.0	6.78	8.76	4.48
2099	Kodiak, St. Paul Harbor	57° 44.7'	152° 29.0'	-0 03	-0 01	*0.99	*1.03	6.65	8.70	4.45
2101	KODIAK, Womens Bay	57° 43.9'	152° 30.7'	<i>Daily predictions</i>				6.78	8.78	4.49
2103	Ugak Bay (Saltery Cove)	57° 29'	152° 44'	-0 29	-0 20	-0.3	-0.1	6.6	8.4	4.3
2105	Port Hobron, Sitkalidak Island	57° 10'	153° 09'	-0 18	-0 06	-0.3	+0.1	6.4	8.3	4.4
2107	Old Harbor	57° 12.1'	153° 18.2'	-0 19	-0 08	*0.98	*1.12	6.45	8.32	4.45

Endnotes can be found at the end of table 2.

TABLE 2. – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Latitude	Longitude	Time		Height		Mean	Diurnal	
				High Water	Low Water	High Water	Low Water			
	ALASKA Kodiak and Afognak Islands-cont. Time meridian, 135° W	North	West	h	m	h	m	ft	ft	ft
				on Kodiak, p.192						
2109	Three Saints Bay	57° 07'	153° 31'	-0 22	-0 13	-0 2	+0 1	6.5	8.3	4.4
2111	Japanese Bay	56° 57.6'	153° 41.2'	-0 21	-0 13	*0.97	*1.06	6.46	8.24	4.40
2113	Sitkinak Lagoon	56° 30'	154° 08'	-0 20	+0 07	-1.0	+0 2	5.6	7.5	4.1
				on Alitak, p.196						
				<i>Daily predictions</i>						
2115	ALITAK, Lazy Bay	56° 53.9'	154° 14.8'	+0 11	+0 10	*0.99	*1.01	9.25	11.63	6.20
2117	Moser Bay (Trap Point)	56° 59.0'	154° 09.3'	+3 46	+3 54	*0.10	*0.06	9.3	11.6	6.2
2119	Olga Bay (A. P. A. Cannery)	57° 09.5'	154° 14.3'					1.0	1.4	0.6
				on Seldovia, p.180						
	<i>Uyak Bay</i>									
2121	Uyak	57° 38.1'	154° 00.4'	-0 17	-0 03	*0.75	*0.98	11.26	13.78	7.28
2123	Larsen Bay	57° 32.0'	153° 59.4'	-0 09	+0 03	*0.74	*0.95	11.20	13.74	7.22
2125	Mining Camp	57° 28'	153° 49'	-0 37	-0 10	-4.1	-0.1	11.5	13.9	7.3
2127	Zachar Bay	57° 33'	153° 44'	-0 09	+0 00	*0.77	*0.77	11.3	13.8	7.3
	<i>Uganik Bay</i>									
2129	Village Islands	57° 47'	153° 33'	-0 15	-0 02	*0.80	*0.80	11.7	14.4	7.5
2131	Northeast Arm	57° 44'	153° 20'	-0 12	-0 01	*0.77	*0.77	11.4	13.9	7.3
2133	Uganik Passage	57° 48'	153° 18'	-0 07	+0 02	*0.81	*0.81	11.9	14.6	7.6
2135	Terror Bay	57° 44.6'	153° 11.7'	-0 03	+0 07	*0.99	*0.97	11.60	14.15	7.45
2137	Viekoda Bay	57° 54'	153° 10'	-0 11	-0 03	*0.80	*0.80	11.8	14.4	7.6
	<i>Kupreanof Strait</i>									
2139	Onion Bay	58° 03'	153° 14'	+0 00	-0 01	*0.80	*0.80	11.8	14.4	7.6
2141	Dry Spruce Island	57° 57'	153° 02'	+0 02	+0 13	*0.77	*0.77	11.4	13.9	7.4
2143	Nachalni Island	57° 58.7'	152° 55.5'	+0 06	+0 16	*0.74	*1.05	11.05	13.67	7.30
2145	Uzkosti Point	57° 55.7'	152° 48.7'	-0 40	+0 19	*0.60	*0.99	8.68	11.30	6.03
2147	West Raspberry Island	58° 06.4'	153° 20.40'	-0 05	+0 06	*0.77	*0.96	11.56	14.04	7.42
2149	Dolphin Point, Raspberry Strait	58° 07'	153° 09'	-0 25	-0 05	-4.1	-0.1	11.5	14.0	7.3
2151	Malina Bay, Shelkof Strait	58° 11'	152° 57'	-0 14	+0 00	*0.81	*0.81	12.0	14.5	7.7
2153	Redfox Bay, Shuyak Strait	58° 27'	152° 36'	-0 14	-0 02	-4.4	-0.2	11.3	13.7	7.2
	<i>Shuyak Island</i>									
2155	Big Bay	58° 33'	152° 37'	+0 10	+0 15	*0.77	*0.77	11.5	13.9	7.3
2157	Carry Inlet	58° 35'	152° 31'	+0 06	+0 07	*0.73	*0.73	10.7	13.1	6.9
	Alaska Peninsula									
2159	Nukshak Island, Shelkof Strait	58° 23.5'	153° 57.5'	-0 01	+0 07	*0.76	*0.95	11.42	13.82	7.32
2161	Kukak, Kukak Bay	58° 20'	154° 07'	-0 08	+0 05	*0.74	*0.74	11.1	13.3	6.9
2163	Aguchik Island, Kukak Bay	58° 17.4'	154° 16.2'	-0 04	+0 06	*0.75	*0.94	11.35	13.76	7.27
2165	Takli Island, Shelkof Strait	58° 03.8'	154° 28.6'	-0 09	+0 03	*0.73	*1.00	10.95	13.59	7.18
2167	Katmai Bay, Shelkof Strait	58° 00'	154° 59'	-0 14	+0 01	*0.71	*0.71	10.5	12.8	6.6
2169	Puale Bay	57° 42'	155° 23'	-0 22	-0 03	*0.67	*0.67	9.8	12.1	6.4
				on Kodiak, p.192						
2171	Kanatak Lagoon, Portage Bay	57° 31'	156° 04'	+0 21	+0 51	+3.0	+0.3	9.5	11.8	6.1
2173	Lees Cabins, Wide Bay	57° 26'	156° 18'	+0 21	+0 32	+3.2	+0.2	9.8	11.9	6.2
2175	Kujulik Bay (North Shore)	56° 36.8'	157° 59.0'	+0 31	+0 46	*1.10	*1.35	7.18	9.50	5.08
2177	Unavikshak Island	56° 29.5'	157° 44.4'	+0 31	+0 44	*1.05	*1.24	6.86	9.08	4.80
2179	Nakchamik Island	56° 21.1'	157° 48.7'	+0 29	+0 41	*1.04	*1.33	6.73	8.99	4.82
2181	Chignik, Anchorage Bay	56° 17.8'	158° 24.0'	+0 34	+0 44	*1.04	*1.28	6.77	8.96	4.78
2183	Castle Bay, Northwest Arm	56° 13.9'	158° 20.8'	+0 32	+0 47	*1.02	*1.30	6.58	8.82	4.72
2185	Chankliut Island	56° 08.8'	158° 06.4'	+0 32	+0 43	*0.98	*1.27	6.32	8.50	4.55
2187	Chowiet Island, Semidi Island	56° 03.1'	156° 41.9'	+0 15	+0 25	*1.04	*1.29	6.75	8.95	4.79
2189	Hump Island, Kuiu Bay	56° 06.8'	158° 35.8'	+0 35	+0 42	*0.91	*1.23	5.78	7.93	4.24
2191	Three Star Point	55° 54'	159° 10'	+0 28	+0 37	*0.90	*1.28	5.7	7.9	4.2
2193	Mitrofanina Island	55° 53.4'	158° 49.2'	+0 32	+0 39	*0.88	*1.23	5.62	7.73	4.15
2195	Chiachi Island (east side)	55° 51'	159° 06'	+0 22	+0 37	*0.89	*1.28	5.6	7.8	4.2
2197	Kupreanof Harbor, Paul Island	55° 47'	159° 21'	+0 19	+0 35	*0.89	*1.28	5.6	7.8	4.2
2199	Fox Bay, Kupreanof Peninsula	55° 38'	159° 37'	+0 18	+0 33	*0.86	*1.19	5.5	7.6	4.0
2201	Dent Point, Stepovak Bay	55° 47'	159° 53'	+0 17	+0 33	*0.86	*1.19	5.5	7.6	4.0
				on Sand Point, p.200						
	<i>Shumagin Islands</i>									
2203	Herendeen Island	55° 03.9'	159° 25.1'	-0 01	-0 02	*1.02	*1.02	5.27	7.39	3.99
2205	Bird Island	54° 50.1'	159° 45.5'	-0 06	-0 09	*0.97	*1.03	4.96	7.05	3.85
2207	Sanborn Harbor, Nagai Island	55° 09'	159° 59'	+0 03	-0 03	*1.00	*0.98	5.2	7.2	3.9
2209	Mist Harbor, Nagai Island	55° 08'	159° 51'	+0 01	-0 02	*0.97	*0.90	5.1	7.0	3.7
2211	Pirate Cove, Popof Island	55° 22'	160° 22'	+0 08	+0 03	*1.03	*0.98	5.4	7.4	4.0
2213	SAND POINT, POPOF ISLAND	55° 20.2'	160° 30.1'					5.19	7.23	3.93
2215	Zachary Bay, Unga Island	55° 20.1'	160° 37.0'	+0 04	+0 04	*1.03	*1.00	5.37	7.43	4.02
2217	Albatross Anchorage, Balboa Bay	55° 35'	160° 37'	-0 02	+0 03	*1.06	*1.05	5.5	7.6	4.1
2219	Beaver Bay	55° 28'	160° 50'	+0 03	+0 02	*1.01	*1.05	5.2	7.3	4.0
2221	Seal Cape, Coal Bay	55° 22'	161° 20'	+0 00	+0 05	*0.98	*1.05	5.0	7.0	3.9
2223	Ukolnoi Island	55° 16'	161° 32'	+0 07	+0 00	*0.97	*0.98	5.0	7.0	3.8
2225	Dolgoi Harbor, Dolgoi Island	55° 07.3'	161° 47.5'	+0 10	+0 02	*0.94	*0.98	4.80	6.78	3.71
2227	Settlement Point, Pavlof Bay	55° 30'	161° 28'	+0 09	+0 08	*0.98	*0.90	5.2	7.2	3.8
2229	King Cove	55° 03.7'	162° 19.6'	+0 11	+0 03	*0.94	*1.00	4.83	6.83	3.74
2231	Lenard Harbor, Cold Bay	55° 07'	162° 23'	+0 12	+0 17	*0.98	*0.98	5.1	7.2	3.8
2233	Cold Bay	55° 12.5'	162° 41.8'	+0 14	+0 11	*1.03	*1.01	5.38	7.42	4.03

Endnotes can be found at the end of table 2.

TABLE 2. – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Latitude	Longitude	Time		Height		Mean	Diurnal	
				High Water	Low Water	High Water	Low Water			
	ALASKA Alaska Peninsula-cont. Time meridian, 135° W	North	West	h	m	h	m	ft	ft	ft
				on Sand Point, p.200						
2235	Sanak Islands									
	Peterson Bay	54° 24'	162° 38'	-0 05	-0 08	*0.83	*1.05	4.0	6.2	3.4
2237	Sanak Harbor	54° 29'	162° 49'	+0 14	+0 03	*0.89	*1.05	4.4	6.6	3.6
	Aleutian Islands									
	<i>Unimak Island</i>									
2239	Dora Harbor	54° 42'	163° 16'	+0 15	+0 15	*0.87	*1.05	4.3	6.5	3.5
2241	Isanotski Strait Entrance, Ikatan Bay	54° 46.9'	163° 21.8'	+0 13	+0 15	*0.91	*1.02	4.57	6.59	3.64
				on Unalaska, p.204						
2243	False Pass, Isanotski Strait	54° 51.8'	163° 24.8'	-2 07	-1 28	*1.13	*0.72	3.07	4.08	2.20
2245	Neumans Cove	54° 57.9'	163° 26.4'	-0 42	-0 46	*1.22	*1.25	2.88	4.30	2.61
2247	St. Catherine Cove	55° 01'	163° 30'	+0 04	-0 18	*1.23	*1.36	2.6	4.7	2.9
2249	Cape Chunak	55° 03.8'	163° 32.0'	+1 10	+1 29	*2.07	*1.95	5.08	7.46	4.34
2251	Cape Mordvinof	54° 56'	164° 28'	+0 26	+0 19	*1.73	*1.36	4.3	6.4	3.7
2253	Cape Sarichef	54° 36'	164° 55'	-0 24	-0 56	*1.37	*1.27	3.2	5.0	3.1
2255	Scotch Cap	54° 23.6'	164° 44.7'	-2 45	-2 53	*1.69	*1.74	4.00	6.18	3.62
2257	Tigalda Bay, Tigalda Island	54° 07.2'	164° 58.6'	-2 40	-1 11	*0.91	*0.91	1.8	3.3	1.9
2259	Southeast Tigalda Island	54° 06.1'	164° 56.5'	-3 34	-3 42	*1.42	*1.42	3.39	5.30	3.02
2261	Rootok Island, Rootok Strait	54° 03.1'	165° 30.8'	-3 38	-3 28	*1.36	*1.32	3.28	5.06	2.87
2263	Trident Bay, Akun Island	54° 08.4'	165° 31.6'	-3 53	-2 57	*1.12	*0.60	3.17	4.13	2.14
2265	Akun Bay, Akun Island	54° 14.0'	165° 32.0'	-0 15	-0 36	*0.87	*0.53	2.40	3.08	1.69
2267	Surf Bay, Akun Island	54° 09.0'	165° 36.9'	+0 08	+0 11	*1.05	*1.08	2.47	3.76	2.23
	<i>Akutan Island</i>									
2269	Akutan	54° 08.0'	165° 46.6'	+0 02	+0 03	*1.03	*0.97	2.53	3.73	2.16
2271	Akutan Harbor	54° 08'	165° 48'	-0 17	-0 07	*1.08	*1.10	2.4	3.9	2.5
2273	Green Bight	54° 06.6'	165° 39.7'	-2 32	-2 59	*1.35	*1.42	3.17	5.01	2.91
2275	Broad Bight	54° 03.8'	165° 56.2'	-3 10	-3 25	*1.52	*1.55	3.59	5.56	3.24
2277	Reef Bight	54° 07.8'	166° 05.9'	-0 23	-0 37	*1.00	*1.04	2.34	3.60	2.14
2279	Malga Bay, Unalga Island	53° 59'	166° 10'	-0 18	-1 05	*0.85	*0.93	1.8	3.3	2.0
	<i>Unalaska Island</i>									
2281	English Bay	53° 56'	166° 15'	+0 16	-0 01	*0.79	*0.76	1.8	3.0	1.8
2283	Dutch Harbor, Amaknak Island	53° 54'	166° 32'	+0 00	-0 07	*1.00	*1.00	2.2	3.7	2.3
2285	UNALASKA	53° 52.8'	166° 32.2'					2.39	3.60	2.12
2287	Anderson Bay	53° 41'	166° 50'	-0 01	+0 28	*1.08	*1.10	2.4	4.0	2.5
2289	Skan Bay	53° 37'	167° 03'	-0 07	-0 19	*1.05	*1.10	2.3	4.0	2.4
2291	Kashega Bay	53° 28'	167° 05'	-0 08	-0 24	*1.08	*1.19	2.3	4.0	2.5
2293	Chernofski Harbor	53° 24'	167° 32'	-0 10	-0 29	*1.02	*1.10	2.2	3.8	2.4
2295	Kuliliak Bay	53° 28'	167° 01'	-3 10	-3 35	*1.46	*1.27	3.5	5.6	3.2
2297	Eagle Bay	53° 29'	166° 56'	-2 56	-3 16	*1.46	*1.02	3.8	5.4	3.1
2299	Raven Bay	53° 28'	166° 52'	-3 16	-3 48	*1.49	*1.27	3.6	5.7	3.3
2301	Usof Bay	53° 31'	166° 48'	-3 30	-3 45	*1.55	*1.19	3.9	6.1	3.3
2303	Udamat Bay, Sedanka Island	53° 50'	166° 13'	-3 13	-3 25	*1.35	*1.35	3.3	5.1	2.9
2305	Udagak Strait	53° 44'	166° 18'	-3 32	-3 59	*1.37	*1.02	3.5	5.5	2.9
2307	Kisselen Bay, Beaver Inlet	53° 43'	166° 34'	-2 59	-3 14	*1.40	*1.10	3.5	5.2	3.0
2309	Bogoslof Island	53° 55'	168° 02'	-0 30	-0 55	*1.08	*1.10	2.4	3.9	2.5
	<i>Umnak Island</i>									
2311	Otter Point	53° 24'	167° 51'	-0 27	-0 40	*0.88	*0.93	1.9	3.4	2.0
2313	Inanadak Bay	53° 18'	168° 21'	-0 06	-0 30	*0.96	*0.93	2.2	3.7	2.2
2315	Okee Bay	53° 01'	168° 50'	-0 07	-0 43	*0.99	*1.10	2.1	3.7	2.3
2317	Adugak Islands	52° 55'	169° 10'	-0 33	-0 56	*1.02	*1.10	2.2	4.0	2.4
2319	Cape Sagak	52° 50'	169° 03'	-3 03	-3 16	*1.20	*1.02	2.9	4.9	2.6
2321	Driftwood Bay	52° 57'	168° 43'	-2 56	-3 22	*1.35	*1.10	3.3	5.3	2.9
2323	Nikolski	52° 56.5'	168° 52.3'	-0 24	-0 19	*1.11	*0.99	2.76	4.02	2.30
2325	Kigul Island	53° 03'	168° 26'	-3 04	-3 42	*1.37	*1.27	3.2	5.5	3.1
	Time meridian, 150° W									
2327	Applegate Cove, Chuginadak Island	52° 52'	169° 52'	-1 21	-1 58	*1.08	*1.27	2.2	4.2	2.6
2329	Herbert Island, west side	52° 43'	170° 09'	-2 40	-2 51	*1.14	*0.93	2.8	4.4	2.5
	<i>Yunaska Island</i>									
2331	East Cove	52° 40'	170° 34'	-2 36	-3 35	*0.88	*0.85	2.0	3.7	2.0
2333	North side	52° 41'	170° 42'	-2 05	-2 29	*1.02	*1.19	2.1	4.0	2.4
2335	Amukta Island, north side	52° 31'	171° 14'	-2 32	-3 03	*0.94	*1.10	1.9	3.6	2.2
				on Sweeper Cove, p.208						
2337	Finch Cove, Seguam Island #	52° 23'	172° 24'	-1 00	+0 07	*0.87	*0.87	--	3.2	1.6
	<i>Atka Island</i>									
2339	Martin Harbor, Korovin Bay #	52° 14'	174° 18'	+0 19	+0 21	*0.87	*0.87	--	3.2	1.6
2341	Atka, Nazan Bay #	52° 13.9'	174° 10.3'	-0 11	+0 18	*0.92	*0.92	2.66	3.38	1.84
2343	Cape Utalug (4 miles west of) #	52° 07'	174° 12'	-1 38	-2 32	*1.19	*1.19	--	4.4	2.2
2345	Atka Pass, east end #	52° 00'	175° 19'	-1 07	-2 10	*1.24	*1.24	--	4.6	2.3
2347	Sagchudak Island #	52° 02'	174° 29'	-1 26	-2 25	*1.24	*1.24	--	4.6	2.3
2349	Explorer Bay #	52° 04'	174° 34'	-2 43	-2 24	*1.24	*1.24	--	4.6	2.3
2351	Bechevin Bay #	52° 02'	175° 07'	+0 11	+0 04	*0.95	*0.95	--	3.5	1.7
2353	Fenimore Pass #	51° 58'	175° 35'	-0 04	-0 13	*0.89	*0.89	--	3.3	1.6
2355	Bugle Point, Great Sitkin Island #	52° 02'	175° 59'	+0 01	-0 05	*0.89	*0.89	--	3.3	1.6
2357	Sand Bay, Great Sitkin Island #	51° 58'	176° 05'	-0 05	-0 20	*0.97	*0.97	--	3.6	1.8
2359	Tanager Point, Chugul Island #	51° 57'	175° 52'	---	-2 08	*1.00	*1.00	--	3.7	1.9
2361	Laska Cove, Kagalaska Island #	51° 50'	176° 24'	-0 04	+0 07	*0.97	*0.97	--	3.6	1.8

Endnotes can be found at the end of table 2.

TABLE 2. – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Latitude	Longitude	Time		Height		Mean	Diurnal	
				High Water	Low Water	High Water	Low Water			
	ALASKA Aleutian Islands-cont. Time meridian, 150° W	North	West	h	m	h	m	ft	ft	ft
				on Sweeper Cove, p.208						
	<i>Adak Island</i>			<i>Daily predictions</i>				2.90	3.71	2.01
2363	SWEEPER COVE, Kuluk Bay #	51° 51.8'	176° 37.9'	-1 24	-2 02	*1.00	*1.00	--	3.7	1.8
2365	Adak Bight #	51° 46'	176° 26'	-1 38	-2 09	*0.97	*0.97	--	3.6	1.8
2367	Boot Bay #	51° 43'	176° 32'	-1 20	-2 04	*0.95	*0.95	--	3.5	1.7
2369	Bay of Waterfalls #	51° 39'	176° 50'	-0 07	-0 21	*0.97	*0.97	--	3.6	1.8
2371	Unalga Bight #	51° 47'	176° 48'							
	<i>Kanaga Island</i>									
2373	Shoal Point	51° 52'	177° 04'	+0 01	-0 16	*0.86	*0.86	--	3.2	1.6
2375	Cape Chlanak	51° 43'	177° 09'	-1 22	-1 34	*0.92	*0.92	--	3.4	1.7
2377	Kanaga Bay #	51° 43'	177° 12'	-1 39	-1 44	*1.05	*1.05	--	3.9	1.9
2379	Cape Chunu #	51° 40'	177° 38'	-1 44	-1 54	*1.11	*1.11	--	4.1	2.0
	<i>Tanaga Island</i>									
2381	Hot Springs Bay #	51° 47'	177° 48'	-0 40	-0 12	*0.84	*0.84	--	3.1	1.5
2383	Tanaga Bay #	51° 43'	178° 00'	-0 06	-0 32	*1.08	*1.08	--	4.0	2.0
2385	Lash Bay #	51° 40'	178° 03'	-0 56	-1 39	*1.14	*1.14	--	4.2	2.1
	<i>Delarof Islands</i>									
2387	Ogliuga Island (east coast) #	51° 36'	178° 37'	+0 01	-0 43	*0.95	*0.95	--	3.5	1.7
2389	Gareloi Island #	51° 45'	178° 48'	-0 08	-0 30	*1.00	*1.00	--	3.7	1.8
	<i>Rat Islands</i>									
	North	East								
2391	Constantine Harbor, Amchitka Island #	51° 25'	179° 17'	+0 19	-0 06	*0.76	*0.76	--	2.8	1.4
2393	Gertrude Cove, Kiska Island #	51° 56'	177° 27'	+0 02	-0 19	*0.86	*0.86	--	3.2	1.6
2395	Kiska Harbor, Kiska Island #	51° 59'	177° 33'	+0 24	-0 13	*0.97	*0.97	--	3.6	1.8
				on Massacre Bay, p.212						
2397	Alcan Harbor, Shemya Island #	52° 44'	174° 04'	+0 00	-0 03	*1.03	*1.03	--	3.4	1.7
2399	Otkriti Bay, Agattu Island #	52° 23'	173° 38'	-0 14	-0 13	*1.03	*1.03	--	3.4	1.7
	<i>Attu Island</i>									
2401	MASSACRE BAY #	52° 50'	173° 12'	<i>Daily predictions</i>				--	3.3	1.6
2403	Chichagof Harbor #	52° 56'	173° 14'	+0 13	+0 16	*1.09	*1.09	--	3.6	1.8
2405	Holtz Bay #	52° 56'	173° 10'	-0 04	+0 18	*1.12	*1.12	--	3.7	1.8
2407	Steller Cove #	52° 59'	172° 54'	-0 13	+0 11	*1.12	*1.12	--	3.7	1.8
2409	Etienne Bay #	52° 56'	172° 37'	-0 17	+0 03	*1.12	*1.12	--	3.7	1.8
	Bristol Bay Time meridian, 135° W	North	West	on Unalaska, p.204						
2411	Amak Island	55° 25'	163° 07'	+1 47	+1 48	*2.13	*1.78	5.2	7.7	4.7
2413	Grant Point, Izembek Lagoon	55° 16'	162° 54'	+3 03	+4 05	*1.23	*0.85	3.2	4.5	2.6
				on Port Moller, p.220						
2415	PORT MOLLER	55° 59.4'	160° 33.7'	<i>Daily predictions</i>				7.39	10.42	5.89
2417	Port Heiden	56° 56.0'	158° 43.7'	+1 43	+2 05	*1.15	*1.18	8.5	12.3	6.9
	<i>Egegik River</i>									
2419	Entrance	58° 14.3'	157° 30.0'	+3 16	+3 47	*1.69	*1.14	13.8	18.2	9.4
2421	Egegik	58° 13.0'	157° 22.5'	+3 42	+5 36	*1.20	*0.36	10.8	13.3	6.2
2423	Middle Bluff, Kvichak Bay	58° 27.2'	157° 30.0'	+3 56	+4 10	*1.84	*1.14	15.2	19.6	10.1
	<i>Naknek River</i>									
2425	Entrance <13>	58° 43.3'	157° 03.4'	+4 27	+5 26	*2.15	*1.00	18.5	22.6	11.4
2427	Omakstalia Point	58° 42.4'	156° 45.4'	+4 58	+8 35	*0.69	*0.14	6.3	8.1	3.4
2429	King Salmon Airport	58° 40.3'	156° 39.4'	+5 43	+9 46	*0.24	*0.09	2.1	3.2	1.2
	<i>Kvichak River</i>									
2431	Kvichak	58° 58.2'	156° 56.8'	+5 21	+7 49	*1.54	*0.41	13.9	16.5	7.8
2433	Levelock	59° 06.8'	156° 49.9'	+6 13	+9 34	*0.90	*0.23	8.2	10.3	4.6
	<i>Nushagak Bay</i>									
2435	Protection Point	58° 30.0'	158° 42.7'	+4 24	+4 25	*1.66	*1.27	13.15	17.74	9.36
2437	Clarks Point	58° 50.9'	158° 33.1'	+4 33	+4 59	*1.96	*1.21	16.22	20.67	10.78
2439	Snag Point	59° 02.4'	158° 26.8'	+5 15	+6 04	*1.96	*1.05	16.58	20.64	10.60
2441	Black Rock, Walrus Islands <14>	58° 42.5'	160° 11.3'	+4 53	+4 53	*0.80	*0.82	5.9	9.5	4.7
	Kuskokwim Bay and River			on Platinum, p.224						
2443	PLATINUM	59° 02.8'	161° 49.0'	<i>Daily predictions</i>				6.12	9.44	3.68
2445	Goodnews Bay entrance	59° 02.7'	161° 48.5'	+0 04	+0 11	*1.01	*0.95	6.2	8.9	3.7
2447	Carter Bay, Kuskokwim Bay	59° 22.6'	162° 01.7'	+0 42	+0 45	*1.24	*1.05	7.67	10.68	4.50
2449	Quinhagak (Kwinak), Kanektok River	59° 45.0'	161° 54.9'	+1 38	+2 06	*1.44	*1.06	9.03	11.93	5.18
2451	Apokak Creek entrance	60° 08.2'	162° 09.5'	+3 18	+4 30	*1.47	*0.79	9.4	12.0	5.2
2453	Popokamute	60° 07.4'	162° 30.0'	+3 04	+4 12	*1.32	*0.97	8.30	11.02	4.77
2455	Helmick Point, southeast of	60° 16.2'	162° 24.6'	+3 56	+5 10	*1.23	*1.02	7.62	10.18	4.45
2457	Lomavik	60° 33.2'	162° 17.8'	+5 57	+7 31	*0.94	*1.11	5.64	7.92	3.52
2459	BETHEL, KUSKOKWIM RIVER	60° 48.0'	161° 45.0'	<i>Daily predictions p.228</i>				2.42	3.67	1.56
2461	Mekoryuk, Nunivak Island	60° 25.0'	166° 10.0'	+2 05	+2 25	*1.05	*1.02	6.41	7.62	3.85
2463	Nelson Island, Tooksook Bay	60° 31.0'	165° 08.0'	+2 48	+3 09	*1.31	*1.65	7.76	9.21	4.92
	Bering Sea			on Unalaska, p.204						
2465	Zapadni Bay, St. George Island	56° 34'	169° 41'	+1 15	+1 18	*0.89	*0.89	--	3.3	1.7
2467	VILLAGE COVE, St. Paul Island	57° 07.5'	170° 16.5'	<i>Daily predictions, p. 216</i>				2.10	3.30	2.03
2469	St. Matthew Island	60° 22'	172° 43'	+0 22	+0 50	*0.57	*0.57	1.3	2.1	1.2

Endnotes can be found at the end of table 2.

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No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Latitude	Longitude	Time		Height		Mean	Diurnal	
				High Water	Low Water	High Water	Low Water			
	ALASKA Bering Sea-cont. Time meridian, 135° W	North	West	h	m	h	m	ft	ft	ft
				on Nome, p.236						
2471	Dall Point, Hooper Bay	61° 31.9'	166° 08.8'	-4	10	-2	46	*0.86	*0.37	1.03 1.36 0.63
	<i>St. Lawrence Island</i>									
2473	Northeast Cape	63° 18.0'	168° 56.5'	-3	59	-3	59	*1.68	*0.73	2.01 2.46 1.22
2475	Fossil River entrance	63° 28.0'	170° 01.0'	-4	00	-4	08	*1.13	*0.67	1.3 1.7 0.8
2477	Savoonga	63° 40.7'	170° 32.2'	-6	15	-6	02	*1.74	*0.87	2.05 3.56 1.29
2479	Niyrakpak Lagoon entrance	63° 37.2'	171° 23.0'	-4	27	-4	31	*0.83	*0.67	0.9 1.2 0.6
	Norton Sound			on Unalakleet, p.232						
2481	Nunam Iqua (Sheldon Pt.), Kwemeluk Pass #	62° 31.9'	164° 50.7'	-5	28	-6	20	*0.57	*0.68	1.81 2.64 1.07
2483	Apoon Mouth, Yukon River #	63° 03'	163° 23'	-1	30	-1	30	*1.03	*1.03	-- 4.0 2.0
2485	Pikmiktalik River entrance #	63° 16'	162° 36'	-1	13	-1	13	*1.08	*1.08	-- 4.2 2.1
2487	St. Michael #	63° 29'	162° 02'	-0	11	-2	16	*1.00	*1.00	-- 3.9 2.0
2489	North Bay, Stuart Island #	63° 37'	162° 30'	-0	28	-0	28	*0.72	*0.72	-- 2.8 1.4
2491	UNALAKLEET #	63° 52.5'	160° 47.2'	<i>Daily predictions</i>				3.17	3.89	1.84
2493	Shaktoolik #	64° 22.8'	161° 14.1'	+0	17	+0	03	*0.97	*0.97	2.43 3.76 1.84
				on Nome, p.236						
2495	NOME	64° 30.0'	165° 25.8'	<i>Daily predictions</i>				1.04	1.54	0.83
2497	Point Spencer, Port Clarence	65° 15.4'	166° 50.8'	+4	56	+5	10	*0.88	*0.42	1.06 1.28 0.66
2499	Teller, Port Clarence	65° 16.0'	166° 21.1'	+4	01	+4	13	*0.80	*0.87	0.80 1.18 0.67
2501	Lost River, Seward Peninsula	65° 23.4'	167° 08.7'	+6	43	+5	30	*0.71	*0.29	0.86 1.09 0.53
	Bering Straits			on Cape Krusenstern, p.240						
2503	Tin City	65° 33.5'	167° 58.5'	+0	15	+0	57	*1.38	*0.83	1.02 0.73 0.46
2505	Shishmaref Inlet	66° 15.8'	166° 01.2'	+2	18	+2	32	*1.45	*0.92	0.76 1.03 0.49
	Kotzebue Sound									
2507	Cape Espenberg	66° 35.1'	164° 15.0'	+3	40	+4	35	*1.48	*1.33	0.72 0.99 0.53
2509	Goodhope Bay	66° 13.8'	163° 54.2'	+7	23	+8	28	*2.61	*1.67	1.36 1.69 0.89
2511	Deering	66° 05.8'	162° 44.4'	+7	35	+9	28	*2.71	*2.33	1.36 1.83 0.96
2513	Kotzebue	66° 54.1'	162° 34.9'	+9	58	+11	23	*0.95	*1.42	0.40 0.66 0.37
2515	CAPE KRUSENSTERN	67° 03.3'	163° 19.3'	cDaily		predicti		ons		0.48 0.66 0.36
2517	Red Dog Dock	67° 34.6'	164° 03.9'	+2	04	+2	51	*1.20	*1.08	0.66 0.88 0.46
2519	Kivalina	67° 43.6'	164° 35.5'	+1	24	+4	38	*1.28	*0.83	0.67 0.90 0.43
2521	Point Hope	68° 20.5'	166° 48.4'	+4	12	+3	54	*0.99	*0.81	0.50 0.67 0.35
	Arctic Ocean <15>			on Kodiak, p.192						
2523	Barrow offshore	71° 21.6'	156° 43.8'	-1	12	-1	53	*0.07	*0.05	0.49 0.66 0.30
2525	Point Barrow	71° 22'	156° 22'	-0	37	-0	26	*0.04	*0.04	0.3 0.4 0.2
2527	PRUDHOE BAY	70° 24.0'	148° 31.6'	<i>Daily predictions, p.244</i>				0.51	0.70	0.34
2529	Flaxman Island	70° 11'	145° 50'	-0	57	-0	28	*0.08	*0.09	0.5 0.7 0.3
2531	Herschel Island, Mackenzie Bay	69° 34'	138° 55'	-1	36	-1	42	--	--	0.6 0.7 1.5
2533	Tuktoyaktuk, Mackenzie Bay	69° 27'	133° 00'	-1	30	-0	54	--	--	1.1 1.2 1.3
	HAWAIIAN ISLANDS Time meridian, 165° W			on Honolulu, p.256						
2535	SAND ISLAND, MIDWAY ISLANDS	28° 12.7'	177° 21.6'	<i>Daily predictions, p.248</i>				0.9	1.3	0.7
2537	Lisianski Island	26° 04'	173° 58'	--	--	--	--	--	--	0.5 0.8 0.3
	Time meridian, 150° W									
2539	Laysan Island	25° 46'	171° 45'	+1	02	+1	12	*0.53	*0.50	0.7 1.0 0.4
2541	East Island, French Frigate Shoals	23° 47'	166° 13'	+0	03	+0	08	*0.73	*0.73	0.9 1.4 0.6
2543	Nonopapa, Niihau Island	21° 52'	160° 14'	-0	16	-0	11	*0.77	*0.77	1.0 1.6 0.7
	<i>Kauai Island</i>			on Nawiliwili, p.252						
2545	Waimea Bay	21° 57'	159° 40'	+0	07	+0	18	*0.86	*0.91	1.0 1.6 0.7
2547	Port Allen, Hanapepe Bay	21° 54.2'	159° 3.5'	-0	15	-0	10	*1.01	*1.00	1.24 1.84 0.82
2549	NAWILIWILI BAY	21° 57.4'	159° 21.6'	<i>Daily predictions</i>				1.2	1.8	0.8
2551	Hanamaulu Bay	22° 00'	159° 20'	+0	10	+0	04	*1.00	*0.91	1.2 1.8 0.8
2553	Hanaiei Bay	22° 13'	159° 30'	-1	01	-1	22	*1.07	*0.91	1.3 1.8 0.8
	<i>Oahu Island</i>			on Honolulu, p.256						
2555	Haleiwa, Waialua Bay #	21° 36'	158° 07'	-1	02	-2	05	*0.80	*0.80	-- 1.6 0.7
2557	Waianae	21° 27'	158° 12'	+0	20	+0	18	*0.93	*1.00	1.2 1.8 0.8
2559	Pearl Harbor Entrance, Bishop Point	21° 19.8'	157° 58.0'	+0	15	+0	06	*1.00	*0.88	1.30 1.66 0.79
2561	Pearl Harbor, Ford Island Ferry	21° 22.1'	157° 56.4'	+0	16	+0	08	*1.03	*0.88	1.35 1.73 0.82
2563	HONOLULU	21° 18.5'	157° 52.0'	<i>Daily predictions</i>				1.28	1.64	0.80
2565	Hanauma Bay	21° 17'	157° 42'	-0	59	-0	45	*1.00	*1.00	1.3 1.9 0.8

Endnotes can be found at the end of table 2.

TABLE 2. – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Latitude	Longitude	Time		Height		Mean	Diurnal	
				High Water	Low Water	High Water	Low Water			
	HAWAIIAN ISLANDS Time meridian, 150° W	North	West	h	m	h	m	ft	ft	ft
				on Moku O Loe, p.260						
	<i>Oahu Island-cont.</i>									
2567	Waimanalo	21° 20'	157° 42'	+0 11		+0 05		*0.88	*0.75	1.1 1.8 0.8
2569	MOKU O LOE	21° 26.2'	157° 47.6'			<i>Daily predictions</i>				1.5 2.1 1.0
2571	Waikane, Kaneohe Bay	21° 30'	157° 51'	-0 22		-0 04		*1.13	*1.00	1.4 2.2 1.1
2573	Laiemaloo	21° 38.2'	157° 55.3'	+0 43		+0 00		*1.05	*1.08	1.05 2.29 1.11
2575	Laie Bay	21° 39'	157° 56'	-0 21		-0 32		*1.00	*0.75	1.3 2.2 0.9
				on Honolulu, p.256						
	<i>Molokai Island</i>									
2577	Kolo	21° 06'	157° 12'	+0 05		+0 01		0.0	0.0	1.3 2.0 0.8
2579	Kaunakakai Harbor	21° 05.1'	157° 01.9'	-0 10		-0 14		*1.13	*1.25	1.42 1.82 0.91
2581	Kamalo Harbor	21° 03'	156° 53'	-0 37		-0 16		+0.1	0.0	1.4 2.1 0.9
2583	Pukoo Harbor	21° 04'	156° 48'	-1 03		-0 48		+0.1	0.0	1.4 2.1 0.9
2585	Kaumalapau, Lanai Island	20° 47'	157° 00'	+0 02		+0 03		+0.2	0.0	1.5 2.2 0.9
	<i>Kahoolawe Island</i>									
2587	Kuheia Bay	20° 36'	156° 36'	-0 09		-0 09		+0.2	0.0	1.5 2.1 0.9
2589	Smuggler Cove	20° 31'	156° 41'	-0 15		+0 03		+0.2	0.0	1.5 2.2 0.9
				on Kahului, p.264						
	<i>Maui Island</i>									
2591	KAHULUI	20° 53.9'	156° 28.3'			<i>Daily predictions</i>				1.6 2.3 1.1
2593	Hana	20° 46'	155° 59'	+0 40		+0 18		*1.05	*0.54	1.8 2.5 1.1
2595	Makena	20° 39'	156° 27'	+1 21		+1 09		*0.73	*0.54	1.2 1.8 0.8
2597	Kihei, Maalaea Bay	20° 47'	156° 28'	+1 52		+1 19		*0.94	*0.54	1.6 2.3 1.0
2599	Lahaina	20° 53'	156° 41'	+1 18		+1 01		*0.89	*0.81	1.4 2.2 1.0
				on Hilo, p.268						
	<i>Hawaii Island</i>									
2601	Mahukona	20° 11'	155° 54'	+0 38		+0 42		*0.80	*0.67	1.4 2.1 0.9
2603	Kawaihae	20° 02.4'	155° 49.9'	+1 01		+0 57		*0.83	*0.60	1.46 2.14 0.91
2605	Kailua Kona	19° 39'	156° 00'	+0 38		+0 37		*0.80	*0.67	1.4 2.1 0.9
2607	Napoopoo, Kealahou Bay	19° 28'	155° 55'	+0 48		+0 47		*0.80	*0.67	1.4 2.1 0.9
2609	Honuapo	19° 05'	155° 33'	+0 38		+0 33		*1.01	*1.00	1.7 2.5 1.1
2611	HILO	19° 43.8'	155° 03.4'			<i>Daily predictions</i>				1.67 2.40 1.13
2613	JOHNSTON ATOLL	16° 44.3'	169° 31.8'			<i>Daily predictions, p.272</i>				1.9 2.2 1.1

Endnotes can be found at the end of table 2.

ENDNOTES

- * Ratio. If the ratio is accompanied by a correction factor, multiply the heights of the high and low waters at the reference station by the ratio, and then apply the correction factor.
- # The tide at this place is chiefly diurnal. SEE CAUTION NOTE.
- <1> For places on the Atlantic coast, see "Tide Tables, East Coast of North and South America."
- <2> For places on the Caribbean Sea and Gulf of Mexico, see "Tide Tables, East Coast of North and South America."
- <3> The bore in the Colorado River above Phillips Point is reported to have a height of several feet at times of large tides.
- <4> These data apply only during low river stages.
- <5> The Columbia River is subject to annual freshets. Short range predictions are available at local river forecast centers. The data for stations above Harrington Point apply only during low river stages.
- <6> For stations on the Canadian side see pages 290 and 291.
- <7> The low water seldom falls below the chart datum.
- <8> The data for La Conner apply only during low levels of the channel which usually occur in midsummer. Low water seldom falls below the chart datum.
- <9> Heights are referred to mean lower low water, the datum of soundings on National Ocean Service charts.
- <10> Because of shoals, low water at this place is restricted from falling below half tide level outside the river entrance.
- <13> No low water falls below -2 feet.
- <14> When the difference in height between lower high water and higher low water at Port Moller is less than 4 feet, reliance should not be placed on calculated corresponding tides at Black Rock because the tide there may actually be diurnal.
- <15> Along the Arctic coast of Alaska east of Cape Lisburne, the mean range is about 0.5 foot.
- <16> For the passages inside Vancouver Island the height differences apply only to the higher high and lower low waters at the indicated reference station.
- <17> The slough in this area goes dry at low water stages of the tide. The mean high water depth is about 5 feet.
- <18> Due to bottom configuration and depths at low water stages, a low water stand may occur at this station.

TABLE 3.—HEIGHT OF TIDE AT ANY TIME

EXPLANATION OF TABLE

Although the footnote of Table 3 may contain sufficient explanation for finding the height of tide at any time, two examples are given here to illustrate its use.

Example 1.—Find the height of the tide at 0735 at Balboa, Panama, on a day when the predicted tides from Table 1 are given as:

<i>Low Water</i>		<i>High Water</i>	
<i>Time</i>	<i>Height</i>	<i>Time</i>	<i>Height</i>
<i>h.m.</i>	<i>ft</i>	<i>h.m.</i>	<i>ft</i>
0500	3.1	1114	14.7
1746	2.5	2356	13.4

An inspection of the above example shows that the desired time falls between the two morning tides

The duration of rise is $11^{\text{h}} 14^{\text{m}} - 5^{\text{h}} 00^{\text{m}} = 6^{\text{h}} 14^{\text{m}}$.

The time after low water for which the height is required is $7^{\text{h}} 35^{\text{m}} - 5^{\text{h}} 00^{\text{m}} = 2^{\text{h}} 35^{\text{m}}$.

The range of tide is $14.7 - 3.1 = 11.6$ feet.

The duration of rise or fall in table 3 is given in heavy-faced type for each 20 minutes from $4^{\text{h}} 00^{\text{m}}$ to $10^{\text{h}} 40^{\text{m}}$. The nearest tabular value to $6^{\text{h}} 14^{\text{m}}$, the above duration of rise, is $6^{\text{h}} 20^{\text{m}}$; and on the horizontal line of $6^{\text{h}} 20^{\text{m}}$, the nearest tabular time to $2^{\text{h}} 35^{\text{m}}$ after low water for which the height is required is $2^{\text{h}} 32^{\text{m}}$. Following down the column in which this $2^{\text{h}} 32^{\text{m}}$ is found to its intersection with the line of the range 11.5 feet (the nearest tabular value to the above range of 11.6 feet), the correction is found to be 4.0 feet, which being reckoned from low water, must be added, making $3.1 + 4.0 = 7.1$ feet or 216 centimeters which is the required height above mean lower low water, the datum for Balboa.

Example 2. —Find the height of the tide at 0300 at Los Angeles, Calif., on a day when the predicted tides are given as:

<i>High Water</i>		<i>Low Water</i>	
<i>Time</i>	<i>Height</i>	<i>Time</i>	<i>Height</i>
<i>h.m.</i>	<i>ft</i>	<i>h.m.</i>	<i>ft</i>
0039	4.9	0814	0.2
1510	3.1	1933	2.4

The duration of fall is $8^{\text{h}} 14^{\text{m}} - 00^{\text{h}} 39^{\text{m}} = 7^{\text{h}} 35^{\text{m}}$.

The time after high water for which the height is required is $3^{\text{h}} 00^{\text{m}} - 00^{\text{h}} 39^{\text{m}} = 02^{\text{h}} 21^{\text{m}}$.

The range of tide is $4.9 - 0.2 = 4.7$ feet.

Entering Table 3 at the duration of fall of $7^{\text{h}} 40^{\text{m}}$, which is the nearest value to $7^{\text{h}} 35^{\text{m}}$, the nearest value on the horizontal line to $2^{\text{h}} 21^{\text{m}}$ is $2^{\text{h}} 18^{\text{m}}$ after high water. Follow down this column to its intersection with a range of 4.5 feet which is the nearest tabular value to 4.7 feet, one obtains 0.9 which, being calculated from high water, must be subtracted from it. The approximate height at $03^{\text{h}} 00^{\text{m}}$ is, therefore, $4.9 - 0.9 = 4.0$ feet or 122 centimeters.

When the duration of rise or fall is greater than $10^{\text{h}} 40^{\text{m}}$, enter the table with one-half the given duration and with one-half the time from the nearest high or low water; but if the duration of rise or fall is less than 4 hours, enter the table with double the given duration and with double the time from the nearest high or low water.

Similarly, when the range of tide is greater than 20 feet, enter the table with one-half the given range. The tabular correction should then be doubled before applying it to the given high or low water

TABLE 3.—HEIGHT OF TIDE AT ANY TIME

height. If the range of tide is greater than 40 feet, take one-third of the range and multiply the tabular correction by 3.

If the height at any time is desired for a place listed in Table 2 predictions of the high and low waters for the day in question should be obtained by the use of the difference given for the place in that table. Having obtained these predictions, the height for any intermediate time is obtained in the same manner as illustrated in the foregoing example.

GRAPHIC METHOD

If the height of the tide is required for a number of times on a certain day, the full tide curve for the day may be obtained by the *one-quarter, one-tenth rule*. The procedure is as follows:

1. On cross-section paper plot the high and low water points in the order of their occurrence for the day, measuring time horizontally and height vertically. These are the basic points for the curve.
2. Draw light straight lines connecting the points representing successive high and low waters.
3. Divide each of these straight lines into four equal parts. The halfway point of each line gives another point for the curve.
4. At the quarter point adjacent to high water draw a vertical line above the point and at the quarter point adjacent to low water draw a vertical line below the point, making the length of these lines equal to one-tenth of the range between the high and low waters used. The points marking the ends of these vertical lines give two additional intermediate points for the curve.
5. Draw a smooth curve through the points of high and low waters and the intermediate points, making the curve well rounded near high and low waters. This curve will approximate the actual tide curve and heights for any time of the day may be readily scaled from it.

Caution.—Both methods presented are based on the assumption that the rise and fall conform to simple cosine curves. Therefore, the heights obtained will be approximate. The roughness of approximation will vary as the tide curve differs from a cosine curve.

An example of the use of the graphical method is illustrated below. Using the same predicted tides as in example 2, the approximate height at 3^h 00^m could be determined as shown below.

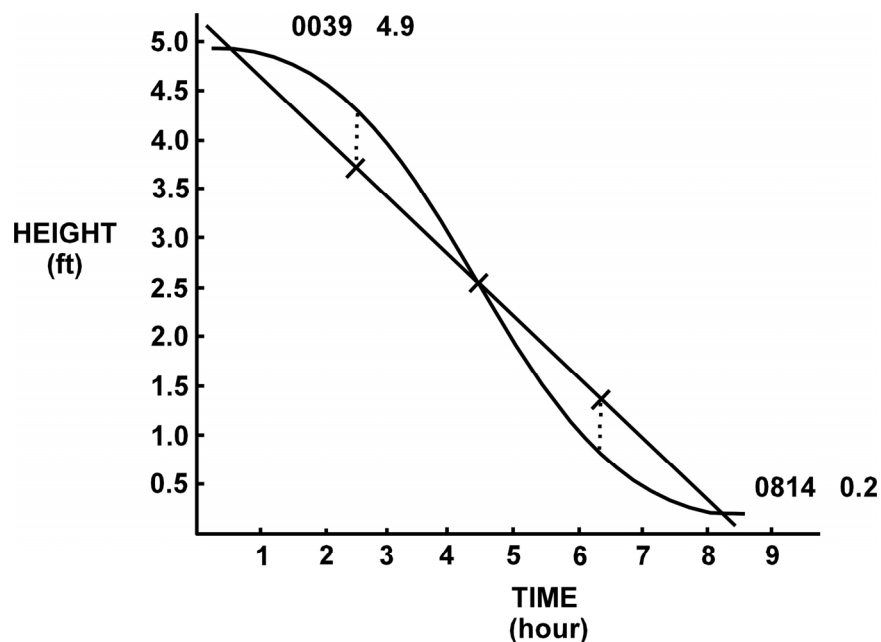


TABLE 3.—HEIGHT OF TIDE AT ANY TIME

<i>h. m.</i>	Time from the nearest high water or low water														
	<i>h. m.</i>	<i>h. m.</i>	<i>h. m.</i>	<i>h. m.</i>	<i>h. m.</i>	<i>h. m.</i>	<i>h. m.</i>	<i>h. m.</i>	<i>h. m.</i>	<i>h. m.</i>	<i>h. m.</i>	<i>h. m.</i>	<i>h. m.</i>	<i>h. m.</i>	<i>h. m.</i>
4 10	0 08	0 16	0 24	0 32	0 40	0 48	0 56	1 04	1 12	1 20	1 28	1 36	1 44	1 52	2 00
4 20	0 09	0 17	0 26	0 35	0 43	0 52	1 01	1 09	1 18	1 27	1 35	1 44	1 53	2 01	2 10
4 40	0 09	0 19	0 28	0 37	0 47	0 56	1 05	1 15	1 24	1 33	1 43	1 52	2 01	2 11	2 20
5 00	0 10	0 20	0 30	0 40	0 50	1 00	1 10	1 20	1 30	1 40	1 50	2 00	2 10	2 20	2 30
5 20	0 11	0 21	0 32	0 43	0 53	1 04	1 15	1 25	1 36	1 47	1 57	2 08	2 19	2 29	2 40
5 40	0 11	0 23	0 34	0 45	0 57	1 08	1 19	1 31	1 42	1 53	2 05	2 16	2 27	2 39	2 50
6 00	0 12	0 24	0 36	0 48	1 00	1 12	1 24	1 36	1 48	2 00	2 12	2 24	2 36	2 48	3 00
6 20	0 13	0 25	0 38	0 51	1 03	1 16	1 29	1 41	1 54	2 07	2 19	2 32	2 45	2 57	3 10
6 40	0 13	0 27	0 40	0 53	1 07	1 20	1 33	1 47	2 00	2 13	2 27	2 40	2 53	3 07	3 20
7 00	0 14	0 28	0 42	0 56	1 10	1 24	1 38	1 52	2 06	2 20	2 34	2 48	3 02	3 16	3 30
7 20	0 15	0 29	0 44	0 59	1 13	1 28	1 43	1 57	2 12	2 27	2 41	2 56	3 11	3 25	3 40
7 40	0 15	0 31	0 46	1 01	1 17	1 32	1 47	2 03	2 18	2 33	2 49	3 04	3 19	3 35	3 50
8 00	0 16	0 32	0 48	1 04	1 20	1 36	1 52	2 08	2 24	2 40	2 56	3 12	3 28	3 44	4 00
8 20	0 17	0 33	0 50	1 07	1 23	1 40	1 57	2 13	2 30	2 47	3 03	3 20	3 37	3 53	4 10
8 40	0 17	0 35	0 52	1 09	1 27	1 44	2 01	2 19	2 36	2 53	3 11	3 28	3 45	4 03	4 20
9 00	0 18	0 36	0 54	1 12	1 30	1 48	2 06	2 24	2 42	3 00	3 18	3 36	3 54	4 12	4 30
9 20	0 19	0 37	0 56	1 15	1 33	1 52	2 11	2 29	2 48	3 07	3 25	3 44	4 03	4 21	4 40
9 40	0 19	0 39	0 58	1 17	1 37	1 56	2 15	2 35	2 54	3 13	3 33	3 52	4 11	4 31	4 50
10 00	0 20	0 40	1 00	1 20	1 40	2 00	2 20	2 40	3 00	3 20	3 40	4 00	4 20	4 40	5 00
10 20	0 21	0 41	1 02	1 23	1 43	2 04	2 25	2 45	3 06	3 27	3 47	4 08	4 29	4 49	5 10
10 40	0 21	0 43	1 04	1 25	1 47	2 08	2 29	2 51	3 12	3 33	3 55	4 16	4 37	4 59	5 20
<i>Ft.</i>	Correction to height														
	<i>Ft.</i>	<i>Ft.</i>	<i>Ft.</i>	<i>Ft.</i>	<i>Ft.</i>	<i>Ft.</i>	<i>Ft.</i>	<i>Ft.</i>	<i>Ft.</i>	<i>Ft.</i>	<i>Ft.</i>	<i>Ft.</i>	<i>Ft.</i>	<i>Ft.</i>	<i>Ft.</i>
0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2
1.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.4	0.5
1.5	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.4	0.5	0.6	0.7	0.8
2.0	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
2.5	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.7	0.9	1.0	1.1	1.2
3.0	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.5	0.6	0.8	0.9	1.0	1.2	1.3	1.5
3.5	0.0	0.0	0.1	0.2	0.2	0.3	0.4	0.6	0.7	0.9	1.0	1.2	1.4	1.6	1.8
4.0	0.0	0.0	0.1	0.2	0.3	0.4	0.5	0.7	0.8	1.0	1.2	1.4	1.6	1.8	2.0
4.5	0.0	0.0	0.1	0.2	0.3	0.4	0.6	0.7	0.9	1.1	1.3	1.6	1.8	2.0	2.2
5.0	0.0	0.1	0.1	0.2	0.3	0.5	0.6	0.8	1.0	1.2	1.5	1.7	2.0	2.2	2.5
5.5	0.0	0.1	0.1	0.2	0.4	0.5	0.7	0.9	1.1	1.4	1.6	1.9	2.2	2.5	2.8
6.0	0.0	0.1	0.1	0.3	0.4	0.6	0.8	1.0	1.2	1.5	1.8	2.1	2.4	2.7	3.0
6.5	0.0	0.1	0.2	0.3	0.4	0.6	0.8	1.1	1.3	1.6	1.9	2.2	2.6	2.9	3.2
7.0	0.0	0.1	0.2	0.3	0.5	0.7	0.9	1.2	1.4	1.8	2.1	2.4	2.8	3.1	3.5
7.5	0.0	0.1	0.2	0.3	0.5	0.7	1.0	1.2	1.5	1.9	2.2	2.6	3.0	3.4	3.8
8.0	0.0	0.1	0.2	0.3	0.5	0.8	1.0	1.3	1.6	2.0	2.4	2.8	3.2	3.6	4.0
8.5	0.0	0.1	0.2	0.4	0.6	0.8	1.1	1.4	1.8	2.1	2.5	2.9	3.4	3.8	4.2
9.0	0.0	0.1	0.2	0.4	0.6	0.9	1.2	1.5	1.9	2.2	2.7	3.1	3.6	4.0	4.5
9.5	0.0	0.1	0.2	0.4	0.6	0.9	1.2	1.6	2.0	2.4	2.8	3.3	3.8	4.3	4.8
10.0	0.0	0.1	0.2	0.4	0.7	1.0	1.3	1.7	2.1	2.5	3.0	3.5	4.0	4.5	5.0
10.5	0.0	0.1	0.3	0.5	0.7	1.0	1.3	1.7	2.2	2.6	3.1	3.6	4.2	4.7	5.2
11.0	0.0	0.1	0.3	0.5	0.7	1.1	1.4	1.7	2.3	2.8	3.3	3.8	4.4	4.9	5.5
11.5	0.0	0.1	0.3	0.5	0.8	1.1	1.5	1.8	2.3	2.9	3.4	4.0	4.6	5.1	5.8
12.0	0.0	0.1	0.3	0.5	0.8	1.1	1.5	1.9	2.5	3.0	3.6	4.1	4.8	5.4	6.0
12.5	0.0	0.1	0.3	0.5	0.8	1.2	2.6	1.9	2.6	3.1	3.7	4.3	5.0	5.6	6.2
13.0	0.0	0.1	0.3	0.6	0.9	1.2	1.7	2.2	2.7	3.2	3.9	4.5	5.1	5.8	6.5
13.5	0.0	0.1	0.3	0.6	0.9	1.3	1.7	2.2	2.8	3.4	4.0	4.7	5.3	6.0	6.8
14.0	0.0	0.2	0.3	0.6	0.9	1.3	1.8	2.3	2.9	3.5	4.2	4.8	5.5	6.3	7.0
14.5	0.0	0.2	0.4	0.6	1.0	1.4	1.9	2.4	3.0	3.6	4.3	5.0	5.7	6.5	7.2
15.0	0.0	0.2	0.4	0.6	1.0	1.4	1.9	2.5	3.1	3.8	4.4	5.2	5.9	6.7	7.5
15.5	0.0	0.2	0.4	0.7	1.0	1.5	2.0	2.6	3.2	3.9	4.6	5.4	6.1	6.9	7.8
16.0	0.0	0.2	0.4	0.7	1.1	1.5	2.1	2.6	3.3	4.0	4.7	5.5	6.3	7.2	8.0
16.5	0.0	0.2	0.4	0.7	1.1	1.6	2.1	2.7	3.4	4.1	4.9	5.7	6.5	7.4	8.2
17.0	0.0	0.2	0.4	0.7	1.1	1.6	2.2	2.8	3.5	4.2	5.0	5.9	6.7	7.6	8.5
17.5	0.0	0.2	0.4	0.8	1.2	1.7	2.2	2.9	3.6	4.4	5.2	6.0	6.9	7.8	8.8
18.0	0.0	0.2	0.4	0.8	1.2	1.7	2.3	3.0	3.7	4.5	5.3	6.2	7.1	8.1	9.0
18.5	0.1	0.2	0.5	0.8	1.2	1.8	2.4	3.1	3.8	4.6	5.5	6.4	7.3	8.3	9.2
19.0	0.1	0.2	0.5	0.8	1.3	1.8	2.4	3.1	3.9	4.8	5.6	6.6	7.5	8.5	9.5
19.5	0.1	0.2	0.5	0.8	1.3	1.9	2.5	3.2	4.0	4.9	5.8	6.7	7.7	8.7	9.8
20.0	0.1	0.2	0.5	0.9	1.3	1.9	2.6	3.3	4.1	5.0	5.9	6.9	7.9	9.0	10.0

Obtain from the predictions the high water and low water, one of which is before and the other after the time for which the height is required. The difference between the times of occurrence of these tides is the duration of rise or fall, and the difference between their heights is the range of tide for the above table. Find the difference between the nearest high or low water and the time for which the height is required.

Enter the table with the duration of rise or fall, printed in heavy-faced type, which most nearly agrees with the actual value, and on that horizontal line find the time from the nearest high or low water which agrees most nearly with the corresponding actual difference. The correction sought is in the column directly below, on the line with the range of tide.

When the nearest tide is high water, subtract the correction.

When the nearest tide is low, add the correction.

TABLE 4.—LOCAL MEAN TIME OF SUNRISE AND SUNSET

EXPLANATION OF TABLE

This table gives the local mean time of the rising and setting of the Sun's upper limb for every fifth day of the year. The times were computed for the instant when the true zenith distance of the Sun's center is $90^{\circ} 50', 34'$ having been allowed for horizontal refraction and $16'$ for semidiameter. No allowance has been made for elevation of the observer.

Because of the sensible variations which may be made in the time of rising or setting of the Sun by a difference in elevation of the observer, and by changes in the refraction, any great refinement in the interpolation of intermediate dates or latitudes in this table is unnecessary.

The value obtained from Table 4 may be converted to standard time by means of Table 5, which follows it.

TABLE 4.-SUNRISE AND SUNSET, 2019

Date	0°		5° N.		10° N.		15° N.		20° N.		25° N.	
	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set
	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.
Jan. 1	06 00	18 07	06 08	17 59	06 17	17 50	06 26	17 41	06 35	17 32	06 45	17 22
6	06 02	18 09	06 10	18 01	06 19	17 53	06 27	17 44	06 36	17 35	06 46	17 25
11	06 04	18 12	06 12	18 04	06 20	17 55	06 29	17 47	06 37	17 38	06 47	17 29
16	06 06	18 13	06 14	18 06	06 21	17 58	06 29	17 50	06 38	17 42	06 47	17 33
21	06 08	18 15	06 15	18 08	06 22	18 00	06 30	17 53	06 38	17 45	06 46	17 37
26	06 09	18 16	06 16	18 09	06 23	18 02	06 30	17 55	06 37	17 48	06 45	17 40
31	06 10	18 17	06 16	18 11	06 23	18 04	06 29	17 58	06 36	17 51	06 43	17 44
Feb. 5	06 10	18 17	06 16	18 12	06 22	18 06	06 28	18 00	06 34	17 54	06 41	17 47
10	06 11	18 18	06 16	18 13	06 21	18 07	06 26	18 02	06 32	17 57	06 38	17 51
15	06 11	18 18	06 15	18 13	06 20	18 09	06 25	18 04	06 29	17 59	06 35	17 54
20	06 10	18 17	06 14	18 13	06 18	18 09	06 22	18 05	06 26	18 01	06 31	17 57
25	06 10	18 16	06 13	18 13	06 16	18 10	06 20	18 07	06 23	18 03	06 27	18 00
Mar. 2	06 09	18 15	06 11	18 13	06 14	18 11	06 17	18 08	06 19	18 05	06 22	18 03
7	06 08	18 14	06 10	18 13	06 12	18 11	06 13	18 09	06 15	18 07	06 18	18 05
12	06 07	18 13	06 08	18 12	06 09	18 11	06 10	18 10	06 11	18 09	06 13	18 07
17	06 05	18 12	06 06	18 11	06 06	18 11	06 07	18 10	06 07	18 10	06 08	18 10
22	06 04	18 10	06 04	18 10	06 03	18 11	06 03	18 11	06 03	18 11	06 02	18 12
27	06 02	18 09	06 01	18 10	06 00	18 11	05 59	18 12	05 58	18 13	05 57	18 14
Apr. 1	06 01	18 07	05 59	18 09	05 58	18 11	05 56	18 12	05 54	18 14	05 52	18 16
6	05 59	18 06	05 57	18 08	05 55	18 10	05 52	18 13	05 50	18 16	05 47	18 18
11	05 58	18 04	05 55	18 07	05 52	18 10	05 49	18 14	05 46	18 17	05 42	18 21
16	05 57	18 03	05 53	18 07	05 49	18 11	05 46	18 14	05 42	18 18	05 37	18 23
21	05 55	18 02	05 51	18 06	05 47	18 11	05 43	18 15	05 38	18 20	05 33	18 25
26	05 54	18 01	05 50	18 06	05 45	18 11	05 40	18 16	05 34	18 22	05 29	18 28
May. 1	05 54	18 01	05 48	18 06	05 43	18 12	05 37	18 17	05 31	18 23	05 25	18 30
6	05 53	18 00	05 47	18 06	05 41	18 12	05 35	18 19	05 28	18 25	05 21	18 32
11	05 53	18 00	05 46	18 06	05 40	18 13	05 33	18 20	05 26	18 27	05 18	18 35
16	05 53	18 00	05 46	18 07	05 39	18 14	05 32	18 21	05 24	18 29	05 15	18 38
21	05 53	18 00	05 46	18 08	05 38	18 15	05 30	18 23	05 22	18 31	05 13	18 40
26	05 53	18 01	05 46	18 08	05 38	18 16	05 30	18 25	05 21	18 33	05 12	18 43
31	05 54	18 01	05 46	18 09	05 38	18 18	05 29	18 26	05 20	18 35	05 10	18 45
Jun. 5	05 55	18 02	05 47	18 10	05 38	18 19	05 29	18 28	05 20	18 37	05 10	18 47
10	05 56	18 03	05 47	18 12	05 39	18 20	05 30	18 29	05 20	18 39	05 10	18 49
15	05 57	18 04	05 48	18 13	05 39	18 22	05 30	18 31	05 20	18 41	05 10	18 51
20	05 58	18 05	05 49	18 14	05 40	18 23	05 31	18 32	05 21	18 42	05 11	18 52
25	05 59	18 06	05 50	18 15	05 41	18 24	05 32	18 33	05 22	18 43	05 12	18 53
30	06 00	18 07	05 51	18 16	05 43	18 25	05 33	18 34	05 24	18 43	05 13	18 54
Jul. 5	06 01	18 08	05 53	18 17	05 44	18 25	05 35	18 34	05 25	18 44	05 15	18 54
10	06 02	18 09	05 54	18 17	05 45	18 26	05 36	18 34	05 27	18 43	05 17	18 53
15	06 02	18 10	05 54	18 17	05 46	18 26	05 38	18 34	05 29	18 43	05 19	18 52
20	06 03	18 10	05 55	18 17	05 47	18 25	05 39	18 33	05 31	18 42	05 22	18 51
25	06 03	18 10	05 56	18 17	05 48	18 25	05 41	18 32	05 33	18 40	05 24	18 49
30	06 03	18 10	05 56	18 17	05 49	18 23	05 42	18 31	05 35	18 38	05 27	18 46
Aug. 4	06 03	18 10	05 56	18 16	05 50	18 22	05 43	18 29	05 36	18 36	05 29	18 43
9	06 02	18 09	05 56	18 15	05 51	18 20	05 45	18 26	05 38	18 33	05 31	18 40
14	06 01	18 08	05 56	18 13	05 51	18 18	05 45	18 24	05 40	18 30	05 33	18 36
19	06 00	18 07	05 56	18 12	05 51	18 16	05 46	18 21	05 41	18 26	05 36	18 31
24	05 59	18 06	05 55	18 10	05 51	18 14	05 47	18 18	05 42	18 22	05 38	18 27
29	05 58	18 04	05 54	18 08	05 51	18 11	05 47	18 14	05 44	18 18	05 40	18 22
Sep. 3	05 56	18 03	05 53	18 05	05 51	18 08	05 48	18 11	05 45	18 14	05 41	18 17
8	05 55	18 01	05 52	18 03	05 50	18 05	05 48	18 07	05 46	18 09	05 43	18 12
13	05 53	17 59	05 51	18 01	05 50	18 02	05 48	18 03	05 47	18 05	05 45	18 06
18	05 51	17 57	05 50	17 58	05 50	17 59	05 49	17 59	05 48	18 00	05 47	18 01
23	05 49	17 56	05 49	17 56	05 49	17 56	05 49	17 56	05 49	17 56	05 49	17 56
28	05 47	17 54	05 48	17 53	05 49	17 53	05 49	17 52	05 50	17 51	05 51	17 50
Oct. 3	05 46	17 52	05 47	17 51	05 49	17 50	05 50	17 48	05 51	17 47	05 53	17 45
8	05 44	17 51	05 46	17 49	05 48	17 47	05 50	17 45	05 53	17 42	05 55	17 40
13	05 43	17 50	05 46	17 47	05 48	17 44	05 51	17 41	05 54	17 38	05 57	17 35
18	05 42	17 49	05 45	17 45	05 49	17 42	05 52	17 38	05 56	17 34	05 59	17 31
23	05 41	17 48	05 45	17 44	05 49	17 40	05 53	17 35	05 57	17 31	06 02	17 26
28	05 40	17 47	05 45	17 43	05 50	17 38	05 54	17 33	05 59	17 28	06 05	17 22
Nov. 2	05 40	17 47	05 45	17 42	05 51	17 36	05 56	17 31	06 02	17 25	06 08	17 19
7	05 40	17 47	05 46	17 41	05 52	17 35	05 58	17 29	06 04	17 23	06 11	17 16
12	05 41	17 48	05 47	17 41	05 53	17 35	06 00	17 28	06 07	17 21	06 14	17 14
17	05 41	17 48	05 48	17 42	05 55	17 35	06 02	17 27	06 10	17 20	06 18	17 12
22	05 42	17 50	05 50	17 42	05 57	17 35	06 05	17 27	06 13	17 19	06 21	17 11
27	05 44	17 51	05 52	17 43	05 59	17 36	06 07	17 27	06 16	17 19	06 25	17 10
Dec. 2	05 46	17 53	05 54	17 45	06 02	17 37	06 10	17 28	06 19	17 19	06 28	17 10
7	05 48	17 55	05 56	17 47	06 04	17 38	06 13	17 30	06 22	17 20	06 32	17 11
12	05 50	17 57	05 58	17 49	06 07	17 40	06 16	17 31	06 25	17 22	06 35	17 12
17	05 52	18 00	06 01	17 51	06 10	17 42	06 19	17 33	06 28	17 24	06 38	17 14
22	05 55	18 02	06 03	17 54	06 12	17 45	06 21	17 36	06 31	17 26	06 41	17 16
27	05 57	18 05	06 06	17 56	06 15	17 47	06 24	17 38	06 33	17 29	06 43	17 19

Local mean time. To obtain standard time of rise or set, see Table 5.

TABLE 4.—SUNRISE AND SUNSET, 2019

Date	30°N.		32°N.		34°N.		36°N.		38°N.		40°N.	
	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.
Jan. 1	06 56	17 11	07 00	17 06	07 05	17 02	07 11	16 56	07 16	16 51	07 22	16 45
6	06 57	17 15	07 01	17 10	07 06	17 06	07 11	17 01	07 16	16 55	07 22	16 50
11	06 57	17 19	07 01	17 14	07 06	17 10	07 11	17 05	07 16	17 00	07 21	16 55
16	06 57	17 23	07 01	17 19	07 05	17 15	07 10	17 10	07 15	17 05	07 20	17 00
21	06 55	17 27	06 59	17 23	07 03	17 19	07 08	17 15	07 12	17 10	07 17	17 06
26	06 54	17 32	06 57	17 28	07 01	17 24	07 05	17 20	07 09	17 16	07 14	17 11
31	06 51	17 36	06 54	17 33	06 58	17 29	07 02	17 25	07 06	17 22	07 10	17 17
Feb. 5	06 48	17 40	06 51	17 37	06 54	17 34	06 58	17 31	07 01	17 27	07 05	17 23
10	06 44	17 44	06 47	17 42	06 50	17 39	06 53	17 36	06 56	17 33	06 59	17 30
15	06 40	17 48	06 43	17 46	06 45	17 44	06 48	17 41	06 50	17 38	06 53	17 35
20	06 36	17 52	06 38	17 50	06 40	17 48	06 42	17 46	06 44	17 44	06 47	17 41
25	06 31	17 56	06 32	17 54	06 34	17 53	06 36	17 51	06 38	17 49	06 40	17 47
Mar. 2	06 25	18 00	06 27	17 58	06 28	17 57	06 29	17 56	06 31	17 54	06 33	17 53
7	06 20	18 03	06 21	18 02	06 22	18 01	06 23	18 00	06 24	17 59	06 25	17 58
12	06 14	18 06	06 15	18 06	06 15	18 05	06 16	18 05	06 16	18 04	06 17	18 03
17	06 08	18 09	06 08	18 09	06 08	18 09	06 09	18 09	06 09	18 09	06 09	18 09
22	06 02	18 12	06 02	18 13	06 02	18 13	06 01	18 13	06 01	18 13	06 01	18 14
27	05 56	18 15	05 55	18 16	05 55	18 17	05 54	18 17	05 54	18 18	05 53	18 19
Apr. 1	05 50	18 18	05 49	18 19	05 48	18 20	05 47	18 22	05 46	18 23	05 45	18 24
6	05 44	18 22	05 43	18 23	05 41	18 24	05 40	18 26	05 38	18 27	05 37	18 29
11	05 38	18 25	05 37	18 26	05 35	18 28	05 33	18 30	05 31	18 32	05 29	18 34
16	05 33	18 28	05 31	18 30	05 28	18 32	05 26	18 34	05 24	18 37	05 21	18 39
21	05 27	18 31	05 25	18 33	05 22	18 36	05 20	18 38	05 17	18 41	05 14	18 44
26	05 22	18 34	05 20	18 37	05 17	18 40	05 14	18 43	05 11	18 46	05 07	18 49
May. 1	05 18	18 37	05 15	18 40	05 11	18 43	05 08	18 47	05 04	18 50	05 01	18 54
6	05 13	18 40	05 10	18 44	05 06	18 47	05 03	18 51	04 59	18 55	04 55	18 59
11	05 10	18 44	05 06	18 47	05 02	18 51	04 58	18 55	04 54	19 00	04 49	19 04
16	05 06	18 47	05 02	18 51	04 58	18 55	04 54	18 59	04 49	19 04	04 44	19 09
21	05 04	18 50	04 59	18 54	04 55	18 59	04 50	19 03	04 45	19 08	04 40	19 14
26	05 01	18 53	04 57	18 57	04 52	19 02	04 47	19 07	04 42	19 12	04 37	19 18
31	05 00	18 56	04 55	19 00	04 50	19 05	04 45	19 10	04 40	19 16	04 34	19 22
Jun. 5	04 59	18 58	04 54	19 03	04 49	19 08	04 44	19 14	04 38	19 19	04 32	19 25
10	04 58	19 01	04 54	19 06	04 48	19 11	04 43	19 16	04 37	19 22	04 31	19 28
15	04 59	19 02	04 54	19 07	04 48	19 13	04 43	19 18	04 37	19 24	04 31	19 30
20	04 59	19 04	04 54	19 09	04 49	19 14	04 43	19 20	04 37	19 26	04 31	19 32
25	05 00	19 05	04 55	19 10	04 50	19 15	04 45	19 21	04 39	19 26	04 32	19 33
30	05 02	19 05	04 57	19 10	04 52	19 15	04 46	19 21	04 41	19 27	04 34	19 33
Jul. 5	05 04	19 05	04 59	19 10	04 54	19 15	04 49	19 20	04 43	19 26	04 37	19 32
10	05 06	19 04	05 02	19 09	04 57	19 14	04 51	19 19	04 46	19 25	04 40	19 30
15	05 09	19 03	05 04	19 07	05 00	19 12	04 55	19 17	04 49	19 22	04 44	19 28
20	05 12	19 01	05 07	19 05	05 03	19 10	04 58	19 14	04 53	19 19	04 47	19 25
25	05 15	18 58	05 11	19 02	05 06	19 06	05 02	19 11	04 57	19 16	04 52	19 21
30	05 18	18 55	05 14	18 59	05 10	19 03	05 05	19 07	05 01	19 11	04 56	19 16
Aug. 4	05 21	18 51	05 17	18 55	05 13	18 58	05 09	19 02	05 05	19 06	05 01	19 11
9	05 24	18 47	05 20	18 50	05 17	18 54	05 13	18 57	05 10	19 01	05 06	19 05
14	05 27	18 42	05 24	18 45	05 21	18 48	05 17	18 52	05 14	18 55	05 10	18 59
19	05 29	18 37	05 27	18 40	05 24	18 43	05 21	18 46	05 18	18 49	05 15	18 52
24	05 32	18 32	05 30	18 34	05 28	18 37	05 25	18 39	05 23	18 42	05 20	18 44
29	05 35	18 26	05 33	18 28	05 31	18 30	05 29	18 32	05 27	18 35	05 25	18 37
Sep. 3	05 38	18 21	05 36	18 22	05 35	18 24	05 33	18 25	05 31	18 27	05 29	18 29
8	05 41	18 14	05 39	18 16	05 38	18 17	05 37	18 18	05 35	18 19	05 34	18 21
13	05 43	18 08	05 42	18 09	05 42	18 10	05 41	18 11	05 40	18 12	05 39	18 13
18	05 46	18 02	05 45	18 02	05 45	18 03	05 44	18 03	05 44	18 04	05 43	18 04
23	05 49	17 56	05 49	17 56	05 48	17 56	05 48	17 56	05 48	17 56	05 48	17 56
28	05 51	17 50	05 52	17 49	05 52	17 49	05 52	17 49	05 53	17 48	05 53	17 48
Oct. 3	05 54	17 44	05 55	17 43	05 56	17 42	05 56	17 41	05 57	17 41	05 58	17 40
8	05 57	17 38	05 58	17 37	05 59	17 35	06 00	17 34	06 02	17 33	06 03	17 32
13	06 00	17 32	06 02	17 30	06 03	17 29	06 05	17 27	06 06	17 26	06 08	17 24
18	06 04	17 26	06 05	17 25	06 07	17 23	06 09	17 21	06 11	17 19	06 13	17 17
23	06 07	17 21	06 09	17 19	06 11	17 17	06 14	17 15	06 16	17 12	06 19	17 10
28	06 11	17 17	06 13	17 14	06 16	17 12	06 18	17 09	06 21	17 06	06 24	17 03
Nov. 2	06 14	17 12	06 17	17 10	06 20	17 07	06 23	17 04	06 26	17 00	06 30	16 57
7	06 18	17 09	06 21	17 06	06 25	17 02	06 28	16 59	06 32	16 55	06 35	16 51
12	06 22	17 06	06 26	17 02	06 29	16 59	06 33	16 55	06 37	16 51	06 41	16 47
17	06 26	17 03	06 30	16 59	06 34	16 56	06 38	16 51	06 42	16 47	06 47	16 42
22	06 30	17 01	06 34	16 57	06 39	16 53	06 43	16 49	06 48	16 44	06 53	16 39
27	06 35	17 00	06 39	16 56	06 43	16 52	06 48	16 47	06 53	16 42	06 58	16 37
Dec. 2	06 39	17 00	06 43	16 55	06 48	16 51	06 53	16 46	06 58	16 41	07 03	16 35
7	06 43	17 00	06 47	16 55	06 52	16 51	06 57	16 46	07 02	16 40	07 08	16 35
12	06 46	17 01	06 51	16 56	06 56	16 51	07 01	16 46	07 06	16 41	07 12	16 35
17	06 49	17 03	06 54	16 58	06 59	16 53	07 04	16 48	07 10	16 42	07 16	16 36
22	06 52	17 05	06 57	17 00	07 02	16 55	07 07	16 50	07 13	16 44	07 19	16 38
27	06 54	17 08	06 59	17 03	07 04	16 58	07 09	16 53	07 15	16 47	07 21	16 41

Local mean time. To obtain standard time of rise or set, see Table 5.

TABLE 4.—SUNRISE AND SUNSET, 2019

Date	42°N.		44°N.		46°N.		48°N.		50°N.		52°N.	
	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.
Jan. 1	07 28	16 39	07 35	16 32	07 42	16 25	07 50	16 17	07 59	16 09	08 08	15 59
6	07 28	16 44	07 35	16 37	07 42	16 30	07 49	16 22	07 58	16 14	08 07	16 05
11	07 27	16 49	07 33	16 43	07 40	16 36	07 47	16 29	07 56	16 21	08 04	16 12
16	07 25	16 54	07 31	16 49	07 38	16 42	07 45	16 35	07 52	16 28	08 00	16 19
21	07 22	17 00	07 28	16 55	07 34	16 49	07 40	16 42	07 48	16 35	07 55	16 28
26	07 19	17 07	07 24	17 02	07 29	16 56	07 35	16 50	07 42	16 44	07 49	16 36
31	07 14	17 13	07 19	17 08	07 24	17 03	07 29	16 58	07 35	16 52	07 42	16 45
Feb. 5	07 09	17 20	07 13	17 15	07 18	17 11	07 23	17 06	07 28	17 01	07 34	16 55
10	07 03	17 26	07 07	17 22	07 11	17 18	07 15	17 14	07 20	17 09	07 25	17 04
15	06 56	17 32	07 00	17 29	07 03	17 26	07 07	17 22	07 11	17 18	07 16	17 13
20	06 49	17 39	06 52	17 36	06 55	17 33	06 58	17 30	07 02	17 26	07 06	17 23
25	06 42	17 45	06 44	17 43	06 47	17 40	06 49	17 38	06 52	17 35	06 55	17 32
Mar. 2	06 34	17 51	06 36	17 49	06 38	17 47	06 40	17 45	06 42	17 43	06 44	17 41
7	06 26	17 57	06 27	17 56	06 29	17 54	06 30	17 53	06 32	17 51	06 33	17 50
12	06 18	18 03	06 18	18 02	06 19	18 01	06 20	18 00	06 21	18 00	06 22	17 59
17	06 09	18 08	06 09	18 08	06 10	18 08	06 10	18 08	06 10	18 08	06 10	18 07
22	06 01	18 14	06 00	18 14	06 00	18 15	06 00	18 15	05 59	18 16	05 59	18 16
27	05 52	18 20	05 51	18 20	05 50	18 21	05 50	18 22	05 48	18 23	05 47	18 25
Apr. 1	05 44	18 25	05 42	18 27	05 41	18 28	05 39	18 30	05 38	18 31	05 36	18 33
6	05 35	18 31	05 33	18 33	05 31	18 35	05 29	18 37	05 27	18 39	05 24	18 42
11	05 27	18 36	05 24	18 39	05 22	18 41	05 19	18 44	05 16	18 47	05 13	18 50
16	05 19	18 42	05 16	18 45	05 13	18 48	05 10	18 51	05 06	18 55	05 02	18 59
21	05 11	18 47	05 08	18 51	05 04	18 54	05 00	18 58	04 56	19 03	04 51	19 07
26	05 04	18 53	05 00	18 57	04 56	19 01	04 51	19 05	04 46	19 10	04 41	19 16
May. 1	04 57	18 58	04 52	19 03	04 48	19 07	04 43	19 13	04 37	19 18	04 31	19 24
6	04 50	19 04	04 45	19 09	04 40	19 14	04 35	19 20	04 29	19 26	04 22	19 33
11	04 44	19 09	04 39	19 14	04 33	19 20	04 27	19 26	04 21	19 33	04 13	19 41
16	04 39	19 14	04 33	19 20	04 27	19 26	04 21	19 33	04 13	19 40	04 05	19 49
21	04 35	19 19	04 28	19 25	04 22	19 32	04 15	19 39	04 07	19 47	03 58	19 56
26	04 31	19 24	04 24	19 30	04 17	19 37	04 10	19 45	04 01	19 53	03 52	20 03
31	04 28	19 28	04 21	19 35	04 14	19 42	04 06	19 50	03 57	19 59	03 47	20 09
Jun. 5	04 26	19 32	04 19	19 39	04 11	19 46	04 03	19 55	03 54	20 04	03 43	20 14
10	04 24	19 35	04 17	19 42	04 09	19 50	04 01	19 58	03 51	20 08	03 41	20 18
15	04 24	19 37	04 17	19 44	04 09	19 52	04 00	20 01	03 50	20 11	03 40	20 22
20	04 24	19 39	04 17	19 46	04 09	19 54	04 00	20 03	03 50	20 13	03 40	20 24
25	04 26	19 40	04 18	19 47	04 10	19 55	04 01	20 04	03 52	20 13	03 41	20 24
30	04 28	19 40	04 20	19 47	04 12	19 55	04 04	20 03	03 54	20 13	03 44	20 23
Jul. 5	04 30	19 39	04 23	19 46	04 15	19 53	04 07	20 02	03 58	20 11	03 47	20 21
10	04 34	19 37	04 27	19 44	04 19	19 51	04 11	19 59	04 02	20 08	03 52	20 18
15	04 37	19 34	04 31	19 41	04 24	19 48	04 16	19 56	04 07	20 04	03 58	20 14
20	04 42	19 31	04 35	19 37	04 29	19 44	04 21	19 51	04 13	19 59	04 04	20 08
25	04 46	19 26	04 40	19 32	04 34	19 38	04 27	19 45	04 19	19 53	04 11	20 01
30	04 51	19 21	04 46	19 27	04 40	19 33	04 33	19 39	04 26	19 46	04 18	19 54
Aug. 4	04 56	19 16	04 51	19 21	04 46	19 26	04 40	19 32	04 33	19 38	04 26	19 45
9	05 01	19 09	04 57	19 14	04 52	19 19	04 46	19 24	04 40	19 30	04 34	19 36
14	05 06	19 02	05 02	19 06	04 58	19 11	04 53	19 16	04 48	19 21	04 42	19 27
19	05 12	18 55	05 08	18 59	05 04	19 03	05 00	19 07	04 55	19 11	04 50	19 16
24	05 17	18 47	05 14	18 50	05 10	18 54	05 06	18 57	05 02	19 01	04 58	19 06
29	05 22	18 39	05 19	18 42	05 16	18 45	05 13	18 48	05 10	18 51	05 06	18 55
Sep. 3	05 27	18 31	05 25	18 33	05 23	18 35	05 20	18 38	05 17	18 41	05 14	18 43
8	05 32	18 22	05 31	18 24	05 29	18 26	05 27	18 28	05 25	18 30	05 23	18 32
13	05 38	18 14	05 36	18 15	05 35	18 16	05 34	18 17	05 32	18 19	05 31	18 20
18	05 43	18 05	05 42	18 06	05 41	18 06	05 41	18 07	05 40	18 08	05 39	18 09
23	05 48	17 56	05 48	17 56	05 48	17 56	05 47	17 57	05 47	17 57	05 47	17 57
28	05 53	17 48	05 54	17 47	05 54	17 47	05 54	17 46	05 55	17 46	05 55	17 45
Oct. 3	05 59	17 39	05 59	17 38	06 00	17 37	06 01	17 36	06 02	17 35	06 04	17 34
8	06 04	17 30	06 05	17 29	06 07	17 28	06 08	17 26	06 10	17 24	06 12	17 22
13	06 10	17 22	06 12	17 20	06 14	17 18	06 16	17 16	06 18	17 14	06 21	17 11
18	06 15	17 14	06 18	17 12	06 20	17 09	06 23	17 07	06 26	17 04	06 29	17 00
23	06 21	17 07	06 24	17 04	06 27	17 01	06 31	16 57	06 34	16 54	06 38	16 50
28	06 27	17 00	06 31	16 56	06 34	16 53	06 38	16 49	06 42	16 45	06 47	16 40
Nov. 2	06 33	16 53	06 37	16 49	06 41	16 45	06 46	16 41	06 51	16 36	06 56	16 30
7	06 39	16 47	06 44	16 43	06 48	16 38	06 54	16 33	06 59	16 28	07 05	16 22
12	06 46	16 42	06 50	16 37	06 56	16 32	07 01	16 26	07 07	16 20	07 14	16 14
17	06 52	16 38	06 57	16 32	07 03	16 27	07 09	16 21	07 15	16 14	07 23	16 07
22	06 58	16 34	07 03	16 28	07 09	16 22	07 16	16 16	07 23	16 08	07 31	16 00
27	07 04	16 31	07 10	16 25	07 16	16 19	07 23	16 12	07 31	16 04	07 39	15 56
Dec. 2	07 09	16 29	07 15	16 23	07 22	16 16	07 29	16 09	07 38	16 01	07 46	15 52
7	07 14	16 28	07 20	16 22	07 28	16 15	07 35	16 07	07 44	15 59	07 53	15 49
12	07 18	16 29	07 25	16 22	07 32	16 15	07 40	16 07	07 49	15 58	07 59	15 48
17	07 22	16 30	07 29	16 23	07 36	16 16	07 44	16 08	07 53	15 59	08 03	15 49
22	07 25	16 32	07 32	16 25	07 39	16 18	07 47	16 10	07 56	16 01	08 06	15 51
27	07 27	16 35	07 34	16 28	07 41	16 21	07 49	16 13	07 58	16 04	08 08	15 54

Local mean time. To obtain standard time of rise or set, see Table 5.

TABLE 4.—SUNRISE AND SUNSET, 2019

Date	54°N.		56°N.		58°N.		60°N.		62°N.		64°N.	
	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.
Jan. 1	08 19	15 48	08 31	15 36	08 45	15 22	09 02	15 05	09 23	14 44	09 50	14 18
6	08 17	15 54	08 29	15 43	08 43	15 29	08 59	15 13	09 19	14 53	09 43	14 28
11	08 14	16 02	08 26	15 51	08 39	15 38	08 54	15 22	09 12	15 04	09 35	14 42
16	08 10	16 10	08 20	15 59	08 32	15 47	08 47	15 33	09 03	15 17	09 24	14 56
21	08 04	16 19	08 14	16 09	08 25	15 58	08 38	15 45	08 53	15 30	09 11	15 12
26	07 57	16 28	08 06	16 19	08 16	16 09	08 28	15 58	08 42	15 44	08 58	15 28
31	07 49	16 38	07 57	16 30	08 06	16 21	08 17	16 11	08 29	15 59	08 43	15 44
Feb. 5	07 40	16 48	07 48	16 41	07 56	16 33	08 05	16 24	08 16	16 13	08 28	16 01
10	07 31	16 58	07 37	16 52	07 44	16 45	07 52	16 37	08 01	16 28	08 12	16 17
15	07 21	17 09	07 26	17 03	07 32	16 57	07 39	16 50	07 47	16 43	07 56	16 34
20	07 10	17 19	07 14	17 14	07 19	17 09	07 25	17 03	07 32	16 57	07 39	16 50
25	06 59	17 29	07 02	17 25	07 06	17 21	07 11	17 16	07 16	17 11	07 22	17 05
Mar. 2	06 47	17 38	06 50	17 36	06 53	17 32	06 57	17 29	07 01	17 25	07 05	17 21
7	06 35	17 48	06 37	17 46	06 39	17 44	06 42	17 42	06 45	17 39	06 48	17 36
12	06 23	17 58	06 24	17 57	06 25	17 55	06 27	17 54	06 29	17 53	06 30	17 51
17	06 11	18 07	06 11	18 07	06 11	18 07	06 12	18 06	06 12	18 06	06 13	18 06
22	05 58	18 17	05 58	18 17	05 57	18 18	05 57	18 19	05 56	18 19	05 55	18 20
27	05 46	18 26	05 45	18 27	05 43	18 29	05 42	18 31	05 40	18 33	05 37	18 35
Apr. 1	05 34	18 35	05 32	18 38	05 29	18 40	05 26	18 43	05 23	18 46	05 20	18 50
6	05 22	18 45	05 19	18 48	05 15	18 51	05 11	18 55	05 07	19 00	05 02	19 05
11	05 10	18 54	05 06	18 58	05 01	19 02	04 56	19 07	04 51	19 13	04 44	19 20
16	04 58	19 03	04 53	19 08	04 48	19 14	04 42	19 20	04 35	19 27	04 27	19 35
21	04 46	19 13	04 41	19 18	04 34	19 25	04 27	19 32	04 19	19 41	04 09	19 50
26	04 35	19 22	04 29	19 29	04 21	19 36	04 13	19 45	04 03	19 54	03 52	20 06
May. 1	04 24	19 31	04 17	19 39	04 09	19 47	03 59	19 57	03 48	20 08	03 35	20 22
6	04 14	19 40	04 06	19 49	03 57	19 58	03 46	20 09	03 33	20 22	03 18	20 38
11	04 05	19 49	03 56	19 58	03 45	20 09	03 33	20 22	03 19	20 36	03 01	20 54
16	03 56	19 58	03 46	20 08	03 34	20 20	03 21	20 34	03 05	20 50	02 45	21 10
21	03 49	20 06	03 37	20 17	03 25	20 30	03 10	20 45	02 52	21 03	02 30	21 26
26	03 42	20 13	03 30	20 25	03 16	20 39	03 00	20 56	02 40	21 16	02 15	21 42
31	03 36	20 20	03 24	20 33	03 09	20 47	02 51	21 05	02 30	21 27	02 01	21 56
Jun. 5	03 32	20 26	03 19	20 39	03 03	20 55	02 45	21 14	02 21	21 37	01 50	22 09
10	03 29	20 30	03 15	20 44	02 59	21 00	02 39	21 20	02 15	21 45	01 40	22 20
15	03 27	20 34	03 13	20 48	02 57	21 05	02 36	21 25	02 11	21 51	01 34	22 28
20	03 27	20 36	03 13	20 50	02 56	21 07	02 36	21 27	02 09	21 54	01 31	22 32
25	03 29	20 36	03 14	20 51	02 58	21 07	02 37	21 28	02 11	21 54	01 33	22 32
30	03 31	20 36	03 17	20 49	03 01	21 06	02 41	21 26	02 15	21 51	01 39	22 27
Jul. 5	03 35	20 33	03 22	20 47	03 06	21 03	02 47	21 22	02 22	21 46	01 49	22 19
10	03 41	20 29	03 28	20 42	03 12	20 57	02 54	21 15	02 31	21 38	02 01	22 08
15	03 47	20 24	03 34	20 37	03 20	20 51	03 03	21 08	02 42	21 28	02 15	21 55
20	03 54	20 18	03 42	20 29	03 29	20 43	03 13	20 58	02 54	21 17	02 29	21 41
25	04 01	20 11	03 51	20 21	03 38	20 33	03 24	20 48	03 07	21 05	02 45	21 26
30	04 09	20 02	04 00	20 12	03 48	20 23	03 35	20 36	03 20	20 51	03 01	21 10
Aug. 4	04 18	19 53	04 09	20 02	03 59	20 12	03 47	20 24	03 33	20 37	03 17	20 53
9	04 27	19 43	04 19	19 51	04 09	20 00	03 59	20 10	03 47	20 22	03 32	20 37
14	04 35	19 33	04 28	19 40	04 20	19 48	04 11	19 57	04 00	20 07	03 48	20 19
19	04 44	19 22	04 38	19 28	04 31	19 35	04 23	19 43	04 14	19 52	04 03	20 02
24	04 53	19 10	04 48	19 16	04 42	19 22	04 35	19 28	04 27	19 36	04 18	19 45
29	05 02	18 59	04 58	19 03	04 53	19 08	04 47	19 13	04 40	19 20	04 33	19 27
Sep. 3	05 11	18 47	05 07	18 50	05 03	18 54	04 59	18 59	04 54	19 04	04 48	19 09
8	05 20	18 34	05 17	18 37	05 14	18 40	05 11	18 44	05 07	18 47	05 02	18 52
13	05 29	18 22	05 27	18 24	05 25	18 26	05 22	18 28	05 19	18 31	05 16	18 34
18	05 38	18 10	05 37	18 11	05 35	18 12	05 34	18 13	05 32	18 15	05 30	18 16
23	05 47	17 57	05 46	17 57	05 46	17 58	05 46	17 58	05 45	17 58	05 45	17 59
28	05 56	17 45	05 56	17 44	05 57	17 43	05 57	17 43	05 58	17 42	05 59	17 41
Oct. 3	06 05	17 32	06 06	17 31	06 08	17 29	06 09	17 28	06 11	17 26	06 13	17 23
8	06 14	17 20	06 16	17 18	06 19	17 15	06 21	17 13	06 24	17 10	06 28	17 06
13	06 23	17 08	06 26	17 05	06 30	17 02	06 33	16 58	06 38	16 54	06 43	16 49
18	06 33	16 57	06 37	16 53	06 41	16 48	06 46	16 43	06 51	16 38	06 58	16 31
23	06 42	16 46	06 47	16 41	06 52	16 35	06 58	16 29	07 05	16 22	07 13	16 15
28	06 52	16 35	06 58	16 29	07 04	16 23	07 11	16 16	07 19	16 07	07 28	15 58
Nov. 2	07 02	16 25	07 08	16 18	07 16	16 11	07 24	16 02	07 33	15 53	07 44	15 42
7	07 12	16 15	07 19	16 08	07 27	15 59	07 37	15 50	07 48	15 39	08 00	15 26
12	07 21	16 06	07 29	15 58	07 39	15 49	07 49	15 38	08 02	15 26	08 16	15 11
17	07 31	15 58	07 40	15 49	07 50	15 39	08 02	15 27	08 16	15 13	08 33	14 56
22	07 40	15 52	07 50	15 42	08 01	15 30	08 14	15 17	08 30	15 02	08 48	14 43
27	07 49	15 46	07 59	15 35	08 11	15 23	08 26	15 09	08 43	14 52	09 04	14 31
Dec. 2	07 56	15 42	08 08	15 30	08 21	15 17	08 36	15 02	08 55	14 43	09 18	14 20
7	08 03	15 39	08 15	15 27	08 29	15 13	08 45	14 57	09 05	14 37	09 30	14 12
12	08 09	15 38	08 22	15 25	08 36	15 11	08 53	14 54	09 14	14 33	09 41	14 06
17	08 14	15 38	08 27	15 25	08 41	15 10	08 59	14 53	09 20	14 32	09 48	14 04
22	08 17	15 40	08 30	15 27	08 45	15 12	09 02	14 55	09 24	14 33	09 52	14 05
27	08 19	15 43	08 31	15 30	08 46	15 16	09 03	14 58	09 25	14 37	09 53	14 09

Local mean time. To obtain standard time of rise or set, see Table 5.

TABLE 4.—SUNRISE AND SUNSET, 2019

Date	66°N.		68°N.		70°N.		72°N.		74°N.		76°N.	
	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.
Jan. 1	10 28	13 39	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --
6	10 18	13 54	11 23	12 49	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --
11	10 05	14 11	10 54	13 22	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --
16	09 51	14 29	10 29	13 51	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --
21	09 35	14 49	10 06	14 17	10 58	13 25	-- --	-- --	-- --	-- --	-- --	-- --
26	09 18	15 08	09 44	14 42	10 22	14 04	11 45	12 41	-- --	-- --	-- --	-- --
31	09 01	15 27	09 23	15 05	09 52	14 36	10 38	13 50	-- --	-- --	-- --	-- --
Feb. 5	08 43	15 46	09 01	15 28	09 25	15 04	09 59	14 31	10 55	13 35	-- --	-- --
10	08 25	16 05	08 40	15 49	09 00	15 30	09 25	15 05	10 02	14 28	11 13	13 17
15	08 06	16 23	08 19	16 10	08 35	15 55	08 55	15 35	09 23	15 07	10 04	14 26
20	07 48	16 41	07 58	16 31	08 11	16 18	08 27	16 02	08 48	15 42	09 16	15 13
25	07 29	16 58	07 37	16 50	07 47	16 40	08 00	16 28	08 15	16 13	08 36	15 52
Mar. 2	07 10	17 15	07 17	17 09	07 24	17 02	07 33	16 53	07 45	16 42	08 00	16 27
7	06 51	17 32	06 56	17 28	07 01	17 23	07 07	17 17	07 15	17 10	07 25	17 00
12	06 32	17 49	06 35	17 47	06 38	17 44	06 41	17 41	06 46	17 37	06 51	17 31
17	06 13	18 05	06 14	18 05	06 15	18 04	06 16	18 04	06 17	18 03	06 18	18 02
22	05 54	18 22	05 53	18 23	05 52	18 25	05 50	18 27	05 48	18 29	05 45	18 32
27	05 35	18 38	05 32	18 41	05 28	18 45	05 24	18 50	05 18	18 56	05 11	19 03
Apr. 1	05 16	18 54	05 11	18 59	05 05	19 06	04 58	19 13	04 49	19 23	04 37	19 35
6	04 56	19 11	04 49	19 18	04 41	19 27	04 31	19 37	04 18	19 51	04 01	20 08
11	04 37	19 28	04 28	19 37	04 17	19 48	04 04	20 02	03 46	20 20	03 23	20 45
16	04 17	19 45	04 06	19 56	03 53	20 10	03 35	20 28	03 12	20 52	02 40	21 27
21	03 58	20 02	03 44	20 16	03 27	20 34	03 05	20 57	02 35	21 29	01 46	22 23
26	03 38	20 20	03 22	20 37	03 01	20 59	02 33	21 28	01 50	22 15	** **	** **
May. 1	03 19	20 38	02 59	20 59	02 33	21 26	01 55	22 06	00 38		** **	** **
6	02 59	20 57	02 35	21 22	02 02	21 57	01 06	23 00	** **	** **	** **	** **
11	02 39	21 16	02 10	21 47	01 26	22 34	** **	** **	** **	** **	** **	** **
16	02 20	21 36	01 43	22 14	00 29		** **	** **	** **	** **	** **	** **
21	01 59	21 57	01 12	22 48	** **	** **	** **	** **	** **	** **	** **	** **
26	01 39	22 19	00 24		** **	** **	** **	** **	** **	** **	** **	** **
31	01 18	22 41	** **	** **	** **	** **	** **	** **	** **	** **	** **	** **
Jun. 5	00 56	23 05	** **	** **	** **	** **	** **	** **	** **	** **	** **	** **
10	00 31	23 34	** **	** **	** **	** **	** **	** **	** **	** **	** **	** **
15	** **	** **	** **	** **	** **	** **	** **	** **	** **	** **	** **	** **
20	** **	** **	** **	** **	** **	** **	** **	** **	** **	** **	** **	** **
25	** **	** **	** **	** **	** **	** **	** **	** **	** **	** **	** **	** **
30		23 50	** **	** **	** **	** **	** **	** **	** **	** **	** **	** **
Jul. 5	00 46	23 18	** **	** **	** **	** **	** **	** **	** **	** **	** **	** **
10	01 11	22 55	** **	** **	** **	** **	** **	** **	** **	** **	** **	** **
15	01 34	22 34	** **	** **	** **	** **	** **	** **	** **	** **	** **	** **
20	01 56	22 14	00 54	23 10	** **	** **	** **	** **	** **	** **	** **	** **
25	02 16	21 53	01 33	22 34	** **	** **	** **	** **	** **	** **	** **	** **
30	02 36	21 33	02 03	22 06	01 03	23 00	** **	** **	** **	** **	** **	** **
Aug. 4	02 56	21 14	02 29	21 40	01 48	22 18		23 46	** **	** **	** **	** **
9	03 15	20 54	02 52	21 16	02 21	21 45	01 32	22 30	** **	** **	** **	** **
14	03 33	20 34	03 14	20 52	02 49	21 16	02 15	21 49	01 13	22 43	** **	** **
19	03 50	20 15	03 35	20 30	03 15	20 49	02 48	21 14	02 10	21 50	00 48	22 58
24	04 07	19 55	03 54	20 08	03 38	20 23	03 18	20 43	02 50	21 10	02 06	21 50
29	04 24	19 36	04 14	19 46	04 01	19 58	03 45	20 14	03 23	20 34	02 53	21 02
Sep. 3	04 41	19 16	04 32	19 24	04 22	19 34	04 10	19 46	03 53	20 01	03 32	20 22
8	04 57	18 57	04 50	19 03	04 43	19 10	04 33	19 19	04 22	19 30	04 06	19 45
13	05 13	18 38	05 08	18 42	05 03	18 47	04 56	18 53	04 48	19 00	04 38	19 10
18	05 28	18 18	05 26	18 21	05 23	18 23	05 19	18 27	05 14	18 31	05 08	18 36
23	05 44	17 59	05 43	18 00	05 42	18 00	05 41	18 01	05 40	18 02	05 38	18 03
28	06 00	17 40	06 01	17 39	06 02	17 37	06 04	17 35	06 06	17 33	06 08	17 31
Oct. 3	06 16	17 21	06 19	17 18	06 22	17 14	06 26	17 10	06 31	17 04	06 38	16 58
8	06 32	17 02	06 37	16 57	06 42	16 51	06 49	16 44	06 58	16 35	07 09	16 24
13	06 48	16 43	06 55	16 36	07 03	16 28	07 13	16 18	07 25	16 05	07 41	15 49
18	07 05	16 24	07 14	16 15	07 24	16 05	07 37	15 51	07 54	15 34	08 17	15 11
23	07 22	16 05	07 33	15 54	07 46	15 41	08 03	15 24	08 25	15 02	08 57	14 30
28	07 40	15 47	07 53	15 33	08 09	15 17	08 31	14 55	09 00	14 26	09 46	13 40
Nov. 2	07 57	15 29	08 13	15 12	08 34	14 52	09 01	14 25	09 41	13 44	11 15	12 11
7	08 16	15 10	08 35	14 51	09 00	14 26	09 35	13 51	10 40	12 46	-- --	-- --
12	08 34	14 53	08 57	14 30	09 28	13 59	10 18	13 09	-- --	-- --	-- --	-- --
17	08 53	14 36	09 21	14 08	10 01	13 28	-- --	-- --	-- --	-- --	-- --	-- --
22	09 12	14 19	09 45	13 46	10 41	12 50	-- --	-- --	-- --	-- --	-- --	-- --
27	09 31	14 03	10 11	13 23	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --
Dec. 2	09 49	13 49	10 40	12 58	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --
7	10 06	13 37	11 16	12 26	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --
12	10 20	13 27	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --
17	10 30	13 22	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --
22	10 35	13 22	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --
27	10 34	13 28	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --

Local mean time. To obtain standard time of rise or set, see Table 5.

TABLE 4.—SUNRISE AND SUNSET, 2019

Date	0° S.		5° S.		10° S.		15° S.		20° S.		25° S.	
	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.
Jan. 1	06 00	18 07	05 51	18 16	05 42	18 24	05 33	18 33	05 24	18 43	05 13	18 53
6	06 02	18 09	05 54	18 18	05 45	18 26	05 36	18 35	05 27	18 44	05 17	18 54
11	06 04	18 12	05 56	18 20	05 48	18 28	05 39	18 36	05 30	18 45	05 21	18 55
16	06 06	18 13	05 58	18 21	05 50	18 29	05 42	18 37	05 34	18 46	05 24	18 55
21	06 08	18 15	06 00	18 22	05 53	18 30	05 45	18 37	05 37	18 45	05 28	18 54
26	06 09	18 16	06 02	18 23	05 55	18 30	05 48	18 37	05 40	18 45	05 32	18 53
31	06 10	18 17	06 04	18 23	05 57	18 30	05 50	18 36	05 43	18 43	05 36	18 51
Feb. 5	06 10	18 17	06 05	18 23	05 59	18 29	05 53	18 35	05 46	18 41	05 39	18 48
10	06 11	18 18	06 06	18 23	06 00	18 28	05 55	18 33	05 49	18 39	05 43	18 45
15	06 11	18 18	06 06	18 22	06 02	18 27	05 57	18 31	05 52	18 36	05 46	18 42
20	06 10	18 17	06 06	18 21	06 02	18 25	05 58	18 29	05 54	18 33	05 49	18 38
25	06 10	18 16	06 06	18 20	06 03	18 23	06 00	18 26	05 56	18 30	05 52	18 34
Mar. 2	06 09	18 15	06 06	18 18	06 04	18 21	06 01	18 23	05 58	18 26	05 55	18 29
7	06 08	18 14	06 06	18 16	06 04	18 18	06 02	18 20	06 00	18 22	05 57	18 24
12	06 07	18 13	06 05	18 14	06 04	18 15	06 03	18 17	06 01	18 18	06 00	18 19
17	06 05	18 12	06 05	18 12	06 04	18 13	06 04	18 13	06 03	18 14	06 02	18 14
22	06 04	18 10	06 04	18 10	06 04	18 10	06 04	18 10	06 04	18 09	06 04	18 09
27	06 02	18 09	06 03	18 08	06 04	18 07	06 05	18 06	06 06	18 05	06 07	18 04
Apr. 1	06 01	18 07	06 02	18 06	06 04	18 04	06 05	18 02	06 07	18 01	06 09	17 59
6	05 59	18 06	06 01	18 03	06 04	18 01	06 06	17 59	06 08	17 56	06 11	17 54
11	05 58	18 04	06 01	18 01	06 04	17 59	06 07	17 55	06 10	17 52	06 13	17 49
16	05 57	18 03	06 00	18 00	06 04	17 56	06 07	17 52	06 11	17 48	06 15	17 44
21	05 55	18 02	06 00	17 58	06 04	17 54	06 08	17 49	06 13	17 45	06 17	17 40
26	05 54	18 01	05 59	17 56	06 04	17 52	06 09	17 47	06 14	17 41	06 20	17 36
May. 1	05 54	18 01	05 59	17 55	06 05	17 50	06 10	17 44	06 16	17 38	06 22	17 32
6	05 53	18 00	05 59	17 54	06 05	17 48	06 11	17 42	06 18	17 35	06 25	17 29
11	05 53	18 00	05 59	17 53	06 06	17 47	06 13	17 40	06 20	17 33	06 27	17 26
16	05 53	18 00	06 00	17 53	06 07	17 46	06 14	17 39	06 21	17 31	06 30	17 23
21	05 53	18 00	06 00	17 53	06 08	17 45	06 15	17 38	06 23	17 30	06 32	17 21
26	05 53	18 01	06 01	17 53	06 09	17 45	06 17	17 37	06 25	17 28	06 34	17 19
31	05 54	18 01	06 02	17 53	06 10	17 45	06 19	17 37	06 27	17 28	06 37	17 18
Jun. 5	05 55	18 02	06 03	17 54	06 12	17 45	06 20	17 37	06 29	17 28	06 39	17 18
10	05 56	18 03	06 04	17 55	06 13	17 46	06 22	17 37	06 31	17 28	06 41	17 18
15	05 57	18 04	06 05	17 55	06 14	17 47	06 23	17 38	06 33	17 28	06 43	17 18
20	05 58	18 05	06 07	17 57	06 15	17 48	06 24	17 39	06 34	17 29	06 44	17 19
25	05 59	18 06	06 08	17 58	06 16	17 49	06 25	17 40	06 35	17 30	06 45	17 20
30	06 00	18 07	06 09	17 59	06 17	17 50	06 26	17 41	06 36	17 32	06 46	17 22
Jul. 5	06 01	18 08	06 09	18 00	06 18	17 51	06 27	17 43	06 36	17 33	06 46	17 24
10	06 02	18 09	06 10	18 01	06 18	17 53	06 27	17 44	06 36	17 35	06 45	17 26
15	06 02	18 10	06 10	18 02	06 18	17 54	06 27	17 45	06 35	17 37	06 44	17 28
20	06 03	18 10	06 10	18 02	06 18	17 55	06 26	17 47	06 34	17 39	06 43	17 30
25	06 03	18 10	06 10	18 03	06 17	17 56	06 25	17 48	06 33	17 41	06 41	17 32
30	06 03	18 10	06 10	18 03	06 17	17 57	06 24	17 50	06 31	17 42	06 39	17 35
Aug. 4	06 03	18 10	06 09	18 03	06 15	17 57	06 22	17 51	06 28	17 44	06 36	17 37
9	06 02	18 09	06 08	18 03	06 14	17 58	06 20	17 52	06 26	17 46	06 32	17 39
14	06 01	18 08	06 07	18 03	06 12	17 58	06 17	17 53	06 23	17 47	06 29	17 41
19	06 00	18 07	06 05	18 03	06 10	17 58	06 14	17 53	06 19	17 48	06 24	17 43
24	05 59	18 06	06 03	18 02	06 07	17 58	06 11	17 54	06 15	17 50	06 20	17 45
29	05 58	18 04	06 01	18 01	06 04	17 58	06 08	17 54	06 11	17 51	06 15	17 47
Sep. 3	05 56	18 03	05 59	18 00	06 02	17 57	06 04	17 55	06 07	17 52	06 10	17 49
8	05 55	18 01	05 57	17 59	05 59	17 57	06 01	17 55	06 03	17 53	06 05	17 51
13	05 53	17 59	05 54	17 58	05 55	17 57	05 57	17 55	05 58	17 54	06 00	17 53
18	05 51	17 57	05 52	17 57	05 52	17 56	05 53	17 56	05 54	17 55	05 54	17 54
23	05 49	17 56	05 49	17 56	05 49	17 56	05 49	17 56	05 49	17 56	05 49	17 56
28	05 47	17 54	05 47	17 55	05 46	17 56	05 45	17 56	05 45	17 57	05 44	17 58
Oct. 3	05 46	17 52	05 45	17 54	05 43	17 55	05 42	17 57	05 40	17 58	05 38	18 00
8	05 44	17 51	05 42	17 53	05 40	17 55	05 38	17 57	05 36	18 00	05 33	18 02
13	05 43	17 50	05 40	17 52	05 38	17 55	05 35	17 58	05 32	18 01	05 28	18 05
18	05 42	17 49	05 39	17 52	05 35	17 55	05 31	17 59	05 28	18 03	05 24	18 07
23	05 41	17 48	05 37	17 52	05 33	17 56	05 29	18 00	05 24	18 05	05 19	18 10
28	05 40	17 47	05 36	17 52	05 31	17 57	05 26	18 02	05 21	18 07	05 15	18 13
Nov. 2	05 40	17 47	05 35	17 52	05 30	17 58	05 24	18 03	05 18	18 09	05 12	18 16
7	05 40	17 47	05 34	17 53	05 28	17 59	05 22	18 05	05 16	18 12	05 09	18 19
12	05 41	17 48	05 34	17 54	05 28	18 01	05 21	18 07	05 14	18 15	05 06	18 22
17	05 41	17 48	05 34	17 55	05 27	18 02	05 20	18 10	05 12	18 18	05 04	18 26
22	05 42	17 50	05 35	17 57	05 28	18 05	05 20	18 12	05 12	18 21	05 03	18 30
27	05 44	17 51	05 36	17 59	05 28	18 07	05 20	18 15	05 11	18 24	05 02	18 33
Dec. 2	05 46	17 53	05 38	18 01	05 29	18 09	05 21	18 18	05 12	18 27	05 02	18 37
7	05 48	17 55	05 39	18 03	05 31	18 12	05 22	18 21	05 12	18 30	05 02	18 40
12	05 50	17 57	05 41	18 06	05 33	18 15	05 23	18 24	05 14	18 33	05 04	18 44
17	05 52	18 00	05 44	18 08	05 35	18 17	05 25	18 26	05 16	18 36	05 05	18 47
22	05 55	18 02	05 46	18 11	05 37	18 20	05 28	18 29	05 18	18 39	05 08	18 49
27	05 57	18 05	05 48	18 13	05 40	18 22	05 30	18 31	05 21	18 41	05 10	18 52

Local mean time. To obtain standard time of rise or set, see Table 5.

Date	30° S.		32° S.		34° S.		36° S.		38° S.		40° S.	
	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.
Jan. 1	05 02	19 05	04 57	19 09	04 52	19 15	04 47	19 20	04 41	19 26	04 35	19 32
6	05 06	19 05	05 01	19 10	04 56	19 15	04 51	19 20	04 45	19 26	04 39	19 32
11	05 10	19 06	05 05	19 10	05 00	19 15	04 55	19 20	04 50	19 25	04 44	19 31
16	05 14	19 05	05 10	19 09	05 05	19 14	05 00	19 19	04 55	19 24	04 50	19 29
21	05 19	19 04	05 14	19 08	05 10	19 12	05 05	19 17	05 00	19 21	04 55	19 27
26	05 23	19 02	05 19	19 05	05 15	19 09	05 11	19 14	05 06	19 18	05 01	19 23
31	05 27	18 59	05 24	19 03	05 20	19 06	05 16	19 10	05 12	19 14	05 07	19 19
Feb. 5	05 32	18 56	05 28	18 59	05 25	19 02	05 21	19 06	05 18	19 10	05 14	19 14
10	05 36	18 52	05 33	18 55	05 30	18 58	05 27	19 01	05 23	19 04	05 20	19 08
15	05 40	18 48	05 38	18 50	05 35	18 53	05 32	18 56	05 29	18 59	05 26	19 02
20	05 44	18 43	05 42	18 45	05 39	18 47	05 37	18 50	05 34	18 52	05 32	18 55
25	05 48	18 38	05 46	18 40	05 44	18 42	05 42	18 44	05 40	18 46	05 37	18 48
Mar. 2	05 51	18 33	05 50	18 34	05 48	18 35	05 47	18 37	05 45	18 39	05 43	18 41
7	05 55	18 27	05 54	18 28	05 53	18 29	05 51	18 30	05 50	18 32	05 49	18 33
12	05 58	18 21	05 57	18 22	05 57	18 22	05 56	18 23	05 55	18 24	05 54	18 25
17	06 01	18 15	06 01	18 15	06 01	18 16	06 00	18 16	06 00	18 16	05 59	18 17
22	06 04	18 09	06 04	18 09	06 04	18 09	06 04	18 09	06 04	18 09	06 04	18 09
27	06 07	18 03	06 08	18 03	06 08	18 02	06 09	18 02	06 09	18 01	06 10	18 01
Apr. 1	06 10	17 57	06 11	17 56	06 12	17 55	06 13	17 55	06 14	17 54	06 15	17 53
6	06 13	17 51	06 15	17 50	06 16	17 49	06 17	17 47	06 18	17 46	06 20	17 45
11	06 16	17 45	06 18	17 44	06 20	17 42	06 21	17 41	06 23	17 39	06 25	17 37
16	06 19	17 40	06 21	17 38	06 23	17 36	06 25	17 34	06 27	17 32	06 30	17 30
21	06 23	17 35	06 25	17 32	06 27	17 30	06 29	17 28	06 32	17 25	06 35	17 22
26	06 26	17 30	06 28	17 27	06 31	17 24	06 34	17 22	06 37	17 19	06 40	17 16
May. 1	06 29	17 25	06 32	17 22	06 35	17 19	06 38	17 16	06 41	17 13	06 45	17 09
6	06 32	17 21	06 35	17 18	06 38	17 15	06 42	17 11	06 46	17 07	06 50	17 03
11	06 35	17 17	06 39	17 14	06 42	17 10	06 46	17 06	06 50	17 02	06 54	16 58
16	06 38	17 14	06 42	17 10	06 46	17 07	06 50	17 02	06 54	16 58	06 59	16 53
21	06 41	17 12	06 45	17 08	06 49	17 03	06 54	16 59	06 59	16 54	07 03	16 49
26	06 44	17 10	06 48	17 05	06 53	17 01	06 58	16 56	07 02	16 51	07 08	16 46
31	06 47	17 08	06 51	17 04	06 56	16 59	07 01	16 54	07 06	16 49	07 11	16 44
Jun. 5	06 50	17 07	06 54	17 03	06 59	16 58	07 04	16 53	07 09	16 48	07 15	16 42
10	06 52	17 07	06 57	17 02	07 01	16 57	07 07	16 52	07 12	16 47	07 18	16 41
15	06 54	17 07	06 58	17 02	07 03	16 57	07 09	16 52	07 14	16 47	07 20	16 41
20	06 55	17 08	07 00	17 03	07 05	16 58	07 10	16 53	07 16	16 47	07 22	16 41
25	06 56	17 09	07 01	17 04	07 06	16 59	07 11	16 54	07 17	16 49	07 23	16 43
30	06 57	17 11	07 01	17 06	07 06	17 01	07 11	16 56	07 17	16 50	07 23	16 45
Jul. 5	06 56	17 13	07 01	17 08	07 06	17 03	07 11	16 58	07 16	16 53	07 22	16 47
10	06 56	17 15	07 00	17 11	07 05	17 06	07 10	17 01	07 15	16 56	07 21	16 50
15	06 54	17 18	06 59	17 13	07 03	17 09	07 08	17 04	07 13	16 59	07 18	16 54
20	06 53	17 20	06 57	17 16	07 01	17 12	07 06	17 07	07 10	17 03	07 15	16 58
25	06 50	17 23	06 54	17 19	06 58	17 15	07 02	17 11	07 07	17 07	07 12	17 02
30	06 47	17 26	06 51	17 23	06 55	17 19	06 59	17 15	07 03	17 11	07 07	17 06
Aug. 4	06 44	17 29	06 47	17 26	06 50	17 22	06 54	17 19	06 58	17 15	07 02	17 11
9	06 39	17 32	06 43	17 29	06 46	17 26	06 49	17 22	06 53	17 19	06 56	17 15
14	06 35	17 35	06 38	17 32	06 41	17 29	06 44	17 26	06 47	17 23	06 50	17 20
19	06 30	17 38	06 32	17 35	06 35	17 33	06 38	17 30	06 40	17 27	06 43	17 25
24	06 25	17 40	06 27	17 38	06 29	17 36	06 31	17 34	06 34	17 32	06 36	17 29
29	06 19	17 43	06 21	17 42	06 23	17 40	06 25	17 38	06 27	17 36	06 29	17 34
Sep. 3	06 13	17 46	06 15	17 45	06 16	17 43	06 18	17 42	06 19	17 40	06 21	17 39
8	06 07	17 49	06 08	17 48	06 09	17 47	06 11	17 45	06 12	17 44	06 13	17 43
13	06 01	17 51	06 02	17 51	06 03	17 50	06 03	17 49	06 04	17 49	06 05	17 48
18	05 55	17 54	05 55	17 54	05 56	17 53	05 56	17 53	05 56	17 53	05 57	17 53
23	05 49	17 57	05 49	17 57	05 49	17 57	05 49	17 57	05 48	17 57	05 48	17 57
28	05 43	17 59	05 42	18 00	05 42	18 00	05 41	18 01	05 41	18 01	05 40	18 02
Oct. 3	05 36	18 02	05 36	18 03	05 35	18 04	05 34	18 05	05 33	18 06	05 32	18 07
8	05 30	18 05	05 29	18 06	05 28	18 08	05 27	18 09	05 25	18 11	05 24	18 12
13	05 25	18 08	05 23	18 10	05 21	18 12	05 20	18 13	05 18	18 15	05 16	18 17
18	05 19	18 12	05 17	18 14	05 15	18 16	05 13	18 18	05 11	18 20	05 08	18 23
23	05 14	18 15	05 12	18 18	05 09	18 20	05 07	18 23	05 04	18 25	05 01	18 28
28	05 09	18 19	05 07	18 22	05 04	18 24	05 01	18 27	04 58	18 30	04 55	18 34
Nov. 2	05 05	18 23	05 02	18 26	04 59	18 29	04 55	18 32	04 52	18 36	04 48	18 40
7	05 01	18 27	04 58	18 30	04 54	18 34	04 51	18 37	04 47	18 41	04 43	18 45
12	04 58	18 31	04 54	18 35	04 50	18 38	04 46	18 42	04 42	18 47	04 38	18 51
17	04 55	18 35	04 51	18 39	04 47	18 43	04 43	18 48	04 38	18 52	04 33	18 57
22	04 53	18 39	04 49	18 44	04 45	18 48	04 40	18 53	04 35	18 58	04 30	19 03
27	04 52	18 44	04 47	18 48	04 43	18 53	04 38	18 58	04 33	19 03	04 27	19 08
Dec. 2	04 51	18 48	04 47	18 52	04 42	18 57	04 37	19 02	04 31	19 08	04 25	19 14
7	04 51	18 51	04 47	18 56	04 42	19 01	04 36	19 07	04 31	19 12	04 24	19 18
12	04 52	18 55	04 47	19 00	04 42	19 05	04 37	19 11	04 31	19 16	04 25	19 23
17	04 54	18 58	04 49	19 03	04 44	19 08	04 38	19 14	04 32	19 20	04 26	19 26
22	04 56	19 01	04 51	19 06	04 46	19 11	04 40	19 17	04 34	19 23	04 28	19 29
27	04 59	19 03	04 54	19 08	04 48	19 13	04 43	19 19	04 37	19 25	04 31	19 31

Local mean time. To obtain standard time of rise or set, see Table 5.

TABLE 4.—SUNRISE AND SUNSET, 2019

Date	42° S.		44° S.		46° S.		48° S.		50° S.		52° S.	
	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.
Jan. 1	04 28	19 39	04 21	19 46	04 13	19 54	04 04	20 02	03 55	20 12	03 44	20 22
6	04 33	19 39	04 26	19 45	04 18	19 53	04 10	20 01	04 01	20 10	03 50	20 21
11	04 38	19 37	04 31	19 44	04 24	19 51	04 16	19 59	04 07	20 08	03 57	20 18
16	04 44	19 35	04 37	19 42	04 30	19 48	04 23	19 56	04 14	20 04	04 05	20 13
21	04 50	19 32	04 44	19 38	04 37	19 45	04 30	19 52	04 22	19 59	04 14	20 08
26	04 56	19 28	04 51	19 34	04 44	19 40	04 38	19 46	04 31	19 53	04 23	20 01
31	05 03	19 23	04 57	19 29	04 52	19 34	04 46	19 40	04 39	19 46	04 32	19 54
Feb. 5	05 09	19 18	05 05	19 23	05 00	19 28	04 54	19 33	04 48	19 39	04 42	19 45
10	05 16	19 12	05 12	19 16	05 07	19 20	05 02	19 25	04 57	19 30	04 51	19 36
15	05 22	19 05	05 19	19 09	05 15	19 13	05 10	19 17	05 06	19 21	05 01	19 26
20	05 29	18 58	05 26	19 01	05 22	19 04	05 19	19 08	05 15	19 12	05 10	19 16
25	05 35	18 50	05 32	18 53	05 30	18 56	05 27	18 59	05 23	19 02	05 20	19 05
Mar. 2	05 41	18 42	05 39	18 45	05 37	18 47	05 34	18 49	05 32	18 52	05 29	18 54
7	05 47	18 34	05 46	18 36	05 44	18 37	05 42	18 39	05 40	18 41	05 38	18 43
12	05 53	18 26	05 52	18 27	05 51	18 28	05 50	18 29	05 48	18 30	05 47	18 32
17	05 59	18 17	05 58	18 18	05 58	18 18	05 57	18 19	05 56	18 19	05 56	18 20
22	06 04	18 09	06 04	18 09	06 04	18 09	06 04	18 09	06 04	18 09	06 04	18 09
27	06 10	18 00	06 11	18 00	06 11	17 59	06 12	17 58	06 12	17 58	06 13	17 57
Apr. 1	06 16	17 52	06 17	17 51	06 18	17 49	06 19	17 48	06 20	17 47	06 21	17 46
6	06 21	17 43	06 23	17 42	06 24	17 40	06 26	17 38	06 28	17 36	06 30	17 34
11	06 27	17 35	06 29	17 33	06 31	17 31	06 33	17 28	06 36	17 26	06 38	17 23
16	06 32	17 27	06 35	17 25	06 37	17 22	06 40	17 19	06 43	17 16	06 47	17 12
21	06 37	17 19	06 41	17 16	06 44	17 13	06 47	17 10	06 51	17 06	06 55	17 02
26	06 43	17 12	06 46	17 09	06 50	17 05	06 54	17 01	06 59	16 56	07 03	16 52
May. 1	06 48	17 05	06 52	17 01	06 57	16 57	07 01	16 53	07 06	16 48	07 12	16 42
6	06 54	16 59	06 58	16 55	07 03	16 50	07 08	16 45	07 13	16 39	07 20	16 33
11	06 59	16 54	07 04	16 49	07 09	16 43	07 15	16 38	07 21	16 32	07 27	16 25
16	07 04	16 49	07 09	16 43	07 15	16 38	07 21	16 31	07 28	16 25	07 35	16 17
21	07 09	16 44	07 14	16 39	07 20	16 32	07 27	16 26	07 34	16 19	07 42	16 11
26	07 13	16 41	07 19	16 35	07 26	16 28	07 33	16 21	07 40	16 13	07 49	16 05
31	07 17	16 38	07 24	16 31	07 30	16 25	07 38	16 17	07 46	16 09	07 55	16 00
Jun. 5	07 21	16 36	07 27	16 29	07 34	16 22	07 42	16 15	07 51	16 06	08 00	15 57
10	07 24	16 35	07 31	16 28	07 38	16 21	07 46	16 13	07 55	16 04	08 04	15 55
15	07 26	16 34	07 33	16 28	07 41	16 20	07 49	16 12	07 57	16 03	08 07	15 54
20	07 28	16 35	07 35	16 28	07 42	16 21	07 50	16 13	07 59	16 04	08 09	15 54
25	07 29	16 36	07 36	16 29	07 43	16 22	07 51	16 14	08 00	16 05	08 10	15 55
30	07 29	16 38	07 36	16 32	07 43	16 24	07 51	16 16	08 00	16 08	08 10	15 58
Jul. 5	07 28	16 41	07 35	16 34	07 42	16 27	07 50	16 20	07 58	16 11	08 08	16 01
10	07 27	16 44	07 33	16 38	07 40	16 31	07 48	16 23	07 56	16 15	08 05	16 06
15	07 24	16 48	07 30	16 42	07 37	16 35	07 44	16 28	07 52	16 20	08 01	16 12
20	07 21	16 52	07 27	16 46	07 33	16 40	07 40	16 33	07 47	16 26	07 55	16 18
25	07 17	16 57	07 22	16 51	07 28	16 45	07 35	16 39	07 42	16 32	07 49	16 24
30	07 12	17 01	07 17	16 56	07 22	16 51	07 28	16 45	07 35	16 39	07 42	16 32
Aug. 4	07 06	17 06	07 11	17 02	07 16	16 57	07 22	16 51	07 27	16 45	07 34	16 39
9	07 00	17 11	07 05	17 07	07 09	17 03	07 14	16 58	07 19	16 52	07 25	16 47
14	06 54	17 16	06 57	17 13	07 01	17 09	07 06	17 04	07 11	17 00	07 16	16 54
19	06 46	17 21	06 50	17 18	06 53	17 15	06 57	17 11	07 01	17 07	07 06	17 02
24	06 39	17 27	06 42	17 24	06 45	17 21	06 48	17 18	06 52	17 14	06 55	17 10
29	06 31	17 32	06 33	17 29	06 36	17 27	06 39	17 24	06 41	17 21	06 45	17 18
Sep. 3	06 23	17 37	06 25	17 35	06 27	17 33	06 29	17 31	06 31	17 29	06 34	17 26
8	06 14	17 42	06 16	17 41	06 17	17 39	06 19	17 38	06 20	17 36	06 22	17 34
13	06 06	17 47	06 07	17 46	06 07	17 45	06 08	17 44	06 09	17 43	06 11	17 42
18	05 57	17 52	05 57	17 52	05 58	17 52	05 58	17 51	05 59	17 51	05 59	17 50
23	05 48	17 57	05 48	17 58	05 48	17 58	05 48	17 58	05 48	17 58	05 47	17 59
28	05 39	18 03	05 39	18 03	05 38	18 04	05 37	18 05	05 37	18 06	05 36	18 07
Oct. 3	05 31	18 08	05 30	18 09	05 28	18 11	05 27	18 12	05 26	18 14	05 24	18 15
8	05 22	18 14	05 21	18 15	05 19	18 17	05 17	18 19	05 15	18 21	05 12	18 24
13	05 14	18 19	05 12	18 22	05 09	18 24	05 07	18 27	05 04	18 29	05 01	18 33
18	05 06	18 25	05 03	18 28	05 00	18 31	04 57	18 34	04 54	18 38	04 50	18 41
23	04 58	18 31	04 55	18 34	04 52	18 38	04 48	18 42	04 44	18 46	04 39	18 50
28	04 51	18 37	04 47	18 41	04 43	18 45	04 39	18 50	04 34	18 54	04 29	19 00
Nov. 2	04 44	18 44	04 40	18 48	04 36	18 52	04 31	18 57	04 25	19 03	04 19	19 09
7	04 38	18 50	04 34	18 55	04 28	19 00	04 23	19 05	04 17	19 11	04 10	19 18
12	04 33	18 56	04 28	19 01	04 22	19 07	04 16	19 13	04 09	19 20	04 02	19 27
17	04 28	19 02	04 22	19 08	04 16	19 14	04 10	19 21	04 02	19 28	03 55	19 36
22	04 24	19 08	04 18	19 15	04 12	19 21	04 04	19 28	03 57	19 36	03 48	19 45
27	04 21	19 14	04 15	19 21	04 08	19 28	04 00	19 36	03 52	19 44	03 43	19 53
Dec. 2	04 19	19 20	04 12	19 27	04 05	19 34	03 57	19 42	03 48	19 51	03 38	20 01
7	04 18	19 25	04 11	19 32	04 03	19 40	03 55	19 48	03 46	19 57	03 36	20 08
12	04 18	19 29	04 11	19 37	04 03	19 44	03 54	19 53	03 45	20 03	03 34	20 13
17	04 19	19 33	04 12	19 40	04 04	19 48	03 55	19 57	03 45	20 07	03 35	20 18
22	04 21	19 36	04 14	19 43	04 06	19 51	03 57	20 00	03 47	20 10	03 36	20 21
27	04 24	19 38	04 17	19 45	04 09	19 53	04 00	20 02	03 50	20 11	03 39	20 22

Local mean time. To obtain standard time of rise or set, see Table 5.

Date	54° S.		56° S.		58° S.		60° S.	
	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.
Jan. 1	03 32	20 34	03 19	20 48	03 02	21 04	02 43	21 24
6	03 39	20 32	03 25	20 45	03 10	21 01	02 51	21 19
11	03 46	20 29	03 34	20 41	03 19	20 56	03 01	21 13
16	03 55	20 24	03 43	20 35	03 29	20 49	03 13	21 05
21	04 04	20 17	03 53	20 28	03 40	20 41	03 26	20 55
26	04 14	20 10	04 04	20 20	03 52	20 31	03 39	20 44
31	04 24	20 02	04 15	20 10	04 05	20 21	03 53	20 32
Feb. 5	04 34	19 52	04 26	20 00	04 17	20 09	04 07	20 20
10	04 45	19 42	04 38	19 49	04 30	19 57	04 20	20 06
15	04 55	19 32	04 49	19 38	04 42	19 45	04 34	19 52
20	05 06	19 21	05 00	19 26	04 54	19 32	04 48	19 38
25	05 16	19 09	05 11	19 13	05 06	19 18	05 01	19 24
Mar. 2	05 26	18 57	05 22	19 01	05 18	19 05	05 14	19 09
7	05 36	18 45	05 33	18 48	05 30	18 51	05 27	18 54
12	05 45	18 33	05 44	18 35	05 42	18 37	05 39	18 39
17	05 55	18 21	05 54	18 22	05 53	18 23	05 52	18 24
22	06 04	18 09	06 04	18 09	06 04	18 09	06 04	18 09
27	06 14	17 56	06 14	17 55	06 15	17 54	06 16	17 53
Apr. 1	06 23	17 44	06 25	17 42	06 26	17 40	06 28	17 38
6	06 32	17 32	06 35	17 29	06 37	17 27	06 40	17 23
11	06 41	17 20	06 45	17 17	06 48	17 13	06 52	17 09
16	06 51	17 08	06 55	17 04	06 59	17 00	07 04	16 54
21	07 00	16 57	07 05	16 52	07 10	16 47	07 16	16 40
26	07 09	16 46	07 14	16 40	07 21	16 34	07 28	16 26
May. 1	07 18	16 36	07 24	16 29	07 32	16 22	07 40	16 13
6	07 26	16 26	07 34	16 19	07 42	16 10	07 52	16 00
11	07 35	16 17	07 43	16 09	07 53	15 59	08 04	15 49
16	07 43	16 09	07 52	16 00	08 03	15 49	08 15	15 37
21	07 51	16 02	08 01	15 52	08 12	15 40	08 25	15 27
26	07 58	15 55	08 09	15 45	08 21	15 32	08 35	15 18
31	08 05	15 50	08 16	15 39	08 29	15 26	08 44	15 11
Jun. 5	08 10	15 46	08 22	15 34	08 36	15 21	08 52	15 05
10	08 15	15 44	08 27	15 31	08 41	15 17	08 58	15 00
15	08 18	15 43	08 31	15 30	08 46	15 15	09 03	14 58
20	08 20	15 43	08 33	15 30	08 48	15 15	09 05	14 58
25	08 21	15 44	08 34	15 31	08 49	15 17	09 06	14 59
30	08 21	15 47	08 33	15 34	08 47	15 20	09 05	15 03
Jul. 5	08 19	15 51	08 31	15 39	08 45	15 25	09 01	15 08
10	08 15	15 56	08 27	15 44	08 40	15 31	08 56	15 15
15	08 10	16 02	08 21	15 51	08 34	15 38	08 49	15 23
20	08 05	16 09	08 15	15 58	08 27	15 46	08 41	15 33
25	07 58	16 16	08 07	16 06	08 18	15 55	08 31	15 43
30	07 50	16 24	07 59	16 15	08 09	16 05	08 20	15 54
Aug. 4	07 41	16 32	07 49	16 24	07 58	16 15	08 08	16 05
9	07 32	16 40	07 39	16 33	07 47	16 25	07 56	16 16
14	07 21	16 49	07 28	16 42	07 35	16 35	07 43	16 27
19	07 11	16 57	07 16	16 52	07 22	16 46	07 29	16 39
24	07 00	17 06	07 04	17 01	07 09	16 56	07 15	16 51
29	06 48	17 15	06 52	17 11	06 56	17 07	07 01	17 02
Sep. 3	06 36	17 24	06 39	17 21	06 43	17 17	06 46	17 14
8	06 24	17 32	06 26	17 30	06 29	17 28	06 31	17 25
13	06 12	17 41	06 13	17 40	06 15	17 38	06 16	17 37
18	06 00	17 50	06 00	17 50	06 01	17 49	06 01	17 48
23	05 47	17 59	05 47	17 59	05 47	18 00	05 46	18 00
28	05 35	18 08	05 34	18 09	05 32	18 10	05 31	18 12
Oct. 3	05 22	18 17	05 20	18 19	05 18	18 21	05 16	18 24
8	05 10	18 26	05 07	18 29	05 04	18 33	05 01	18 36
13	04 58	18 36	04 54	18 40	04 50	18 44	04 46	18 49
18	04 46	18 46	04 42	18 50	04 37	18 55	04 31	19 01
23	04 35	18 55	04 29	19 01	04 23	19 07	04 16	19 14
28	04 24	19 05	04 17	19 12	04 10	19 19	04 02	19 27
Nov. 2	04 13	19 15	04 06	19 23	03 58	19 31	03 48	19 41
7	04 03	19 25	03 55	19 34	03 46	19 43	03 35	19 54
12	03 54	19 36	03 45	19 45	03 34	19 55	03 22	20 08
17	03 46	19 45	03 36	19 56	03 24	20 07	03 11	20 21
22	03 38	19 55	03 27	20 06	03 15	20 19	03 00	20 34
27	03 32	20 04	03 20	20 16	03 07	20 30	02 50	20 46
Dec. 2	03 27	20 12	03 15	20 25	03 00	20 40	02 43	20 57
7	03 24	20 19	03 11	20 33	02 55	20 48	02 36	21 07
12	03 22	20 25	03 09	20 39	02 52	20 55	02 33	21 15
17	03 22	20 30	03 08	20 44	02 51	21 01	02 31	21 21
22	03 24	20 33	03 10	20 47	02 53	21 04	02 32	21 25
27	03 27	20 34	03 13	20 48	02 56	21 05	02 36	21 25

Local mean time. To obtain standard time of rise or set, see Table 5.

TABLE 5.—REDUCTION OF LOCAL MEAN TIME TO STANDARD TIME

<i>Difference of longitude between local and standard meridian</i>	<i>Correction to local mean time to obtain standard time</i>	<i>Difference of longitude between local and standard meridian</i>	<i>Correction to local mean time to obtain standard time</i>	<i>Difference of longitude between local and standard meridian</i>	<i>Correction to local mean time to obtain standard time</i>
° ' ° '	Minutes	° ' ° '	Minutes	°	Hours
0 00 to 0 07	0	7 23 to 7 37	30	15	1
0 08 to 0 22	1	7 38 to 7 52	31	30	2
0 23 to 0 37	2	7 53 to 8 07	32	45	3
0 38 to 0 52	3	8 08 to 8 22	33	60	4
0 53 to 1 07	4	8 23 to 8 37	34	75	5
1 08 to 1 22	5	8 38 to 8 52	35	90	6
1 23 to 1 37	6	8 53 to 9 07	36	105	7
1 38 to 1 52	7	9 08 to 9 22	37	120	8
1 53 to 2 07	8	9 23 to 9 37	38	135	9
2 08 to 2 22	9	9 38 to 9 52	39	150	10
2 23 to 2 37	10	9 53 to 10 07	40	165	11
2 38 to 2 52	11	10 08 to 10 22	41	180	12
2 53 to 3 07	12	10 23 to 10 37	42		
3 08 to 3 22	13	10 38 to 10 52	43		
3 23 to 3 37	14	10 53 to 11 07	44		
3 38 to 3 52	15	11 08 to 11 22	45		
3 53 to 4 07	16	11 23 to 11 37	46		
4 08 to 4 22	17	11 38 to 11 52	47		
4 23 to 4 37	18	11 53 to 12 07	48		
4 38 to 4 52	19	12 08 to 12 22	49		
4 53 to 5 07	20	12 23 to 12 37	50		
5 08 to 5 22	21	12 38 to 12 52	51		
5 23 to 5 37	22	12 53 to 13 07	52		
5 38 to 5 52	23	13 08 to 13 22	53		
5 53 to 6 07	24	13 23 to 13 37	54		
6 08 to 6 22	25	13 38 to 13 52	55		
6 23 to 6 37	26	13 53 to 14 07	56		
6 38 to 6 52	27	14 08 to 14 22	57		
6 53 to 7 07	28	14 23 to 14 37	58		
7 08 to 7 22	29	14 38 to 14 52	59		

If local meridian is east of standard meridian, subtract the correction from local time.

If local meridian is west of standard meridian, add the correction to local time.

For differences of longitude less than 15°, use the first part of the table. For greater differences use both parts thus: 47° 23' is equivalent to 45°+ 2° 23', the correction for 45° is 3 hours, the correction for 2° 23' is 10 minutes; therefore the total correction for the difference in longitude 47° 23' is 3 hours and 10 minutes.

TABLE 6.—MOONRISE AND MOONSET

EXPLANATION OF TABLE

This table gives the time of rising and setting of the Moon's upper limb for every day in the year, at each of the following places:

Panama Canal	San Francisco, California	Anchorage, Alaska
Los Angeles, California	Seattle, Washington	Honolulu, Hawaii

All of Table 6 was supplied by the Nautical Almanac Office of the United States Naval Observatory. For the Panama Canal the times were computed for a point about midway between the two ends and are applicable to the entire canal and are accurate to within a minute or two.

Panama Canal West

Day	JANUARY		FEBRUARY		MARCH		APRIL		MAY		JUNE		Day
	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	
1	0247	1452	0407	1601	0253	1446	0353	1555	0351	1607	0431	1712	1
2	0338	1538	0456	1650	0341	1536	0434	1641	0431	1653	0518	1806	2
3	0429	1626	0544	1739	0428	1624	0514	1726	0511	1740	0609	1904	3
4	0520	1715	0630	1827	0512	1712	0554	1812	0553	1830	0704	2003	4
5	0610	1804	0714	1915	0555	1758	0633	1858	0638	1922	0802	2102	5
6	0700	1854	0756	2001	0636	1844	0714	1946	0726	2017	0903	2201	6
7	0747	1943	0836	2046	0715	1930	0757	2036	0818	2114	1003	2256	7
8	0833	2031	0915	2131	0755	2015	0842	2128	0913	2212	1102	2348	8
9	0916	2118	0955	2217	0834	2101	0930	2222	1011	2309	1159	....	9
10	0957	2204	1035	2303	0915	2149	1022	2318	1110	....	1254	0037	10
11	1037	2249	1116	2352	0958	2239	1117	....	1209	0005	1348	0124	11
12	1116	2334	1200	....	1044	2331	1215	0016	1307	0059	1440	0210	12
13	1156	....	1248	0043	1133	....	1315	0113	1403	0150	1533	0255	13
14	1237	0021	1340	0138	1227	0026	1415	0209	1458	0239	1626	0342	14
15	1321	0109	1437	0236	1324	0124	1513	0303	1552	0326	1721	0430	15
16	1408	0200	1538	0336	1424	0223	1611	0354	1646	0412	1815	0519	16
17	1500	0255	1642	0438	1526	0321	1707	0444	1741	0459	1909	0611	17
18	1556	0353	1746	0538	1627	0419	1803	0533	1835	0548	2001	0703	18
19	1657	0455	1848	0636	1728	0513	1858	0621	1931	0637	2051	0755	19
20	1801	0558	1948	0730	1826	0606	1954	0709	2025	0728	2138	0846	20
21	1906	0700	2046	0822	1924	0656	2049	0759	2119	0820	2223	0935	21
22	2009	0759	2141	0911	2019	0745	2144	0849	2210	0913	2304	1023	22
23	2109	0854	2235	0958	2115	0834	2238	0940	2259	1004	2344	1109	23
24	2206	0946	2328	1045	2209	0922	2329	1032	2344	1054	....	1154	24
25	2300	1034	....	1132	2303	1011	....	1123	....	1143	0023	1239	25
26	2352	1120	0020	1220	2356	1101	0019	1213	0027	1229	0102	1324	26
27	....	1206	0112	1308	....	1151	0105	1302	0108	1315	0141	1411	27
28	0044	1251	0203	1357	0047	1241	0149	1349	0147	1400	0223	1500	28
29	0135	1337	....	....	0137	1331	0231	1436	0227	1446	0308	1553	29
30	0225	1423	....	....	0225	1420	0311	1521	0306	1532	0357	1649	30
31	0316	1512	....	....	0310	1508	....	....	0347	1621	....	....	31

Day	JULY		AUGUST		SEPTEMBER		OCTOBER		NOVEMBER		DECEMBER		Day
	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	
1	0450	1748	0636	1929	0818	2043	0852	2058	1023	2216	1046	2242	1
2	0548	1848	0738	2024	0915	2131	0948	2149	1116	2309	1131	2330	2
3	0649	1949	0838	2116	1010	2219	1045	2241	1206	....	1213	....	3
4	0751	2047	0936	2204	1105	2308	1140	2334	1253	0001	1253	0017	4
5	0853	2142	1031	2251	1200	2358	1233	....	1336	0050	1332	0102	5
6	0953	2234	1125	2338	1254	....	1324	0026	1417	0137	1409	0146	6
7	1049	2322	1219	....	1347	0049	1412	0117	1456	0223	1448	0231	7
8	1144	....	1312	0025	1438	0140	1456	0207	1534	0308	1528	0316	8
9	1237	0009	1405	0113	1527	0231	1539	0255	1613	0352	1610	0403	9
10	1330	0054	1458	0202	1614	0322	1619	0342	1652	0437	1656	0453	10
11	1422	0140	1550	0252	1658	0411	1658	0427	1733	0523	1745	0546	11
12	1515	0227	1641	0344	1739	0458	1736	0511	1816	0611	1839	0642	12
13	1609	0315	1730	0435	1819	0544	1814	0556	1903	0702	1936	0739	13
14	1702	0405	1816	0525	1858	0629	1854	0641	1953	0755	2035	0837	14
15	1754	0456	1859	0614	1936	0714	1935	0728	2047	0851	2135	0934	15
16	1845	0548	1940	0701	2014	0758	2019	0816	2144	0947	2233	1028	16
17	1933	0639	2019	0746	2054	0843	2106	0907	2242	1043	2329	1119	17
18	2018	0729	2058	0831	2136	0930	2157	1000	2340	1138	....	1207	18
19	2101	0818	2136	0915	2221	1019	2252	1055	....	1230	0024	1253	19
20	2141	0904	2215	1000	2309	1110	2349	1151	0037	1320	0117	1339	20
21	2220	0950	2255	1046	....	1204	....	1247	0133	1408	0211	1425	21
22	2259	1034	2338	1133	0002	1300	0047	1342	0228	1456	0305	1513	22
23	2337	1119	....	1223	0058	1358	0146	1435	0323	1543	0400	1603	23
24	....	1204	0025	1317	0158	1455	0245	1526	0418	1631	0457	1655	24
25	0017	1251	0117	1414	0259	1552	0342	1615	0515	1721	0554	1749	25
26	0100	1341	0213	1513	0400	1646	0439	1704	0612	1813	0650	1844	26
27	0145	1434	0312	1612	0500	1738	0536	1753	0710	1907	0745	1938	27
28	0236	1530	0415	1711	0559	1828	0634	1843	0808	2002	0836	2031	28
29	0331	1630	0518	1808	0657	1918	0731	1935	0904	2057	0924	2122	29
30	0430	1731	0620	1902	0755	2008	0829	2028	0956	2150	1008	2210	30
31	0533	1831	0720	1953	....	....	0927	2122	....	....	1049	2255	31

Local Standard Time. Not adjusted for Daylight Savings Time.

Los Angeles, CA

Day	JANUARY		FEBRUARY		MARCH		APRIL		MAY		JUNE		Day
	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	
1	0253	1400	0434	1452	0321	1338	0403	1506	0338	1542	0343	1724	1
2	0352	1439	0523	1542	0407	1430	0436	1601	0408	1638	0421	1827	2
3	0450	1521	0608	1635	0449	1524	0507	1656	0438	1736	0505	1931	3
4	0546	1606	0649	1729	0527	1618	0537	1751	0511	1836	0555	2033	4
5	0638	1655	0726	1823	0602	1713	0607	1848	0546	1937	0652	2132	5
6	0726	1747	0800	1918	0634	1807	0638	1946	0626	2040	0755	2226	6
7	0810	1841	0832	2012	0705	1902	0711	2045	0712	2142	0902	2313	7
8	0850	1935	0902	2107	0734	1957	0748	2146	0804	2242	1009	2355	8
9	0926	2029	0932	2202	0805	2054	0829	2247	0901	2337	1116	....	9
10	0959	2124	1002	2259	0836	2151	0915	2347	1004	....	1223	0033	10
11	1030	2218	1034	2357	0910	2250	1008	....	1110	0028	1328	0109	11
12	1100	2313	1110	....	0948	2351	1107	0045	1217	0113	1432	0143	12
13	1130	....	1150	0057	1030	....	1212	0139	1324	0153	1536	0217	13
14	1202	0009	1236	0200	1119	0052	1319	0229	1430	0231	1639	0254	14
15	1236	0108	1330	0303	1215	0153	1428	0313	1536	0306	1742	0333	15
16	1314	0209	1431	0406	1318	0251	1537	0354	1642	0342	1842	0415	16
17	1359	0313	1539	0504	1426	0345	1645	0432	1747	0418	1939	0502	17
18	1450	0418	1651	0558	1536	0434	1753	0508	1852	0456	2031	0552	18
19	1550	0524	1803	0646	1648	0519	1900	0545	1955	0537	2117	0645	19
20	1656	0626	1914	0730	1758	0600	2005	0623	2054	0622	2159	0740	20
21	1807	0723	2024	0809	1907	0638	2109	0703	2149	0710	2235	0836	21
22	1919	0814	2130	0846	2015	0715	2210	0746	2238	0802	2309	0931	22
23	2029	0859	2235	0923	2121	0752	2307	0832	2322	0856	2339	1026	23
24	2137	0939	2338	0959	2224	0831	2358	0922	....	0951	....	1121	24
25	2243	1016	....	1038	2325	0912	....	1014	0001	1047	0009	1215	25
26	2346	1051	0038	1118	....	0955	0045	1107	0036	1141	0038	1311	26
27	....	1126	0136	1202	0023	1042	0126	1202	0108	1236	0108	1408	27
28	0047	1202	0230	1248	0116	1131	0203	1257	0139	1331	0140	1507	28
29	0147	1240	....	....	0204	1223	0237	1352	0208	1426	0215	1609	29
30	0245	1320	....	....	0248	1317	0308	1447	0238	1523	0256	1713	30
31	0341	1404	....	....	0327	1411	....	....	0309	1622	....	....	31

Day	JULY		AUGUST		SEPTEMBER		OCTOBER		NOVEMBER		DECEMBER		Day
	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	
1	0344	1817	0536	1945	0757	2017	0901	2004	1055	2104	1109	2140	1
2	0438	1919	0648	2029	0906	2053	1008	2046	1147	2159	1147	2236	2
3	0540	2017	0759	2109	1013	2131	1111	2133	1233	2255	1220	2332	3
4	0647	2108	0908	2145	1118	2210	1210	2222	1312	2351	1250	....	4
5	0757	2154	1015	2221	1221	2253	1304	2215	1348	....	1319	0026	5
6	0906	2234	1121	2256	1321	2339	1352	....	1420	0047	1347	0121	6
7	1014	2311	1225	2333	1417	....	1435	0009	1449	0142	1415	0215	7
8	1121	2346	1328	....	1508	0029	1513	0105	1518	0236	1446	0311	8
9	1225	....	1428	0013	1554	0121	1546	0200	1546	0331	1518	0409	9
10	1329	0020	1526	0056	1635	0216	1617	0255	1615	0426	1556	0508	10
11	1432	0055	1620	0142	1711	0311	1647	0350	1646	0523	1639	0610	11
12	1533	0132	1710	0233	1744	0406	1715	0444	1721	0621	1728	0712	12
13	1634	0213	1754	0326	1815	0501	1744	0539	1800	0721	1824	0812	13
14	1731	0257	1834	0421	1844	0555	1814	0634	1844	0822	1926	0908	14
15	1824	0346	1910	0516	1912	0649	1846	0731	1935	0922	2032	1000	15
16	1913	0437	1942	0611	1941	0744	1921	0829	2032	1019	2139	1045	16
17	1956	0532	2012	0706	2011	0839	2001	0928	2134	1113	2246	1126	17
18	2034	0627	2041	0800	2044	0936	2047	1027	2240	1201	2353	1203	18
19	2109	0723	2109	0854	2121	1034	2140	1126	2347	1245	....	1237	19
20	2140	0818	2139	0949	2203	1133	2239	1222	....	1324	0058	1311	20
21	2210	0912	2210	1044	2252	1233	2342	1315	0054	1400	0204	1346	21
22	2239	1006	2244	1142	2348	1332	....	1402	0201	1435	0310	1423	22
23	2308	1101	2324	1241	....	1428	0050	1445	0309	1511	0416	1503	23
24	2338	1156	....	1342	0050	1520	0159	1525	0416	1547	0521	1548	24
25	....	1253	0009	1443	0158	1608	0308	1608	0524	1626	0624	1637	25
26	0011	1353	0103	1544	0309	1651	0418	1639	0632	1710	0723	1731	26
27	0048	1454	0203	1640	0420	1731	0528	1715	0738	1758	0816	1828	27
28	0132	1558	0311	1732	0532	1809	0638	1754	0840	1850	0903	1926	28
29	0222	1701	0422	1819	0643	1846	0746	1836	0936	1945	0943	2024	29
30	0320	1801	0535	1901	0753	1924	0853	1921	1026	2042	1019	2120	30
31	0426	1856	0647	1940	....	....	0957	2011	....	....	1050	2216	31

Local Standard Time. Not adjusted for Daylight Savings Time.

San Francisco, CA

Day	JANUARY		FEBRUARY		MARCH		APRIL		MAY		JUNE		Day
	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	
1	0317	1411	0502	1458	0349	1345	0427	1517	0357	1559	0355	1748	1
2	0418	1448	0551	1549	0434	1437	0458	1614	0425	1657	0431	1853	2
3	0517	1529	0636	1643	0515	1532	0527	1711	0453	1757	0513	1959	3
4	0613	1613	0715	1738	0552	1628	0555	1809	0523	1859	0602	2102	4
5	0706	1702	0751	1834	0625	1725	0623	1907	0557	2003	0659	2201	5
6	0754	1754	0823	1931	0655	1821	0652	2007	0635	2107	0802	2253	6
7	0837	1849	0852	2027	0724	1918	0723	2109	0719	2210	0910	2338	7
8	0915	1945	0921	2124	0752	2016	0758	2211	0810	2310	1020	....	8
9	0949	2041	0949	2221	0820	2114	0837	2314	0908	....	1129	0018	9
10	1021	2137	1017	2319	0849	2213	0922	....	1011	0005	1238	0054	10
11	1050	2233	1047	....	0921	2315	1015	0016	1119	0054	1345	0127	11
12	1118	2330	1121	0020	0957	....	1114	0114	1228	0137	1452	0159	12
13	1146	....	1159	0122	1038	0017	1220	0207	1337	0216	1558	0231	13
14	1216	0029	1244	0227	1126	0120	1329	0254	1446	0251	1704	0305	14
15	1248	0130	1337	0331	1222	0221	1440	0337	1555	0324	1808	0342	15
16	1325	0233	1438	0434	1325	0319	1551	0415	1703	0357	1910	0423	16
17	1407	0338	1547	0532	1435	0412	1702	0451	1811	0430	2007	0508	17
18	1458	0446	1700	0624	1547	0459	1812	0525	1917	0506	2059	0558	18
19	1557	0552	1815	0710	1701	0542	1922	0559	2022	0546	2145	0652	19
20	1704	0654	1929	0751	1814	0620	2030	0634	2122	0629	2225	0748	20
21	1816	0750	2041	0828	1926	0656	2135	0712	2217	0717	2300	0845	21
22	1930	0839	2150	0903	2036	0730	2238	0754	2306	0809	2331	0942	22
23	2043	0921	2257	0937	2144	0805	2335	0839	2349	0903	....	1039	23
24	2153	0959	....	1011	2250	0842	....	0928	....	0959	0000	1135	24
25	2301	1033	0002	1047	2352	0921	0027	1020	0027	1056	0027	1232	25
26	....	1106	0104	1126	....	1003	0112	1115	0100	1153	0054	1330	26
27	0006	1139	0203	1209	0051	1049	0152	1211	0130	1250	0122	1429	27
28	0110	1213	0258	1255	0144	1138	0228	1307	0159	1347	0152	1531	28
29	0212	1249	....	....	0232	1230	0259	1404	0226	1444	0226	1635	29
30	0311	1328	....	....	0315	1325	0329	1501	0254	1543	0305	1740	30
31	0408	1411	....	....	0353	1421	....	....	0323	1645	....	....	31

Day	JULY		AUGUST		SEPTEMBER		OCTOBER		NOVEMBER		DECEMBER		Day
	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	
1	0351	1846	0544	2010	0815	2033	0925	2014	1124	2110	1136	2148	1
2	0445	1948	0658	2052	0926	2107	1034	2054	1216	2205	1212	2246	2
3	0547	2045	0812	2129	1036	2142	1139	2139	1300	2303	1243	2344	3
4	0655	2134	0924	2203	1143	2220	1239	2228	1339	....	1312	....	4
5	0806	2217	1034	2236	1248	2301	1333	2321	1412	0001	1338	0041	5
6	0918	2255	1142	2309	1349	2346	1420	....	1442	0058	1404	0137	6
7	1029	2330	1248	2344	1446	....	1502	0016	1509	0155	1430	0234	7
8	1137	....	1353	....	1536	0035	1538	0113	1536	0251	1458	0332	8
9	1245	0002	1455	0021	1621	0128	1610	0210	1602	0348	1529	0432	9
10	1351	0034	1554	0103	1701	0223	1639	0307	1629	0446	1604	0534	10
11	1456	0107	1649	0149	1736	0320	1706	0404	1658	0545	1646	0637	11
12	1559	0142	1738	0239	1807	0417	1732	0500	1731	0645	1734	0740	12
13	1701	0221	1822	0333	1835	0514	1759	0557	1808	0747	1830	0841	13
14	1759	0304	1900	0429	1902	0610	1827	0655	1851	0849	1933	0937	14
15	1853	0352	1934	0526	1929	0706	1857	0753	1941	0951	2040	1027	15
16	1941	0444	2004	0623	1956	0803	1930	0853	2039	1048	2149	1111	16
17	2023	0539	2032	0719	2024	0900	2009	0954	2142	1141	2259	1149	17
18	2100	0636	2059	0816	2055	0959	2054	1056	2249	1228	....	1223	18
19	2132	0733	2125	0912	2130	1059	2146	1155	2358	1309	0008	1255	19
20	2202	0830	2153	1008	2211	1200	2245	1251	....	1346	0116	1327	20
21	2229	0926	2222	1106	2258	1301	2350	1342	0107	1420	0225	1359	21
22	2256	1022	2255	1205	2354	1400	....	1428	0217	1453	0333	1433	22
23	2323	1119	2332	1307	....	1456	0059	1509	0327	1525	0441	1512	23
24	2351	1216	....	1409	0057	1547	0211	1546	0438	1559	0549	1555	24
25	....	1316	0017	1512	0206	1633	0323	1621	0549	1636	0653	1643	25
26	0022	1417	0109	1612	0319	1714	0436	1655	0658	1718	0752	1737	26
27	0058	1521	0210	1708	0434	1751	0548	1729	0806	1804	0845	1834	27
28	0139	1626	0318	1758	0548	1826	0700	1805	0909	1855	0930	1934	28
29	0229	1729	0432	1843	0702	1901	0812	1845	1005	1951	1009	2033	29
30	0327	1829	0547	1922	0814	1936	0921	1929	1054	2049	1043	2132	30
31	0433	1923	0702	1958	....	....	1025	2017	....	....	1112	2229	31

Local Standard Time. Not adjusted for Daylight Savings Time.

Seattle, WA

Day	JANUARY		FEBRUARY		MARCH		APRIL		MAY		JUNE		Day
	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	
1	0334	1351	0534	1426	0421	1312	0446	1458	0402	1556	0337	1808	1
2	0440	1422	0623	1517	0505	1407	0512	1601	0423	1701	0408	1920	2
3	0544	1459	0705	1613	0542	1505	0535	1704	0446	1807	0444	2030	3
4	0644	1541	0741	1713	0615	1606	0557	1808	0510	1916	0529	2135	4
5	0738	1629	0812	1814	0643	1708	0619	1913	0537	2026	0624	2233	5
6	0825	1723	0839	1916	0707	1811	0642	2020	0609	2135	0729	2322	6
7	0905	1821	0903	2018	0730	1914	0707	2128	0649	2242	0842	....	7
8	0939	1921	0925	2121	0752	2017	0736	2236	0737	2343	0957	0002	8
9	1009	2022	0947	2224	0814	2122	0810	2344	0834	....	1114	0035	9
10	1035	2124	1010	2329	0838	2228	0851	....	0940	0037	1230	0104	10
11	1058	2226	1034	....	0904	2335	0941	0048	1052	0121	1345	0130	11
12	1120	2330	1102	0036	0934	....	1041	0146	1208	0159	1459	0154	12
13	1143	....	1134	0144	1010	0043	1150	0237	1325	0230	1612	0220	13
14	1206	0035	1214	0254	1055	0150	1305	0319	1441	0258	1725	0247	14
15	1232	0142	1304	0402	1149	0253	1422	0356	1557	0324	1835	0318	15
16	1303	0251	1406	0505	1254	0350	1541	0427	1713	0350	1941	0353	16
17	1340	0403	1517	0602	1407	0440	1700	0455	1828	0416	2041	0435	17
18	1427	0515	1636	0649	1526	0522	1818	0522	1941	0446	2132	0524	18
19	1524	0623	1758	0729	1647	0557	1935	0549	2051	0519	2215	0618	19
20	1632	0725	1919	0803	1808	0628	2050	0617	2155	0558	2251	0717	20
21	1749	0817	2039	0832	1928	0657	2202	0649	2251	0643	2321	0819	21
22	1909	0901	2156	0900	2045	0724	2308	0725	2339	0734	2347	0922	22
23	2029	0936	2310	0927	2200	0752	....	0806	....	0831	....	1024	23
24	2147	1007	....	0955	2312	0822	0008	0854	0018	0931	0010	1127	24
25	2302	1034	0021	1025	....	0855	0059	0947	0051	1032	0031	1230	25
26	....	1100	0129	1059	0020	0933	0143	1044	0119	1135	0052	1334	26
27	0015	1127	0232	1138	0122	1016	0219	1145	0144	1238	0114	1440	27
28	0125	1154	0330	1222	0216	1105	0250	1246	0206	1341	0138	1548	28
29	0233	1225	....	....	0304	1158	0316	1349	0227	1445	0205	1658	29
30	0338	1300	....	....	0344	1256	0340	1452	0249	1551	0238	1809	30
31	0438	1340	....	....	0417	1357	....	....	0312	1658	....	....	31

Day	JULY		AUGUST		SEPTEMBER		OCTOBER		NOVEMBER		DECEMBER		Day
	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	
1	0319	1918	0517	2033	0814	2029	0944	1951	1159	2034	1204	2120	1
2	0411	2021	0637	2107	0933	2056	1059	2026	1249	2131	1235	2224	2
3	0513	2115	0759	2136	1050	2124	1210	2106	1331	2232	1301	2328	3
4	0624	2200	0919	2203	1205	2155	1313	2153	1405	2335	1323	....	4
5	0741	2237	1036	2229	1315	2231	1407	2246	1433	....	1343	0031	5
6	0900	2308	1152	2255	1421	2312	1453	2344	1457	0038	1403	0134	6
7	1018	2335	1305	2323	1519	....	1530	....	1518	0141	1423	0237	7
8	1135	2400	1416	2355	1610	0000	1602	0045	1538	0244	1445	0342	8
9	1249	....	1524	....	1652	0054	1628	0147	1558	0348	1509	0448	9
10	1403	0025	1627	0032	1728	0152	1651	0250	1619	0452	1539	0556	10
11	1514	0051	1722	0115	1757	0253	1712	0353	1642	0557	1614	0706	11
12	1624	0120	1811	0204	1823	0356	1733	0456	1708	0704	1659	0813	12
13	1731	0153	1851	0300	1846	0459	1753	0559	1740	0812	1754	0916	13
14	1832	0232	1925	0359	1907	0601	1814	0703	1818	0920	1859	1011	14
15	1926	0318	1954	0501	1927	0704	1838	0808	1906	1025	2011	1057	15
16	2012	0410	2018	0604	1948	0807	1906	0915	2003	1123	2127	1135	16
17	2051	0507	2040	0706	2010	0911	1939	1021	2109	1214	2244	1206	17
18	2123	0608	2101	0809	2035	1016	2020	1127	2221	1256	....	1233	18
19	2150	0710	2122	0911	2104	1122	2110	1229	2337	1331	0000	1258	19
20	2214	0813	2143	1014	2140	1228	2210	1325	....	1401	0117	1322	20
21	2236	0915	2206	1118	2224	1333	2319	1413	0055	1428	0233	1347	21
22	2256	1018	2233	1224	2319	1434	....	1454	0212	1453	0349	1414	22
23	2317	1120	2305	1331	....	1529	0035	1528	0331	1518	0504	1445	23
24	2340	1224	2345	1439	0024	1616	0153	1558	0449	1544	0618	1523	24
25	....	1330	....	1545	0138	1656	0314	1625	0607	1614	0726	1608	25
26	0005	1438	0035	1646	0258	1729	0434	1651	0724	1649	0827	1701	26
27	0034	1548	0136	1739	0420	1759	0555	1717	0837	1730	0919	1800	27
28	0110	1657	0248	1824	0543	1826	0715	1746	0944	1819	1001	1903	28
29	0156	1803	0407	1902	0705	1853	0834	1819	1040	1915	1035	2008	29
30	0252	1902	0530	1934	0825	1921	0949	1857	1127	2016	1103	2113	30
31	0400	1951	0652	2002	....	....	1058	1942	....	....	1126	2216	31

Local Standard Time. Not adjusted for Daylight Savings Time.

Anchorage, AK

Day	JANUARY		FEBRUARY		MARCH		APRIL		MAY		JUNE		Day
	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	
1	0513	1356	0752	1355	0639	1242	0625	1511	0505	1646	0350	1956	1
2	0634	1413	0839	1449	0717	1344	0637	1628	0512	1806	0404	2124	2
3	0751	1438	0913	1555	0743	1455	0646	1746	0521	1929	0426	2248	3
4	0900	1512	0937	1707	0802	1609	0655	1905	0530	2054	0459	2400	4
5	0957	1559	0955	1822	0816	1726	0703	2025	0543	2220	0550	....	5
6	1039	1658	1008	1938	0827	1843	0712	2147	0600	2345	0701	0053	6
7	1110	1806	1018	2055	0836	2000	0723	2311	0625	....	0828	0128	7
8	1131	1919	1027	2212	0845	2118	0737	....	0704	0103	1002	0151	8
9	1147	2035	1036	2330	0854	2238	0756	0035	0801	0206	1137	0206	9
10	1159	2151	1045	....	0904	2359	0825	0157	0917	0251	1311	0218	10
11	1209	2308	1056	0049	0915	....	0909	0309	1045	0321	1443	0228	11
12	1218	....	1109	0211	0931	0122	1012	0406	1219	0341	1614	0237	12
13	1227	0025	1128	0336	0954	0245	1132	0446	1354	0356	1745	0246	13
14	1237	0145	1155	0500	1028	0404	1304	0513	1528	0407	1915	0258	14
15	1249	0308	1236	0619	1118	0513	1440	0532	1702	0417	2041	0312	15
16	1305	0433	1338	0724	1229	0606	1618	0546	1835	0426	2200	0333	16
17	1328	0601	1500	0811	1357	0643	1754	0557	2007	0437	2306	0403	17
18	1402	0727	1636	0844	1534	0708	1930	0608	2138	0450	2354	0447	18
19	1455	0842	1816	0905	1714	0725	2105	0618	2303	0507	....	0545	19
20	1609	0940	1956	0921	1854	0739	2237	0631	....	0532	0028	0655	20
21	1741	1019	2134	0934	2031	0751	....	0646	0017	0608	0050	0811	21
22	1919	1045	2307	0946	2206	0802	0005	0707	0115	0659	0105	0929	22
23	2057	1103	....	0957	2339	0813	0125	0737	0157	0802	0116	1047	23
24	2233	1117	0038	1009	....	0827	0231	0819	0224	0915	0125	1204	24
25	....	1129	0205	1025	0107	0845	0320	0915	0243	1031	0133	1322	25
26	0004	1139	0328	1045	0229	0910	0355	1022	0256	1149	0140	1441	26
27	0133	1151	0444	1113	0340	0945	0418	1136	0307	1307	0148	1602	27
28	0259	1204	0548	1151	0438	1032	0435	1252	0315	1425	0157	1727	28
29	0422	1220	....	....	0520	1131	0447	1410	0323	1544	0210	1855	29
30	0541	1242	....	....	0550	1240	0456	1528	0330	1705	0227	2022	30
31	0652	1313	....	....	0610	1354	....	....	0339	1829	....	....	31

Day	JULY		AUGUST		SEPTEMBER		OCTOBER		NOVEMBER		DECEMBER		Day
	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	
1	0254	2142	0506	2219	0911	2112	1128	1951	1430	1952	1409	2106	1
2	0336	2245	0646	2234	1048	2122	1302	2009	1514	2056	1423	2227	2
3	0440	2328	0827	2246	1224	2134	1428	2035	1543	2211	1433	2347	3
4	0604	2356	1005	2256	1356	2148	1540	2114	1601	2329	1441	....	4
5	0739	....	1141	2305	1523	2209	1634	2208	1614	....	1447	0105	5
6	0917	0014	1314	2316	1641	2239	1711	2315	1623	0049	1453	0223	6
7	1053	0028	1444	2328	1746	2322	1735	....	1630	0207	1459	0342	7
8	1227	0038	1612	2344	1833	....	1752	0030	1636	0325	1506	0502	8
9	1359	0047	1735	....	1905	0020	1803	0148	1642	0444	1515	0625	9
10	1530	0057	1849	0007	1927	0129	1811	0307	1649	0603	1528	0751	10
11	1659	0107	1948	0040	1942	0245	1818	0425	1657	0725	1548	0918	11
12	1825	0120	2030	0128	1952	0403	1825	0543	1707	0849	1621	1039	12
13	1946	0138	2100	0229	2001	0521	1831	0701	1723	1014	1713	1147	13
14	2056	0204	2119	0341	2008	0638	1839	0820	1747	1138	1826	1235	14
15	2151	0242	2133	0458	2015	0756	1848	0941	1826	1253	1955	1305	15
16	2229	0334	2143	0616	2022	0913	1900	1104	1924	1352	2130	1325	16
17	2255	0440	2151	0733	2030	1032	1918	1228	2042	1432	2306	1337	17
18	2312	0554	2159	0850	2040	1153	1947	1348	2212	1458	....	1347	18
19	2325	0712	2206	1007	2055	1316	2031	1457	2347	1515	0042	1355	19
20	2334	0830	2213	1125	2116	1438	2136	1550	....	1527	0216	1402	20
21	2342	0947	2222	1244	2150	1555	2258	1626	0124	1536	0350	1411	21
22	2349	1104	2234	1406	2242	1701	....	1649	0300	1544	0525	1421	22
23	2357	1221	2251	1530	2355	1749	0032	1705	0437	1552	0700	1434	23
24	....	1340	2318	1653	....	1821	0211	1716	0614	1601	0832	1455	24
25	0005	1502	2400	1808	0126	1842	0351	1726	0752	1613	0955	1528	25
26	0016	1626	....	1909	0305	1857	0531	1734	0929	1630	1100	1617	26
27	0030	1753	0103	1952	0448	1908	0711	1744	1059	1656	1145	1724	27
28	0051	1916	0227	2020	0630	1918	0851	1755	1215	1736	1213	1842	28
29	0125	2027	0405	2038	0811	1928	1029	1809	1310	1835	1231	2004	29
30	0217	2121	0548	2052	0951	1938	1202	1831	1346	1947	1242	2125	30
31	0333	2156	0730	2102	....	....	1325	1903	....	....	1251	2244	31

Local Standard Time. Not adjusted for Daylight Savings Time.

Honolulu, HI

Day	JANUARY		FEBRUARY		MARCH		APRIL		MAY		JUNE		Day
	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	
1	0323	1500	0451	1602	0338	1448	0428	1605	0415	1628	0441	1751	1
2	0417	1543	0541	1652	0425	1539	0505	1655	0451	1719	0524	1850	2
3	0511	1629	0627	1743	0509	1630	0541	1745	0527	1811	0613	1950	3
4	0604	1716	0710	1834	0550	1720	0616	1835	0605	1906	0707	2051	4
5	0655	1806	0750	1924	0629	1810	0652	1926	0646	2003	0805	2150	5
6	0744	1857	0828	2014	0705	1900	0728	2019	0731	2101	0907	2245	6
7	0829	1948	0905	2103	0741	1949	0807	2113	0821	2200	1010	2336	7
8	0912	2038	0940	2153	0816	2039	0849	2209	0915	2259	1113	....	8
9	0951	2128	1015	2243	0851	2130	0935	2307	1014	2355	1214	0023	9
10	1028	2218	1050	2334	0928	2223	1025	....	1115	....	1314	0107	10
11	1104	2307	1128	....	1007	2317	1120	0005	1217	0048	1412	0148	11
12	1139	2357	1209	0027	1050	....	1219	0103	1319	0138	1510	0229	12
13	1215	....	1254	0123	1137	0014	1321	0158	1419	0223	1608	0310	13
14	1252	0048	1345	0222	1230	0112	1424	0251	1520	0307	1706	0352	14
15	1332	0142	1441	0323	1327	0211	1527	0340	1619	0349	1804	0436	15
16	1416	0238	1543	0424	1429	0309	1630	0426	1718	0430	1900	0523	16
17	1505	0337	1649	0524	1534	0406	1731	0510	1817	0512	1955	0612	17
18	1601	0439	1756	0621	1639	0459	1832	0553	1917	0556	2047	0704	18
19	1702	0543	1903	0714	1744	0549	1933	0636	2015	0642	2135	0757	19
20	1808	0645	2008	0803	1848	0635	2033	0720	2112	0731	2219	0849	20
21	1915	0745	2110	0848	1951	0720	2132	0806	2205	0822	2259	0941	21
22	2021	0839	2210	0931	2051	0803	2229	0853	2255	0914	2337	1032	22
23	2125	0929	2309	1014	2151	0847	2324	0942	2341	1007	....	1122	23
24	2227	1015	....	1056	2250	0931	....	1033	....	1059	0012	1211	24
25	2326	1057	0006	1139	2346	1016	0015	1125	0023	1150	0047	1301	25
26	....	1138	0101	1224	....	1104	0102	1216	0102	1240	0121	1351	26
27	0023	1219	0156	1310	0041	1152	0146	1308	0139	1330	0157	1442	27
28	0118	1300	0248	1359	0133	1242	0226	1358	0214	1419	0234	1537	28
29	0213	1343	....	....	0221	1333	0304	1448	0249	1510	0316	1634	29
30	0307	1427	....	....	0307	1424	0340	1538	0324	1601	0402	1734	30
31	0400	1514	....	....	0349	1515	....	....	0401	1655	....	....	31

Day	JULY		AUGUST		SEPTEMBER		OCTOBER		NOVEMBER		DECEMBER		Day
	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	
1	0454	1835	0644	2010	0843	2103	0930	2106	1110	2217	1128	2247	1
2	0551	1937	0751	2059	0945	2146	1031	2153	1203	2311	1209	2339	2
3	0653	2035	0855	2144	1045	2229	1130	2243	1250	....	1247	....	3
4	0758	2130	0958	2227	1145	2314	1227	2335	1333	0004	1322	0029	4
5	0903	2220	1058	2309	1243	....	1320	....	1412	0056	1356	0118	5
6	1006	2306	1157	2351	1339	0001	1409	0027	1449	0147	1429	0207	6
7	1108	2349	1255	....	1433	0050	1454	0120	1523	0237	1503	0256	7
8	1207	....	1352	0033	1524	0141	1535	0212	1557	0326	1539	0346	8
9	1305	0030	1449	0118	1611	0233	1613	0303	1631	0415	1618	0438	9
10	1403	0110	1544	0205	1655	0325	1649	0353	1706	0504	1701	0533	10
11	1500	0151	1637	0254	1735	0416	1723	0442	1743	0556	1748	0630	11
12	1557	0234	1726	0345	1812	0507	1757	0531	1823	0649	1841	0729	12
13	1653	0319	1813	0437	1847	0557	1831	0620	1907	0744	1938	0828	13
14	1748	0407	1855	0529	1922	0646	1906	0710	1955	0841	2039	0925	14
15	1841	0457	1935	0620	1955	0735	1944	0802	2049	0938	2141	1018	15
16	1930	0549	2011	0711	2030	0824	2024	0855	2146	1035	2243	1108	16
17	2015	0642	2046	0801	2105	0914	2109	0949	2246	1130	2344	1154	17
18	2057	0734	2120	0849	2144	1005	2159	1046	2347	1221	....	1237	18
19	2135	0826	2154	0938	2226	1058	2253	1142	....	1309	0044	1318	19
20	2211	0916	2229	1027	2312	1154	2351	1239	0049	1354	0143	1358	20
21	2246	1005	2306	1118	....	1251	....	1333	0150	1436	0242	1439	21
22	2320	1054	2345	1210	0004	1348	0053	1424	0250	1518	0341	1522	22
23	2354	1143	....	1305	0101	1445	0155	1512	0351	1600	0441	1608	23
24	....	1233	0030	1402	0202	1540	0258	1557	0452	1643	0542	1658	24
25	0030	1325	0120	1501	0306	1632	0401	1641	0553	1729	0641	1750	25
26	0109	1419	0215	1601	0412	1721	0504	1724	0655	1817	0738	1845	26
27	0152	1517	0316	1659	0517	1807	0607	1808	0757	1909	0832	1940	27
28	0240	1617	0421	1754	0622	1852	0710	1853	0856	2003	0920	2035	28
29	0334	1718	0528	1846	0725	1936	0812	1941	0951	2058	1004	2128	29
30	0433	1819	0635	1934	0828	2020	0914	2031	1042	2153	1044	2220	30
31	0538	1916	0740	2019	....	....	1014	2123	....	....	1120	2310	31

Local Standard Time. Not adjusted for Daylight Savings Time.

TABLE 7.—CONVERSION OF FEET TO CENTIMETERS

Feet	Tenths of a Foot										Feet
	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	
0	0	3	6	9	12	15	18	21	24	27	0
1	30	34	37	40	43	46	49	52	55	58	1
2	61	64	67	70	73	76	79	82	85	88	2
3	91	94	98	101	104	107	110	113	116	119	3
4	122	125	128	131	134	137	140	143	146	149	4
5	152	155	158	162	165	168	171	174	177	180	5
6	183	186	189	192	195	198	201	204	207	210	6
7	213	216	219	223	226	229	232	235	238	241	7
8	244	247	250	253	256	259	262	265	268	271	8
9	274	277	280	283	287	290	293	296	299	302	9
10	305	308	311	314	317	320	323	326	329	332	10
11	335	338	341	344	347	351	354	357	360	363	11
12	366	369	372	375	378	381	384	387	390	393	12
13	396	399	402	405	408	411	415	418	421	424	13
14	427	430	433	436	439	442	445	448	451	454	14
15	457	460	463	466	469	472	475	479	482	485	15
16	488	491	494	497	500	503	506	509	512	515	16
17	518	521	524	527	530	533	536	539	543	546	17
18	549	552	555	558	561	564	567	570	573	576	18
19	579	582	585	588	591	594	597	600	604	607	19
20	610	613	616	619	622	625	628	631	634	637	20
21	640	643	646	649	652	655	658	661	664	668	21
22	671	674	677	680	683	686	689	692	695	698	22
23	701	704	707	710	713	716	719	722	725	728	23
24	732	735	738	741	744	747	750	753	756	759	24
25	762	765	768	771	774	777	780	783	786	789	25
26	792	796	799	802	805	808	811	814	817	820	26
27	823	826	829	832	835	838	841	844	847	850	27
28	853	856	860	863	866	869	872	875	878	881	28
29	884	887	890	893	896	899	902	905	908	911	29
30	914	917	920	924	927	930	933	936	939	942	30
31	945	948	951	954	957	960	963	966	969	972	31
32	975	978	981	985	988	991	994	997	1000	1003	32
33	1006	1009	1012	1015	1018	1021	1024	1027	1030	1033	33
34	1036	1039	1042	1045	1049	1052	1055	1058	1061	1064	34
35	1067	1070	1073	1076	1079	1082	1085	1088	1091	1094	35
36	1097	1100	1103	1106	1109	1113	1116	1119	1122	1125	36
37	1128	1131	1134	1137	1140	1143	1146	1149	1152	1155	37
38	1158	1161	1164	1167	1170	1173	1177	1180	1183	1186	38
39	1189	1192	1195	1198	1201	1204	1207	1210	1213	1216	39
40	1219	1222	1225	1228	1231	1234	1237	1241	1244	1247	40
41	1250	1253	1256	1259	1262	1265	1268	1271	1274	1277	41
42	1280	1283	1286	1289	1292	1295	1298	1301	1305	1308	42
43	1311	1314	1317	1320	1323	1326	1329	1332	1335	1338	43
44	1341	1344	1347	1350	1353	1356	1359	1362	1366	1369	44
45	1372	1375	1378	1381	1384	1387	1390	1393	1396	1399	45
46	1402	1405	1408	1411	1414	1417	1420	1423	1426	1430	46
47	1433	1436	1439	1442	1445	1448	1451	1454	1457	1460	47
48	1463	1466	1469	1472	1475	1478	1481	1484	1487	1490	48
49	1494	1497	1500	1503	1506	1509	1512	1515	1518	1521	49
50	1524	1527	1530	1533	1536	1539	1542	1545	1548	1551	50

Feet to Meters = Centimeters divided by 100 (from above table)

Example: 09.40 feet = (287 centimeters) / (100) = 02.87 meters.

1 Meter = 100 centimeters

1 Meter = 3.2808399 feet

1 Foot = 0.30480061 meters

1 Foot = 30.480061 centimeters

TABLE 8.—TIDE PREDICTION ACCURACY

EXPLANATION OF TABLE

The accuracy of National Ocean Service tide predictions is determined by comparing predicted and observed high and low waters at all stations for which data exists, primarily the U.S. and its territories. Each water-level station is unique; there is no single standard of accuracy when comparing astronomic tide predictions with observed water levels. Water-level station locations are examined on an individual basis to determine if the predictions are adequate. Comparisons are based on 1989 data except for those locations where the stations were not in operation or the data acquired were unacceptable. If a station was not in operation in 1989, the last good year of data was used. Comparisons are made by subtracting the observed times and heights of the high and low waters from the predicted tides to compute a difference.

Table Legend

Station ID—Each water-level station in the United States and dependent territories has a unique seven digit identification number (ID). The ID is unrelated to the four digit station number used in the published prediction tables.

90% Distribution Level—90% of the absolute values of the differences are less than or equal to the values in these columns.

Standard Deviation of Differences—Standard deviation of all the differences.

Average Difference—Average of the signed sum of all the differences.

TABLE 8.—TIDE PREDICTION ACCURACY

Station ID	Station Name	Year	90% Distribution Level Time Differences				90% Distribution Level Height Differences				Standard Deviation of Differences Times				Standard Deviation of Differences Heights				Average Differences Times				Average Differences Heights						
			High Water (Hours)	Low Water (Hours)	High Water (Feet)	Low Water (Feet)	High Water (Hours)	Low Water (Hours)	High Water (Feet)	Low Water (Feet)	High Water (Hours)	Low Water (Hours)	High Water (Feet)	Low Water (Feet)	High Water (Hours)	Low Water (Hours)	High Water (Feet)	Low Water (Feet)	High Water (Hours)	Low Water (Hours)	High Water (Feet)	Low Water (Feet)	High Water (Hours)	Low Water (Hours)	High Water (Feet)	Low Water (Feet)			
161-2340	Honolulu, HI	1995	0.6	0.5	0.3	0.3	0.3	0.39	0.37	0.21	0.20	0.21	0.17	0.17	0.20	0.18	0.20	0.01	0.03	-0.03	0.02	0.01	0.03	-0.03	0.02	0.01	0.03	-0.03	0.02
941-0170	San Diego, CA	1995	0.4	0.3	0.3	0.3	0.3	0.17	0.17	0.17	0.18	0.17	0.17	0.18	0.20	0.18	0.20	0.20	0.16	0.06	-0.07	0.20	0.16	0.06	-0.07	0.20	0.16	0.06	-0.07
941-0660	Los Angeles, CA	2004	0.2	0.1	0.3	0.3	0.11	0.11	0.11	0.19	0.19	0.19	0.11	0.11	0.19	0.19	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
941-4290	San Francisco, CA	1995	0.3	0.4	0.4	0.6	0.18	0.18	0.25	0.31	0.39	0.31	0.25	0.31	0.39	0.39	0.39	-0.12	-0.03	0.03	-0.02	-0.12	-0.03	0.03	-0.02	-0.12	-0.03	0.03	-0.02
941-8767	Humboldt Bay, CA	2004	0.2	0.2	0.5	0.5	0.10	0.10	0.11	0.11	0.29	0.31	0.11	0.11	0.29	0.31	0.31	-0.05	0.04	0.00	-0.01	-0.05	0.04	0.00	-0.01	-0.05	0.04	0.00	-0.01
941-9750	Crescent City, CA	2004	0.2	0.2	0.6	0.6	0.11	0.11	0.11	0.11	0.35	0.34	0.11	0.11	0.35	0.34	0.34	-0.01	-0.01	-0.01	0.00	-0.01	-0.01	-0.01	0.00	-0.01	-0.01	0.00	0.00
943-9040	Astoria, OR	1995	0.2	0.3	0.7	0.9	0.11	0.11	0.17	0.17	0.48	0.55	0.17	0.17	0.48	0.55	0.55	-0.02	0.04	-0.04	0.07	-0.02	0.04	-0.04	0.07	-0.02	0.04	-0.04	0.07
944-1187	Aberdeen, WA	1982	0.4	0.7	1.0	>1.0	0.26	0.26	0.31	0.31	0.58	0.76	0.31	0.31	0.58	0.76	0.76	0.04	0.34	-0.29	-0.10	0.04	0.34	-0.29	-0.10	0.04	0.34	-0.29	-0.10
944-3090	Neah Bay, WA	2004	0.2	0.2	0.7	0.8	0.13	0.13	0.17	0.17	0.42	0.44	0.17	0.17	0.42	0.44	0.44	-0.02	0.00	0.00	-0.01	-0.02	0.00	0.00	-0.01	-0.02	0.00	0.00	-0.01
44-4900	Port Townsend, WA	2004	0.3	0.3	0.7	0.7	0.21	0.21	0.46	0.46	0.40	0.50	0.21	0.21	0.40	0.50	0.50	-0.04	0.02	0.01	0.00	-0.04	0.02	0.01	0.00	-0.04	0.02	0.01	0.00
944-7130	Seattle, WA	2004	0.3	0.2	0.7	0.7	0.16	0.16	0.14	0.14	0.41	0.40	0.16	0.16	0.41	0.40	0.40	0.05	0.04	0.01	0.01	0.05	0.04	0.01	0.01	0.05	0.04	0.01	0.01
945-0460	Ketchikan, AK	2004	0.1	0.1	0.7	0.7	0.08	0.08	0.09	0.09	0.42	0.42	0.08	0.08	0.42	0.42	0.42	0.00	0.00	-0.01	0.00	0.00	0.00	-0.01	0.00	0.00	0.00	-0.01	0.00
945-1600	Sitka, AK	2004	0.1	0.1	0.7	0.7	0.09	0.09	0.09	0.09	0.40	0.39	0.09	0.09	0.40	0.39	0.39	0.00	0.01	-0.01	0.00	0.00	0.01	-0.01	0.00	0.00	0.01	-0.01	0.00
945-2210	Juneau, AK	2004	0.1	0.1	0.8	0.7	0.10	0.10	0.10	0.10	0.49	0.47	0.10	0.10	0.49	0.47	0.47	0.00	0.00	0.08	-0.08	0.00	0.00	0.08	-0.08	0.00	0.00	0.08	-0.08
945-4050	Cordova, AK	2004	0.2	0.2	0.7	0.7	0.15	0.15	0.14	0.14	0.43	0.44	0.15	0.14	0.43	0.44	0.44	0.04	0.05	-0.02	0.03	0.04	0.05	-0.02	0.03	0.04	0.05	-0.02	0.03
945-4240	Valdez, AK	2004	0.2	0.2	0.7	0.7	0.14	0.14	0.12	0.12	0.42	0.44	0.14	0.12	0.42	0.44	0.44	-0.01	0.00	-0.01	0.01	-0.01	0.00	-0.01	0.01	-0.01	0.00	-0.01	0.01
945-5500	Seldovia, AK	1995	0.1	0.1	0.8	0.9	0.08	0.08	0.09	0.09	0.52	0.56	0.08	0.08	0.52	0.56	0.56	-0.01	0.03	-0.04	0.07	-0.01	0.03	-0.04	0.07	-0.01	0.03	-0.04	0.07
945-5760	Nikishki, AK	2004	0.3	0.3	0.9	1.0	0.15	0.15	0.17	0.17	0.51	0.55	0.15	0.15	0.51	0.55	0.55	-0.13	-0.13	-0.03	0.14	-0.13	-0.13	-0.03	0.14	-0.13	-0.13	-0.03	0.14
945-5920	Anchorage, AK	1995	0.2	0.2	>1.0	>1.0	0.12	0.12	0.12	0.12	0.70	0.78	0.12	0.12	0.70	0.78	0.78	0.08	0.02	0.06	0.20	0.08	0.02	0.06	0.20	0.08	0.02	0.06	0.20
945-7283	Kodiak, AK	1983	0.2	0.2	0.9	0.9	0.16	0.16	0.15	0.15	0.55	0.55	0.16	0.16	0.55	0.55	0.55	0.01	0.04	-0.09	-0.23	0.01	0.04	-0.09	-0.23	0.01	0.04	-0.09	-0.23
946-5261	Nushagak Bay, AK	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
946-8132	St. Michael, AK	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
946-1380	Sweeper Cove	1995	0.4	0.3	0.7	0.8	0.33	0.33	0.23	0.23	0.47	0.48	0.33	0.33	0.47	0.48	0.48	0.09	0.07	-0.02	0.04	0.09	0.07	-0.02	0.04	0.09	0.07	-0.02	0.04
946-2620	Unalaska, AK	2004	0.4	0.4	0.7	0.7	0.47	0.47	0.20	0.20	0.46	0.45	0.47	0.47	0.46	0.45	0.45	0.01	0.02	-0.02	0.00	0.01	0.02	-0.02	0.00	0.01	0.02	-0.02	0.00

TABLE 9.— LOWEST/ HIGHEST ASTRONOMICAL TIDE AND OTHER TIDAL DATUMS

EXPLANATION OF TABLE

Lowest Astronomical Tide (LAT) and Highest Astronomical Tide (HAT) are the lowest and highest predicted values for the tides at a given location over a 19 year period. These values were calculated by generating tide predictions for the time period of the latest National Tidal Datum Epoch (1983-2001) using the latest set of tidal harmonic constituents. The highest and lowest values predicted were recorded to the nearest 0.1 foot. It is important to note that the LAT and HAT values are derived solely from predicted tides based on astronomical forces. Observed water levels can be above the HAT level or below the LAT level due to storms, winds, or other meteorological effects which are not accounted for in the tide predictions.

Table Legend

Station - Each water level station in the United States and its territories has a unique seven digit identification number (ID). The ID is unrelated to the four digit indexing number used in the published prediction tables.

LAT - Lowest Astronomical Tide - The lowest predicted tidal level

MLLW - Mean Lower Low Water

MLW - Mean Low Water

MHW - Mean High Water

MHHW - Mean Higher High Water

HAT - Highest Astronomical Tide - The highest predicted tidal level

Notes

All elevations are provided in feet relative to Mean Lower Low Water (MLLW), the reference datum for tide predictions and soundings on NOAA nautical charts. The other tidal datums (Mean Low Water, Mean High Water, and Mean Higher High Water) in this table are included to provide additional information.

**TABLE 9.— LOWEST/ HIGHEST ASTRONOMICAL TIDE AND
OTHER TIDAL DATUMS**
RELATIVE TO MLLW (feet)

Station Name	LAT	MLW	MHW	MHHW	HAT
9410170 San Diego, California	-2.2	0.9	5.0	5.7	7.8
9410660 Los Angeles, California	-1.9	0.9	4.8	5.5	7.3
9412110 Port San Luis, California	-2.0	1.0	4.6	5.3	7.1
9413450 Monterey, California	-2.0	1.1	4.6	5.3	7.0
9414290 San Francisco, California	-2.1	1.1	5.2	5.8	7.3
9415144 Port Chicago, California	-1.0	0.7	4.4	4.9	6.1
9416841 Arena Cove, California	-2.2	1.2	5.2	5.9	7.7
9418767 North Spit, California	-2.3	1.3	6.1	6.9	8.6
9419750 Crescent City, California	-2.6	1.2	6.2	6.9	8.9
9432780 Charleston, Oregon	-2.7	1.3	7.0	7.6	9.7
9439040 Astoria, Oregon	-2.0	1.2	7.9	8.6	10.6
9441187 Aberdeen, Washington	-3.3	1.5	9.4	10.1	12.8
9441187 Toke Point, Washington	-3.0	1.4	8.2	8.9	11.4
9443090 Neah Bay, Washington	-3.2	1.6	7.1	8.0	10.6
9444900 Port Townsend, Washington	-3.8	2.5	7.8	8.5	10.2
9447130 Seattle, Washington	-4.1	2.8	10.5	11.4	13.5
9449424 Cherry Point, Washington	-3.9	2.6	8.3	9.1	11.0
9450460 Ketchikan, Alaska	-4.5	1.6	14.5	15.4	19.5
9452210 Juneau, Alaska	-4.9	1.6	15.3	16.3	20.9
9451600 Sitka, Alaska	-3.4	1.5	9.2	9.9	12.9
9454050 Cordova, Alaska	-3.8	1.5	11.7	12.6	16.1
9454240 Valdez, Alaska	-3.8	1.5	11.2	12.1	15.4
9455500 Seldovia, Alaska	-5.9	1.7	17.2	18.0	23.1
9455760 Nikiski, Alaska	-5.2	2.1	19.7	20.4	25.2
9455920 Anchorage, Alaska	-4.5	2.2	28.4	29.2	34.6
9457292 Kodiak Island, Alaska	-2.7	1.1	7.9	8.8	11.5
9459450 Sand Point, Alaska	-2.8	1.3	6.5	7.2	9.5
9462620 Unalaska, Alaska	-1.9	0.9	3.3	3.6	5.0
9461380 Adak Island, Alaska	-2.1	0.6	3.5	3.7	5.6
9460150 Massacre Bay, Alaska	-1.9	0.6	3.0	3.3	5.0
9465261 Nushagak Bay, Alaska	-5.0	2.5	17.8	19.5	24.1
9468132 St. Michael, Alaska	-1.0	0.6	3.6	3.9	5.7
9468756 Nome, Alaska	-0.5	0.3	1.4	1.5	1.7
9497645 Prudhoe Bay, Alaska	-0.7	0.1	0.6	0.7	1.5
1619910 Sand Island, Midway Islands	-0.6	0.2	1.1	1.3	1.6
1611400 Nawiliwili, Kauai Island, Hawaii	-0.5	0.2	1.4	1.8	2.6
1612340 Honolulu, Oahu Island, Hawaii	-0.5	0.2	1.4	1.9	2.8
1612480 Mokuoloe, Oahu Island, Hawaii	-0.8	0.3	1.8	2.1	2.9
1615680 Kahului, Maui Island, Hawaii	-0.8	0.3	1.9	2.3	3.1
1617760 Hilo, Hawaii Island, Hawaii	-0.8	0.3	2.0	2.4	3.3
1619000 Johnston Island	-0.7	0.1	2.0	2.2	3.1

PUBLICATIONS RELATING TO TIDES AND TIDAL CURRENTS

TIDE TABLES

Advance information relative to the rise and fall of the tide is given in annual tide tables. These tables include the predicted times and heights of high and low waters for every day in the year for a number of reference stations and differences for obtaining similar predictions for numerous other places.

Tide Tables, Central and Western Pacific Ocean and Indian Ocean.

Tide Tables, East Coast of North and South America (Including Greenland).

Tide Tables, Europe and West Coast of Africa (Including the Mediterranean Sea).

Tide Tables, West Coast of North and South America (Including the Hawaiian Islands).

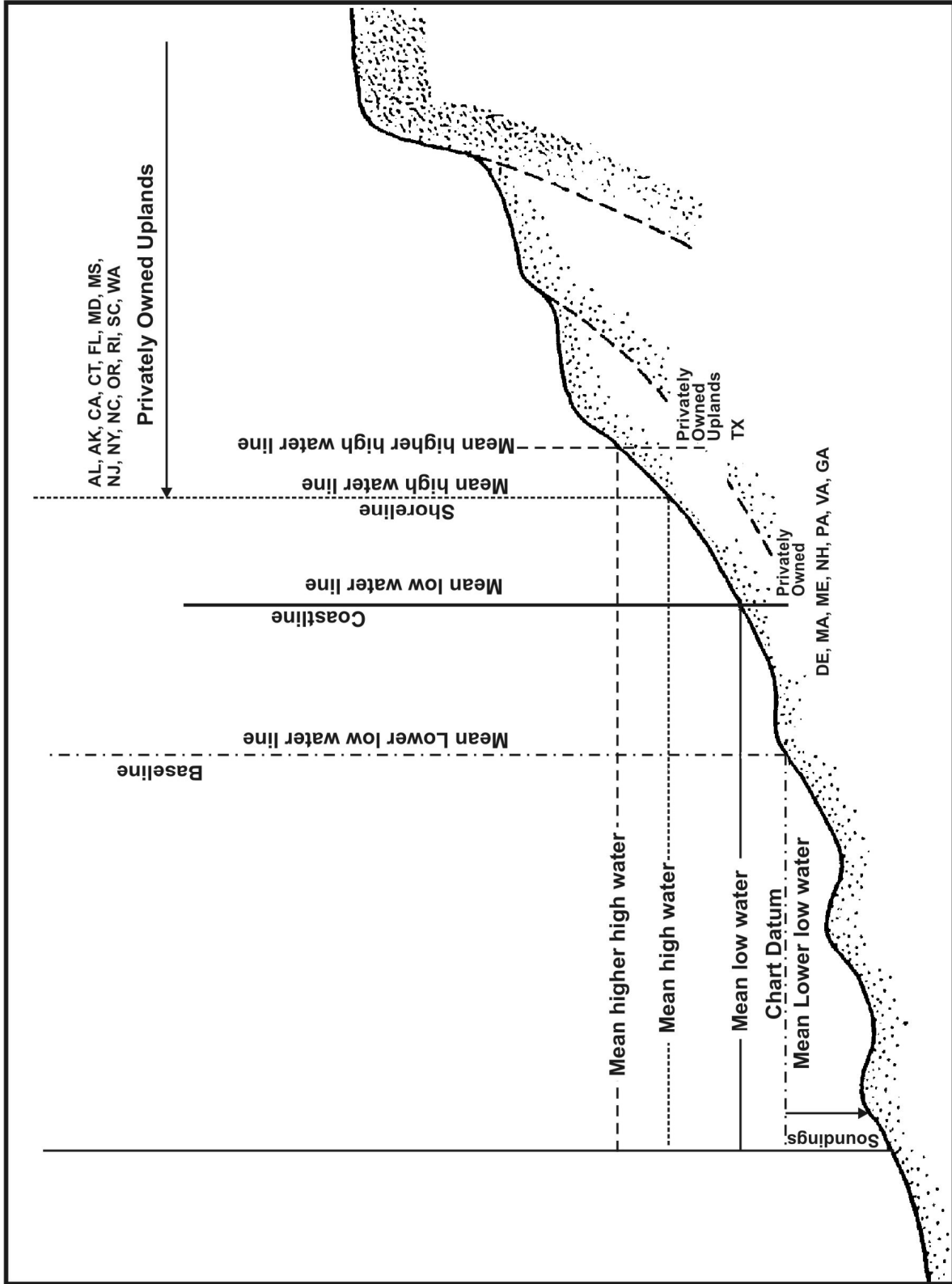
TIDAL CURRENT TABLES

Accompanying the rise and fall of the tide is a periodic horizontal flow of the water known as the tidal current. Advance information relative to these currents is made available in annual tidal current tables which include daily predictions of the times of slack water and the times and velocities of strength of flood and ebb currents for a number of waterways together with differences for obtaining predictions for numerous other places.

Tidal Current Tables, Atlantic Coast of North America.

Tidal Current Tables, Pacific Coast of North America and Asia.

OFFICIAL U.S. DATUMS



Appendix

Hourly Heights

Daily predictions for Anchorage, Nikiski, Seldovia and Valdez, Alaska

JANUARY

Predicted hourly heights in feet

Day	Hours 0/12	Hours 1/13	Hours 2/14	Hours 3/15	Hours 4/16	Hours 5/17	Hours 6/18	Hours 7/19	Hours 8/20	Hours 9/21	Hours 10/22	Hours 11/23
1 Tu	12.1 14.3	18.1 20.0	22.2 24.1	25.0 27.4	26.0 28.6	24.1 26.5	20.2 22.3	15.2 17.3	11.0 12.4	7.5 7.1	5.8 2.3	7.8 -0.2
2 W	3.6 7.9	11.5 14.9	17.6 20.3	22.1 24.4	25.4 27.6	27.0 28.4	25.4 25.9	21.3 21.5	16.3 16.4	11.9 11.6	8.4 6.5	6.1 1.6
3 Th	-1.3 5.9	3.9 9.0	12.1 16.3	18.3 21.3	22.9 25.5	26.5 28.1	27.9 28.2	25.8 24.8	21.3 20.0	16.2 15.0	11.7 10.2	8.5 5.6
4 F	0.5 7.8	-1.2 5.9	5.8 11.2	13.7 18.2	20.0 23.1	24.3 26.9	27.7 28.7	28.2 27.5	25.2 23.2	20.4 18.1	15.0 13.2	10.7 8.5
5 Sa	4.3 9.4	-0.7 6.7	0.5 7.0	8.6 14.0	16.2 20.3	22.2 25.2	26.1 28.2	28.6 29.0	27.6 26.3	23.7 21.2	18.6 16.0	13.1 11.1
6 Su	6.7 10.9	2.4 7.8	-1.1 5.8	3.7 9.4	11.9 16.9	19.1 22.6	24.5 26.9	27.8 29.1	28.7 28.5	26.2 24.5	21.6 19.0	16.2 13.7
7 M	8.9 13.7	4.8 9.0	0.4 6.2	0.3 6.3	7.7 12.6	15.4 19.4	21.9 24.6	26.5 28.1	28.9 29.3	27.9 27.2	24.1 22.2	19.1 16.5
8 Tu	11.3 16.5	6.7 11.3	2.7 7.3	-0.5 5.1	3.5 8.3	11.9 15.6	18.8 21.5	24.3 26.0	28.0 28.5	29.0 28.4	26.4 25.0	21.7 19.7
9 W	14.0 19.2	8.8 14.0	4.7 9.4	0.8 5.8	0.6 5.2	7.8 11.1	15.8 17.9	21.8 23.0	26.2 26.6	28.8 28.1	28.1 26.7	24.3 22.4
10 Th	17.0 22.0	11.5 16.8	6.6 11.8	3.0 7.9	0.2 4.8	3.6 6.6	11.9 13.5	19.1 19.3	24.1 23.8	27.4 26.5	28.8 27.0	26.6 24.4
11 F	19.9 24.8	14.7 19.9	9.4 14.7	5.1 10.3	2.0 6.8	1.5 4.5	7.5 8.3	15.3 14.7	21.7 19.8	25.6 23.7	28.0 25.8	27.9 25.4
12 Sa	22.3 26.7	17.9 23.1	13.2 18.1	8.3 13.2	4.7 9.4	2.3 6.0	4.2 4.9	10.9 9.3	17.7 14.7	23.2 19.4	26.2 22.8	27.7 24.7
13 Su	23.7 27.0	20.7 25.5	16.9 21.8	12.7 16.9	8.4 12.4	5.2 9.0	3.8 5.6	7.3 5.3	13.1 9.1	19.2 13.9	23.8 18.4	26.2 21.7
14 M	23.5 25.7	22.6 26.2	20.1 24.7	16.9 21.0	13.3 16.3	9.6 12.2	6.5 8.7	6.1 5.4	9.5 5.1	14.3 8.0	19.9 12.7	23.6 17.0
15 Tu	20.5 23.3	22.6 25.4	22.3 25.9	20.6 24.5	18.0 20.7	14.8 16.1	11.1 12.1	8.2 8.4	8.0 5.0	10.4 3.9	14.8 6.4	19.9 11.3
16 W	15.8 19.9	19.9 23.2	22.6 25.6	23.0 26.4	22.0 24.9	19.7 20.8	16.4 16.1	12.6 11.8	9.6 7.9	8.7 4.0	10.4 2.2	14.9 4.7
17 Th	10.1 15.0	15.2 20.2	20.1 23.7	23.4 26.6	24.5 27.5	23.9 25.6	21.3 21.1	17.6 16.0	13.4 11.3	10.0 7.1	8.3 2.7	9.9 0.5
18 F	3.3 9.2	9.6 15.4	15.5 20.9	21.2 25.0	24.8 28.2	26.4 28.9	25.6 26.3	22.5 21.2	18.0 15.5	13.5 10.6	9.3 6.2	7.3 1.3
19 Sa	-1.3 6.0	2.4 8.7	9.9 16.3	16.6 22.1	22.8 26.8	26.5 30.0	28.2 30.2	26.7 26.7	22.7 21.0	17.7 14.9	12.7 9.9	8.1 5.1
20 Su	-0.1 6.8	-2.9 4.6	2.5 8.8	11.2 17.7	18.4 23.6	24.5 28.7	28.2 31.5	29.4 31.1	27.0 26.6	22.3 20.5	16.8 14.2	11.4 9.0
21 M	4.0 9.9	-1.7 5.5	-4.0 3.2	4.0 9.7	13.1 19.1	20.5 25.2	26.2 30.1	29.7 32.6	29.9 31.3	26.6 26.0	21.2 19.6	15.6 13.3
22 Tu	7.8 14.0	2.8 8.5	-3.5 3.8	-3.7 2.4	6.5 11.2	15.5 20.4	22.7 26.5	27.9 31.0	30.9 33.1	29.8 30.7	25.7 25.0	19.9 18.4
23 W	12.1 18.4	6.4 12.4	1.2 7.2	-5.0 2.0	-1.6 2.5	9.6 12.7	18.2 21.3	24.8 27.3	29.6 31.4	31.5 33.0	29.2 29.6	24.4 23.6
24 Th	17.0 22.8	10.6 16.8	4.9 10.8	-0.5 5.7	-5.0 0.5	1.8 3.5	12.8 13.6	20.9 21.7	26.7 27.4	31.0 31.2	31.6 31.9	28.3 28.0
25 F	22.0 27.1	15.5 21.2	9.0 15.2	3.6 9.6	-1.6 4.3	-3.0 0.1	5.6 4.6	15.8 13.9	23.1 21.5	28.2 26.7	31.7 30.2	31.1 30.2
26 Sa	26.4 30.1	20.5 25.6	14.3 19.7	8.0 14.0	3.1 8.7	-1.1 3.5	0.3 0.6	9.0 5.4	18.1 13.5	24.5 20.5	29.0 25.4	31.5 28.4
27 Su	28.2 30.3	24.8 28.7	19.6 24.1	13.9 18.7	8.1 13.4	3.8 8.5	1.2 3.6	3.8 1.6	11.5 5.5	19.4 12.3	24.8 18.8	28.6 23.4
28 M	26.1 27.3	26.3 28.7	23.9 27.2	19.6 23.1	14.6 18.3	9.4 13.4	5.9 8.8	4.3 4.3	6.7 2.3	12.7 4.9	19.4 10.5	24.2 16.7
29 Tu	21.2 22.8	24.0 25.7	25.0 27.2	23.8 26.1	20.6 22.6	16.1 18.3	11.6 13.8	8.6 9.3	7.0 5.0	8.3 2.7	12.8 3.8	18.7 8.7
30 W	14.9 17.7	19.4 21.5	22.6 24.5	24.6 26.2	24.6 25.6	22.2 22.5	18.1 18.5	13.8 14.1	10.8 9.7	8.7 5.3	8.7 2.4	12.1 2.3
31 Th	7.5 11.5	13.8 17.2	18.7 20.9	22.3 24.2	25.2 26.0	25.9 25.5	23.7 22.4	19.5 18.3	15.3 13.9	11.8 9.5	9.2 5.1	8.0 1.4

Time meridian 135° W. 0 is midnight. 12 is noon.
 Heights are referred to mean lower low water (N.O.S. chart datum).

Lat. 61° 14'N Long. 149° 53'W

FEBRUARY

Predicted hourly heights in feet

Day	Hours 0/12	Hours 1/13	Hours 2/14	Hours 3/15	Hours 4/16	Hours 5/17	Hours 6/18	Hours 7/19	Hours 8/20	Hours 9/21	Hours 10/22	Hours 11/23
1 F	1.3 7.1	7.4 11.7	14.0 17.4	19.3 21.5	23.2 24.9	26.5 26.6	27.0 25.6	24.4 22.1	20.0 17.6	15.4 13.1	11.5 8.6	8.5 4.3
2 Sa	0.1 7.1	1.5 6.9	8.7 13.1	15.5 18.7	20.9 23.1	24.8 26.2	27.8 27.4	27.3 25.4	24.0 21.1	19.1 16.3	14.1 11.7	10.3 7.2
3 Su	2.7 8.5	-0.9 5.6	3.4 8.1	11.2 15.3	18.0 20.8	23.1 25.1	26.8 27.8	28.5 27.9	26.6 24.5	22.4 19.5	17.1 14.6	12.0 9.8
4 M	5.5 9.7	0.6 6.4	-0.3 5.0	6.7 10.7	14.4 17.9	20.9 23.2	25.5 27.1	28.4 29.0	28.1 27.6	24.9 23.0	20.0 17.6	14.5 12.4
5 Tu	7.8 11.7	3.4 7.5	-0.9 4.4	2.3 6.3	10.8 13.8	18.0 20.5	23.8 25.4	27.7 28.6	29.1 29.4	26.9 26.3	22.5 21.0	17.2 15.2
6 W	10.0 14.3	5.7 9.3	1.0 5.3	-0.5 3.6	6.4 9.0	14.9 16.8	21.4 22.8	26.3 27.0	29.2 29.4	28.7 28.5	24.9 24.3	19.8 18.6
7 Th	12.7 16.9	7.6 11.6	3.4 7.1	-0.4 3.3	2.3 4.5	11.2 12.3	18.8 19.3	24.3 24.5	28.2 28.0	29.7 29.2	27.3 26.7	22.5 21.8
8 F	16.0 19.7	10.1 14.1	5.4 9.3	1.6 5.2	0.3 2.4	6.9 7.0	15.6 15.1	22.2 21.1	26.6 25.6	29.4 28.2	29.0 27.9	25.1 24.2
9 Sa	19.1 22.6	13.5 16.9	7.9 11.6	3.8 7.5	1.0 3.6	3.4 2.9	11.8 9.8	19.2 16.9	24.8 22.2	28.1 25.9	29.4 27.5	27.2 25.8
10 Su	21.8 25.0	16.8 19.9	11.6 14.4	6.7 9.8	3.2 6.2	2.3 2.7	8.0 4.5	15.8 11.8	21.9 17.8	26.4 22.4	28.6 25.4	28.3 26.1
11 M	23.7 26.5	19.8 22.8	15.3 17.7	10.7 12.6	6.6 8.7	3.9 5.4	5.3 2.8	12.1 6.0	18.4 12.3	23.6 17.8	26.8 21.7	28.0 24.2
12 Tu	24.5 26.9	22.2 25.0	18.9 21.3	15.0 16.3	11.1 11.7	7.6 8.4	5.7 5.1	8.6 3.3	14.5 6.4	19.7 11.8	24.0 16.9	26.4 20.3
13 W	23.0 25.5	23.4 26.0	21.8 24.2	19.2 20.8	15.9 16.0	12.5 11.8	9.2 8.5	7.9 5.1	10.7 3.4	15.2 5.5	19.9 10.4	23.5 15.2
14 Th	18.9 22.6	22.2 24.9	23.2 25.8	22.6 24.6	20.7 21.3	17.7 16.6	14.3 12.4	10.9 8.7	9.4 5.1	10.9 2.7	14.5 3.9	19.2 8.5
15 F	13.5 18.1	18.0 22.0	22.2 25.1	24.1 26.7	24.3 25.9	22.7 22.6	19.6 17.7	15.7 13.0	12.0 8.9	9.5 4.8	9.8 1.5	13.1 1.9
16 Sa	6.5 11.4	12.4 17.4	18.1 22.1	23.1 26.2	25.6 28.2	26.5 27.7	24.6 24.0	20.9 18.6	16.4 13.3	12.0 8.8	8.4 4.2	8.0 0.2
17 Su	-0.3 5.9	5.2 10.1	12.5 17.5	19.2 23.1	24.5 27.8	27.5 30.1	28.4 29.5	25.9 25.0	21.3 19.1	16.1 13.3	11.0 8.5	6.9 3.4
18 M	-1.3 5.3	-2.0 3.7	5.4 9.8	13.8 18.4	21.0 24.6	26.2 29.5	29.4 31.8	29.5 30.6	26.2 25.4	20.8 19.0	15.2 13.0	9.6 7.8
19 Tu	2.6 8.1	-3.2 3.3	-2.5 2.0	7.3 10.6	16.0 19.8	23.2 26.2	28.1 30.9	30.9 33.2	29.9 30.9	25.5 25.1	19.6 18.4	13.7 12.2
20 W	6.8 12.0	1.3 6.6	-4.9 0.9	-0.9 1.5	10.3 12.2	18.8 21.1	25.4 27.5	30.1 32.0	31.9 33.7	29.4 30.3	24.2 24.1	18.0 17.3
21 Th	10.9 16.2	5.5 10.2	-0.5 4.7	-5.3 -1.3	2.5 2.5	13.8 13.9	21.7 22.3	27.7 28.3	31.9 32.7	32.1 33.4	28.3 29.1	22.5 22.7
22 F	15.9 20.4	9.3 14.2	3.9 8.5	-2.2 2.5	-3.5 -2.2	7.0 4.5	17.3 15.3	24.4 23.1	29.8 28.7	33.0 32.5	31.5 32.0	26.7 27.4
23 Sa	20.9 24.5	14.2 18.2	7.6 12.3	2.6 6.8	-2.4 0.7	0.4 -1.4	11.3 6.7	20.3 16.3	26.5 23.3	31.2 28.4	32.9 31.4	30.1 30.1
24 Su	25.4 28.0	19.2 22.1	12.7 16.2	6.6 10.7	2.1 5.5	-0.5 0.2	5.1 0.7	14.8 8.5	22.5 16.6	27.7 22.8	31.4 27.2	31.6 29.2
25 M	27.8 29.3	23.5 25.5	17.9 20.0	12.0 14.8	6.7 9.8	3.3 5.0	3.2 1.2	9.1 2.9	17.0 9.3	23.4 16.1	27.6 21.5	30.0 25.3
26 Tu	26.8 27.7	25.7 26.9	22.3 23.4	17.7 18.7	12.4 14.2	8.2 9.8	6.0 5.6	7.0 2.9	11.6 4.5	17.8 9.2	23.0 14.8	26.2 19.6
27 W	23.0 24.0	24.7 25.3	24.4 24.9	22.2 22.2	18.5 18.3	14.0 14.4	10.6 10.4	9.1 6.7	9.5 4.3	12.4 5.0	17.1 8.1	21.5 13.0
28 Th	17.8 19.6	21.2 22.0	23.5 23.8	24.3 23.9	23.2 22.1	20.1 18.7	16.1 15.0	13.0 11.2	11.1 7.5	10.3 4.8	11.6 4.3	15.5 6.4

Time meridian 135° W. 0 is midnight. 12 is noon.
 Heights are referred to mean lower low water (N.O.S. chart datum).

MARCH

Predicted hourly heights in feet

Day	Hours 0/12	Hours 1/13	Hours 2/14	Hours 3/15	Hours 4/16	Hours 5/17	Hours 6/18	Hours 7/19	Hours 8/20	Hours 9/21	Hours 10/22	Hours 11/23
1 F	11.6 14.1	16.6 18.2	20.6 21.1	23.4 23.5	25.3 24.2	24.7 22.7	21.7 19.4	17.8 15.6	14.3 11.6	11.5 7.6	9.5 4.3	9.8 2.7
2 Sa	5.2 8.3	11.2 13.6	16.7 18.1	21.2 21.7	24.5 24.4	26.7 25.4	25.9 23.5	22.6 19.8	18.2 15.6	14.0 11.3	10.4 6.9	7.6 3.0
3 Su	1.2 5.6	5.5 8.0	12.2 14.5	18.2 19.3	22.8 23.4	26.3 26.1	27.9 26.5	26.2 23.7	22.2 19.4	17.2 14.8	12.4 10.2	8.5 5.5
4 M	1.1 6.2	0.9 4.3	7.5 9.5	14.6 16.4	20.6 21.6	25.0 25.6	28.0 27.9	28.2 27.0	25.2 23.1	20.4 18.1	15.0 13.3	10.2 8.6
5 Tu	3.7 7.7	-0.5 3.9	2.7 4.8	10.9 12.3	17.7 19.1	23.3 24.1	27.3 27.8	29.0 29.1	27.3 26.5	23.1 21.7	17.8 16.2	12.3 11.2
6 W	6.6 9.6	1.4 5.1	-0.5 2.4	6.4 7.3	14.8 15.5	21.1 21.8	26.1 26.5	29.2 29.5	28.9 29.1	25.4 25.2	20.3 19.7	14.8 13.9
7 Th	8.9 11.9	4.4 7.1	-0.3 2.6	1.9 2.9	11.1 10.8	18.8 18.5	24.3 24.3	28.5 28.3	30.1 30.2	27.7 28.1	22.9 23.2	17.3 17.3
8 F	11.4 14.3	6.7 9.3	2.3 4.6	0.0 0.9	6.5 5.3	15.7 14.2	22.3 20.9	27.1 26.1	30.2 29.4	29.7 29.7	25.6 26.1	20.0 20.8
9 Sa	14.8 17.0	9.0 11.6	4.6 7.0	1.0 2.2	3.0 1.1	11.9 8.9	19.6 17.0	25.3 22.9	29.1 27.3	30.5 29.4	27.9 28.0	22.9 23.7
10 Su	18.3 19.7	12.4 13.9	7.0 9.1	3.1 4.9	1.8 0.7	8.0 3.3	16.7 12.4	22.8 19.1	27.5 24.2	30.0 27.6	29.3 28.4	25.2 25.7
11 M	21.2 22.2	16.0 16.5	10.6 11.3	5.8 7.2	2.9 3.3	4.9 0.7	13.4 6.3	20.2 14.6	25.2 20.4	28.7 24.6	29.6 27.0	27.0 26.7
12 Tu	23.5 24.4	19.2 19.4	14.4 13.9	9.6 9.5	5.7 6.0	4.3 2.5	9.2 2.0	17.3 8.5	22.3 15.6	26.4 20.7	28.6 24.0	28.1 25.9
13 W	24.9 26.3	22.0 22.5	18.1 17.7	13.9 12.6	9.9 8.7	6.8 5.6	6.8 2.6	12.7 3.3	18.9 9.2	23.2 15.4	26.3 19.8	27.6 22.7
14 Th	24.6 26.4	23.9 25.1	21.7 21.8	18.3 17.3	14.7 12.7	11.1 9.1	8.4 5.9	9.1 3.1	13.9 3.8	18.7 8.3	22.6 13.9	25.2 18.1
15 F	21.5 23.8	23.9 25.6	24.0 25.0	22.7 22.6	19.8 18.4	16.4 13.9	12.8 10.0	10.0 6.5	10.0 3.5	12.9 3.0	17.0 6.4	21.1 11.7
16 Sa	16.3 19.3	20.8 23.0	24.1 25.8	25.1 26.2	24.5 24.5	21.8 20.3	18.2 15.5	14.1 11.1	10.7 7.1	9.1 3.3	10.6 1.6	14.6 4.0
17 Su	9.5 12.1	15.4 18.2	21.1 23.1	25.0 26.8	26.9 28.1	26.7 26.7	23.7 22.3	19.3 17.0	14.6 11.9	10.2 7.4	7.3 2.8	7.8 0.0
18 M	1.7 4.9	8.6 10.6	15.9 18.2	22.3 24.1	26.5 28.4	29.0 30.2	28.5 28.6	24.8 23.7	19.5 17.7	14.1 12.2	8.9 7.2	5.2 2.1
19 Tu	-1.8 3.0	0.5 2.5	9.5 10.5	17.5 19.1	24.0 25.5	28.3 30.0	30.7 32.0	29.3 29.7	24.7 24.1	18.7 17.7	12.9 11.9	7.4 6.6
20 W	1.3 5.9	-3.3 0.6	1.4 1.4	12.0 11.8	19.9 20.5	26.1 27.0	30.2 31.5	31.8 33.1	29.0 29.8	23.5 23.8	17.3 17.1	11.4 11.1
21 Th	5.8 9.7	0.0 4.1	-3.8 -1.9	4.5 2.1	15.2 13.7	22.6 22.0	28.3 28.3	32.0 32.6	32.0 33.2	27.9 29.0	21.7 22.7	15.5 16.0
22 F	9.8 13.6	4.7 8.0	-1.5 1.7	-2.1 -3.2	8.8 4.4	18.5 15.5	25.3 23.3	30.5 29.3	33.2 33.1	31.2 32.5	26.1 27.7	19.7 21.2
23 Sa	14.5 17.4	8.2 11.5	3.3 6.0	-2.0 -0.7	1.7 -2.4	13.3 7.4	21.6 17.2	27.7 24.3	32.3 29.8	33.2 32.7	29.6 31.0	23.7 25.8
24 Su	19.3 21.0	12.7 15.0	6.8 9.4	2.2 3.9	-0.5 -1.9	6.8 0.2	17.1 10.2	24.1 18.5	29.5 24.9	32.8 29.6	31.9 31.3	27.2 28.9
25 M	23.7 24.3	17.6 18.2	11.2 12.8	5.9 7.7	2.4 2.4	3.1 -1.1	11.5 3.7	19.8 12.4	25.7 19.4	30.0 24.8	31.7 28.5	29.4 29.2
26 Tu	26.7 26.4	21.8 21.4	16.2 16.0	10.4 11.2	6.2 6.7	4.4 2.3	7.5 1.3	14.7 6.7	21.2 13.6	26.0 19.4	28.9 23.8	29.2 26.7
27 W	27.0 26.3	24.7 23.6	20.5 19.2	15.6 14.6	10.8 10.5	7.8 6.6	7.5 3.4	10.8 3.9	16.1 8.5	21.3 13.8	24.9 18.5	26.6 22.3
28 Th	24.7 24.0	25.1 23.8	23.6 21.8	20.4 18.3	16.2 14.5	12.3 10.9	10.1 7.4	10.2 5.0	12.2 5.4	15.8 8.7	19.9 12.7	22.8 17.0
29 F	20.8 20.6	23.4 22.1	24.3 22.6	23.7 21.5	21.2 18.8	17.6 15.3	14.2 11.9	12.0 8.5	11.2 6.0	11.6 5.6	14.0 7.6	17.9 11.2
30 Sa	15.8 16.0	19.9 19.1	23.1 21.5	24.6 22.8	24.8 22.5	22.7 20.0	19.1 16.5	15.5 12.9	12.6 9.2	10.3 5.9	9.5 4.5	11.7 5.8
31 Su	10.2 10.0	15.5 15.3	20.2 19.1	23.8 22.4	25.9 24.2	26.2 24.0	23.8 21.3	19.8 17.4	15.6 13.3	11.6 9.1	8.3 4.9	7.0 2.8

Time meridian 135° W. 0 is midnight. 12 is noon.
 Heights are referred to mean lower low water (N.O.S. chart datum).

APRIL

Predicted hourly heights in feet

Day	Hours 0/12	Hours 1/13	Hours 2/14	Hours 3/15	Hours 4/16	Hours 5/17	Hours 6/18	Hours 7/19	Hours 8/20	Hours 9/21	Hours 10/22	Hours 11/23
1	4.7	10.6	16.4	21.6	25.3	27.5	27.1	23.9	19.2	14.3	9.5	5.7
M	5.0	10.0	16.0	20.5	24.2	26.1	25.3	21.9	17.4	12.9	8.1	3.5
2	1.3	5.3	12.5	18.4	23.6	27.2	28.6	26.8	22.6	17.3	12.0	7.1
Tu	3.3	4.6	11.7	17.9	22.8	26.4	27.6	25.6	21.4	16.4	11.6	6.7
3	1.8	1.1	8.1	15.6	21.2	26.1	28.9	28.6	25.2	20.2	14.8	9.5
W	4.6	1.8	6.4	14.4	20.5	25.3	28.4	28.3	25.0	20.0	14.6	9.9
4	5.0	0.5	3.3	12.2	19.1	24.3	28.4	29.9	27.5	22.8	17.3	12.0
Th	7.0	2.1	1.9	9.6	17.4	23.2	27.6	29.7	27.9	23.5	18.0	12.5
5	7.9	3.1	0.8	7.5	16.4	22.5	27.2	30.2	29.6	25.5	20.0	14.4
F	9.4	4.3	0.1	4.0	13.1	20.1	25.6	29.2	29.9	26.7	21.6	15.8
6	10.2	5.9	1.8	3.4	12.5	20.2	25.6	29.4	30.9	28.1	22.9	17.0
Sa	11.7	6.9	1.6	-0.1	7.6	16.1	22.5	27.3	30.0	29.0	24.9	19.5
7	13.6	8.1	4.2	2.1	8.1	17.2	23.3	28.1	30.7	30.0	25.6	19.9
Su	14.2	9.2	4.5	-0.4	1.8	11.4	18.6	24.3	28.3	29.7	27.3	22.8
8	17.3	11.5	6.5	3.3	4.8	13.6	20.7	25.7	29.6	30.6	27.7	22.5
M	16.8	11.5	7.0	2.3	-0.9	5.2	14.4	20.5	25.5	28.5	28.4	25.3
9	20.6	15.3	9.9	5.6	4.0	9.2	18.0	23.1	27.4	29.9	29.1	24.8
Tu	19.4	13.8	9.2	5.1	0.9	0.5	8.7	16.5	21.9	25.8	27.8	26.7
10	23.4	18.7	13.9	9.1	5.7	6.1	13.4	20.5	24.5	27.9	29.1	26.9
W	22.0	16.7	11.6	7.6	3.9	0.5	2.8	10.9	17.6	22.3	25.4	26.8
11	25.3	22.1	17.7	13.4	9.3	6.7	8.7	15.7	21.0	24.7	27.2	27.7
Th	24.8	20.3	15.2	10.6	6.9	3.6	1.2	4.5	11.4	17.5	21.6	24.6
12	25.9	24.7	21.9	17.8	13.9	10.2	8.1	10.3	15.5	19.9	23.6	25.9
F	26.3	23.9	20.1	15.2	10.9	7.3	4.0	2.2	4.8	10.5	16.3	20.3
13	23.8	25.5	25.1	22.8	19.1	15.2	11.4	9.1	9.9	13.3	17.6	21.7
Sa	24.5	25.7	24.4	21.2	16.6	12.3	8.4	4.8	2.6	3.9	8.7	14.4
14	19.3	23.6	26.0	26.5	24.5	20.8	16.5	12.2	8.9	8.0	10.1	14.8
Su	19.8	23.8	26.0	25.9	23.3	18.8	14.1	9.6	5.6	2.3	2.3	6.5
15	13.0	19.0	24.1	27.1	28.3	26.4	22.3	17.2	12.3	7.8	5.4	6.7
M	12.2	18.8	24.0	27.1	27.9	25.6	20.9	15.6	10.6	5.9	1.8	0.7
16	4.9	12.9	19.8	25.2	28.6	30.0	27.6	22.8	17.0	11.6	6.3	2.9
Tu	3.7	11.1	19.0	24.8	28.5	29.8	27.3	22.3	16.4	11.1	5.9	1.4
17	-0.7	5.0	14.3	21.3	26.7	30.3	31.1	27.8	22.1	16.0	10.3	4.9
W	0.4	2.0	11.5	19.9	26.0	29.9	31.2	28.1	22.7	16.4	10.9	5.7
18	0.8	-1.0	7.2	16.8	23.5	28.6	31.8	31.3	26.9	20.6	14.6	8.9
Th	3.4	-1.9	2.1	13.0	21.2	27.3	31.1	31.8	28.0	22.1	15.8	10.1
19	5.2	0.0	0.4	10.9	19.6	25.9	30.5	32.6	30.4	25.0	18.6	12.9
F	7.5	1.4	-3.2	4.1	14.9	22.7	28.4	31.9	31.5	27.1	20.9	14.7
20	8.9	4.4	-0.4	3.8	14.9	22.4	28.2	32.1	32.6	28.7	22.7	16.6
Sa	11.0	5.7	-0.9	-2.6	7.2	16.8	24.1	29.4	32.2	30.6	25.7	19.4
21	13.1	7.6	3.4	0.8	8.5	18.4	24.8	30.0	32.8	31.3	26.4	20.1
Su	14.4	8.9	3.5	-2.5	0.0	10.3	18.6	25.3	30.0	31.6	29.1	23.8
22	17.7	11.4	6.5	2.9	3.9	13.1	21.0	26.7	30.9	32.1	29.0	23.5
M	17.4	12.1	6.8	1.5	-2.1	3.9	13.1	20.3	26.1	29.8	30.3	27.1
23	21.7	15.9	10.0	5.9	3.9	8.1	16.6	22.8	27.6	30.4	29.9	26.0
Tu	20.3	14.8	9.8	5.1	0.4	0.3	7.9	15.4	21.4	26.2	28.9	28.4
24	24.9	19.8	14.4	9.3	6.4	6.5	12.0	18.6	23.6	27.2	28.5	26.9
W	22.9	17.5	12.6	8.2	4.0	0.9	3.7	10.9	17.0	21.9	25.7	27.4
25	26.4	23.0	18.4	13.6	9.6	7.8	9.4	14.2	19.1	23.2	25.6	25.9
Th	24.0	20.3	15.6	11.2	7.5	4.0	2.7	6.5	12.5	17.5	21.5	24.7
26	26.0	24.9	21.9	18.0	13.9	10.6	9.5	11.2	14.4	18.2	21.6	23.4
F	23.5	22.0	18.9	14.9	11.1	7.8	4.9	4.5	7.9	12.8	17.0	20.7
27	23.7	25.1	24.3	22.0	18.5	14.8	11.8	10.6	11.0	12.9	16.3	19.6
Sa	21.4	22.1	21.3	19.0	15.6	12.0	8.8	6.1	5.3	7.7	11.8	16.0
28	19.9	23.3	25.0	24.7	22.9	19.4	15.7	12.3	10.1	9.1	10.4	14.1
Su	18.0	20.4	22.0	21.9	20.3	17.0	13.4	9.9	6.8	5.0	6.5	10.6
29	15.4	19.9	23.7	25.7	25.9	23.9	20.2	15.9	11.8	8.4	6.5	7.9
M	12.7	17.4	20.7	23.0	23.5	22.0	18.5	14.5	10.5	6.6	4.0	5.2
30	10.2	15.9	20.7	24.9	27.0	26.9	24.2	19.9	15.1	10.3	6.0	4.0
Tu	6.5	12.7	18.0	22.1	24.7	25.2	23.2	19.3	14.7	10.4	5.9	2.8

Time meridian 135° W. 0 is midnight. 12 is noon.
 Heights are referred to mean lower low water (N.O.S. chart datum).

MAY

Predicted hourly heights in feet

Day	Hours 0/12	Hours 1/13	Hours 2/14	Hours 3/15	Hours 4/16	Hours 5/17	Hours 6/18	Hours 7/19	Hours 8/20	Hours 9/21	Hours 10/22	Hours 11/23
1	4.9	11.5	17.4	22.3	26.5	28.3	27.2	23.5	18.5	13.4	8.2	3.6
W	2.2	7.0	14.2	19.7	24.1	26.5	26.4	23.5	19.0	14.1	9.6	4.8
2	2.2	6.3	14.2	19.8	24.6	28.2	29.0	26.3	21.6	16.3	11.2	5.9
Th	1.4	2.0	9.2	16.5	22.0	26.1	28.0	26.6	22.9	17.8	12.8	8.3
3	3.8	2.8	9.6	17.5	22.7	27.0	29.7	28.7	24.5	19.1	13.8	8.9
F	3.6	-0.2	3.6	12.2	19.0	24.4	28.0	28.7	26.0	21.5	16.1	11.1
4	6.8	3.0	5.1	13.9	20.8	25.6	29.2	30.4	27.4	22.1	16.4	11.4
Sa	6.6	1.1	-0.6	6.7	15.1	21.5	26.4	29.2	28.6	24.9	19.8	14.2
5	9.2	5.3	3.2	9.1	17.9	23.6	28.1	30.7	29.8	25.3	19.6	13.9
Su	9.1	4.3	-1.0	0.8	10.1	17.5	23.6	27.9	29.7	27.7	23.4	18.0
6	12.3	7.6	4.3	5.2	13.8	21.0	26.0	29.8	30.9	28.1	22.8	17.0
M	11.7	7.0	1.9	-2.0	3.8	13.1	19.5	25.2	28.7	29.2	26.3	21.7
7	16.3	10.7	6.3	4.2	8.8	17.9	23.2	27.8	30.5	29.9	25.5	20.0
Tu	14.5	9.6	5.0	0.0	-1.1	7.3	15.4	21.4	26.1	28.8	28.1	24.7
8	19.9	14.7	9.4	5.7	5.5	12.9	20.5	24.8	28.7	30.1	27.8	22.8
W	17.3	12.2	7.6	3.2	-1.0	1.2	10.3	17.3	22.7	26.5	28.3	26.8
9	23.2	18.3	13.4	8.7	5.9	7.8	15.7	21.6	25.6	28.6	28.9	25.6
Th	20.5	15.2	10.4	6.1	2.1	-0.7	3.8	12.1	18.6	23.3	26.5	27.6
10	25.8	22.1	17.4	12.8	8.6	6.5	9.6	16.5	21.4	25.4	27.6	27.4
F	24.0	19.3	14.1	9.6	5.4	1.8	0.4	5.4	12.7	19.0	23.1	26.3
11	27.1	25.5	21.8	17.4	12.9	9.1	7.2	10.0	15.1	20.0	24.0	26.3
Sa	26.3	23.5	19.2	14.2	9.8	5.7	2.3	1.4	5.6	12.3	18.4	22.7
12	26.1	27.2	26.1	22.5	18.1	13.5	9.6	7.3	8.5	12.4	17.7	22.2
Su	25.2	25.9	24.1	20.3	15.6	11.0	6.7	3.2	1.9	4.9	11.2	17.5
13	22.4	26.2	27.9	27.2	23.7	19.1	14.2	9.8	6.4	5.9	9.1	15.0
M	20.6	24.5	26.2	25.5	22.2	17.6	12.7	8.0	4.1	1.8	3.9	10.0
14	16.9	22.5	26.7	29.0	28.6	24.9	19.9	14.5	9.4	4.9	3.1	5.8
Tu	12.9	19.7	24.5	27.0	27.2	24.2	19.6	14.2	9.2	4.7	1.7	2.9
15	9.5	17.3	23.1	27.6	30.2	29.6	25.5	19.9	14.1	8.6	3.4	0.5
W	3.5	12.2	19.7	24.9	28.0	28.7	25.7	20.8	15.1	9.9	5.1	1.7
16	2.5	10.5	18.6	24.3	28.7	31.1	29.8	25.0	19.0	13.3	7.6	2.2
Th	-1.6	2.8	12.7	20.3	25.6	29.0	29.6	26.4	21.1	15.2	9.9	5.4
17	1.7	3.5	13.0	20.5	26.0	29.9	31.6	29.0	23.6	17.4	12.0	6.6
F	0.9	-2.9	4.0	14.1	21.5	26.6	29.9	29.9	26.1	20.5	14.6	9.4
18	5.4	1.8	6.1	16.0	22.6	27.8	31.1	31.3	27.4	21.5	15.7	10.4
Sa	5.4	-0.8	-2.5	6.5	15.9	23.0	27.7	30.5	29.5	25.1	19.3	13.4
19	8.6	5.0	2.6	9.9	18.9	24.8	29.5	31.7	30.2	25.2	19.2	13.8
Su	8.7	3.8	-2.2	-0.3	9.5	17.8	24.5	28.7	30.5	28.4	23.5	17.8
20	11.9	7.6	4.3	5.0	13.8	21.2	26.7	30.5	31.4	28.2	22.6	16.8
M	11.7	6.8	1.7	-2.3	3.3	12.4	19.9	25.8	29.4	30.0	26.9	21.7
21	16.0	10.3	6.7	4.5	8.5	17.1	23.1	27.9	30.6	29.9	25.7	19.9
Tu	14.5	9.5	4.8	0.0	-0.4	7.4	15.1	21.7	26.8	29.4	28.7	24.9
22	19.7	14.2	9.1	6.2	6.1	12.3	19.4	24.4	28.1	29.4	27.4	22.8
W	17.1	12.1	7.4	3.1	-0.3	3.1	11.1	17.6	23.1	27.2	28.7	26.9
23	22.7	17.7	12.6	8.4	6.4	8.7	15.2	20.7	24.8	27.3	27.3	24.6
Th	19.9	14.6	9.9	5.8	2.0	1.1	6.9	14.1	19.5	23.9	27.0	27.5
24	25.1	20.8	16.1	11.6	8.3	7.5	11.1	16.5	21.0	24.2	25.7	24.9
F	22.0	17.5	12.7	8.4	5.0	2.1	3.4	9.7	16.0	20.5	24.1	26.5
25	26.3	23.6	19.6	15.1	11.3	8.5	8.7	12.1	16.3	20.2	22.9	23.9
Sa	23.0	20.2	16.3	11.9	8.1	5.0	3.1	5.4	11.1	16.8	20.7	24.0
26	26.0	25.5	22.9	19.1	15.0	11.4	8.8	9.0	11.3	14.8	18.6	21.4
Su	22.5	21.9	19.7	16.4	12.3	8.8	5.8	4.4	6.4	11.4	16.6	20.4
27	23.7	25.8	25.3	23.0	19.3	15.3	11.6	8.7	8.1	9.3	12.8	16.9
M	20.2	21.8	21.9	20.3	17.5	13.6	10.0	6.9	5.3	6.3	10.9	16.1
28	20.3	23.7	26.0	25.8	23.5	19.7	15.5	11.3	7.9	6.0	6.9	10.8
Tu	15.8	19.7	22.1	22.7	21.7	19.1	15.1	11.2	7.8	5.4	5.9	10.5
29	16.2	20.5	24.3	26.7	26.4	23.8	19.6	15.1	10.4	6.3	3.7	5.0
W	9.9	15.8	20.2	23.1	24.1	23.2	20.4	16.2	11.9	8.2	5.1	5.6
30	11.1	17.2	21.5	25.4	27.6	26.9	23.4	18.8	13.9	9.1	4.4	1.8
Th	4.1	10.5	16.7	21.5	24.6	25.6	24.2	20.9	16.2	11.8	7.8	4.7
31	6.2	12.9	19.0	23.2	26.9	28.5	26.6	22.2	17.1	12.2	7.3	2.4
F	0.4	4.8	12.2	18.4	23.2	26.2	26.7	24.5	20.5	15.5	11.1	7.1

Time meridian 135° W. 0 is midnight. 12 is noon.
 Heights are referred to mean lower low water (N.O.S. chart datum).

Lat. 61° 14'N Long. 149° 53'W

JUNE

Predicted hourly heights in feet

Day	Hours 0/12	Hours 1/13	Hours 2/14	Hours 3/15	Hours 4/16	Hours 5/17	Hours 6/18	Hours 7/19	Hours 8/20	Hours 9/21	Hours 10/22	Hours 11/23
1	4.6	8.0	15.8	21.3	25.4	28.5	28.9	25.6	20.4	15.0	10.3	5.4
Sa	0.5	0.0	6.7	14.3	20.5	25.1	27.6	27.1	24.0	19.3	14.2	9.8
2	6.1	5.0	11.0	18.8	23.7	27.7	29.8	28.6	24.0	18.3	13.0	8.5
Su	3.5	-1.2	0.8	9.3	16.5	22.6	26.8	28.6	27.0	23.1	17.9	12.7
3	8.4	5.3	6.4	14.6	21.4	26.0	29.5	30.4	27.5	22.1	16.3	11.2
M	6.7	1.5	-2.4	2.9	11.8	18.5	24.4	28.0	28.9	26.3	21.8	16.5
4	11.2	7.1	4.8	8.9	17.9	23.3	27.9	30.6	30.1	25.8	20.1	14.4
Tu	9.5	4.9	-0.5	-2.3	5.8	14.0	20.5	25.8	28.8	28.5	25.3	20.4
5	15.1	9.8	6.1	5.1	12.0	20.2	24.9	29.1	30.8	28.8	23.8	18.2
W	12.7	7.8	3.1	-2.0	-0.7	8.7	16.0	22.3	26.8	29.0	27.7	24.0
6	19.0	13.7	8.7	5.4	6.4	14.8	21.5	26.1	29.5	30.2	27.0	21.8
Th	16.2	11.0	6.0	1.4	-2.5	1.9	11.1	18.1	23.6	27.5	28.9	26.8
7	22.7	17.7	12.5	7.9	5.1	8.0	16.2	22.0	26.5	29.1	29.1	25.3
F	20.1	14.6	9.5	4.6	0.3	-1.8	4.4	13.0	19.8	24.6	28.0	28.6
8	26.2	21.7	16.7	11.6	7.4	5.1	8.9	16.0	21.7	26.0	28.3	27.8
Sa	24.1	18.9	13.6	8.5	3.9	0.0	-0.4	6.2	14.4	20.8	25.1	28.3
9	28.5	25.9	21.2	16.2	11.2	7.1	5.1	8.4	14.5	20.5	24.8	27.2
Su	26.8	23.7	18.7	13.5	8.4	4.0	0.6	1.0	7.1	14.9	21.0	25.4
10	28.4	28.7	26.0	21.3	16.2	11.2	6.9	4.5	6.7	12.1	18.5	23.2
M	26.1	26.3	23.9	19.5	14.5	9.4	5.0	1.8	2.0	7.3	14.8	20.9
11	25.5	28.5	29.1	26.5	21.8	16.6	11.4	6.7	3.4	4.2	9.3	16.2
Tu	21.7	25.1	26.2	24.8	21.0	16.3	11.0	6.6	3.1	2.7	7.1	14.4
12	20.7	25.4	28.7	29.6	27.1	22.3	16.9	11.5	6.3	2.1	1.8	6.6
W	14.4	20.5	24.5	26.5	26.0	22.8	18.1	12.6	8.1	4.3	3.2	6.8
13	14.4	20.8	25.5	29.0	30.0	27.3	22.4	16.7	11.3	5.8	1.1	-0.4
Th	4.9	13.6	20.0	24.4	27.1	27.2	24.3	19.3	13.9	9.2	5.4	3.6
14	7.0	15.2	21.3	26.0	29.3	30.0	26.9	21.7	16.0	10.7	5.2	0.2
F	-1.9	4.8	13.8	20.3	24.7	27.8	28.1	24.9	19.7	14.3	9.6	6.1
15	3.9	8.4	16.8	22.4	27.0	29.8	29.6	25.7	20.2	14.8	9.7	4.7
Sa	-0.8	-2.1	6.2	15.0	21.3	25.6	28.6	28.2	24.6	19.2	13.8	9.5
16	6.3	4.4	10.8	18.7	24.1	28.1	30.1	28.7	24.0	18.4	13.3	8.5
Su	3.9	-1.8	-0.6	8.6	16.8	22.8	26.7	29.1	27.7	23.4	18.0	12.5
17	8.9	5.8	5.8	13.8	20.7	25.8	29.2	30.0	27.2	21.9	16.4	11.6
M	7.0	2.4	-2.2	2.4	11.3	19.0	24.5	27.9	29.1	26.5	21.7	16.3
18	10.9	8.0	5.4	8.5	16.7	22.6	27.3	29.7	29.3	25.3	19.6	14.4
Tu	9.6	5.3	0.6	-0.9	6.1	14.2	21.2	26.0	28.7	28.4	24.8	19.8
19	14.3	9.4	6.8	5.9	11.8	19.0	24.3	28.1	29.5	27.7	22.9	17.2
W	12.3	7.5	3.4	-0.5	2.0	10.1	17.1	23.2	27.3	28.8	27.0	22.7
20	17.7	12.3	8.2	6.0	7.8	14.8	20.8	25.3	28.1	28.4	25.5	20.3
Th	14.8	10.0	5.6	1.6	0.1	6.1	13.7	19.8	24.8	27.9	28.1	25.1
21	20.5	15.5	10.6	7.1	6.0	10.4	17.1	22.0	25.7	27.4	26.6	22.9
F	17.7	12.4	7.8	4.0	0.6	2.4	10.0	16.9	21.9	25.9	28.0	26.8
22	23.1	18.3	13.5	9.3	6.4	7.1	12.7	18.3	22.6	25.3	26.2	24.4
Sa	20.5	15.5	10.4	6.2	2.9	1.1	5.5	13.2	19.3	23.3	26.5	27.5
23	25.4	21.3	16.5	12.1	8.4	6.1	8.3	13.6	18.4	22.2	24.5	24.7
Su	22.5	18.7	14.0	9.2	5.6	2.7	2.8	8.2	15.3	20.7	24.1	26.6
24	26.8	24.3	20.0	15.3	11.3	7.8	6.1	8.8	13.1	17.7	21.3	23.4
M	23.4	21.2	17.9	13.7	9.3	6.0	3.6	4.9	9.9	16.3	21.2	24.3
25	26.4	26.2	23.5	19.4	14.8	11.0	7.3	6.0	8.0	11.7	16.3	20.1
Tu	22.4	22.6	20.9	18.2	14.4	10.4	7.0	5.3	6.5	10.6	16.6	21.1
26	24.1	26.1	25.9	23.3	19.1	14.7	10.8	6.9	5.3	6.4	10.1	14.8
W	19.1	21.8	22.5	21.4	19.3	15.8	11.9	8.5	6.8	7.2	10.9	16.7
27	21.0	24.0	26.1	25.9	23.2	18.9	14.5	10.3	6.3	3.9	4.6	8.7
Th	13.9	18.7	21.9	23.1	22.6	20.7	17.3	13.1	9.7	7.6	7.4	11.2
28	17.1	21.3	24.4	26.5	26.2	23.1	18.5	13.9	9.5	5.2	2.3	3.2
F	8.0	13.9	19.0	22.7	24.3	24.1	21.9	18.2	13.7	10.2	7.6	7.5
29	12.1	18.1	22.2	25.4	27.4	26.4	22.6	17.6	12.9	8.5	3.8	0.7
Sa	2.4	8.4	14.7	20.2	24.0	25.8	25.2	22.5	18.1	13.6	9.7	7.0
30	7.8	13.6	19.7	23.7	27.0	28.3	26.4	21.7	16.3	11.5	7.2	2.3
Su	-0.6	2.4	9.7	16.2	22.0	25.6	27.1	25.8	22.2	17.4	12.7	8.7

Time meridian 135° W. 0 is midnight. 12 is noon.
 Heights are referred to mean lower low water (N.O.S. chart datum).

JULY

Predicted hourly heights in feet

Day	Hours 0/12	Hours 1/13	Hours 2/14	Hours 3/15	Hours 4/16	Hours 5/17	Hours 6/18	Hours 7/19	Hours 8/20	Hours 9/21	Hours 10/22	Hours 11/23
1	6.4	8.5	15.8	21.5	25.7	28.7	29.2	26.0	20.6	14.9	10.2	5.7
M	0.8	-1.8	3.4	11.4	18.1	23.8	27.2	28.1	25.7	21.4	16.3	11.4
2	7.5	5.7	9.8	18.1	23.3	27.7	30.1	29.5	25.2	19.4	13.7	9.0
Tu	4.3	-0.9	-2.2	5.3	13.3	20.2	25.5	28.4	28.4	25.2	20.3	15.1
3	9.9	6.3	5.2	11.8	20.0	25.0	29.3	31.0	29.2	24.1	18.1	12.5
W	7.6	2.9	-2.6	-1.6	7.7	15.4	22.1	26.8	29.3	28.1	24.3	19.1
4	13.7	8.7	5.1	5.4	14.0	21.4	26.5	30.2	31.2	28.3	22.8	16.8
Th	11.2	6.2	1.2	-3.8	0.4	10.3	17.7	23.9	28.1	29.7	27.5	23.1
5	17.8	12.3	7.5	3.9	6.2	15.7	22.4	27.4	30.5	30.8	27.0	21.3
F	15.4	9.7	4.7	-0.5	-3.8	3.3	12.9	20.0	25.4	29.2	29.6	26.7
6	21.8	16.5	10.9	6.3	2.9	7.3	16.4	22.9	27.6	30.3	29.9	25.6
Sa	19.9	14.0	8.2	3.3	-1.7	-2.4	6.2	15.4	22.1	26.8	30.0	29.4
7	25.9	20.6	15.1	9.7	5.1	2.5	8.0	16.3	22.8	27.1	29.7	28.7
Su	24.4	18.7	12.9	7.1	2.4	-1.8	0.0	8.7	17.4	23.5	27.9	30.4
8	29.2	25.1	19.6	14.1	8.9	4.1	2.4	7.6	15.3	21.8	26.1	28.5
M	27.5	23.6	18.1	12.5	6.9	2.5	-0.5	2.4	10.5	18.7	24.2	28.3
9	30.3	28.9	24.5	19.0	13.6	8.4	3.6	2.1	6.4	13.6	20.1	24.6
Tu	27.0	26.5	23.4	18.5	13.2	7.8	3.7	1.6	4.3	11.5	19.0	24.2
10	28.1	29.8	28.5	24.2	18.9	13.5	8.4	3.6	1.6	4.7	11.3	18.1
W	22.8	25.5	26.0	23.8	19.8	14.7	9.5	5.8	3.7	5.6	11.6	18.6
11	23.6	27.3	29.3	28.2	24.1	19.1	13.8	8.6	3.6	0.9	2.7	9.0
Th	16.2	21.2	24.4	25.9	24.9	21.5	16.5	11.6	8.0	5.5	6.2	11.3
12	18.2	22.9	26.6	28.7	27.9	24.0	19.1	13.9	8.8	3.7	0.3	0.9
F	7.6	15.0	20.2	23.9	26.4	26.1	23.0	18.0	13.3	9.4	6.6	6.3
13	11.2	18.1	22.6	26.4	28.4	27.5	23.6	18.7	13.7	8.7	3.7	-0.4
Sa	-0.1	7.4	14.9	20.3	24.2	27.2	27.1	23.8	18.7	13.9	10.0	7.0
14	6.2	12.0	18.6	23.1	26.7	28.4	27.0	22.8	17.7	12.9	8.1	3.5
Su	-1.3	0.1	8.5	16.0	21.3	25.2	28.1	27.3	23.5	18.3	13.3	9.8
15	6.6	6.5	13.6	19.7	24.3	27.4	28.6	26.1	21.4	16.4	11.6	7.2
M	2.7	-1.9	2.0	10.7	18.0	23.0	26.6	28.5	26.6	22.2	16.9	11.9
16	9.0	5.8	8.0	15.8	21.5	25.9	28.4	28.4	24.8	19.6	14.7	10.0
Tu	6.0	1.1	-1.3	5.2	13.5	20.4	24.9	27.9	28.2	25.1	20.3	14.7
17	10.3	7.6	5.5	10.6	18.1	23.4	27.3	29.0	27.7	23.1	17.6	12.7
W	8.1	4.3	-0.4	1.0	9.0	16.6	22.9	26.7	28.6	27.1	23.0	18.0
18	12.4	8.6	6.0	6.6	13.7	20.3	25.2	28.3	29.1	26.3	21.0	15.5
Th	10.6	6.3	2.1	-0.6	4.9	13.0	19.7	25.0	28.1	28.3	25.3	20.7
19	15.5	10.3	6.9	5.1	9.1	16.5	22.2	26.3	28.6	28.1	24.2	18.6
F	13.1	8.3	4.3	0.3	1.4	9.4	16.7	22.4	26.7	28.8	27.2	23.1
20	18.1	13.0	8.5	5.2	5.6	12.0	18.7	23.6	26.9	28.2	26.3	21.7
Sa	16.1	10.7	6.2	2.4	0.0	5.1	13.6	20.0	24.6	28.0	28.5	25.5
21	20.7	15.6	10.8	6.8	4.2	7.4	14.5	20.3	24.4	26.9	27.0	24.1
Su	19.3	13.8	8.5	4.6	1.3	1.9	9.4	17.2	22.6	26.2	28.4	27.4
22	23.5	18.4	13.3	9.1	5.4	4.2	9.4	15.9	21.0	24.5	26.3	25.3
M	21.9	17.2	12.0	7.2	3.8	1.7	5.3	12.9	19.7	24.3	27.0	28.0
23	26.0	21.6	16.3	11.6	7.9	4.4	4.9	10.6	16.2	20.9	24.0	25.2
Tu	23.6	20.2	16.0	11.2	7.0	4.1	3.8	8.6	15.2	21.3	24.9	27.0
24	27.0	24.5	19.9	14.9	10.7	7.1	4.0	5.7	10.6	15.7	20.0	23.0
W	23.9	22.3	19.5	15.9	11.7	7.9	5.5	6.5	10.9	16.5	21.7	24.7
25	26.3	26.0	23.3	18.9	14.2	10.4	6.7	4.1	5.6	9.7	14.6	18.7
Th	21.8	22.9	21.9	19.8	16.8	13.1	9.5	7.5	8.6	11.9	16.9	21.5
26	24.2	25.6	25.3	22.8	18.4	14.0	10.3	6.4	3.9	4.7	8.4	13.2
F	17.5	21.1	22.7	22.5	21.0	18.4	14.7	11.1	9.1	9.5	12.0	16.9
27	21.1	23.8	25.4	25.3	22.7	18.4	14.0	10.1	6.1	3.2	3.3	7.1
Sa	12.1	16.9	21.2	23.4	23.8	22.6	19.8	15.9	12.1	9.7	9.2	11.8
28	16.9	21.1	24.1	26.1	26.0	23.1	18.4	13.8	9.6	5.5	2.0	1.8
Su	6.0	11.7	17.3	22.2	24.7	25.5	24.0	20.7	16.3	12.1	9.0	8.3
29	11.5	17.4	21.8	25.4	27.5	27.1	23.5	18.3	13.3	9.0	4.5	0.6
M	0.4	5.6	12.3	18.6	23.7	26.4	27.1	24.8	20.7	15.8	11.2	7.7
30	7.1	11.6	18.4	23.1	27.2	29.1	28.1	23.7	18.0	12.6	8.1	3.4
Tu	-0.8	-0.7	6.3	13.7	20.6	25.4	28.1	28.0	24.8	19.9	14.7	9.8
31	6.3	6.0	12.3	19.8	24.9	29.0	30.6	28.8	23.5	17.4	11.8	7.2
W	2.3	-2.5	-0.8	8.0	15.8	22.6	27.1	29.5	28.2	24.2	18.8	13.3

Time meridian 135° W. 0 is midnight. 12 is noon.
 Heights are referred to mean lower low water (N.O.S. chart datum).

Lat. 61° 14'N Long. 149° 53'W

AUGUST

Predicted hourly heights in feet

Day	Hours 0/12	Hours 1/13	Hours 2/14	Hours 3/15	Hours 4/16	Hours 5/17	Hours 6/18	Hours 7/19	Hours 8/20	Hours 9/21	Hours 10/22	Hours 11/23
1 Th	8.3 6.1	4.8 0.9	5.2 -4.0	13.7 0.5	21.3 10.5	26.6 18.2	30.5 24.6	31.7 28.7	28.8 30.2	23.0 27.9	16.6 23.1	11.0 17.5
2 F	11.8 9.9	7.0 4.9	2.9 -0.8	5.2 -4.6	15.4 3.2	22.7 13.4	28.0 20.8	31.5 26.5	32.1 30.3	28.1 30.4	22.1 27.1	15.6 21.8
3 Sa	16.0 14.4	10.3 8.5	5.5 3.4	1.2 -2.6	6.2 -3.4	16.7 6.8	23.7 16.4	28.8 23.2	32.1 28.3	31.8 31.4	27.0 30.1	20.8 25.9
4 Su	20.2 19.4	14.4 13.0	8.9 6.9	3.6 2.0	0.2 -3.3	7.5 -0.4	17.6 10.4	24.4 19.2	29.1 25.3	32.1 30.0	30.7 31.9	25.7 29.5
5 M	24.5 24.3	18.6 18.1	12.8 11.8	7.4 5.8	1.7 1.1	0.3 -2.2	8.6 3.3	17.9 13.5	24.4 21.5	28.8 26.8	31.3 30.9	29.3 31.6
6 Tu	28.5 27.7	23.0 23.1	17.1 17.3	11.4 11.2	6.1 5.7	0.7 1.6	1.1 0.5	9.0 6.6	17.5 15.6	23.7 22.7	27.9 27.4	29.7 30.7
7 W	30.6 27.7	27.2 26.4	21.6 22.4	16.1 17.4	10.7 11.6	5.4 6.8	0.7 3.6	1.9 3.7	8.6 9.0	16.3 16.5	22.2 22.7	26.1 26.8
8 Th	29.4 24.0	29.3 25.9	25.9 25.5	20.8 22.7	15.7 18.4	10.6 13.2	5.5 9.0	1.5 6.4	2.3 6.3	7.6 10.0	14.5 16.2	20.2 21.8
9 F	25.4 18.1	27.8 22.1	27.9 24.6	25.0 25.5	20.5 23.9	15.8 20.2	11.0 15.3	6.2 11.5	2.4 8.9	2.3 7.7	6.0 9.8	12.4 15.2
10 Sa	20.4 10.8	23.7 16.7	26.4 21.0	26.9 24.3	24.7 26.2	20.7 25.3	16.2 21.8	11.6 17.1	6.9 13.3	3.0 10.1	1.6 8.0	4.2 8.8
11 Su	14.2 3.1	19.2 10.3	22.8 16.5	25.7 21.2	26.6 24.9	24.7 27.4	20.9 26.5	16.4 22.7	11.8 17.9	7.2 13.7	3.2 10.2	0.5 7.3
12 M	7.9 -0.6	14.0 3.5	19.1 11.2	23.0 17.7	25.9 22.3	26.9 26.2	24.7 28.3	20.6 26.7	16.0 22.4	11.4 17.3	6.9 12.8	2.6 9.3
13 Tu	6.0 1.3	8.0 -0.8	15.0 5.5	20.1 13.4	24.2 19.8	26.9 24.2	27.3 27.7	24.3 28.5	19.7 25.7	15.0 20.9	10.3 15.5	6.1 11.1
14 W	7.7 4.7	5.0 -0.2	9.6 0.8	16.8 8.9	22.0 16.5	25.9 22.4	28.2 26.3	27.4 28.7	23.3 27.6	18.2 23.8	13.4 18.6	8.8 13.0
15 Th	9.2 7.1	5.7 2.6	5.3 -0.8	12.3 4.3	19.2 12.8	24.2 19.8	27.7 24.9	29.1 28.2	26.7 28.7	21.6 25.9	16.3 21.3	11.4 15.8
16 F	10.6 9.3	7.0 5.1	4.2 0.5	7.4 0.8	15.5 8.9	21.7 16.8	26.3 22.8	29.1 27.2	29.0 29.3	25.2 27.8	19.6 23.6	14.1 18.4
17 Sa	13.0 11.7	8.4 7.1	4.8 2.9	4.1 -0.3	10.7 4.6	18.4 13.7	23.9 20.4	27.8 25.5	29.7 28.9	27.9 29.3	23.1 26.0	17.3 20.9
18 Su	15.6 14.8	10.5 9.3	6.2 5.1	3.0 1.2	5.9 1.5	14.1 9.7	20.8 17.9	25.5 23.5	28.6 27.6	29.2 29.7	26.0 28.1	20.7 23.5
19 M	18.0 18.1	12.8 12.4	8.3 7.2	4.1 3.5	2.7 1.1	9.0 5.6	16.9 14.5	22.6 21.3	26.5 25.9	28.7 28.8	27.6 29.2	23.5 26.0
20 Tu	20.8 21.1	15.2 15.9	10.4 10.5	6.4 6.0	2.5 3.0	4.0 3.3	12.0 10.5	18.7 18.1	23.6 23.7	26.8 27.3	27.8 28.9	25.4 27.6
21 W	23.5 23.2	18.0 19.1	12.8 14.5	8.6 9.6	4.9 5.8	2.0 3.9	6.3 7.1	13.9 14.4	19.6 20.4	23.8 25.0	26.3 27.5	26.1 28.0
22 Th	25.5 24.4	21.1 21.7	15.8 18.2	11.1 14.1	7.6 9.9	3.9 6.8	2.8 6.2	8.2 10.8	14.5 16.6	19.6 21.5	23.1 25.1	25.1 26.8
23 F	26.4 23.7	23.6 23.2	19.3 21.3	14.4 18.4	10.3 14.9	7.2 11.3	3.8 8.5	3.8 8.8	8.7 12.8	14.2 17.1	18.6 21.4	21.8 24.2
24 Sa	25.6 20.5	25.1 22.9	22.6 23.1	18.6 21.9	14.0 19.6	10.4 16.5	7.2 13.0	4.0 10.2	4.2 10.3	8.0 12.8	13.0 16.5	17.1 20.6
25 Su	23.2 15.5	24.9 19.8	24.7 23.0	22.7 24.0	18.9 23.6	14.5 21.4	10.8 18.1	7.4 14.2	4.1 11.1	3.6 10.1	6.5 11.5	11.3 15.3
26 M	19.6 9.7	22.7 14.9	25.1 20.3	25.6 24.1	23.9 25.7	20.0 25.5	15.3 23.0	11.2 19.1	7.4 14.6	3.6 10.8	2.2 8.7	4.7 9.7
27 Tu	14.1 2.8	19.2 9.0	23.2 15.4	26.4 21.7	27.3 25.7	25.6 27.7	21.2 27.2	16.0 23.9	11.3 19.1	7.0 14.0	2.7 9.4	0.5 6.7
28 W	7.7 -1.3	13.4 1.7	19.7 9.7	24.6 17.1	28.3 23.6	29.4 27.6	27.2 29.5	22.0 28.0	16.2 23.8	11.0 18.2	6.4 12.7	1.6 7.7
29 Th	4.7 0.5	5.9 -3.0	13.8 2.2	21.0 11.8	26.5 19.5	30.2 25.7	31.2 29.4	28.2 30.7	22.3 28.0	16.0 22.8	10.5 16.9	5.6 11.1
30 F	6.2 4.7	2.5 -1.0	5.1 -3.8	15.1 4.6	22.6 14.7	28.3 22.1	31.9 27.7	32.4 31.2	28.3 31.0	22.0 27.2	15.3 21.4	9.8 15.3
31 Sa	9.6 8.7	4.5 3.6	0.3 -2.6	5.7 -2.7	16.7 8.3	24.1 17.8	29.6 24.6	33.0 29.8	32.7 32.4	27.7 30.6	21.1 25.8	14.5 19.6

Time meridian 135° W. 0 is midnight. 12 is noon.
 Heights are referred to mean lower low water (N.O.S. chart datum).

ANCHORAGE, ALASKA, 2019
 Lat. 61° 14'N Long. 149° 53'W

SEPTEMBER

Predicted hourly heights in feet

Day	Hours 0/12	Hours 1/13	Hours 2/14	Hours 3/15	Hours 4/16	Hours 5/17	Hours 6/18	Hours 7/19	Hours 8/20	Hours 9/21	Hours 10/22	Hours 11/23
1	13.6	8.1	2.4	-1.2	7.3	18.2	25.2	30.4	33.6	32.0	26.5	19.8
Su	13.3	7.4	2.2	-3.6	0.4	12.4	20.9	27.0	31.6	32.9	29.6	24.0
2	17.8	11.9	6.5	0.0	-1.1	9.4	19.3	26.0	30.8	33.2	30.7	25.1
M	18.4	11.8	6.0	0.9	-2.7	4.9	16.1	23.5	29.0	32.8	32.3	28.0
3	21.9	15.9	10.2	4.6	-1.6	0.5	11.1	20.0	26.1	30.6	32.0	29.0
Tu	23.4	17.0	10.5	5.1	0.7	0.3	9.3	18.9	25.4	30.1	32.7	30.9
4	26.0	19.9	14.2	8.7	3.1	-1.6	2.7	12.2	20.0	25.6	29.4	30.1
W	27.2	22.0	16.1	9.9	5.3	2.2	4.3	12.6	20.5	26.1	29.8	31.2
5	28.9	23.9	18.1	13.0	7.8	2.5	-0.1	4.6	12.4	19.3	24.2	27.4
Th	28.0	25.7	21.2	16.0	10.4	6.8	5.1	7.8	14.2	20.8	25.4	28.2
6	28.9	26.7	22.1	17.2	12.5	7.8	3.3	1.9	5.7	11.8	17.7	22.2
F	25.2	26.2	24.8	21.5	16.9	12.2	9.3	8.2	9.8	14.3	19.6	23.5
7	25.8	26.6	25.0	21.3	17.1	12.9	8.5	4.7	3.4	5.7	10.3	15.8
Sa	20.2	23.4	25.2	25.0	22.6	18.6	14.4	11.8	10.1	10.0	12.9	17.8
8	21.3	23.6	25.0	24.2	21.4	17.7	13.7	9.5	5.8	4.0	4.6	8.5
Su	14.2	19.0	22.7	25.2	26.1	24.2	20.3	16.2	13.1	10.3	8.9	11.0
9	16.0	19.7	22.6	24.6	24.6	22.1	18.4	14.4	10.2	6.1	3.5	3.1
M	7.4	13.7	19.0	23.1	26.2	27.4	25.4	21.2	16.8	12.8	9.2	6.9
10	9.5	15.3	19.4	23.0	25.4	25.5	22.8	18.8	14.4	9.9	5.6	2.2
Tu	1.9	7.9	14.6	20.3	24.4	27.7	28.3	25.5	20.7	15.7	11.2	7.3
11	5.1	9.6	16.0	20.6	24.5	26.9	26.4	22.8	18.3	13.7	8.9	4.4
W	0.6	2.4	10.0	16.9	22.4	26.4	28.9	28.1	24.3	18.9	13.5	9.1
12	5.0	4.5	11.3	17.9	22.9	26.6	28.3	26.5	22.0	17.0	12.2	7.4
Th	2.6	-0.2	5.1	13.3	19.9	25.0	28.4	29.2	26.7	21.9	16.2	10.9
13	6.8	3.1	6.0	14.2	20.5	25.4	28.6	29.0	25.6	20.4	15.1	10.2
F	5.6	0.7	1.1	9.4	17.1	23.1	27.5	29.7	28.4	24.3	18.9	13.2
14	8.4	4.3	2.7	9.2	17.4	23.3	27.6	30.0	28.6	24.0	18.3	12.8
Sa	8.2	3.5	0.0	4.9	14.1	20.9	26.1	29.6	29.9	26.5	21.3	15.8
15	10.5	6.0	2.1	4.3	13.0	20.4	25.7	29.3	30.2	27.2	21.9	15.9
Su	10.5	6.2	1.7	1.5	10.0	18.5	24.2	28.5	30.6	28.7	23.9	18.2
16	12.8	8.1	3.5	1.4	7.7	16.5	22.8	27.4	30.1	29.3	25.1	19.4
M	13.4	8.2	4.3	1.3	5.7	15.2	22.1	26.9	30.1	30.3	26.5	20.9
17	15.2	10.2	5.8	1.4	2.8	11.6	19.1	24.7	28.4	29.7	27.3	22.6
Tu	17.0	11.2	6.5	3.2	3.3	11.3	19.4	24.9	28.7	30.4	28.4	23.5
18	17.7	12.4	8.0	3.7	0.6	6.0	14.9	21.0	25.7	28.4	28.3	25.0
W	20.2	14.9	9.5	5.5	3.6	7.6	16.3	22.3	26.8	29.3	29.2	25.6
19	20.3	14.7	10.1	6.3	2.2	1.7	9.5	17.0	22.2	25.9	27.6	26.2
Th	22.8	18.3	13.4	8.7	5.6	5.8	12.5	19.5	24.0	27.4	28.7	27.0
20	22.6	17.4	12.4	8.5	5.2	1.8	4.0	11.9	17.9	22.3	25.2	26.1
F	24.4	21.2	17.2	13.0	9.1	6.9	9.0	15.8	20.8	24.5	26.8	27.2
21	24.6	20.4	15.6	11.1	7.9	4.8	2.4	6.0	12.5	17.8	21.4	24.0
Sa	24.8	23.4	20.8	17.3	13.7	10.3	8.7	11.5	16.7	20.6	23.7	25.5
22	25.6	23.2	19.6	15.1	11.1	8.1	5.0	3.3	6.5	11.8	16.6	19.9
Su	22.9	24.2	23.5	21.5	18.5	15.1	11.8	10.2	12.1	15.5	19.2	22.2
23	24.3	24.9	23.3	20.2	15.9	12.0	8.7	5.4	3.6	5.5	10.0	14.7
M	18.7	22.6	24.6	24.8	23.3	20.2	16.5	12.7	10.4	10.6	13.1	17.1
24	20.8	23.8	25.4	24.7	22.0	17.6	13.3	9.4	5.6	2.9	3.6	7.8
Tu	13.1	18.4	23.3	26.0	26.9	25.3	21.8	17.3	12.7	9.1	8.0	10.2
25	15.3	20.3	24.5	27.0	27.0	24.3	19.4	14.4	9.8	5.4	1.7	1.5
W	6.0	12.8	19.3	24.8	27.9	29.0	26.8	22.4	17.0	11.7	7.2	5.2
26	7.6	14.4	20.8	26.0	29.1	29.5	26.2	20.7	14.9	9.8	4.8	0.5
Th	-0.3	5.6	14.0	21.1	26.7	29.9	30.6	27.4	21.9	15.9	10.2	5.2
27	2.5	5.8	14.8	22.2	27.8	31.1	31.3	27.2	21.1	14.8	9.4	4.1
F	-0.7	-1.3	7.1	16.4	23.5	28.7	31.7	31.2	26.8	20.6	14.4	8.6
28	3.4	0.0	5.7	16.3	23.8	29.4	32.7	32.2	27.3	20.7	14.2	8.7
Sa	3.4	-1.9	-0.5	10.4	19.3	26.0	30.8	33.0	30.7	25.4	18.8	12.7
29	7.2	1.4	-1.6	7.1	18.0	25.3	30.7	33.7	32.0	26.6	19.8	13.3
Su	7.7	2.5	-2.6	2.4	14.4	22.3	28.4	32.6	33.3	29.5	23.4	16.9
30	11.1	5.6	-1.0	-1.7	9.5	19.5	26.5	31.5	33.8	31.1	25.3	18.5
M	12.1	6.6	1.4	-1.8	7.0	18.1	25.0	30.5	33.8	32.5	27.6	21.1

Time meridian 135° W. 0 is midnight. 12 is noon.
 Heights are referred to mean lower low water (N.O.S. chart datum).

Lat. 61° 14'N Long. 149° 53'W

OCTOBER

Predicted hourly heights in feet

Day	Hours 0/12	Hours 1/13	Hours 2/14	Hours 3/15	Hours 4/16	Hours 5/17	Hours 6/18	Hours 7/19	Hours 8/20	Hours 9/21	Hours 10/22	Hours 11/23
1 Tu	15.0 17.1	9.3 10.6	3.7 5.6	-2.9 0.8	0.2 1.1	11.9 11.8	20.8 21.0	27.3 27.2	31.8 31.9	33.1 33.8	29.7 30.8	23.7 25.2
2 W	18.8 22.0	13.1 15.7	7.6 9.4	1.6 5.1	-3.1 1.7	3.2 5.4	13.9 15.5	21.7 23.1	27.6 28.4	31.4 32.0	31.6 32.3	27.9 28.4
3 Th	22.5 26.0	16.6 20.5	11.3 14.6	6.1 9.1	0.4 5.6	-1.3 4.3	6.4 9.6	15.3 17.8	22.2 23.9	27.1 28.2	30.1 30.5	29.6 29.7
4 F	25.7 27.6	20.0 24.4	14.8 19.7	10.0 14.4	5.2 9.8	0.7 7.4	1.7 7.6	8.8 12.3	16.0 18.4	21.8 23.5	26.0 26.6	28.2 27.9
5 Sa	26.8 26.3	23.2 26.1	18.3 23.6	13.9 19.7	9.6 15.1	5.3 11.5	2.4 9.8	4.4 10.2	10.0 13.1	15.7 17.5	20.6 21.7	24.3 24.1
6 Su	25.1 22.7	24.4 24.9	21.6 25.3	17.7 23.9	13.8 20.7	10.0 16.6	6.4 13.4	4.3 11.6	6.0 10.8	9.9 12.0	14.6 15.5	19.1 19.4
7 M	21.7 17.9	23.1 21.9	23.2 24.6	21.4 25.7	18.2 25.0	14.7 22.0	11.1 18.0	7.6 14.6	5.5 11.9	6.1 9.7	8.8 9.8	13.1 13.2
8 Tu	17.4 12.4	20.2 17.6	22.6 22.1	23.4 25.2	22.4 27.0	19.4 26.2	15.8 23.0	12.0 18.6	8.2 14.5	5.4 10.6	5.0 7.5	7.3 7.2
9 W	11.7 6.6	16.6 12.9	20.3 18.6	23.4 23.4	24.8 26.7	23.9 28.3	20.6 26.9	16.6 22.9	12.3 17.8	7.9 12.9	4.4 8.3	3.4 4.8
10 Th	5.6 2.4	11.8 7.8	17.3 14.8	21.8 20.7	25.2 25.4	26.6 28.4	24.9 29.0	21.0 26.3	16.4 21.4	11.8 15.8	6.8 10.5	2.9 5.8
11 F	2.6 1.4	5.9 3.1	13.5 10.9	19.3 17.7	24.1 23.4	27.3 27.7	27.9 29.7	25.1 28.4	20.4 24.3	15.4 18.8	10.5 13.2	5.3 8.0
12 Sa	3.3 3.7	1.8 0.9	8.2 6.2	16.2 14.9	22.0 21.1	26.5 26.2	29.0 29.7	28.1 29.9	24.2 26.7	18.9 21.5	13.7 15.8	8.8 10.5
13 Su	5.5 7.0	1.2 2.3	3.1 2.4	11.7 10.9	19.2 19.0	24.7 24.4	28.6 28.8	29.9 30.9	27.3 28.9	22.5 24.1	16.8 18.3	11.6 12.9
14 M	7.9 9.5	3.0 5.3	0.3 1.9	6.3 6.3	15.3 15.9	22.0 22.5	27.0 27.4	30.0 30.7	29.6 30.7	25.8 26.7	20.3 21.1	14.4 15.3
15 Tu	10.2 12.2	5.5 7.6	0.7 4.0	1.5 3.6	10.3 11.6	18.3 20.0	24.4 25.5	28.6 29.5	30.4 31.3	28.4 29.1	23.7 23.9	18.0 17.9
16 W	12.5 15.8	7.9 10.2	3.1 6.2	-0.5 3.9	4.7 7.6	14.0 16.7	20.7 22.9	26.1 27.6	29.3 30.4	29.6 30.3	26.5 26.3	21.5 20.7
17 Th	15.0 19.3	10.1 14.0	5.8 8.9	1.2 5.6	0.4 5.5	8.7 12.7	16.7 20.4	22.6 24.9	27.0 28.7	29.1 30.1	28.0 27.9	24.3 23.0
18 F	17.5 22.3	12.3 17.5	8.1 12.7	4.2 8.4	0.3 6.1	3.2 8.7	12.3 17.0	18.7 22.3	23.7 26.0	27.0 28.6	28.0 28.5	26.0 25.0
19 Sa	20.0 24.4	14.8 20.8	10.3 16.5	6.7 12.3	3.1 8.7	0.9 7.5	6.4 12.0	14.4 19.0	19.8 22.8	23.9 25.9	26.4 27.5	26.6 26.5
20 Su	22.6 25.5	18.0 23.6	13.2 20.3	9.3 16.5	6.1 12.7	2.9 9.6	2.4 9.1	8.4 13.6	15.0 18.6	19.9 22.1	23.3 24.8	25.5 26.0
21 M	25.0 25.0	21.6 25.3	17.4 24.0	12.9 21.0	9.4 17.4	6.3 13.7	3.3 10.5	3.6 9.8	8.7 12.8	14.5 16.5	19.1 20.3	22.4 23.1
22 Tu	25.0 21.8	24.6 25.1	22.1 26.1	18.3 25.4	14.0 22.5	10.3 18.7	6.9 14.6	3.9 10.8	3.8 9.0	7.5 10.1	13.0 13.4	17.7 18.0
23 W	21.8 16.8	24.8 22.0	25.4 26.0	24.0 27.7	20.4 27.3	15.9 24.2	11.7 19.7	7.7 14.8	4.2 10.3	2.8 7.0	5.7 6.7	11.2 10.2
24 Th	16.1 10.1	21.4 17.1	25.5 23.1	27.2 27.5	26.4 29.7	22.8 29.1	17.9 25.3	12.9 19.9	8.3 14.3	3.9 8.9	1.6 4.6	3.8 3.4
25 F	7.5 2.6	15.3 10.6	21.9 18.5	26.8 24.8	29.2 29.2	28.8 31.5	24.8 30.1	19.3 25.4	13.6 19.1	8.5 13.1	3.4 7.3	0.5 2.5
26 Sa	0.6 -0.3	6.3 2.8	15.9 12.8	23.1 20.7	28.3 26.9	31.0 31.0	30.3 32.7	25.8 30.0	19.8 24.3	13.7 17.7	8.2 11.7	3.1 5.9
27 Su	0.5 2.8	-1.4 -0.7	6.9 5.1	17.2 16.0	24.5 23.2	29.6 29.0	32.3 32.7	30.9 32.9	25.9 28.8	19.4 22.4	13.2 15.9	7.7 10.2
28 M	4.6 7.1	-1.5 2.3	-1.8 0.1	8.9 9.0	18.7 19.2	25.8 25.8	30.6 31.0	32.8 33.7	30.5 32.1	25.1 26.8	18.4 20.2	12.3 14.2
29 Tu	8.6 11.0	3.1 6.3	-3.3 1.9	-0.1 2.6	11.4 13.4	20.3 22.0	27.0 28.0	31.4 32.5	32.7 33.7	29.5 30.4	23.7 24.4	17.2 18.0
30 W	12.3 15.7	7.0 9.7	1.1 5.6	-3.7 2.2	3.0 6.6	13.8 17.1	21.8 24.1	27.9 29.5	31.6 32.9	31.8 32.5	28.0 28.0	22.0 21.7
31 Th	15.8 20.3	10.4 14.2	5.2 8.8	-0.6 5.4	-2.1 4.1	6.7 10.8	15.9 19.6	23.1 25.5	28.3 29.9	31.2 31.9	30.3 30.1	26.1 25.1

Time meridian 135° W. 0 is midnight. 12 is noon.
 Heights are referred to mean lower low water (N.O.S. chart datum).

NOVEMBER

Predicted hourly heights in feet

Day	Hours 0/12	Hours 1/13	Hours 2/14	Hours 3/15	Hours 4/16	Hours 5/17	Hours 6/18	Hours 7/19	Hours 8/20	Hours 9/21	Hours 10/22	Hours 11/23
1	19.0	13.7	8.6	3.7	-0.9	1.2	10.0	17.6	23.8	28.1	30.0	28.5
F	24.1	18.8	13.1	8.6	6.1	7.2	14.2	20.9	25.8	28.9	29.6	27.1
2	22.2	16.7	11.9	7.3	3.0	0.5	5.0	12.5	18.8	23.8	27.3	28.4
Sa	26.6	22.5	17.7	12.6	9.2	7.8	10.2	15.8	21.0	24.8	26.8	26.7
3	24.2	19.8	15.0	10.8	6.9	3.3	2.9	7.9	14.0	19.1	23.2	26.1
Su	26.8	25.0	21.6	17.3	13.1	10.3	9.7	11.8	15.7	19.9	22.9	24.3
4	24.1	22.1	18.5	14.4	10.7	7.3	4.5	5.1	9.4	14.3	18.6	22.3
M	25.0	25.7	24.4	21.6	17.7	14.0	11.5	10.6	11.4	14.1	17.9	20.7
5	22.2	22.6	21.3	18.5	14.8	11.4	8.2	5.7	6.1	9.4	13.6	17.8
Tu	21.7	24.6	25.6	24.8	22.2	18.5	14.7	11.8	9.9	9.5	11.7	15.7
6	19.1	21.2	22.4	21.9	19.7	16.1	12.7	9.2	6.3	5.8	8.5	12.7
W	17.4	21.7	25.0	26.3	25.8	23.1	19.1	14.7	11.0	7.9	6.8	9.3
7	14.4	18.5	21.6	23.4	23.5	21.3	17.6	13.6	9.6	5.9	4.8	7.4
Th	12.6	17.9	22.5	26.1	27.5	26.7	23.3	18.7	13.7	9.1	5.3	4.2
8	8.2	14.4	19.2	23.0	25.1	25.2	22.6	18.4	13.9	9.4	5.0	3.7
F	7.3	13.8	19.2	24.2	27.6	28.6	26.7	22.5	17.3	11.9	6.7	2.7
9	2.8	8.8	15.7	20.9	24.9	26.9	26.3	23.0	18.2	13.3	8.5	4.0
Sa	3.4	9.1	16.3	21.4	26.3	29.1	28.9	25.6	20.5	15.0	9.6	4.4
10	0.7	3.1	11.0	17.9	23.2	26.9	28.2	26.4	22.3	17.0	12.1	7.2
Su	3.2	4.6	12.5	19.3	24.2	28.4	30.1	28.1	23.4	17.9	12.5	7.3
11	2.1	-0.1	5.4	14.0	20.5	25.5	28.6	28.6	25.6	20.7	15.2	10.4
M	6.0	3.1	7.7	16.5	22.4	27.0	30.2	30.1	26.2	20.7	15.0	10.1
12	5.0	0.1	0.7	8.9	16.9	23.0	27.5	29.6	28.1	24.1	18.6	13.1
Tu	8.7	4.9	4.5	12.2	20.2	25.3	29.3	31.1	28.9	23.7	17.8	12.5
13	7.8	2.7	-1.2	3.3	12.3	19.5	25.2	28.8	29.7	26.9	22.2	16.6
W	11.1	7.2	4.4	7.6	16.7	23.0	27.7	30.7	30.7	26.7	21.0	15.2
14	10.2	5.6	0.6	-0.8	6.9	15.2	21.7	26.7	29.4	28.9	25.3	20.3
Th	14.7	9.5	6.1	5.3	12.0	20.1	25.1	29.2	30.9	28.9	23.9	18.2
15	12.8	8.2	3.7	-0.8	1.4	10.6	17.5	23.5	27.5	29.1	27.4	23.5
F	18.4	13.1	8.4	5.8	7.8	16.2	22.3	26.5	29.7	29.8	26.3	21.0
16	15.6	10.7	6.4	2.1	-0.8	4.8	13.4	19.5	24.6	27.7	28.2	25.8
Sa	21.7	16.9	11.9	7.9	6.4	11.0	19.0	23.4	27.1	29.1	28.0	23.6
17	18.5	13.4	9.0	5.0	1.2	0.7	8.0	15.4	20.9	25.0	27.4	27.1
Su	24.5	20.3	15.8	11.3	8.0	7.6	13.3	19.7	23.6	26.7	27.9	26.0
18	21.7	16.7	12.0	7.9	4.3	1.2	2.6	9.9	16.5	21.5	25.0	27.0
M	26.4	23.8	19.6	15.5	11.3	8.3	8.6	13.7	18.7	22.8	25.6	26.6
19	24.8	20.9	16.2	11.7	7.8	4.4	1.8	4.0	10.3	16.7	21.4	24.9
Tu	26.9	26.5	24.0	19.9	15.7	11.6	8.5	8.4	11.9	16.5	21.1	24.2
20	25.8	24.6	21.5	17.1	12.6	8.6	5.0	2.5	4.2	9.7	16.1	20.9
W	24.9	27.3	27.3	25.0	20.8	16.4	11.9	8.2	6.9	8.9	13.6	18.9
21	23.1	25.5	25.4	23.1	18.9	14.4	9.9	5.9	3.0	3.6	8.6	15.2
Th	20.7	25.3	28.1	28.7	26.3	21.9	16.9	11.8	7.2	4.5	5.5	10.6
22	17.2	22.5	25.9	26.9	25.3	21.2	16.3	11.3	6.8	3.1	2.9	7.5
F	14.8	21.1	26.1	29.3	30.2	27.5	22.5	16.8	11.3	5.9	2.1	2.3
23	8.3	16.5	22.6	26.7	28.4	27.3	23.2	17.8	12.3	7.3	3.2	2.3
Sa	7.2	15.6	22.1	27.3	30.6	31.3	27.8	22.2	16.0	10.4	4.6	0.1
24	-0.2	7.6	16.7	23.2	27.6	29.8	28.6	24.3	18.4	12.7	7.5	3.4
Su	2.1	8.2	17.4	23.7	28.8	31.8	31.5	27.2	21.0	14.9	9.2	3.5
25	-1.7	-1.2	8.5	17.6	24.2	28.5	30.8	29.1	24.3	18.2	12.5	7.5
M	3.5	2.6	10.8	19.6	25.6	30.3	32.6	30.9	25.6	19.2	13.5	8.0
26	2.5	-3.2	-0.4	10.4	19.0	25.4	29.5	31.2	28.8	23.5	17.3	11.6
Tu	7.2	3.3	4.3	14.1	21.9	27.6	31.6	32.6	29.4	23.5	17.3	11.9
27	6.7	1.1	-3.8	2.2	12.6	20.8	26.6	30.3	31.0	27.7	22.0	16.0
W	10.3	6.7	3.3	7.3	17.3	23.9	29.3	32.3	31.8	27.4	21.1	15.4
28	10.0	5.2	-0.5	-2.7	5.7	15.0	22.6	27.7	30.7	30.1	26.0	20.3
Th	14.3	9.2	6.0	4.3	11.1	19.8	25.6	30.1	32.0	30.1	24.9	18.7
29	13.4	8.1	3.5	-1.5	0.3	9.3	17.3	24.1	28.5	30.4	28.7	24.1
F	18.6	12.7	8.3	5.7	6.6	14.5	21.5	26.6	30.0	30.6	27.6	22.1
30	16.3	11.3	6.4	2.0	-0.9	4.3	12.6	19.5	25.1	28.7	29.4	26.8
Sa	22.0	16.8	11.4	7.9	6.2	9.6	16.9	22.5	26.6	28.8	28.3	24.7

Time meridian 135° W. 0 is midnight. 12 is noon.
 Heights are referred to mean lower low water (N.O.S. chart datum).

Lat. 61° 14'N Long. 149° 53'W

DECEMBER

Predicted hourly heights in feet

Day	Hours 0/12	Hours 1/13	Hours 2/14	Hours 3/15	Hours 4/16	Hours 5/17	Hours 6/18	Hours 7/19	Hours 8/20	Hours 9/21	Hours 10/22	Hours 11/23
1 Su	19.3 24.7	14.0 20.1	9.3 15.2	5.1 10.7	1.2 7.9	1.5 7.7	8.3 12.2	15.4 18.0	21.1 22.6	25.6 25.6	28.3 26.8	27.9 25.6
2 M	22.0 26.4	17.0 23.0	12.1 18.8	8.0 14.3	4.4 10.5	1.8 8.3	4.6 9.2	11.5 13.3	17.4 17.9	22.0 21.8	25.7 24.1	27.4 24.7
3 Tu	23.3 26.6	20.0 25.2	15.6 22.0	11.1 18.0	7.6 14.0	4.5 10.6	3.3 8.7	7.1 9.7	13.4 12.7	18.5 16.8	22.3 20.3	25.4 22.4
4 W	23.0 25.1	21.9 26.1	19.1 24.7	15.3 21.9	11.3 17.9	8.1 14.1	5.3 10.6	4.9 8.6	8.5 8.7	14.0 11.0	18.6 14.9	22.1 18.7
5 Th	21.2 22.0	22.2 25.0	21.6 26.2	19.6 25.0	16.2 22.2	12.4 18.2	9.2 14.2	6.4 10.2	5.8 7.5	8.7 6.6	13.8 8.7	18.3 13.0
6 F	17.5 18.3	20.6 22.1	22.4 25.4	22.4 26.7	21.0 25.6	17.8 22.5	14.0 18.3	10.4 13.7	7.3 9.2	5.9 5.7	8.3 4.2	13.4 6.7
7 Sa	12.0 13.7	17.2 18.8	21.0 22.8	23.3 26.4	23.9 27.5	22.7 26.0	19.4 22.2	15.2 17.6	11.2 12.6	7.6 7.8	5.5 3.5	8.0 2.2
8 Su	5.7 8.5	12.3 15.1	17.8 20.1	22.2 24.2	24.8 27.6	25.5 28.2	23.9 25.6	20.2 21.1	15.5 16.1	11.3 11.1	7.2 5.9	5.2 1.5
9 M	1.1 5.3	6.4 10.3	13.6 17.4	19.4 22.0	23.8 26.2	26.4 28.9	26.6 28.3	24.3 24.4	19.9 19.3	15.0 14.2	10.7 9.3	6.6 4.0
10 Tu	-0.1 5.9	1.2 6.3	8.4 13.3	15.6 20.0	21.5 24.4	25.7 28.2	27.8 29.8	27.0 27.6	23.7 22.6	18.7 17.1	13.7 12.1	9.5 7.3
11 W	2.1 8.0	-1.2 5.4	2.8 8.4	11.0 16.7	18.0 22.5	23.7 26.9	27.4 29.9	28.6 30.0	26.5 26.2	22.3 20.6	17.0 14.9	12.0 10.1
12 Th	5.4 10.3	0.2 6.7	-1.4 5.5	5.5 11.6	13.6 19.6	20.4 24.7	25.7 28.9	28.7 30.7	28.7 29.2	25.5 24.3	20.7 18.5	15.2 13.0
13 F	8.2 13.5	3.5 8.7	-1.4 5.8	0.0 6.8	8.6 15.0	16.0 21.7	22.6 26.5	27.1 30.0	29.3 30.7	28.0 27.6	24.2 22.2	19.0 16.4
14 Sa	11.2 17.4	6.4 11.9	1.7 7.6	-2.2 5.3	2.6 9.0	11.5 17.8	18.3 23.2	24.4 27.7	28.1 30.2	29.2 29.7	26.9 25.4	22.6 20.0
15 Su	14.4 20.9	9.3 15.9	4.7 10.7	0.1 6.9	-1.6 5.6	5.9 11.5	14.0 19.3	20.5 24.2	25.6 28.1	28.6 29.7	28.5 28.1	25.6 23.3
16 M	17.9 24.3	12.6 19.5	7.6 14.6	3.3 9.7	-0.8 6.3	0.3 6.2	8.9 12.9	16.4 19.6	22.3 24.5	26.5 27.6	28.8 28.8	27.7 26.5
17 Tu	21.7 27.2	16.3 23.4	11.2 18.5	6.4 13.7	2.4 9.2	-0.7 5.9	2.7 6.6	11.1 12.7	18.3 18.8	23.5 23.8	27.2 26.7	28.8 27.7
18 W	25.3 28.8	20.9 27.1	15.6 23.0	10.6 18.1	6.0 13.3	2.3 8.9	0.3 5.5	4.6 6.1	12.4 11.0	19.4 17.2	24.1 22.3	27.6 25.6
19 Th	26.8 27.8	24.9 29.0	21.0 27.5	16.0 23.2	11.2 18.3	6.6 13.3	3.0 8.7	1.6 4.9	5.6 4.5	12.9 8.4	19.6 14.7	24.3 20.4
20 F	24.4 24.2	26.1 27.9	25.2 29.4	22.1 28.1	17.5 23.8	12.7 18.8	8.0 13.5	4.4 8.6	2.8 4.1	5.9 2.5	12.7 5.4	19.3 12.1
21 Sa	18.7 19.0	23.3 24.1	25.8 28.0	26.1 29.8	23.8 28.7	19.6 24.4	14.6 19.1	9.8 13.6	5.9 8.3	3.7 3.2	5.9 0.6	12.1 2.7
22 Su	10.1 11.9	17.5 19.2	22.7 24.2	25.9 28.3	27.2 30.3	25.6 29.0	21.7 24.5	16.3 18.9	11.4 13.4	7.1 7.9	4.4 2.5	5.6 -1.1
23 M	0.8 5.5	9.3 12.7	17.2 19.9	22.7 24.9	26.4 28.9	28.4 30.7	27.1 28.7	22.9 23.8	17.3 18.1	12.3 12.7	7.8 7.3	4.9 2.0
24 Tu	-2.5 4.9	0.4 6.1	9.9 14.4	17.7 21.1	23.3 26.2	27.2 29.8	29.4 30.8	27.7 27.8	23.0 22.5	17.4 16.8	12.2 11.6	8.1 6.5
25 W	1.3 7.9	-3.4 4.6	1.7 7.8	11.5 16.6	19.2 22.8	24.5 27.7	28.3 30.5	29.8 30.4	27.3 26.4	22.2 20.7	16.5 15.3	11.3 10.1
26 Th	5.5 10.1	-0.1 7.1	-3.0 4.6	4.5 10.5	13.7 18.8	21.2 24.6	26.0 29.0	29.3 31.0	29.5 29.5	26.1 24.5	20.7 18.7	14.9 13.5
27 F	8.4 12.9	4.1 8.9	-1.4 5.9	-0.8 5.9	7.9 13.6	16.4 20.8	23.2 26.1	27.5 29.7	29.8 30.7	28.5 27.8	24.2 22.3	18.8 16.5
28 Sa	11.4 16.7	6.6 11.0	2.2 7.6	-1.7 5.3	2.9 8.4	11.5 16.3	19.1 22.4	25.1 27.0	28.6 29.7	29.6 29.4	26.9 25.6	22.1 19.8
29 Su	14.2 19.8	9.2 14.4	4.8 9.5	0.5 6.5	0.0 5.8	7.3 11.4	15.0 18.4	21.6 23.6	26.5 27.2	29.1 28.8	28.5 27.4	24.8 22.9
30 M	17.1 22.4	11.8 17.5	7.2 12.4	3.1 8.3	0.0 5.8	3.4 7.5	11.5 13.9	18.2 19.8	23.6 24.1	27.5 26.7	28.8 27.3	26.8 24.9
31 Tu	20.2 24.8	14.7 20.2	9.6 15.4	5.6 10.9	2.0 7.4	1.3 5.8	7.4 9.3	15.2 15.3	20.8 20.3	24.9 23.8	27.9 25.7	27.9 25.4

Time meridian 135° W. 0 is midnight. 12 is noon.
 Heights are referred to mean lower low water (N.O.S. chart datum).

JANUARY

Predicted hourly heights in feet

Day	Hours 0/12	Hours 1/13	Hours 2/14	Hours 3/15	Hours 4/16	Hours 5/17	Hours 6/18	Hours 7/19	Hours 8/20	Hours 9/21	Hours 10/22	Hours 11/23
1 Tu	16.2 19.1	17.5 20.6	16.9 20.0	14.9 17.6	12.4 14.3	9.5 10.4	6.6 5.9	5.2 2.2	6.3 0.8	9.0 2.1	12.4 5.1	16.0 9.1
2 W	13.4 16.8	16.8 19.7	18.3 20.9	17.6 19.9	15.7 17.2	13.1 13.5	9.9 9.2	6.9 4.4	5.5 0.7	6.7 -0.3	9.5 1.6	13.1 5.2
3 Th	9.8 14.2	14.5 17.9	17.9 20.5	19.1 21.0	18.2 19.4	16.0 16.2	13.1 12.1	9.6 7.5	6.5 2.6	5.5 -0.7	7.2 -0.8	10.4 1.9
4 F	6.2 11.6	11.3 15.6	16.1 19.1	19.1 21.1	19.7 20.8	18.2 18.4	15.6 14.6	12.4 10.3	8.8 5.4	5.9 0.8	5.6 -1.6	7.9 -0.6
5 Sa	3.1 9.1	8.0 13.2	13.3 17.1	17.8 20.1	20.1 21.3	19.9 20.1	17.8 16.9	14.7 12.7	11.1 8.1	7.5 3.3	5.3 -0.7	5.9 -1.9
6 Su	0.4 6.6	5.0 10.6	10.4 14.9	15.5 18.5	19.2 20.8	20.6 21.0	19.6 18.9	16.8 15.1	13.2 10.5	9.5 5.8	6.2 1.4	4.9 -1.6
7 M	-1.3 4.9	2.3 7.8	7.5 12.3	12.8 16.5	17.4 19.5	20.3 20.9	20.7 20.2	18.7 17.4	15.3 13.1	11.5 8.3	7.9 3.8	5.2 0.1
8 Tu	-1.6 4.6	0.1 5.5	4.7 9.2	10.1 13.8	15.0 17.6	18.8 19.9	20.7 20.5	20.2 19.1	17.5 15.7	13.7 11.1	9.8 6.4	6.5 2.3
9 W	-0.5 5.6	-0.8 4.6	2.2 6.5	7.3 10.7	12.4 15.0	16.7 18.1	19.6 19.7	20.6 19.6	19.2 17.6	16.0 13.8	12.0 9.2	8.3 4.9
10 Th	1.6 7.2	-0.1 5.2	0.8 5.1	4.6 7.7	9.8 11.8	14.3 15.6	17.8 17.9	19.8 18.9	20.0 18.4	18.0 16.0	14.4 12.2	10.5 7.8
11 F	4.1 9.4	1.8 6.7	1.1 5.4	2.9 5.8	7.1 8.6	11.8 12.4	15.6 15.4	18.2 17.1	19.6 17.7	19.1 17.0	16.7 14.6	13.0 10.9
12 Sa	7.1 11.9	4.2 8.8	2.7 6.7	2.8 5.7	5.2 6.4	9.3 9.0	13.4 12.3	16.4 14.7	18.3 16.0	19.0 16.5	18.0 15.7	15.4 13.5
13 Su	10.3 14.5	7.1 11.3	5.1 8.6	4.2 6.7	4.7 5.8	7.2 6.5	10.9 8.8	14.3 11.6	16.6 13.6	18.0 14.9	18.4 15.5	17.1 15.0
14 M	13.1 16.6	10.4 14.0	7.9 11.0	6.4 8.5	5.8 6.6	6.4 5.5	8.7 5.9	12.0 7.9	14.8 10.5	16.7 12.5	17.8 14.1	18.0 15.1
15 Tu	14.9 18.0	13.4 16.5	11.1 13.8	9.0 10.8	7.7 8.1	7.0 5.9	7.5 4.4	9.6 4.6	12.6 6.7	15.1 9.3	16.9 11.7	17.9 13.9
16 W	15.4 18.5	15.6 18.4	14.2 16.6	12.1 13.7	10.1 10.4	8.6 7.3	7.6 4.6	7.9 2.8	9.9 3.0	12.9 5.4	15.5 8.5	17.4 11.6
17 Th	14.5 18.3	16.4 19.6	16.7 19.2	15.3 16.9	13.0 13.4	10.8 9.6	8.9 6.0	7.5 2.7	7.7 0.7	9.9 1.3	13.2 4.4	16.1 8.3
18 F	12.3 17.2	15.8 19.8	18.0 20.9	18.0 20.0	16.3 17.1	13.6 12.9	10.8 8.4	8.4 4.1	6.7 0.4	7.0 -1.4	9.9 0.0	13.7 4.0
19 Sa	9.0 14.6	13.8 18.6	17.6 21.4	19.6 22.2	19.2 20.7	16.8 17.0	13.5 12.0	10.2 6.9	7.2 2.0	5.4 -1.9	6.3 -3.2	10.0 -0.7
20 Su	4.5 10.4	10.4 15.7	15.7 20.1	19.6 22.8	21.1 23.2	19.9 20.9	16.8 16.5	12.8 10.8	8.9 5.1	5.5 -0.1	4.0 -3.9	5.7 -4.2
21 M	-0.5 5.5	5.8 11.1	12.3 16.9	17.8 21.4	21.3 23.9	22.1 23.7	20.1 20.7	16.3 15.6	11.7 9.4	7.3 3.3	3.8 -1.9	2.8 -5.1
22 Tu	-4.3 2.0	0.7 5.8	7.7 11.9	14.4 17.9	19.6 22.2	22.5 24.2	22.5 23.5	19.8 20.0	15.3 14.4	10.2 8.0	5.5 1.9	2.3 -3.1
23 W	-5.3 1.3	-3.3 1.9	2.6 6.3	9.9 12.7	16.3 18.4	21.0 22.3	23.2 23.8	22.4 22.7	19.0 18.8	14.0 13.1	8.7 6.7	4.1 1.0
24 Th	-3.2 3.2	-4.4 0.9	-1.3 2.2	5.0 7.0	12.0 13.0	17.8 18.2	21.8 21.5	23.2 22.7	21.8 21.3	17.9 17.4	12.7 11.8	7.5 6.0
25 F	1.0 6.7	-2.3 3.0	-2.5 1.3	1.2 2.9	7.4 7.5	13.7 12.8	18.7 17.2	21.9 20.1	22.7 21.1	20.8 19.7	16.7 16.0	11.6 11.0
26 Sa	6.0 11.0	1.9 6.7	-0.5 3.4	0.0 2.0	3.9 3.5	9.5 7.5	14.8 11.9	18.9 15.6	21.4 18.2	21.7 19.2	19.6 18.0	15.6 14.9
27 Su	10.7 14.9	6.8 10.9	3.7 7.2	1.9 4.2	2.7 2.7	6.2 3.8	10.9 6.9	15.2 10.5	18.5 13.6	20.5 16.2	20.6 17.5	18.5 16.8
28 M	14.4 17.8	11.3 14.7	8.3 11.3	5.9 8.0	4.4 5.0	5.0 3.1	7.9 3.6	11.6 5.9	14.9 8.8	17.7 11.8	19.5 14.6	19.6 16.3
29 Tu	16.3 18.9	14.7 17.4	12.4 14.9	10.1 11.9	8.0 8.7	6.4 5.3	6.6 3.0	8.7 2.9	11.6 4.7	14.4 7.3	16.9 10.5	18.7 13.7
30 W	16.0 18.3	16.5 18.7	15.5 17.5	13.7 15.1	11.8 12.2	9.5 8.8	7.6 4.9	7.3 2.3	8.9 2.0	11.3 3.6	13.8 6.4	16.4 10.0
31 Th	13.8 16.5	16.4 18.5	17.2 18.9	16.5 17.6	14.9 15.2	12.8 12.0	10.1 8.1	7.8 3.9	7.3 1.2	8.7 1.0	11.0 3.0	13.7 6.3

Time meridian 135° W. 0 is midnight. 12 is noon.
 Heights are referred to mean lower low water (N.O.S. chart datum).

FEBRUARY

Predicted hourly heights in feet

Day	Hours 0/12	Hours 1/13	Hours 2/14	Hours 3/15	Hours 4/16	Hours 5/17	Hours 6/18	Hours 7/19	Hours 8/20	Hours 9/21	Hours 10/22	Hours 11/23
1 F	10.6 14.1	14.7 17.2	17.5 19.1	18.2 19.2	17.3 17.5	15.4 14.7	12.8 11.1	9.7 6.7	7.2 2.4	6.9 0.0	8.5 0.5	11.1 3.2
2 Sa	7.3 11.8	12.1 15.2	16.3 18.3	18.7 19.8	18.9 19.2	17.5 16.9	15.1 13.5	12.0 9.4	8.5 4.7	6.2 0.7	6.4 -0.8	8.6 0.8
3 Su	4.4 9.4	9.2 13.1	14.2 16.8	18.1 19.5	19.8 20.3	19.2 18.9	17.0 15.8	13.9 11.8	10.3 7.2	6.8 2.5	5.1 -0.8	6.3 -1.0
4 M	2.0 6.8	6.5 10.8	11.7 14.9	16.5 18.4	19.7 20.5	20.4 20.3	18.7 17.9	15.7 14.0	12.0 9.5	8.2 4.8	5.0 0.5	4.4 -1.6
5 Tu	-0.2 4.4	4.0 8.0	9.3 12.6	14.5 16.7	18.6 19.7	20.7 20.9	20.2 19.7	17.6 16.4	13.8 11.9	9.8 7.0	6.0 2.5	3.6 -0.8
6 W	-1.4 3.0	1.6 5.1	6.8 9.6	12.3 14.5	17.0 18.2	20.2 20.5	21.1 20.7	19.4 18.6	15.9 14.5	11.6 9.5	7.4 4.8	4.1 0.9
7 Th	-1.2 3.0	-0.1 3.1	4.2 6.4	9.9 11.5	15.0 16.0	18.9 19.1	21.0 20.5	20.7 19.8	18.0 16.9	13.8 12.4	9.2 7.3	5.4 3.1
8 F	0.1 4.0	-0.5 2.6	2.1 3.9	7.3 8.0	12.9 13.0	17.2 17.0	20.0 19.2	20.9 19.8	19.6 18.4	16.1 15.0	11.5 10.3	7.2 5.7
9 Sa	2.3 5.8	0.6 3.5	1.3 3.0	4.9 5.1	10.4 9.5	15.3 14.0	18.6 17.1	20.3 18.6	20.2 18.6	18.0 16.8	14.1 13.2	9.6 8.9
10 Su	5.0 8.1	2.6 5.1	2.0 3.6	3.7 3.8	7.8 6.2	12.9 10.3	16.9 14.1	19.1 16.5	19.9 17.5	19.0 17.2	16.2 15.3	12.2 12.0
11 M	8.2 10.9	5.3 7.5	3.9 5.1	4.1 4.1	6.3 4.5	10.3 6.8	14.7 10.4	17.6 13.5	18.9 15.3	19.0 16.2	17.6 15.9	14.7 14.3
12 Tu	11.5 13.8	8.5 10.4	6.5 7.4	5.7 5.5	6.2 4.5	8.3 4.6	11.9 6.6	15.5 9.7	17.6 12.3	18.3 14.0	18.1 15.1	16.6 15.2
13 W	14.0 16.1	11.8 13.5	9.5 10.4	8.0 7.7	7.5 5.7	7.8 4.3	9.6 4.1	12.6 5.7	15.5 8.4	17.1 10.9	17.8 13.0	17.5 14.7
14 Th	15.3 17.7	14.6 16.5	12.9 14.0	10.9 10.9	9.5 8.0	8.6 5.5	8.4 3.4	9.8 2.7	12.4 4.1	15.0 7.0	16.7 9.9	17.6 12.7
15 F	15.1 18.2	16.3 18.6	15.9 17.4	14.2 14.7	12.1 11.3	10.3 7.9	8.8 4.6	8.0 1.8	9.1 0.8	11.7 2.5	14.5 5.9	16.7 9.7
16 Sa	13.4 17.3	16.4 19.4	17.9 20.0	17.3 18.5	15.3 15.4	12.8 11.3	10.2 7.1	7.9 3.0	6.7 -0.3	7.9 -1.1	11.0 1.2	14.4 5.5
17 Su	10.3 14.8	14.9 18.5	18.3 21.1	19.6 21.5	18.6 19.6	15.9 15.7	12.5 10.8	9.2 5.7	6.1 0.9	4.9 -2.5	6.5 -2.7	10.5 0.8
18 M	6.2 10.5	12.0 15.8	17.1 20.1	20.4 22.7	21.1 22.8	19.3 20.1	15.7 15.4	11.5 9.7	7.3 4.0	3.9 -1.2	2.9 -4.3	5.5 -3.4
19 Tu	1.4 5.1	7.8 11.1	14.2 17.0	19.4 21.6	22.2 24.0	22.1 23.4	19.3 20.0	14.8 14.5	9.8 8.3	5.0 2.1	1.6 -3.0	1.4 -5.2
20 W	-2.9 0.5	3.0 5.4	10.2 12.0	16.8 18.2	21.5 22.6	23.5 24.5	22.3 23.2	18.5 19.1	13.3 13.2	7.7 6.6	2.7 0.6	-0.3 -3.9
21 Th	-4.9 -1.4	-1.3 0.6	5.6 6.2	12.9 13.0	19.0 18.9	23.0 22.8	24.0 24.1	21.8 22.3	17.2 17.7	11.4 11.6	5.6 5.2	0.9 -0.3
22 F	-3.7 -0.1	-3.4 -1.5	1.4 1.3	8.5 7.3	15.3 13.7	20.6 18.9	23.6 22.2	23.6 22.9	20.6 20.7	15.5 16.1	9.6 10.2	4.0 4.4
23 Sa	-0.1 3.2	-2.4 -0.2	-0.8 -0.7	4.4 2.6	11.2 8.2	17.1 13.8	21.3 18.2	23.3 20.9	22.5 21.2	19.0 18.9	13.8 14.5	8.2 9.3
24 Su	4.6 7.4	1.2 3.4	0.0 0.7	2.2 0.7	7.4 3.8	13.2 8.6	17.9 13.2	21.0 16.8	22.2 19.0	20.8 19.2	17.2 17.1	12.3 13.3
25 M	9.2 11.5	5.6 7.6	3.3 4.3	2.8 2.1	5.2 2.1	9.7 4.6	14.2 8.4	17.7 11.9	20.0 14.9	20.5 17.0	19.0 17.4	15.7 15.8
26 Tu	13.0 14.8	9.9 11.5	7.5 8.4	5.8 5.6	5.5 3.4	7.5 3.0	10.9 4.8	14.2 7.5	16.7 10.3	18.4 13.1	18.8 15.4	17.5 16.2
27 W	15.4 16.7	13.4 14.6	11.4 12.1	9.6 9.5	8.0 6.8	7.5 4.3	8.7 3.3	11.1 4.3	13.4 6.3	15.3 8.8	16.9 11.8	17.5 14.5
28 Th	15.9 16.9	15.7 16.5	14.5 15.0	13.0 12.9	11.3 10.4	9.4 7.3	8.4 4.3	8.9 2.9	10.5 3.4	12.2 5.2	14.1 7.9	15.9 11.4

Time meridian 135° W. 0 is midnight. 12 is noon.
 Heights are referred to mean lower low water (N.O.S. chart datum).

NIKISKI, ALASKA, 2019
 Lat. 60° 41'N Long. 151° 24'W

MARCH

Predicted hourly heights in feet

Day	Hours 0/12	Hours 1/13	Hours 2/14	Hours 3/15	Hours 4/16	Hours 5/17	Hours 6/18	Hours 7/19	Hours 8/20	Hours 9/21	Hours 10/22	Hours 11/23
1	14.6	16.4	16.6	15.7	14.2	12.2	9.7	8.1	8.2	9.5	11.2	13.5
F	15.7	17.1	17.0	15.6	13.4	10.6	7.0	3.5	1.9	2.5	4.6	7.9
2	12.0	15.5	17.5	17.6	16.5	14.6	11.9	8.9	7.1	7.2	8.7	10.9
Sa	13.7	16.4	17.9	17.6	15.9	13.3	9.9	5.7	2.2	0.9	2.1	4.9
3	9.0	13.5	17.1	18.7	18.3	16.6	14.0	10.6	7.2	5.6	6.3	8.5
Su	11.5	14.9	17.7	18.8	18.0	15.6	12.4	8.3	3.8	0.6	0.3	2.5
4	6.4	11.1	15.7	18.8	19.6	18.3	15.7	12.3	8.4	5.2	4.3	6.1
M	9.3	13.0	16.7	19.2	19.5	17.7	14.5	10.5	6.0	1.7	-0.5	0.6
5	4.1	8.8	13.8	18.1	20.2	19.8	17.4	13.9	9.9	5.8	3.2	3.7
Tu	6.7	10.9	15.1	18.6	20.3	19.6	16.7	12.7	8.1	3.5	-0.1	-0.8
6	1.9	6.6	11.8	16.7	20.0	20.9	19.2	15.7	11.4	7.1	3.4	1.9
W	3.9	8.2	13.0	17.2	20.1	20.7	18.9	15.1	10.3	5.6	1.4	-1.0
7	0.1	4.4	9.9	15.0	19.1	21.2	20.7	17.7	13.3	8.6	4.4	1.5
Th	1.6	5.1	10.3	15.3	19.0	20.9	20.4	17.5	12.9	7.9	3.3	0.0
8	-0.7	2.1	7.6	13.3	17.8	20.8	21.4	19.5	15.5	10.6	5.9	2.2
F	0.6	2.2	6.9	12.5	17.1	20.0	20.9	19.4	15.6	10.6	5.7	1.9
9	-0.1	0.8	5.1	11.0	16.3	19.8	21.4	20.7	17.7	13.0	7.9	3.7
Sa	1.0	0.6	3.6	9.0	14.4	18.2	20.2	20.1	17.8	13.6	8.6	4.3
10	1.5	0.9	3.2	8.4	14.2	18.5	20.7	21.1	19.3	15.5	10.5	5.8
Su	2.3	0.7	1.5	5.3	10.7	15.5	18.4	19.5	18.8	16.0	11.8	7.3
11	3.9	2.3	2.9	6.1	11.4	16.4	19.6	20.6	19.9	17.4	13.3	8.5
M	4.5	2.0	1.2	2.8	6.8	11.8	15.6	17.7	18.3	17.2	14.5	10.6
12	6.9	4.6	4.0	5.3	8.8	13.6	17.6	19.6	19.8	18.5	15.6	11.6
Tu	7.4	4.2	2.4	2.2	3.9	7.7	11.9	14.9	16.5	16.9	15.9	13.5
13	10.3	7.6	6.1	6.0	7.4	10.7	14.7	17.7	18.8	18.5	17.1	14.4
W	10.8	7.2	4.6	3.2	3.0	4.4	7.6	11.1	13.6	15.1	15.8	15.3
14	13.4	10.9	8.9	7.8	7.7	8.8	11.4	14.6	16.8	17.7	17.5	16.4
Th	14.1	10.9	7.9	5.5	4.0	3.2	4.1	6.7	9.8	12.2	14.2	15.4
15	15.5	14.2	12.2	10.4	9.2	8.5	8.9	10.9	13.6	15.7	16.7	17.1
F	16.5	14.6	11.8	8.9	6.3	4.1	2.6	2.9	5.3	8.4	11.3	14.0
16	16.0	16.5	15.5	13.5	11.5	9.7	8.1	7.9	9.6	12.2	14.6	16.5
Sa	17.6	17.6	15.9	13.0	9.7	6.5	3.4	1.2	1.3	3.9	7.4	11.2
17	14.8	17.4	18.1	16.9	14.5	11.8	9.0	6.6	6.0	7.8	10.9	14.2
Su	17.0	18.9	19.1	17.3	14.0	10.0	5.9	1.9	-0.6	-0.2	3.0	7.5
18	12.3	16.6	19.3	19.7	17.9	14.7	11.1	7.3	4.3	3.7	6.1	10.2
M	14.5	18.3	20.7	20.8	18.5	14.4	9.6	4.6	0.1	-2.4	-1.2	3.1
19	8.6	14.3	18.9	21.3	21.0	18.2	14.0	9.4	4.9	1.6	1.6	5.0
Tu	10.3	15.6	20.0	22.4	22.0	18.9	14.1	8.5	2.9	-1.8	-3.6	-1.2
20	4.3	10.8	16.9	21.3	22.9	21.5	17.6	12.5	7.1	2.1	-0.8	0.2
W	4.8	11.1	17.0	21.6	23.6	22.5	18.6	13.0	7.0	1.2	-3.1	-3.7
21	0.1	6.6	13.6	19.5	23.2	23.7	21.1	16.3	10.4	4.6	-0.3	-2.5
Th	-0.3	5.5	12.3	18.4	22.7	24.0	22.1	17.5	11.6	5.4	-0.1	-3.4
22	-2.7	2.4	9.5	16.4	21.6	24.2	23.5	19.9	14.4	8.2	2.3	-2.1
F	-3.1	0.3	6.7	13.7	19.4	22.9	23.5	20.9	16.0	10.0	4.1	-0.6
23	-2.6	-0.5	5.4	12.5	18.6	22.7	24.1	22.4	18.1	12.2	6.1	0.8
Sa	-2.7	-2.6	1.6	8.2	14.6	19.6	22.4	22.3	19.3	14.3	8.7	3.6
24	0.0	-0.7	2.5	8.6	14.9	19.8	22.7	23.0	20.6	15.9	10.2	4.7
Su	0.2	-2.3	-1.2	3.4	9.4	14.9	19.0	21.1	20.5	17.5	12.9	8.0
25	4.0	1.6	1.9	5.6	11.2	16.3	19.9	21.7	21.3	18.5	13.9	8.8
M	4.2	0.7	-0.9	0.7	5.0	10.1	14.5	17.8	19.4	18.7	15.9	12.0
26	8.2	5.3	3.8	4.7	8.2	12.7	16.5	18.9	19.9	19.1	16.4	12.4
Tu	8.3	4.7	2.1	1.0	2.5	6.0	10.0	13.4	16.1	17.6	17.1	14.9
27	11.9	9.2	7.2	6.2	7.0	9.9	13.1	15.6	17.3	17.9	17.2	14.9
W	11.8	8.6	5.9	3.7	2.7	3.7	6.3	9.2	12.0	14.6	16.2	16.2
28	14.6	12.6	10.7	9.1	8.1	8.5	10.3	12.5	14.1	15.4	16.2	15.9
Th	14.3	12.0	9.6	7.4	5.2	3.7	4.1	5.9	8.1	10.7	13.5	15.5
29	16.0	15.1	13.7	12.2	10.5	9.0	8.7	9.8	11.1	12.5	14.0	15.2
F	15.5	14.5	12.8	10.8	8.5	5.9	3.9	3.8	5.1	7.2	10.0	13.2
30	15.7	16.6	16.0	14.8	13.1	10.9	8.7	7.9	8.5	9.7	11.3	13.4
Sa	15.2	15.9	15.2	13.7	11.6	8.9	5.6	3.3	3.0	4.4	6.8	10.3
31	14.0	16.7	17.6	16.9	15.3	13.0	10.1	7.5	6.5	7.2	8.7	11.0
Su	13.8	16.1	16.9	16.1	14.2	11.6	8.2	4.5	2.3	2.4	4.3	7.5

Time meridian 135° W. 0 is midnight. 12 is noon.
 Heights are referred to mean lower low water (N.O.S. chart datum).

APRIL

Predicted hourly heights in feet

Day	Hours 0/12	Hours 1/13	Hours 2/14	Hours 3/15	Hours 4/16	Hours 5/17	Hours 6/18	Hours 7/19	Hours 8/20	Hours 9/21	Hours 10/22	Hours 11/23
1	11.6	15.6	18.1	18.5	17.2	14.9	11.9	8.3	5.5	4.9	6.2	8.7
M	11.8	15.2	17.4	17.9	16.5	13.9	10.6	6.6	2.9	1.3	2.3	5.2
2	9.2	13.7	17.6	19.4	18.9	16.7	13.5	9.7	5.8	3.4	3.8	6.2
Tu	9.7	13.5	17.0	18.8	18.4	16.1	12.7	8.8	4.6	1.3	0.8	3.2
3	7.2	11.9	16.4	19.5	20.2	18.5	15.2	11.2	6.9	3.2	1.8	3.5
W	7.2	11.5	15.7	18.8	19.8	18.3	15.0	10.9	6.6	2.6	0.4	1.4
4	5.2	10.1	14.9	18.9	20.8	20.1	17.1	12.8	8.3	4.0	1.0	0.9
Th	4.2	9.0	13.9	17.9	20.2	20.0	17.4	13.2	8.7	4.4	1.1	0.3
5	3.1	8.2	13.5	17.9	20.8	21.2	19.0	14.9	10.0	5.3	1.3	-0.5
F	1.1	5.8	11.4	16.2	19.6	20.8	19.5	15.9	11.2	6.5	2.7	0.5
6	1.4	5.8	11.6	16.7	20.2	21.7	20.6	17.2	12.3	7.1	2.6	-0.5
Sa	-0.9	2.3	8.0	13.7	18.0	20.5	20.6	18.3	14.0	9.1	4.8	1.8
7	1.0	3.6	9.0	14.8	19.2	21.5	21.5	19.2	14.8	9.5	4.4	0.6
Su	-1.4	-0.4	4.1	10.2	15.5	19.0	20.5	19.7	16.7	12.2	7.5	3.9
8	1.9	2.5	6.3	12.1	17.4	20.6	21.6	20.5	17.2	12.4	7.1	2.5
M	-0.4	-1.3	0.9	6.1	11.9	16.5	19.1	19.8	18.5	15.1	10.7	6.6
9	3.9	3.0	4.7	9.1	14.6	18.9	20.9	20.9	18.9	15.2	10.3	5.4
Tu	1.6	-0.4	-0.4	2.5	7.7	12.9	16.5	18.4	18.7	17.1	13.9	9.9
10	6.6	4.8	4.7	6.9	11.2	16.1	19.2	20.2	19.5	17.2	13.5	8.9
W	4.7	1.7	0.4	0.9	3.8	8.5	12.9	15.8	17.3	17.5	16.0	13.2
11	9.9	7.4	6.2	6.4	8.5	12.4	16.3	18.5	19.0	18.1	15.9	12.5
Th	8.5	5.0	2.6	1.5	1.9	4.5	8.5	12.1	14.6	16.2	16.7	15.6
12	13.3	10.6	8.6	7.6	7.6	9.2	12.3	15.4	17.1	17.6	17.1	15.4
F	12.5	9.1	6.1	3.8	2.4	2.3	4.3	7.7	11.0	13.6	15.6	16.5
13	15.9	14.1	11.8	9.8	8.4	7.7	8.6	11.1	13.7	15.5	16.5	16.7
Sa	15.7	13.4	10.3	7.4	4.8	2.7	1.9	3.5	6.6	9.9	13.0	15.7
14	17.2	17.0	15.2	12.8	10.5	8.3	6.7	7.0	9.2	12.0	14.3	16.3
Su	17.3	16.8	14.7	11.7	8.4	5.1	2.2	1.0	2.4	5.7	9.5	13.4
15	16.8	18.6	18.3	16.3	13.4	10.2	7.0	4.8	4.8	7.2	10.6	13.9
M	16.8	18.6	18.3	16.1	12.7	8.7	4.7	1.2	-0.2	1.6	5.5	10.1
16	14.8	18.6	20.3	19.5	16.8	13.1	8.9	4.9	2.2	2.5	5.6	9.9
Tu	14.3	18.1	20.2	19.8	17.1	13.0	8.4	3.6	-0.2	-1.1	1.4	6.3
17	11.8	17.0	20.7	21.8	20.2	16.5	11.8	6.8	2.2	-0.4	0.7	4.8
W	10.2	15.5	19.7	21.6	20.7	17.3	12.5	7.3	2.3	-1.3	-1.4	2.3
18	8.1	14.2	19.4	22.6	22.7	19.9	15.3	9.9	4.3	-0.5	-2.4	-0.2
Th	5.0	11.2	17.0	21.2	22.5	20.8	16.7	11.5	6.0	1.1	-1.8	-0.6
19	4.2	10.7	16.9	21.6	23.7	22.6	18.8	13.4	7.5	1.7	-2.6	-3.5
F	-0.1	6.1	12.8	18.5	22.1	22.7	20.2	15.6	10.2	4.8	0.3	-1.4
20	1.1	6.9	13.5	19.2	23.0	23.9	21.7	17.0	11.2	5.1	-0.3	-3.8
Sa	-3.4	1.1	7.7	14.3	19.5	22.3	22.1	19.1	14.2	8.9	3.9	0.4
21	-0.1	3.6	9.7	15.9	20.7	23.3	23.0	19.9	14.8	8.9	3.2	-1.6
Su	-3.9	-2.3	2.9	9.4	15.4	19.8	21.8	21.0	17.6	12.8	7.9	3.7
22	1.2	2.0	6.3	12.3	17.6	21.2	22.6	21.4	17.8	12.6	7.1	2.0
M	-1.7	-3.0	-0.5	4.9	10.8	15.9	19.4	20.7	19.5	16.1	11.7	7.5
23	4.2	2.8	4.4	8.9	14.1	18.1	20.5	21.0	19.3	15.6	10.7	5.9
Tu	1.8	-0.9	-1.3	1.7	6.6	11.6	15.7	18.5	19.4	18.0	14.8	11.0
24	7.7	5.4	4.8	6.7	10.7	14.8	17.6	19.1	19.0	17.2	13.7	9.5
W	5.7	2.6	0.6	0.7	3.5	7.7	11.6	14.9	17.3	18.0	16.8	14.1
25	11.1	8.6	6.9	6.6	8.4	11.6	14.4	16.3	17.2	17.1	15.5	12.6
Th	9.2	6.2	3.9	2.3	2.5	4.8	8.0	11.1	13.9	16.1	17.0	16.1
26	13.9	11.6	9.7	8.3	7.8	9.1	11.3	13.2	14.5	15.5	15.6	14.4
F	12.2	9.6	7.4	5.3	3.7	3.6	5.3	7.8	10.3	13.0	15.4	16.5
27	16.0	14.3	12.5	10.7	9.1	8.2	8.8	10.3	11.7	12.9	14.2	14.9
Sa	14.2	12.6	10.5	8.5	6.4	4.5	4.0	5.2	7.3	9.8	12.7	15.4
28	16.7	16.4	15.0	13.2	11.1	8.9	7.5	7.7	8.9	10.2	12.0	13.8
Su	15.0	14.7	13.3	11.4	9.3	6.7	4.5	3.8	4.9	7.0	9.8	13.2
29	16.1	17.5	17.0	15.4	13.2	10.6	7.8	6.1	6.2	7.6	9.4	11.9
M	14.4	15.8	15.6	14.1	11.9	9.3	6.2	3.8	3.4	4.9	7.4	10.8
30	14.5	17.4	18.4	17.4	15.2	12.4	9.1	5.9	4.3	4.9	6.9	9.6
Tu	12.8	15.6	17.0	16.4	14.3	11.6	8.5	5.2	3.0	3.2	5.5	8.8

Time meridian 135° W. 0 is midnight. 12 is noon.
 Heights are referred to mean lower low water (N.O.S. chart datum).

MAY

Predicted hourly heights in feet

Day	Hours 0/12	Hours 1/13	Hours 2/14	Hours 3/15	Hours 4/16	Hours 5/17	Hours 6/18	Hours 7/19	Hours 8/20	Hours 9/21	Hours 10/22	Hours 11/23
1	12.7	16.4	18.8	19.0	17.1	14.1	10.6	6.7	3.5	2.5	4.1	7.1
W	10.7	14.4	17.2	18.0	16.7	14.0	10.6	7.1	3.8	2.3	3.6	6.9
2	11.0	15.1	18.5	20.0	19.0	16.0	12.2	8.0	4.0	1.3	1.4	4.2
Th	8.3	12.6	16.4	18.7	18.6	16.4	12.9	9.1	5.5	2.7	2.3	5.0
3	9.3	13.8	17.8	20.3	20.4	18.1	14.1	9.6	5.1	1.3	-0.5	1.1
F	5.3	10.2	14.8	18.3	19.7	18.6	15.5	11.4	7.4	4.0	2.0	3.1
4	7.1	12.2	16.7	20.0	21.2	20.0	16.4	11.7	6.7	2.3	-0.9	-1.4
Sa	1.8	7.1	12.5	17.0	19.7	20.1	18.0	14.2	9.8	5.9	2.9	2.2
5	4.8	9.9	15.2	19.3	21.4	21.3	18.8	14.3	9.0	3.9	-0.1	-2.4
Su	-1.3	3.2	9.2	14.7	18.6	20.4	19.8	17.0	12.7	8.3	4.7	2.6
6	3.1	7.0	12.7	17.8	21.0	21.9	20.6	17.0	11.9	6.4	1.6	-1.8
M	-2.8	-0.4	5.1	11.3	16.3	19.4	20.4	19.1	15.7	11.3	7.1	4.1
7	3.0	4.7	9.4	15.2	19.6	21.7	21.6	19.3	15.1	9.7	4.4	0.1
Tu	-2.4	-2.4	1.0	7.0	12.9	17.1	19.5	19.9	18.1	14.5	10.2	6.5
8	4.2	3.9	6.4	11.5	16.8	20.2	21.4	20.5	17.7	13.3	8.0	3.1
W	-0.4	-2.2	-1.3	2.7	8.5	13.7	17.2	19.1	19.1	17.1	13.6	9.6
9	6.5	4.9	5.1	8.0	12.9	17.4	19.9	20.4	19.2	16.3	12.0	7.1
Th	2.8	-0.1	-1.3	0.0	4.0	9.3	13.7	16.7	18.4	18.3	16.4	13.1
10	9.7	7.1	5.8	6.2	8.9	13.2	16.8	18.7	19.0	17.9	15.3	11.4
F	7.0	3.4	0.9	-0.1	1.1	4.8	9.4	13.2	16.0	17.7	17.8	16.1
11	13.2	10.2	7.9	6.6	6.7	8.9	12.4	15.4	17.1	17.7	17.0	14.9
Sa	11.5	7.8	4.6	2.2	1.0	1.8	4.9	9.0	12.6	15.4	17.4	17.8
12	16.4	13.8	11.0	8.6	6.8	6.3	7.9	10.8	13.6	15.5	16.7	16.8
Su	15.2	12.4	9.0	5.9	3.3	1.6	2.0	4.7	8.5	12.1	15.4	17.8
13	18.4	17.2	14.6	11.6	8.7	6.2	5.0	6.1	8.8	11.7	14.3	16.4
M	17.2	16.2	13.6	10.3	7.0	3.8	1.6	1.7	4.4	8.3	12.3	16.1
14	18.8	19.5	18.0	15.1	11.7	8.1	4.7	3.0	4.0	6.9	10.4	13.9
Tu	16.9	18.2	17.3	14.7	11.2	7.5	3.8	1.3	1.5	4.4	8.7	13.3
15	17.4	20.2	20.6	18.6	15.1	11.0	6.5	2.6	0.7	2.0	5.6	9.9
W	14.3	17.9	19.3	18.3	15.4	11.6	7.4	3.3	0.8	1.5	5.0	9.9
16	14.9	19.2	21.6	21.3	18.6	14.4	9.5	4.4	0.2	-1.3	0.7	5.1
Th	10.3	15.4	19.1	20.4	18.9	15.5	11.3	6.8	2.6	0.6	2.0	6.4
17	11.8	17.0	21.0	22.6	21.4	17.7	12.8	7.5	2.1	-2.0	-2.7	0.4
F	5.6	11.5	16.9	20.3	21.0	18.9	15.1	10.5	5.9	2.1	0.8	3.3
18	8.3	14.0	19.0	22.3	22.9	20.6	16.2	10.8	5.2	-0.1	-3.5	-3.1
Sa	1.0	7.0	13.1	18.2	21.1	21.0	18.3	14.2	9.5	5.1	1.8	1.6
19	5.1	10.7	16.2	20.6	22.8	22.3	19.1	14.2	8.6	3.1	-1.8	-4.2
Su	-2.5	2.5	8.8	14.7	19.2	21.3	20.5	17.3	13.0	8.5	4.5	2.1
20	3.0	7.3	12.9	17.9	21.3	22.5	21.0	17.2	12.0	6.6	1.4	-2.6
M	-3.8	-1.0	4.5	10.6	16.0	19.7	21.0	19.6	16.1	11.9	7.7	4.3
21	2.9	4.8	9.5	14.7	18.8	21.2	21.4	19.2	15.1	10.0	4.9	0.4
Tu	-2.6	-2.6	1.0	6.6	12.1	16.7	19.6	20.2	18.4	14.9	10.9	7.2
22	4.6	4.1	6.7	11.3	15.8	18.8	20.3	19.8	17.3	13.1	8.3	3.9
W	0.3	-1.7	-0.8	3.2	8.3	13.1	16.8	19.1	19.3	17.2	13.8	10.2
23	7.2	5.3	5.5	8.4	12.5	15.9	18.1	18.9	18.1	15.5	11.5	7.3
Th	3.7	0.9	-0.3	1.2	5.1	9.5	13.4	16.5	18.4	18.3	16.2	13.1
24	10.0	7.6	6.2	6.7	9.4	12.8	15.3	16.8	17.3	16.5	14.0	10.5
F	7.0	4.1	2.0	1.4	3.0	6.5	10.1	13.3	16.0	17.6	17.4	15.5
25	12.7	10.2	8.2	7.0	7.5	9.7	12.3	14.1	15.3	15.9	15.2	13.1
Sa	10.2	7.3	5.0	3.3	2.8	4.4	7.3	10.3	13.1	15.6	17.1	17.0
26	15.2	12.8	10.5	8.6	7.4	7.6	9.3	11.2	12.7	14.0	14.9	14.6
Su	12.9	10.4	8.1	6.1	4.4	3.9	5.2	7.7	10.3	13.0	15.5	17.1
27	16.9	15.2	12.9	10.7	8.6	7.0	6.9	8.3	9.9	11.6	13.3	14.5
M	14.5	13.2	11.0	8.9	6.8	5.0	4.4	5.6	7.9	10.5	13.3	15.9
28	17.4	17.1	15.3	12.9	10.4	7.9	5.9	5.7	7.0	8.9	10.9	13.2
Tu	14.9	15.1	13.7	11.6	9.4	7.1	5.1	4.5	5.9	8.4	11.2	14.2
29	16.9	18.1	17.3	15.1	12.3	9.4	6.4	4.3	4.3	6.0	8.4	11.1
W	13.9	15.8	15.9	14.3	11.9	9.4	6.9	4.8	4.6	6.5	9.4	12.6
30	15.8	18.1	18.7	17.3	14.4	11.1	7.6	4.3	2.4	3.0	5.5	8.7
Th	12.1	15.2	16.9	16.6	14.6	11.8	8.9	6.2	4.4	4.8	7.5	11.0
31	14.5	17.6	19.4	19.1	16.6	13.0	9.1	5.2	1.9	0.7	2.3	5.8
F	9.8	13.8	16.9	18.1	17.0	14.4	11.2	8.0	5.3	4.0	5.4	9.0

Time meridian 135° W. 0 is midnight. 12 is noon.
 Heights are referred to mean lower low water (N.O.S. chart datum).

JUNE

Predicted hourly heights in feet

Day	Hours 0/12	Hours 1/13	Hours 2/14	Hours 3/15	Hours 4/16	Hours 5/17	Hours 6/18	Hours 7/19	Hours 8/20	Hours 9/21	Hours 10/22	Hours 11/23
1 Sa	13.1 6.8	16.8 11.6	19.4 15.7	20.3 18.4	18.8 18.9	15.4 17.0	11.0 13.8	6.7 10.2	2.6 6.9	-0.3 4.5	-0.6 4.0	2.3 6.6
2 Su	11.0 3.1	15.5 8.5	19.0 13.6	20.9 17.5	20.6 19.6	17.9 19.2	13.6 16.6	8.7 12.8	4.1 9.0	0.1 5.8	-2.1 3.8	-1.1 4.4
3 M	8.1 -0.8	13.3 4.5	17.8 10.5	20.7 15.5	21.7 19.0	20.2 20.3	16.6 19.1	11.6 15.9	6.4 11.7	1.7 7.9	-1.9 4.9	-3.2 3.5
4 Tu	5.2 -3.5	9.9 0.2	15.4 6.3	19.6 12.3	21.8 17.0	21.8 19.9	19.4 20.4	15.0 18.6	9.6 14.9	4.2 10.7	-0.3 6.8	-3.3 4.2
5 W	3.7 -3.9	6.4 -3.0	11.7 1.6	17.1 8.0	20.7 13.8	22.1 18.0	21.3 20.2	18.3 20.2	13.5 17.9	7.8 14.0	2.5 9.7	-1.6 6.1
6 Th	3.9 -2.1	4.1 -3.6	7.6 -1.8	13.0 3.2	18.0 9.5	20.9 14.7	21.7 18.3	20.4 20.1	17.1 19.7	12.1 17.2	6.5 13.2	1.5 9.1
7 F	5.8 1.4	4.1 -1.7	4.8 -2.6	8.5 -0.4	13.7 4.7	18.0 10.5	20.3 15.1	20.8 18.3	19.3 19.8	15.9 19.2	11.1 16.6	5.8 12.7
8 Sa	8.8 5.8	5.9 1.9	4.4 -0.7	5.3 -1.3	8.8 1.1	13.5 5.9	17.1 11.0	19.1 15.1	19.6 18.1	18.2 19.5	15.1 18.8	10.6 16.2
9 Su	12.5 10.7	9.0 6.5	6.2 3.1	4.7 0.7	5.4 0.2	8.5 2.3	12.4 6.6	15.6 11.2	17.6 15.0	18.3 17.9	17.4 19.3	14.6 18.7
10 M	16.2 14.7	12.7 11.3	9.4 7.7	6.5 4.5	4.6 2.1	4.8 1.4	7.4 3.2	10.8 7.1	13.8 11.2	16.0 14.9	17.3 17.9	16.9 19.5
11 Tu	18.9 16.9	16.5 15.2	13.1 12.3	9.7 9.0	6.4 5.9	4.0 3.2	3.7 2.2	5.7 3.8	8.9 7.4	12.0 11.4	14.8 15.2	16.7 18.4
12 W	19.9 16.8	19.3 17.4	16.8 16.0	13.3 13.3	9.6 10.1	5.8 6.8	2.7 3.8	2.0 2.7	3.9 4.3	7.1 7.8	10.7 11.9	14.2 15.9
13 Th	19.2 14.4	20.6 17.4	19.7 18.2	16.9 16.8	13.1 14.1	8.9 10.7	4.5 7.2	1.1 4.0	0.3 3.0	2.4 4.8	6.0 8.5	10.3 12.9
14 F	17.1 10.7	20.2 15.3	21.2 18.4	19.8 19.0	16.6 17.3	12.3 14.4	7.6 10.8	2.8 7.1	-0.7 3.9	-1.1 3.2	1.5 5.6	5.7 9.7
15 Sa	14.2 6.4	18.4 11.8	21.2 16.6	21.5 19.3	19.4 19.5	15.6 17.4	11.0 14.1	5.9 10.4	0.9 6.5	-2.2 3.7	-1.9 3.6	1.5 6.7
16 Su	11.2 2.4	15.8 7.9	19.7 13.5	21.7 17.9	21.2 20.1	18.4 19.5	14.1 17.0	9.2 13.5	4.0 9.6	-0.8 5.8	-3.2 3.5	-1.9 4.4
17 M	8.1 -0.9	12.9 4.1	17.3 9.8	20.6 15.2	21.7 19.0	20.4 20.4	16.9 19.2	12.2 16.2	7.2 12.4	2.1 8.6	-2.1 5.1	-3.4 3.6
18 Tu	5.5 -2.8	9.8 0.7	14.5 6.2	18.5 11.8	21.0 16.6	21.2 19.7	19.1 20.3	15.1 18.5	10.3 15.1	5.3 11.2	0.5 7.5	-2.8 4.6
19 W	4.1 -2.7	6.8 -1.5	11.4 2.9	15.9 8.4	19.1 13.5	20.8 17.7	20.2 19.9	17.5 19.8	13.2 17.5	8.3 13.8	3.6 10.0	-0.5 6.6
20 Th	4.4 -0.8	4.9 -1.9	8.3 0.4	12.8 5.1	16.7 10.3	19.2 14.8	20.1 18.2	18.9 19.8	15.8 19.0	11.4 16.3	6.7 12.6	2.4 8.9
21 F	6.0 1.9	4.6 -0.4	5.9 -0.4	9.6 2.6	13.7 7.3	16.8 11.8	18.7 15.6	19.0 18.3	17.4 19.3	14.1 18.1	9.8 15.1	5.5 11.5
22 Sa	8.2 4.9	5.9 2.1	5.2 0.6	6.9 1.4	10.5 4.7	14.0 9.0	16.4 12.9	17.7 16.0	17.7 18.1	16.0 18.6	12.6 17.1	8.6 14.0
23 Su	10.7 8.0	7.9 5.0	6.1 2.9	5.8 2.1	7.6 3.2	10.9 6.5	13.7 10.2	15.5 13.4	16.6 16.1	16.5 17.8	14.7 17.9	11.6 16.2
24 M	13.2 11.0	10.2 8.0	7.9 5.6	6.3 4.1	6.1 3.5	7.9 4.9	10.6 7.9	12.9 11.1	14.4 13.8	15.5 16.1	15.4 17.5	13.8 17.4
25 Tu	15.6 13.5	12.8 11.1	10.1 8.5	7.9 6.6	6.3 5.2	6.0 4.8	7.5 6.1	9.8 8.9	11.8 11.7	13.4 14.1	14.6 16.2	14.8 17.5
26 W	17.1 14.8	15.2 13.7	12.5 11.5	9.8 9.3	7.6 7.5	5.8 6.1	5.3 5.7	6.7 7.0	8.8 9.6	10.8 12.3	12.7 14.6	14.3 16.7
27 Th	17.7 14.7	17.1 15.3	14.9 14.3	12.1 12.2	9.3 10.0	6.7 8.1	4.7 6.6	4.2 6.1	5.6 7.6	7.9 10.3	10.3 13.1	12.7 15.5
28 F	17.5 13.4	18.2 15.6	17.1 16.2	14.5 15.0	11.4 12.7	8.2 10.3	5.3 8.2	3.0 6.5	2.7 6.2	4.6 8.1	7.4 11.2	10.4 14.2
29 Sa	16.8 11.3	18.6 14.8	18.8 17.0	17.0 17.2	13.8 15.5	10.2 12.9	6.6 10.2	3.3 7.8	1.1 6.0	1.4 6.2	4.0 8.7	7.6 12.4
30 Su	15.7 8.5	18.4 12.8	19.8 16.4	19.2 18.3	16.7 18.0	12.8 15.7	8.6 12.6	4.6 9.6	1.1 6.9	-0.8 5.3	0.3 6.1	4.0 9.5

Time meridian 135° W. 0 is midnight. 12 is noon.
 Heights are referred to mean lower low water (N.O.S. chart datum).

JULY

Predicted hourly heights in feet

Day	Hours 0/12	Hours 1/13	Hours 2/14	Hours 3/15	Hours 4/16	Hours 5/17	Hours 6/18	Hours 7/19	Hours 8/20	Hours 9/21	Hours 10/22	Hours 11/23
1	13.8	17.5	20.0	20.8	19.4	15.9	11.4	6.7	2.3	-1.2	-2.3	-0.1
M	4.7	10.0	14.7	18.2	19.5	18.4	15.6	12.0	8.6	5.8	4.5	6.3
2	10.6	15.4	19.2	21.4	21.5	19.2	14.9	9.8	4.6	0.1	-3.1	-3.3
Tu	0.3	6.0	11.8	16.6	19.7	20.3	18.5	15.0	11.0	7.3	4.5	3.9
3	6.7	11.8	17.0	20.7	22.4	21.7	18.6	13.7	8.1	2.7	-1.8	-4.4
W	-3.4	1.3	7.7	13.7	18.3	20.7	20.7	18.2	14.1	9.8	5.9	3.4
4	3.6	7.3	13.0	18.2	21.6	22.7	21.4	17.8	12.5	6.6	1.1	-3.1
Th	-4.8	-2.7	2.9	9.6	15.4	19.5	21.3	20.6	17.6	13.1	8.5	4.7
5	2.6	3.6	8.0	13.9	18.9	21.8	22.5	20.8	16.8	11.3	5.3	0.1
F	-3.5	-4.4	-1.3	4.8	11.4	16.7	20.2	21.5	20.2	16.8	12.1	7.5
6	3.9	2.3	3.9	8.6	14.3	18.7	21.2	21.7	19.8	15.7	10.2	4.6
Sa	-0.1	-3.1	-3.1	0.6	6.7	12.8	17.5	20.5	21.3	19.7	15.9	11.2
7	6.8	3.6	2.4	4.2	8.8	14.0	17.9	20.1	20.5	18.6	14.7	9.6
Su	4.5	0.5	-1.8	-1.3	2.6	8.3	13.7	17.8	20.4	20.9	19.0	15.2
8	10.7	6.7	3.7	2.6	4.4	8.5	12.9	16.4	18.5	19.1	17.5	14.0
M	9.5	5.2	1.9	0.1	0.8	4.5	9.5	14.2	17.8	20.1	20.4	18.4
9	14.8	10.7	6.9	4.0	2.7	4.1	7.6	11.4	14.5	16.9	17.8	16.7
Tu	13.8	10.1	6.5	3.7	2.0	2.7	5.9	10.3	14.3	17.6	19.7	19.9
10	18.1	14.7	10.9	7.3	4.2	2.5	3.4	6.2	9.6	12.8	15.5	16.9
W	16.4	14.1	11.1	8.2	5.5	3.8	4.2	6.9	10.6	14.2	17.4	19.5
11	19.7	18.0	14.9	11.3	7.6	4.0	1.9	2.3	4.7	7.9	11.4	14.7
Th	16.6	16.6	14.9	12.4	9.7	6.9	5.0	5.1	7.4	10.8	14.2	17.4
12	19.5	19.8	18.0	15.0	11.3	7.3	3.3	0.8	1.0	3.4	6.9	10.9
F	14.6	17.0	17.2	15.8	13.4	10.7	7.7	5.5	5.5	7.7	11.0	14.5
13	17.8	19.8	19.9	18.0	14.8	10.9	6.5	2.2	-0.4	0.0	2.7	6.6
Sa	11.2	15.4	17.8	18.0	16.5	14.0	11.0	7.8	5.4	5.6	8.0	11.5
14	15.2	18.4	20.2	19.9	17.6	14.1	10.0	5.2	0.7	-1.5	-0.5	2.8
Su	7.4	12.4	16.6	18.8	18.6	16.7	14.0	10.6	7.2	5.0	5.7	8.6
15	12.4	16.2	19.3	20.6	19.6	16.8	12.9	8.4	3.5	-0.7	-2.2	-0.2
M	3.8	8.9	14.1	18.0	19.6	18.8	16.4	13.2	9.6	6.1	4.6	6.0
16	9.5	13.6	17.4	20.0	20.6	18.9	15.5	11.3	6.5	1.7	-1.9	-2.2
Tu	0.8	5.7	11.1	16.0	19.2	20.0	18.4	15.5	11.9	8.1	5.0	4.3
17	6.7	10.9	15.1	18.6	20.5	20.3	17.8	13.9	9.3	4.5	0.0	-2.4
W	-1.4	2.7	8.0	13.3	17.7	20.1	19.9	17.6	14.1	10.3	6.5	4.1
18	4.5	7.9	12.4	16.4	19.4	20.6	19.5	16.4	12.0	7.2	2.6	-1.1
Th	-2.2	0.2	5.1	10.5	15.4	19.0	20.4	19.3	16.3	12.4	8.5	5.1
19	3.6	5.2	9.3	13.9	17.5	19.8	20.2	18.3	14.6	9.9	5.3	1.2
F	-1.5	-1.2	2.5	7.8	12.9	17.1	19.8	20.2	18.3	14.7	10.6	6.9
20	4.2	3.7	6.3	10.8	15.0	18.0	19.6	19.3	16.9	12.8	8.1	3.8
Sa	0.5	-0.9	0.7	5.1	10.3	14.8	18.1	19.9	19.5	16.9	13.0	9.0
21	5.7	3.8	4.3	7.6	12.0	15.6	17.9	18.9	18.1	15.2	11.0	6.6
Su	3.0	0.7	0.4	3.0	7.7	12.4	16.1	18.6	19.5	18.4	15.4	11.4
22	7.8	5.2	4.1	5.2	8.6	12.6	15.6	17.3	17.8	16.6	13.7	9.7
M	5.8	3.1	1.8	2.4	5.5	10.0	14.0	16.8	18.5	18.8	17.2	13.9
23	10.2	7.1	5.1	4.5	6.0	9.3	12.6	14.9	16.3	16.6	15.3	12.5
Tu	9.0	5.9	4.0	3.4	4.6	7.7	11.7	14.9	16.9	18.1	17.9	16.0
24	12.8	9.5	7.0	5.4	4.9	6.4	9.3	12.0	13.9	15.1	15.5	14.4
W	12.0	9.0	6.7	5.5	5.2	6.5	9.4	12.8	15.3	16.8	17.6	17.1
25	15.2	12.2	9.2	7.0	5.4	4.9	6.2	8.7	11.0	12.9	14.3	14.9
Th	14.1	12.1	9.7	7.9	6.9	6.7	7.8	10.5	13.3	15.4	16.7	17.4
26	16.8	14.7	11.9	9.1	6.8	5.1	4.3	5.3	7.7	10.0	12.1	14.0
F	15.0	14.5	12.8	10.7	9.1	8.0	7.5	8.5	10.9	13.6	15.5	16.9
27	17.6	16.8	14.7	11.7	8.8	6.2	4.0	3.0	4.1	6.6	9.4	12.1
Sa	14.5	15.8	15.4	13.7	11.7	9.9	8.3	7.6	8.5	11.0	13.8	16.0
28	17.6	18.3	17.3	14.8	11.4	8.1	5.0	2.4	1.3	2.8	5.9	9.3
Su	12.8	15.6	17.0	16.5	14.6	12.1	9.9	7.9	6.9	8.1	11.1	14.3
29	17.0	18.8	19.3	17.9	14.8	10.9	7.0	3.3	0.3	-0.4	1.8	5.8
M	10.1	14.2	17.3	18.5	17.5	14.9	12.0	9.1	6.7	5.8	7.6	11.3
30	15.2	18.4	20.4	20.4	18.3	14.5	9.9	5.3	1.1	-1.8	-1.9	1.4
Tu	6.5	11.7	16.2	19.2	19.7	18.0	14.8	11.1	7.7	5.0	4.6	7.2
31	11.9	16.5	20.0	21.8	21.4	18.5	13.9	8.6	3.4	-1.1	-3.7	-2.6
W	1.9	7.9	13.7	18.3	20.8	20.6	18.0	14.0	9.7	5.9	3.2	3.5

Time meridian 135° W. 0 is midnight. 12 is noon.
 Heights are referred to mean lower low water (N.O.S. chart datum).

AUGUST

Predicted hourly heights in feet

Day	Hours 0/12	Hours 1/13	Hours 2/14	Hours 3/15	Hours 4/16	Hours 5/17	Hours 6/18	Hours 7/19	Hours 8/20	Hours 9/21	Hours 10/22	Hours 11/23
1 Th	7.3 -2.5	12.8 3.3	17.9 10.0	21.5 15.9	23.0 20.2	21.8 22.0	18.2 20.9	12.9 17.5	7.0 12.8	1.5 8.0	-3.0 3.9	-4.8 1.7
2 F	2.9 -4.9	7.7 -1.3	13.9 5.3	19.2 12.3	22.6 18.0	23.6 21.6	21.8 22.6	17.5 20.7	11.6 16.5	5.4 11.3	-0.2 6.3	-4.2 2.2
3 Sa	0.6 -4.4	2.8 -3.9	8.4 0.7	14.8 7.7	19.9 14.4	22.9 19.5	23.4 22.4	21.1 22.6	16.4 20.0	10.3 15.3	4.1 9.8	-1.2 4.8
4 Su	1.1 -1.3	0.2 -3.5	3.2 -2.0	9.1 3.3	15.2 10.1	19.8 16.1	22.4 20.4	22.6 22.6	20.0 22.1	15.1 18.9	9.1 14.0	3.3 8.6
5 M	3.9 3.4	0.8 -0.3	0.5 -1.6	3.8 0.6	9.5 5.9	15.0 12.0	19.0 17.1	21.3 20.6	21.2 22.1	18.5 21.1	13.9 17.7	8.4 12.9
6 Tu	7.9 8.3	3.8 4.3	1.1 1.5	1.1 0.9	4.4 3.2	9.4 8.0	14.0 13.2	17.5 17.3	19.6 20.1	19.5 21.2	17.1 19.9	13.0 16.7
7 W	12.3 12.8	8.0 9.1	4.3 6.0	1.9 3.9	1.8 3.4	4.6 5.5	8.7 9.5	12.5 13.6	15.7 16.9	17.7 19.2	18.0 20.1	16.1 18.9
8 Th	16.0 15.7	12.2 13.2	8.6 10.5	5.2 8.1	2.7 6.1	2.2 5.4	4.2 7.0	7.5 10.1	10.8 13.3	13.8 16.0	16.1 18.2	16.9 19.1
9 F	18.3 16.5	15.8 16.0	12.7 14.3	9.4 12.1	6.1 9.9	3.2 7.7	2.1 6.6	3.4 7.6	6.0 9.9	9.1 12.6	12.4 15.2	15.2 17.5
10 Sa	18.6 15.1	18.1 16.9	16.0 16.8	13.2 15.4	10.0 13.5	6.4 11.1	3.0 8.4	1.5 6.9	2.4 7.5	4.8 9.5	8.0 12.0	11.8 14.8
11 Su	17.4 12.2	18.7 15.9	18.3 17.8	16.3 17.7	13.6 16.3	10.1 14.1	6.0 11.3	2.2 8.2	0.6 6.4	1.5 7.0	4.1 9.1	7.9 11.9
12 M	15.0 8.7	17.8 13.5	19.1 17.2	18.5 18.9	16.4 18.4	13.3 16.5	9.4 13.9	4.9 10.4	1.0 7.1	-0.3 5.5	1.1 6.5	4.3 9.1
13 Tu	12.4 5.6	16.0 10.6	18.7 15.4	19.7 18.7	18.6 19.7	15.9 18.5	12.4 16.0	8.0 12.7	3.2 8.8	-0.3 5.5	-0.8 4.7	1.5 6.5
14 W	9.9 2.9	13.7 7.7	17.3 13.0	19.7 17.5	20.0 20.0	18.1 19.9	14.8 17.8	10.7 14.6	5.9 10.7	1.3 6.8	-1.3 4.0	-0.6 4.2
15 Th	7.2 0.6	11.3 5.2	15.4 10.5	18.8 15.6	20.5 19.3	19.8 20.7	17.0 19.5	13.0 16.4	8.5 12.5	3.7 8.4	-0.3 4.7	-1.6 3.0
16 F	4.5 -0.9	8.5 2.8	13.1 8.1	17.2 13.4	20.0 17.9	20.7 20.5	19.0 20.7	15.4 18.4	10.8 14.5	6.1 10.2	1.6 6.1	-1.3 3.1
17 Sa	2.6 -1.2	5.5 0.8	10.3 5.6	15.0 11.2	18.6 16.0	20.6 19.5	20.3 21.0	17.7 19.9	13.4 16.7	8.5 12.2	3.9 7.8	0.3 4.2
18 Su	2.2 -0.1	3.1 -0.1	7.1 3.4	12.2 8.8	16.5 14.0	19.4 18.0	20.5 20.4	19.3 20.6	15.9 18.5	11.2 14.6	6.4 10.0	2.4 5.9
19 M	3.0 1.9	2.1 0.6	4.3 2.1	8.9 6.4	13.8 11.8	17.4 16.2	19.5 19.1	19.7 20.4	17.8 19.6	14.0 16.7	9.3 12.5	4.9 8.0
20 Tu	4.6 4.4	2.6 2.4	2.8 2.3	5.7 4.7	10.4 9.3	14.7 14.2	17.5 17.6	18.8 19.3	18.5 19.6	16.1 18.1	12.2 14.8	7.9 10.6
21 W	6.7 7.4	4.1 4.8	3.0 3.9	3.8 4.5	7.1 7.4	11.4 11.7	14.8 15.7	16.9 18.0	17.6 18.9	17.0 18.5	14.6 16.5	11.0 13.2
22 Th	9.4 10.6	6.2 7.8	4.3 6.1	3.7 5.8	4.8 6.8	7.8 9.5	11.5 13.2	14.2 16.2	15.7 17.7	16.3 18.0	15.7 17.3	13.6 15.3
23 F	12.2 13.4	8.9 11.0	6.3 8.9	4.8 7.8	4.3 7.5	5.2 8.3	7.8 10.7	10.9 13.7	13.1 16.0	14.5 17.0	15.3 17.3	15.0 16.6
24 Sa	14.8 15.1	12.0 13.9	9.0 12.0	6.8 10.3	5.2 9.2	4.3 8.6	4.9 9.0	7.1 10.9	9.7 13.5	11.9 15.4	13.7 16.5	14.9 17.0
25 Su	16.6 15.4	14.9 16.0	12.3 15.0	9.5 13.2	7.1 11.4	5.0 9.9	3.5 8.7	3.7 8.6	5.8 10.3	8.5 12.8	11.1 15.0	13.5 16.6
26 M	17.5 14.3	17.4 16.7	15.7 17.4	12.9 16.3	9.8 14.1	6.8 11.8	4.0 9.5	2.0 7.7	2.1 7.3	4.5 9.2	7.7 12.2	11.1 15.1
27 Tu	17.4 12.1	18.8 16.0	18.7 18.5	16.7 18.9	13.4 17.2	9.6 14.3	5.9 11.2	2.3 8.2	0.1 5.8	0.5 5.6	3.5 8.2	7.7 12.0
28 W	15.8 8.7	18.9 13.9	20.6 18.2	20.2 20.5	17.6 20.1	13.5 17.5	8.9 13.8	4.3 9.8	0.2 6.0	-1.9 3.5	-0.7 3.9	3.5 7.5
29 Th	12.5 4.5	17.1 10.7	20.7 16.4	22.3 20.5	21.3 22.1	17.9 20.7	13.0 17.1	7.5 12.5	2.3 7.7	-1.9 3.5	-3.5 1.3	-1.0 2.7
30 F	7.5 -0.1	13.4 6.4	18.7 13.3	22.4 19.0	23.6 22.5	21.9 23.0	17.6 20.6	11.9 16.0	5.9 10.6	0.3 5.4	-3.6 1.1	-4.0 -0.4
31 Sa	2.2 -3.4	8.0 1.8	14.7 9.1	20.1 16.0	23.6 21.1	24.1 23.7	21.7 23.2	16.7 19.8	10.5 14.5	4.2 8.6	-1.2 3.2	-4.3 -0.7

Time meridian 135° W. 0 is midnight. 12 is noon.
 Heights are referred to mean lower low water (N.O.S. chart datum).

SEPTEMBER

Predicted hourly heights in feet

Day	Hours 0/12	Hours 1/13	Hours 2/14	Hours 3/15	Hours 4/16	Hours 5/17	Hours 6/18	Hours 7/19	Hours 8/20	Hours 9/21	Hours 10/22	Hours 11/23
1 Su	-1.3 -3.9	2.4 -1.6	9.0 4.5	15.8 11.9	21.0 18.2	23.9 22.5	23.8 24.1	20.7 22.6	15.3 18.4	9.0 12.7	2.9 6.7	-1.9 1.5
2 M	-1.7 -1.5	-1.2 -2.3	3.3 1.1	10.0 7.5	16.4 14.3	21.1 19.7	23.4 23.0	22.8 23.6	19.3 21.4	13.9 16.8	7.8 11.0	2.4 5.4
3 Tu	0.8 2.8	-1.6 0.0	-0.4 0.2	4.4 4.1	10.7 10.1	16.3 15.9	20.3 20.2	22.0 22.4	21.1 22.3	17.7 19.7	12.6 15.1	7.2 9.8
4 W	4.9 7.6	1.1 4.2	-0.6 2.4	0.9 3.1	5.4 6.8	10.9 12.0	15.5 16.5	18.7 19.6	20.2 21.1	19.4 20.7	16.3 18.1	11.9 13.9
5 Th	9.4 11.9	5.3 8.7	2.2 6.3	0.8 4.9	2.2 5.7	6.0 8.8	10.3 12.7	14.0 16.0	16.9 18.3	18.3 19.4	17.8 19.0	15.3 16.8
6 F	13.4 15.2	9.7 12.8	6.5 10.5	3.7 8.5	2.2 7.2	3.1 7.4	5.8 9.6	9.1 12.4	12.2 14.7	15.0 16.6	16.8 17.9	16.8 17.8
7 Sa	16.2 16.6	13.6 15.7	10.7 14.1	7.9 12.3	5.0 10.3	3.1 8.5	3.2 8.1	5.1 9.4	7.7 11.3	10.6 13.2	13.7 15.2	16.0 16.8
8 Su	17.3 16.1	16.3 17.2	14.3 16.8	11.9 15.4	9.0 13.5	5.7 11.1	3.2 8.7	2.7 7.7	4.1 8.5	6.5 10.1	9.7 12.1	13.3 14.6
9 M	16.7 13.9	17.5 17.0	16.9 18.2	15.1 17.8	12.6 16.2	9.3 13.9	5.5 10.7	2.6 7.8	1.9 6.6	3.2 7.3	5.9 9.2	9.7 11.8
10 Tu	14.8 10.9	17.3 15.4	18.3 18.4	17.5 19.3	15.5 18.3	12.6 16.1	8.7 13.0	4.4 9.3	1.5 6.2	1.1 5.3	3.0 6.6	6.4 9.1
11 W	12.5 8.0	16.0 13.0	18.5 17.4	19.1 19.8	17.8 19.8	15.1 17.9	11.6 15.0	7.1 11.2	2.7 7.1	0.4 4.3	0.9 4.3	3.8 6.6
12 Th	10.0 5.6	14.0 10.6	17.7 15.6	19.7 19.4	19.5 20.7	17.3 19.6	13.9 16.7	9.7 12.9	5.0 8.6	1.1 4.6	-0.2 2.8	1.7 4.0
13 F	7.5 3.5	11.8 8.4	16.1 13.7	19.4 18.2	20.6 20.9	19.3 20.9	16.1 18.4	11.9 14.6	7.4 10.2	2.8 5.8	-0.2 2.5	0.1 2.0
14 Sa	4.7 1.6	9.3 6.4	14.1 11.8	18.2 16.7	20.7 20.3	20.7 21.5	18.3 20.1	14.2 16.5	9.5 12.0	4.9 7.4	1.1 3.3	-0.4 1.1
15 Su	2.1 0.5	6.3 4.2	11.6 9.8	16.3 15.1	19.8 19.2	21.2 21.4	20.0 21.2	16.6 18.5	11.9 14.1	7.1 9.1	3.0 4.7	0.3 1.5
16 M	0.7 0.6	3.3 2.5	8.5 7.4	13.9 13.2	18.1 17.8	20.6 20.7	20.9 21.5	18.7 20.0	14.6 16.3	9.7 11.4	5.2 6.6	1.9 2.8
17 Tu	0.6 1.9	1.2 2.1	5.1 5.3	10.7 10.7	15.6 16.0	19.0 19.5	20.5 21.1	19.9 20.7	17.0 18.2	12.6 13.9	7.8 9.0	4.1 4.7
18 W	1.8 4.0	0.8 3.0	2.5 4.3	7.1 8.3	12.4 13.6	16.6 17.9	19.0 20.1	19.7 20.5	18.4 19.2	15.2 16.1	10.9 11.7	6.8 7.1
19 Th	3.6 6.7	1.7 4.9	1.7 4.9	4.1 6.9	8.7 10.9	13.4 15.5	16.6 18.6	18.2 19.7	18.4 19.3	16.9 17.5	13.7 14.2	9.9 10.1
20 F	6.2 9.8	3.6 7.5	2.4 6.5	2.9 6.9	5.5 9.0	9.6 12.6	13.5 16.2	15.9 18.3	17.0 18.7	17.1 17.9	15.6 16.0	12.9 13.0
21 Sa	9.4 12.9	6.2 10.5	4.2 8.9	3.4 8.2	3.8 8.5	6.1 10.1	9.6 13.1	12.7 15.9	14.7 17.3	15.8 17.5	16.1 16.9	15.1 15.3
22 Su	12.7 15.4	9.6 13.7	7.0 11.8	5.2 10.3	4.1 9.4	4.1 9.1	5.8 10.1	8.7 12.5	11.4 14.8	13.5 16.1	15.1 16.7	15.9 16.6
23 M	15.5 16.5	13.3 16.4	10.5 14.9	7.9 13.0	5.8 11.1	4.1 9.5	3.4 8.5	4.8 9.0	7.5 11.1	10.3 13.5	12.9 15.3	15.1 16.7
24 Tu	17.3 16.2	16.6 18.0	14.5 17.8	11.6 16.1	8.6 13.6	5.7 11.0	3.2 8.5	2.0 6.8	3.3 7.1	6.3 9.5	9.7 12.5	13.2 15.3
25 W	17.6 14.5	18.8 18.1	18.2 19.8	15.8 19.2	12.4 16.7	8.6 13.4	4.8 9.8	1.6 6.4	0.3 4.4	2.0 5.0	5.8 8.2	10.2 12.2
26 Th	16.1 11.7	19.2 16.8	20.7 20.4	19.8 21.6	16.8 20.1	12.5 16.6	7.9 12.2	3.3 7.7	-0.3 3.7	-1.2 1.7	1.5 3.2	6.3 7.5
27 F	12.8 8.0	17.6 14.2	21.2 19.5	22.5 22.6	20.9 22.8	17.0 20.1	11.9 15.5	6.5 10.2	1.4 5.1	-2.0 0.9	-2.0 -0.5	2.0 2.2
28 Sa	7.7 3.6	14.0 10.5	19.4 17.1	22.9 22.0	23.6 24.2	21.2 23.2	16.5 19.3	10.7 13.8	4.9 7.8	-0.2 2.3	-3.0 -1.6	-1.6 -1.9
29 Su	2.1 -0.1	8.7 6.2	15.5 13.5	20.9 19.7	24.0 23.8	23.9 24.8	20.7 22.6	15.4 17.8	9.2 11.6	3.4 5.4	-1.3 0.1	-2.9 -3.1
30 M	-2.2 -1.7	2.9 2.4	10.0 9.3	16.8 16.2	21.8 21.6	24.2 24.5	23.3 24.4	19.6 21.2	13.9 15.8	7.8 9.5	2.4 3.5	-1.4 -1.3

Time meridian 135° W. 0 is midnight. 12 is noon.
 Heights are referred to mean lower low water (N.O.S. chart datum).

OCTOBER

Predicted hourly heights in feet

Day	Hours 0/12	Hours 1/13	Hours 2/14	Hours 3/15	Hours 4/16	Hours 5/17	Hours 6/18	Hours 7/19	Hours 8/20	Hours 9/21	Hours 10/22	Hours 11/23
1 Tu	-3.5 -0.4	-1.5 0.5	4.3 5.4	11.4 12.1	17.6 18.2	21.9 22.4	23.5 24.1	22.1 23.0	18.0 19.3	12.5 13.8	6.9 7.8	2.3 2.4
2 W	-1.6 3.1	-2.8 1.5	0.0 3.3	5.9 8.2	12.3 14.2	17.6 19.0	21.1 22.0	22.1 22.8	20.4 21.1	16.5 17.2	11.5 12.1	6.7 6.8
3 Th	2.3 7.4	-0.8 4.7	-1.2 3.9	1.8 6.0	7.1 10.4	12.5 15.2	16.8 18.6	19.6 20.6	20.4 20.8	18.8 19.0	15.3 15.5	11.1 11.0
4 F	6.7 11.5	3.2 8.7	0.9 6.8	0.7 6.3	3.5 8.1	7.8 11.6	12.0 14.9	15.5 17.2	17.9 18.6	18.7 18.7	17.5 17.3	14.7 14.4
5 Sa	10.9 14.8	7.6 12.5	4.8 10.5	2.7 8.8	2.4 8.1	4.5 9.1	7.7 11.5	10.9 13.7	13.9 15.3	16.4 16.6	17.5 17.0	16.8 16.2
6 Su	14.1 16.8	11.5 15.5	9.0 13.8	6.5 12.0	4.3 10.1	3.5 8.8	4.7 9.0	7.0 10.5	9.7 12.0	12.6 13.5	15.4 15.1	16.9 16.2
7 M	16.0 17.2	14.6 17.5	12.6 16.5	10.4 14.9	7.7 12.8	5.0 10.3	3.7 8.3	4.3 8.0	6.1 8.9	8.7 10.4	12.0 12.3	15.2 14.6
8 Tu	16.2 16.0	16.5 18.2	15.5 18.5	13.7 17.3	11.2 15.4	8.1 12.6	4.8 9.3	3.2 6.9	3.6 6.5	5.5 7.5	8.5 9.4	12.3 12.1
9 W	15.1 13.7	17.1 17.5	17.5 19.4	16.3 19.2	14.2 17.4	11.2 14.7	7.4 11.2	3.9 7.4	2.4 5.0	3.2 5.0	5.6 6.8	9.3 9.5
10 Th	13.1 11.3	16.5 15.9	18.4 19.3	18.3 20.4	16.6 19.2	13.8 16.5	10.2 13.0	6.0 8.8	2.6 5.0	1.8 3.2	3.5 4.2	6.9 7.0
11 F	10.7 9.2	14.9 14.0	18.2 18.3	19.6 20.8	18.6 20.7	16.0 18.3	12.5 14.7	8.4 10.4	4.2 6.0	1.6 2.6	2.0 2.0	4.9 4.3
12 Sa	8.3 7.3	12.8 12.2	17.0 17.0	19.8 20.5	20.2 21.6	18.2 20.0	14.6 16.5	10.5 12.0	6.2 7.4	2.5 3.2	1.2 0.8	3.2 1.7
13 Su	5.5 5.4	10.4 10.5	15.2 15.6	19.1 19.6	20.9 21.8	20.0 21.4	16.9 18.4	12.7 13.9	8.3 9.0	4.3 4.4	1.6 0.9	1.9 -0.1
14 M	2.5 3.6	7.6 8.5	12.9 14.0	17.5 18.5	20.5 21.4	21.1 22.1	19.1 20.2	15.2 16.1	10.6 11.0	6.3 6.0	2.9 1.9	1.6 -0.5
15 Tu	0.1 2.7	4.2 6.2	10.0 11.8	15.3 17.1	19.2 20.6	21.1 22.1	20.5 21.3	17.6 18.2	13.2 13.4	8.6 8.2	4.8 3.6	2.5 0.3
16 W	-0.9 3.0	1.3 4.6	6.4 9.1	12.4 14.8	17.1 19.3	20.0 21.5	20.9 21.7	19.4 19.8	15.9 15.9	11.4 10.8	7.2 5.8	4.2 1.9
17 Th	-0.3 4.5	-0.2 4.4	3.1 7.0	8.6 11.9	14.1 17.1	17.9 20.3	19.9 21.4	20.0 20.5	18.0 17.9	14.3 13.7	10.1 8.8	6.5 4.3
18 F	1.3 6.7	0.0 5.6	1.1 6.3	4.9 9.2	10.3 13.9	15.0 18.1	17.9 20.2	19.2 20.3	18.8 18.9	16.6 16.0	13.2 12.0	9.4 7.5
19 Sa	3.8 9.6	1.6 7.6	1.0 7.0	2.5 8.0	6.3 10.8	11.1 14.8	14.9 18.0	17.1 19.2	18.1 18.9	17.6 17.4	15.7 14.7	12.6 11.1
20 Su	7.3 12.8	4.3 10.4	2.6 8.9	2.2 8.3	3.6 9.0	7.0 11.3	11.0 14.5	14.1 16.9	16.1 17.8	17.1 17.6	16.9 16.5	15.3 14.3
21 M	11.1 15.8	7.9 13.6	5.4 11.5	3.7 9.9	3.0 8.9	4.0 8.9	6.8 10.6	10.3 13.2	13.1 15.3	15.2 16.4	16.7 16.8	16.9 16.4
22 Tu	14.7 17.7	12.1 16.8	9.1 14.7	6.5 12.3	4.5 10.2	3.1 8.4	3.6 7.7	6.0 8.9	9.3 11.4	12.3 13.7	15.0 15.5	17.0 16.9
23 W	17.2 18.3	16.0 19.1	13.4 18.0	10.3 15.5	7.3 12.5	4.5 9.5	2.5 6.8	2.6 5.5	5.1 6.7	8.6 9.5	12.2 12.6	15.7 15.5
24 Th	17.8 17.3	18.7 20.1	17.5 20.7	14.7 18.9	11.2 15.6	7.5 11.8	3.9 7.8	1.4 4.3	1.6 2.9	4.5 4.5	8.7 8.2	13.2 12.4
25 F	16.4 15.1	19.4 19.6	20.4 22.1	18.9 21.9	15.6 19.2	11.3 14.9	6.8 10.1	2.7 5.3	0.2 1.4	0.9 0.4	4.7 3.0	9.8 7.7
26 Sa	13.1 11.9	17.9 17.7	21.2 22.0	21.9 23.8	19.8 22.5	15.7 18.6	10.7 13.4	5.7 7.8	1.3 2.5	-0.7 -1.3	1.0 -1.4	5.9 2.3
27 Su	8.2 8.0	14.4 14.6	19.6 20.3	22.7 23.9	22.7 24.6	19.8 22.0	15.1 17.2	9.7 11.2	4.4 5.2	0.3 -0.2	-0.8 -3.3	2.1 -2.2
28 M	2.7 4.2	9.4 10.7	16.0 17.3	21.1 22.4	23.6 24.9	22.8 24.3	19.2 20.7	14.0 15.1	8.5 8.9	3.4 2.8	-0.1 -2.1	0.0 -4.2
29 Tu	-1.9 1.7	4.0 6.8	11.0 13.5	17.4 19.4	22.0 23.5	23.6 24.8	22.1 23.1	18.0 18.8	12.7 12.9	7.4 6.7	2.8 1.1	0.4 -3.0
30 W	-4.0 1.6	-0.6 4.0	5.7 9.5	12.6 15.7	18.3 20.6	22.0 23.4	22.9 23.7	20.9 21.3	16.7 16.6	11.6 10.9	6.8 5.2	3.0 0.3
31 Th	-2.9 3.9	-2.7 3.5	1.3 6.4	7.5 11.7	13.7 16.9	18.5 20.6	21.4 22.4	21.7 21.9	19.5 19.1	15.4 14.6	10.8 9.4	6.7 4.5

Time meridian 135° W. 0 is midnight. 12 is noon.
 Heights are referred to mean lower low water (N.O.S. chart datum).

NOVEMBER

Predicted hourly heights in feet

Day	Hours 0/12	Hours 1/13	Hours 2/14	Hours 3/15	Hours 4/16	Hours 5/17	Hours 6/18	Hours 7/19	Hours 8/20	Hours 9/21	Hours 10/22	Hours 11/23
1 F	0.5 7.3	-1.7 5.3	-0.8 5.5	3.4 8.6	9.0 13.1	14.0 17.1	18.0 19.6	20.3 20.6	20.3 19.8	18.1 17.1	14.4 13.0	10.6 8.6
2 Sa	4.7 10.9	1.6 8.5	0.1 7.0	1.3 7.3	5.1 9.9	9.7 13.4	13.8 16.2	17.0 17.8	19.0 18.5	19.0 17.8	17.1 15.5	14.0 12.2
3 Su	8.7 14.2	5.6 11.8	3.2 9.8	2.0 8.3	3.1 8.4	6.2 10.3	9.7 12.7	13.0 14.5	15.9 15.8	17.8 16.6	18.0 16.3	16.6 14.7
4 M	12.1 16.6	9.4 14.7	7.0 12.7	4.9 10.8	3.6 9.0	4.3 8.6	6.6 9.7	9.3 11.3	12.1 12.7	15.0 14.2	17.1 15.4	17.7 15.7
5 Tu	14.6 17.9	12.7 17.1	10.6 15.4	8.4 13.4	6.0 11.0	4.5 8.8	4.7 7.8	6.4 8.4	8.8 9.6	11.6 11.2	14.7 13.2	17.1 15.0
6 W	15.8 17.8	15.2 18.6	13.6 17.7	11.6 15.8	9.2 13.3	6.5 10.4	4.6 7.5	4.6 6.3	6.2 6.8	8.6 8.3	11.7 10.4	15.2 13.2
7 Th	15.6 16.5	16.7 19.0	16.1 19.3	14.4 17.9	12.1 15.4	9.2 12.3	6.1 8.7	4.2 5.6	4.4 4.5	6.2 5.5	9.1 7.7	12.8 10.7
8 F	14.1 14.7	16.8 18.3	17.7 20.2	16.8 19.7	14.6 17.4	11.8 14.1	8.5 10.3	5.2 6.3	3.6 3.4	4.5 3.1	7.1 5.0	10.6 8.1
9 Sa	11.9 12.9	15.8 17.1	18.3 20.1	18.6 20.9	16.9 19.3	14.1 16.0	10.8 12.0	7.2 7.7	4.2 3.6	3.4 1.5	5.3 2.3	8.8 5.4
10 Su	9.5 11.3	13.9 15.7	17.7 19.4	19.6 21.4	19.0 20.8	16.4 18.0	13.0 13.8	9.3 9.2	5.7 4.7	3.4 1.2	3.9 0.2	7.1 2.5
11 M	6.8 9.5	11.7 14.3	16.2 18.5	19.4 21.3	20.3 21.9	18.6 19.9	15.3 15.9	11.4 11.0	7.6 6.2	4.5 2.0	3.3 -0.6	5.2 -0.1
12 Tu	3.7 7.3	9.0 12.5	14.1 17.3	18.3 20.7	20.6 22.2	20.3 21.4	17.7 18.1	13.8 13.3	9.7 8.1	6.1 3.5	3.8 -0.1	3.9 -1.6
13 W	0.5 5.3	5.6 9.8	11.4 15.3	16.3 19.6	19.8 22.0	21.0 22.2	19.8 20.1	16.4 16.0	12.2 10.7	8.2 5.5	5.1 1.3	3.8 -1.5
14 Th	-1.5 4.4	2.0 7.2	7.8 12.4	13.6 17.7	17.9 21.1	20.5 22.3	20.8 21.4	18.8 18.4	15.0 13.7	10.8 8.4	7.1 3.5	4.8 -0.1
15 F	-1.8 5.0	-0.6 5.6	3.8 9.2	9.9 14.5	15.2 19.1	18.8 21.5	20.5 21.8	20.1 20.1	17.6 16.6	13.7 11.8	9.7 6.6	6.6 2.3
16 Sa	-0.5 6.7	-1.3 5.8	0.8 7.0	5.7 10.8	11.5 15.8	16.0 19.5	18.9 21.0	20.0 20.6	19.2 18.6	16.5 15.0	12.8 10.4	9.2 5.7
17 Su	2.0 9.2	-0.1 7.2	-0.2 6.7	2.3 8.1	7.2 11.7	12.3 16.0	16.1 18.8	18.4 19.8	19.2 19.2	18.3 17.3	15.8 14.0	12.3 9.7
18 M	5.7 12.4	2.6 9.7	0.9 8.0	1.0 7.4	3.5 8.5	8.0 11.6	12.5 15.1	15.7 17.4	17.8 18.3	18.6 18.0	17.8 16.5	15.5 13.6
19 Tu	10.0 15.8	6.4 12.9	3.7 10.4	2.1 8.4	2.0 7.4	4.2 8.0	8.2 10.5	12.1 13.5	15.1 15.6	17.4 16.9	18.4 17.3	17.9 16.4
20 W	14.1 18.5	10.8 16.4	7.6 13.6	5.0 10.8	3.1 8.3	2.6 6.5	4.4 6.6	8.0 8.7	11.7 11.5	14.9 14.0	17.5 16.0	18.9 17.3
21 Th	17.0 19.9	15.1 19.4	12.1 17.2	8.9 14.0	6.0 10.6	3.5 7.3	2.6 4.8	4.2 4.4	7.7 6.5	11.5 9.7	15.2 12.9	18.2 15.9
22 F	17.9 19.6	18.1 21.2	16.4 20.4	13.3 17.6	9.8 13.8	6.4 9.7	3.4 5.5	2.3 2.5	4.0 2.1	7.7 4.6	12.1 8.4	16.2 12.6
23 Sa	16.6 18.0	19.1 21.4	19.5 22.5	17.5 21.0	14.1 17.4	10.2 12.9	6.3 7.9	3.0 3.2	1.9 0.0	4.1 0.1	8.4 3.3	13.3 8.1
24 Su	13.2 15.2	17.8 20.0	20.5 23.0	20.6 23.4	18.2 20.9	14.3 16.5	10.0 11.2	5.7 5.7	2.4 0.7	1.9 -2.2	4.8 -1.2	9.8 3.0
25 M	8.7 11.8	14.5 17.4	19.3 21.9	21.7 24.1	21.2 23.4	18.2 20.0	14.0 14.9	9.3 9.1	4.9 3.4	2.0 -1.5	2.3 -3.6	6.2 -1.5
26 Tu	3.7 8.1	10.0 14.0	16.1 19.4	20.6 23.2	22.4 24.4	21.2 22.6	17.7 18.4	13.2 12.8	8.5 6.9	4.3 1.3	2.0 -3.0	3.4 -4.0
27 W	-0.8 4.9	5.2 10.2	11.8 16.1	17.6 20.8	21.5 23.6	22.5 23.8	20.6 21.1	16.8 16.4	12.1 10.7	7.6 5.0	3.9 -0.2	2.5 -3.6
28 Th	-3.4 3.6	0.8 6.8	7.1 12.3	13.5 17.5	18.7 21.4	21.7 23.1	22.0 22.4	19.7 19.2	15.6 14.3	11.1 8.8	7.0 3.6	3.9 -0.9
29 F	-3.2 4.4	-1.9 5.0	3.0 8.7	9.1 13.8	14.8 18.2	19.2 21.0	21.5 22.0	21.1 20.6	18.5 17.2	14.5 12.5	10.3 7.4	6.7 2.8
30 Sa	-0.7 6.8	-2.0 5.3	0.2 6.5	5.1 10.3	10.7 14.7	15.5 18.0	19.1 20.0	20.8 20.3	20.1 18.8	17.3 15.4	13.5 11.0	9.8 6.6

Time meridian 135° W. 0 is midnight. 12 is noon.
 Heights are referred to mean lower low water (N.O.S. chart datum).

Lat. 60° 41'N Long. 151° 24'W

DECEMBER

Predicted hourly heights in feet

Day	Hours 0/12	Hours 1/13	Hours 2/14	Hours 3/15	Hours 4/16	Hours 5/17	Hours 6/18	Hours 7/19	Hours 8/20	Hours 9/21	Hours 10/22	Hours 11/23
1 Su	2.9 9.8	0.2 7.4	-0.2 6.4	2.4 7.8	7.0 11.2	11.7 14.6	15.7 17.1	18.6 18.4	19.9 18.6	19.0 17.0	16.3 14.0	12.9 10.1
2 M	6.5 12.7	3.6 10.1	1.6 8.1	1.7 7.3	4.3 8.6	8.3 11.3	12.1 13.8	15.4 15.6	18.0 16.8	19.0 17.0	18.1 15.7	15.6 13.1
3 Tu	9.9 15.3	7.1 12.8	4.8 10.5	3.2 8.6	3.4 7.7	5.8 8.6	9.0 10.6	12.2 12.5	15.1 14.1	17.4 15.4	18.4 15.9	17.6 15.0
4 W	12.9 17.4	10.3 15.4	8.0 13.0	6.0 10.8	4.6 8.6	4.7 7.4	6.7 7.9	9.4 9.4	12.1 11.1	14.9 12.8	17.2 14.5	18.2 15.4
5 Th	15.0 18.4	13.2 17.5	11.1 15.4	9.0 13.0	7.0 10.5	5.5 7.9	5.5 6.4	7.2 6.7	9.6 8.1	12.2 9.9	15.1 12.1	17.5 14.3
6 F	15.7 18.2	15.4 18.8	13.9 17.6	11.8 15.3	9.7 12.5	7.5 9.5	5.8 6.5	5.8 4.8	7.6 5.3	10.0 7.0	12.9 9.4	15.9 12.2
7 Sa	15.0 17.2	16.5 19.2	16.2 19.3	14.5 17.4	12.3 14.5	9.9 11.2	7.4 7.7	5.7 4.5	6.1 3.1	8.2 4.1	11.0 6.6	14.1 9.7
8 Su	13.2 15.9	16.2 18.8	17.5 20.1	16.9 19.3	14.8 16.7	12.2 13.1	9.5 9.2	6.9 5.4	5.5 2.3	6.5 1.7	9.2 3.6	12.5 7.0
9 M	10.9 14.6	14.8 17.9	17.7 20.3	18.5 20.7	17.2 18.8	14.6 15.2	11.6 11.0	8.6 6.8	6.1 2.8	5.4 0.3	7.3 0.8	10.8 3.9
10 Tu	8.3 12.9	12.8 16.9	16.8 19.9	19.1 21.4	19.1 20.6	17.1 17.6	13.9 13.2	10.6 8.5	7.5 4.1	5.4 0.5	5.7 -1.1	8.7 0.7
11 W	5.1 10.4	10.2 15.2	15.0 19.1	18.6 21.5	20.2 21.9	19.3 19.9	16.4 16.0	12.8 11.0	9.3 6.0	6.4 1.7	5.0 -1.4	6.4 -1.8
12 Th	1.4 7.5	6.9 12.4	12.4 17.4	17.0 20.9	22.0 22.4	20.7 21.7	18.9 18.8	15.5 14.1	11.5 8.7	8.0 3.7	5.5 -0.4	4.9 -2.6
13 F	-1.7 5.3	2.8 8.9	9.0 14.4	14.5 19.1	18.6 21.9	20.8 22.6	20.6 21.0	18.2 17.3	14.3 12.2	10.2 6.7	6.9 1.8	4.8 -1.7
14 Sa	-3.0 4.6	-0.7 6.0	4.7 10.3	11.0 15.9	16.2 20.1	19.7 22.2	21.1 22.1	20.2 19.9	17.3 15.8	13.1 10.5	9.1 5.1	6.0 0.7
15 Su	-2.2 5.6	-2.5 4.8	0.7 6.8	6.6 11.5	12.7 16.7	17.3 20.2	20.1 21.7	21.0 21.2	19.6 18.7	16.3 14.5	12.1 9.3	8.3 4.2
16 M	0.3 7.8	-1.8 5.6	-1.4 5.2	2.4 7.4	8.3 12.0	13.8 16.6	17.8 19.5	20.1 20.6	20.6 20.0	18.9 17.6	15.5 13.5	11.4 8.6
17 Tu	4.1 11.1	0.8 7.9	-0.8 5.8	0.2 5.4	4.1 7.6	9.6 11.7	14.4 15.6	17.9 18.1	19.9 19.2	20.1 18.8	18.3 16.7	14.9 13.0
18 W	8.7 14.8	4.8 11.2	2.0 8.1	0.6 6.0	1.7 5.3	5.4 7.1	10.3 10.5	14.6 13.9	17.7 16.3	19.7 17.8	19.8 17.9	18.0 16.3
19 Th	13.1 18.1	9.4 15.0	6.0 11.5	3.4 8.3	2.1 5.8	3.0 4.6	6.4 5.8	10.7 8.8	14.6 12.0	17.7 14.6	19.6 16.7	19.9 17.4
20 F	16.4 20.2	13.8 18.5	10.5 15.3	7.5 11.7	4.9 8.2	3.3 5.0	3.9 3.3	6.9 4.1	10.9 6.8	14.7 10.1	17.9 13.4	20.0 16.2
21 Sa	17.6 20.7	17.1 20.8	14.9 18.9	11.8 15.5	8.8 11.6	6.0 7.5	4.0 3.7	4.4 1.5	7.3 2.2	11.2 5.1	15.0 8.9	18.4 12.9
22 Su	16.4 19.4	18.3 21.6	18.0 21.4	15.9 19.1	12.9 15.3	9.7 10.9	6.5 6.2	4.3 1.9	4.7 -0.4	7.6 0.6	11.7 4.0	15.8 8.5
23 M	13.3 16.9	17.3 20.6	19.4 22.4	19.0 21.7	16.7 18.8	13.5 14.5	10.0 9.6	6.4 4.5	4.2 0.0	4.9 -1.9	8.2 -0.3	12.5 3.8
24 Tu	9.0 13.8	14.4 18.3	18.5 21.7	20.4 22.9	19.6 21.4	17.0 17.9	13.5 13.2	9.7 7.9	6.0 2.6	4.0 -1.7	5.3 -2.9	9.1 -0.3
25 W	4.6 10.4	10.4 15.3	15.9 19.7	19.8 22.5	21.1 22.8	19.8 20.6	16.8 16.5	13.0 11.4	8.9 6.0	5.3 0.7	3.9 -2.9	6.0 -3.0
26 Th	0.6 7.0	6.2 11.9	12.2 16.8	17.5 20.7	20.9 22.7	21.4 22.2	19.5 19.3	16.0 14.7	12.0 9.5	7.9 4.1	4.6 -0.7	4.1 -3.4
27 F	-2.2 4.7	2.4 8.4	8.3 13.4	14.2 18.0	18.9 21.1	21.4 22.3	21.2 21.1	18.6 17.6	14.8 12.8	10.7 7.6	6.8 2.6	4.2 -1.5
28 Sa	-3.0 4.2	-0.6 5.7	4.6 9.9	10.5 14.7	15.9 18.6	19.8 21.0	21.5 21.5	20.5 19.6	17.5 15.8	13.5 10.9	9.4 5.9	5.9 1.5
29 Su	-1.6 5.4	-1.8 4.6	1.6 6.9	7.0 11.2	12.5 15.6	17.1 18.7	20.2 20.4	21.1 20.2	19.5 17.9	16.1 13.9	12.1 9.2	8.3 4.8
30 M	1.1 7.6	-0.9 5.4	0.1 5.4	4.1 8.1	9.3 12.2	14.0 15.8	17.8 18.2	20.2 19.3	20.4 18.7	18.3 16.2	14.7 12.3	10.9 8.0
31 Tu	4.3 10.1	1.5 7.4	0.5 5.8	2.3 6.2	6.4 9.0	11.0 12.5	15.0 15.3	18.0 17.1	19.7 17.9	19.4 17.2	17.0 14.8	13.5 11.1

Time meridian 135° W. 0 is midnight. 12 is noon.
 Heights are referred to mean lower low water (N.O.S. chart datum).

JANUARY

Predicted hourly heights in feet

Day	Hours 0/12	Hours 1/13	Hours 2/14	Hours 3/15	Hours 4/16	Hours 5/17	Hours 6/18	Hours 7/19	Hours 8/20	Hours 9/21	Hours 10/22	Hours 11/23
1 Tu	13.8 16.8	11.8 14.4	9.2 10.9	6.6 7.0	5.1 3.6	5.1 1.6	6.5 1.4	9.0 2.8	12.2 5.6	15.1 9.0	17.1 12.3	17.7 14.5
2 W	15.3 18.0	14.5 16.8	12.5 14.0	9.7 10.1	7.0 5.8	5.3 2.3	5.3 0.4	6.8 0.5	9.5 2.3	12.8 5.6	15.8 9.6	17.7 13.1
3 Th	15.4 18.3	16.1 18.3	15.2 16.5	12.8 13.2	9.6 8.8	6.7 4.3	5.1 0.8	5.3 -0.6	7.2 0.0	10.2 2.6	13.7 6.5	16.6 10.8
4 F	14.3 17.6	16.5 18.8	16.8 18.2	15.3 15.7	12.4 11.8	8.9 7.0	5.9 2.5	4.7 -0.5	5.4 -1.3	7.8 0.2	11.2 3.6	14.8 8.0
5 Sa	12.4 16.1	15.7 18.5	17.4 19.1	17.1 17.7	14.9 14.5	11.4 10.0	7.7 5.0	5.0 0.8	4.3 -1.5	5.7 -1.2	8.7 1.2	12.5 5.2
6 Su	9.9 13.9	14.1 17.2	17.0 19.0	17.9 18.8	16.7 16.6	13.9 12.7	10.0 7.8	6.3 3.0	4.2 -0.6	4.3 -1.7	6.5 -0.4	10.0 2.8
7 M	7.2 11.4	11.9 15.2	15.7 18.0	17.8 19.1	17.8 18.0	15.8 15.0	12.3 10.6	8.3 5.7	5.1 1.3	3.8 -1.2	4.8 -1.2	7.6 1.0
8 Tu	4.8 9.0	9.4 12.8	13.7 16.2	16.8 18.3	18.0 18.5	17.1 16.6	14.4 13.0	10.6 8.4	6.8 3.8	4.3 0.4	3.9 -1.0	5.8 0.0
9 W	3.0 7.0	7.0 10.3	11.3 13.8	15.0 16.6	17.3 17.9	17.5 17.2	15.8 14.7	12.7 10.8	9.0 6.5	5.8 2.7	4.1 0.2	4.6 0.0
10 Th	1.8 5.6	5.2 8.2	9.1 11.3	12.9 14.3	15.9 16.4	17.2 16.9	16.6 15.6	14.3 12.8	11.1 9.0	7.8 5.2	5.3 2.3	4.4 0.9
11 F	1.5 5.0	3.9 6.5	7.3 9.1	10.9 11.8	14.1 14.2	16.1 15.6	16.6 15.5	15.4 13.9	12.9 11.1	9.8 7.7	7.0 4.7	5.2 2.6
12 Sa	2.1 5.4	3.4 5.6	6.0 7.1	9.1 9.4	12.2 11.6	14.7 13.5	16.0 14.4	15.8 14.1	14.2 12.5	11.7 10.0	9.0 7.2	6.7 4.9
13 Su	3.6 6.6	3.6 5.6	5.2 5.8	7.7 7.2	10.5 9.1	13.0 11.0	14.9 12.5	15.7 13.3	15.2 13.0	13.4 11.7	11.0 9.6	8.6 7.4
14 M	5.7 8.3	4.8 6.4	5.1 5.4	6.6 5.5	8.9 6.6	11.3 8.2	13.5 10.0	15.1 11.6	15.5 12.6	14.8 12.6	13.0 11.6	10.7 10.0
15 Tu	8.2 10.6	6.7 8.1	5.9 6.0	6.1 4.6	7.5 4.5	9.5 5.4	11.8 7.0	13.8 9.0	15.3 11.0	15.7 12.4	14.9 12.8	13.1 12.3
16 W	10.9 13.4	9.2 10.7	7.6 7.7	6.5 5.0	6.5 3.3	7.7 2.9	9.7 3.9	12.0 5.8	14.2 8.3	15.8 10.9	16.3 12.9	15.4 13.8
17 Th	13.4 16.3	12.1 13.9	10.1 10.6	8.1 6.9	6.6 3.6	6.3 1.4	7.5 1.0	9.6 2.3	12.3 4.8	14.9 8.2	16.8 11.5	17.3 14.1
18 F	15.3 18.6	14.9 17.3	13.2 14.3	10.6 10.2	7.9 5.7	5.9 1.7	5.5 -0.7	6.8 -0.9	9.5 1.0	12.7 4.4	15.9 8.7	18.1 12.8
19 Sa	15.7 19.6	16.9 19.9	16.2 18.1	13.9 14.4	10.6 9.4	7.1 4.0	4.7 -0.5	4.4 -2.8	6.2 -2.4	9.5 0.3	13.5 4.7	17.2 9.8
20 Su	14.5 18.6	17.5 21.0	18.5 21.0	17.1 18.5	14.0 13.9	9.8 8.1	5.7 2.1	3.2 -2.5	3.3 -4.5	5.8 -3.3	9.8 0.5	14.5 5.8
21 M	11.5 15.6	16.3 19.9	19.2 22.0	19.6 21.5	17.4 18.3	13.4 12.9	8.5 6.4	4.1 0.2	1.8 -4.1	2.5 -5.2	5.7 -3.1	10.5 1.5
22 Tu	7.4 11.3	13.3 16.6	18.0 20.6	20.4 22.4	20.0 21.3	17.0 17.4	12.2 11.5	6.9 4.8	2.6 -1.2	0.8 -4.8	2.2 -5.0	6.1 -2.0
23 W	3.2 6.6	9.3 11.9	15.1 17.1	19.3 20.7	21.0 21.9	19.8 20.2	16.0 15.9	10.8 9.9	5.4 3.5	1.5 -1.8	0.4 -4.4	2.4 -3.7
24 Th	-0.1 3.0	5.3 7.2	11.2 12.3	16.5 16.9	20.0 20.0	20.8 20.6	18.8 18.6	14.7 14.2	9.4 8.5	4.3 2.9	1.0 -1.4	0.6 -3.1
25 F	-1.6 1.3	2.2 3.7	7.4 7.6	12.8 12.1	17.4 16.0	19.9 18.5	20.0 18.7	17.5 16.6	13.3 12.6	8.3 7.7	3.9 3.1	1.3 -0.1
26 Sa	-0.9 2.0	0.9 2.1	4.6 4.3	9.2 7.6	13.9 11.3	17.5 14.6	19.3 16.5	18.8 16.6	16.2 14.8	12.2 11.6	7.8 7.7	4.1 4.1
27 Su	1.8 4.6	1.5 2.8	3.4 2.8	6.6 4.5	10.5 7.0	14.3 10.1	17.1 12.8	18.2 14.6	17.5 14.8	15.1 13.6	11.6 11.2	7.9 8.3
28 M	5.6 8.3	3.9 5.3	3.8 3.5	5.4 3.2	8.0 4.2	11.1 6.1	14.1 8.7	16.3 11.2	17.2 13.0	16.5 13.6	14.4 13.1	11.5 11.6
29 Tu	9.4 11.7	7.3 8.7	5.8 5.8	5.6 3.8	6.7 3.1	8.7 3.5	11.2 5.1	13.7 7.4	15.6 10.0	16.4 12.1	15.9 13.3	14.2 13.3
30 W	12.4 14.4	10.7 12.0	8.7 9.0	7.1 5.9	6.6 3.5	7.2 2.4	8.8 2.6	10.9 4.1	13.3 6.6	15.2 9.5	16.0 12.0	15.8 13.6
31 Th	14.1 16.0	13.3 14.6	11.6 12.1	9.4 8.7	7.6 5.3	6.7 2.7	7.1 1.5	8.5 1.8	10.7 3.6	13.2 6.6	15.2 9.9	16.2 12.8

Time meridian 135° W. 0 is midnight. 12 is noon.
 Heights are referred to mean lower low water (N.O.S. chart datum).

FEBRUARY

Predicted hourly heights in feet

Day	Hours 0/12	Hours 1/13	Hours 2/14	Hours 3/15	Hours 4/16	Hours 5/17	Hours 6/18	Hours 7/19	Hours 8/20	Hours 9/21	Hours 10/22	Hours 11/23
1 F	14.6 16.8	15.0 16.4	14.1 14.6	12.0 11.6	9.4 7.8	7.2 4.0	6.2 1.4	6.6 0.5	8.3 1.3	10.9 3.8	13.6 7.4	15.8 11.1
2 Sa	14.1 16.7	15.8 17.5	15.9 16.7	14.4 14.3	11.6 10.6	8.5 6.2	6.2 2.4	5.4 0.1	6.2 -0.2	8.4 1.5	11.5 4.8	14.5 8.9
3 Su	12.9 15.8	15.7 17.8	16.9 18.0	16.2 16.4	13.9 13.2	10.4 8.8	7.0 4.2	4.8 0.6	4.6 -1.0	6.1 -0.3	9.1 2.4	12.6 6.5
4 M	11.0 14.2	14.8 17.2	17.1 18.7	17.5 18.1	15.8 15.6	12.6 11.5	8.6 6.6	5.2 2.0	3.6 -0.9	4.2 -1.3	6.6 0.5	10.3 4.1
5 Tu	8.8 11.8	13.3 15.7	16.6 18.3	18.1 18.9	17.3 17.4	14.6 13.9	10.7 9.2	6.5 4.2	3.6 0.2	2.9 -1.6	4.5 -0.8	7.8 2.2
6 W	6.5 9.3	11.3 13.5	15.4 17.0	17.9 18.8	18.2 18.5	16.4 15.9	12.8 11.7	8.5 6.8	4.6 2.2	2.5 -0.8	2.9 -1.3	5.4 0.7
7 Th	4.5 6.9	9.1 10.9	13.6 14.8	17.0 17.6	18.4 18.5	17.5 17.2	14.7 13.9	10.6 9.4	6.4 4.7	3.2 0.9	2.2 -0.8	3.6 0.0
8 F	3.0 4.9	7.2 8.4	11.7 12.2	15.5 15.5	17.8 17.5	18.0 17.4	16.1 15.3	12.6 11.7	8.5 7.3	4.8 3.3	2.6 0.7	2.6 0.2
9 Sa	2.1 3.6	5.7 6.2	9.8 9.6	13.7 13.0	16.6 15.6	17.8 16.6	16.9 15.9	14.3 13.3	10.6 9.7	6.8 5.9	3.9 2.9	2.6 1.5
10 Su	2.1 3.2	4.6 4.6	8.2 7.3	11.9 10.3	15.1 13.0	17.0 14.9	17.1 15.3	15.5 14.1	12.5 11.6	8.9 8.4	5.7 5.5	3.6 3.4
11 M	2.9 3.8	4.2 3.8	6.9 5.3	10.3 7.8	13.4 10.3	15.7 12.4	16.7 13.8	16.1 13.9	14.1 12.7	11.1 10.6	7.9 8.1	5.3 5.9
12 Tu	4.6 5.4	4.7 4.1	6.1 4.2	8.7 5.5	11.6 7.5	14.0 9.5	15.7 11.4	16.1 12.6	15.2 12.8	13.1 12.0	10.4 10.5	7.6 8.6
13 W	7.0 7.8	6.1 5.6	6.2 4.2	7.5 3.9	9.7 4.8	12.0 6.4	14.0 8.3	15.4 10.2	15.7 11.7	14.8 12.4	12.9 12.2	10.4 11.2
14 Th	9.7 10.9	8.3 8.2	7.3 5.7	7.0 3.8	7.9 3.0	9.7 3.5	11.7 4.9	13.7 7.0	15.1 9.4	15.7 11.5	15.1 12.9	13.4 13.2
15 F	12.5 14.4	11.1 11.8	9.4 8.6	7.8 5.3	7.0 2.7	7.4 1.3	8.9 1.6	11.0 3.3	13.3 6.0	15.3 9.1	16.3 12.1	16.0 14.1
16 Sa	14.8 17.5	14.1 15.7	12.3 12.6	9.9 8.6	7.5 4.4	6.0 1.0	6.2 -0.7	7.7 -0.2	10.3 2.0	13.3 5.6	16.0 9.8	17.6 13.5
17 Su	16.0 19.2	16.7 19.1	15.5 16.9	12.9 13.0	9.5 8.0	6.2 2.8	4.3 -1.1	4.5 -2.7	6.5 -1.7	9.9 1.5	13.8 6.1	17.2 11.2
18 M	15.5 18.7	18.0 20.8	18.3 20.4	16.4 17.6	12.8 12.7	8.3 6.7	4.3 0.9	2.3 -3.1	2.8 -4.2	5.6 -2.3	10.0 1.9	14.7 7.6
19 Tu	13.3 15.9	17.7 20.1	19.9 22.0	19.5 21.1	16.5 17.4	11.7 11.7	6.4 5.0	2.1 -1.0	0.3 -4.6	1.6 -4.8	5.3 -1.8	10.5 3.4
20 W	9.7 11.4	15.6 17.0	19.7 21.1	21.2 22.5	19.7 20.8	15.7 16.4	10.0 10.1	4.3 3.2	0.1 -2.4	-1.0 -5.1	1.1 -4.2	5.6 -0.2
21 Th	5.6 6.4	12.1 12.3	17.7 17.7	21.1 21.2	21.6 22.0	19.1 19.7	14.1 14.7	8.0 8.3	2.3 1.9	-1.3 -2.8	-1.5 -4.3	1.4 -2.4
22 F	2.2 2.2	8.2 7.3	14.3 12.9	19.2 17.7	21.6 20.5	21.0 20.5	17.6 17.8	12.2 12.8	6.2 6.9	1.0 1.4	-1.7 -2.1	-1.1 -2.5
23 Sa	0.2 0.0	5.0 3.4	10.6 8.1	16.0 13.0	19.7 17.0	21.0 19.0	19.5 18.5	15.7 15.6	10.4 11.1	4.9 6.1	0.6 1.8	-1.2 -0.4
24 Su	0.1 0.1	3.1 1.4	7.5 4.5	12.4 8.4	16.7 12.4	19.3 15.5	19.6 16.9	17.6 16.2	13.8 13.7	9.0 10.1	4.4 6.2	1.1 3.2
25 M	1.9 2.3	2.9 1.6	5.7 2.7	9.5 5.2	13.3 8.2	16.5 11.3	18.1 13.7	17.8 14.8	15.7 14.3	12.3 12.5	8.4 9.8	4.8 7.1
26 Tu	5.1 5.7	4.4 3.6	5.4 2.9	7.7 3.6	10.5 5.3	13.3 7.5	15.5 9.9	16.5 12.0	16.1 13.1	14.3 13.1	11.6 12.1	8.5 10.4
27 W	8.5 9.2	7.0 6.7	6.4 4.7	7.1 3.8	8.6 3.8	10.6 4.8	12.6 6.5	14.3 8.6	15.1 10.7	14.8 12.1	13.5 12.7	11.6 12.4
28 Th	11.4 12.0	10.0 9.9	8.5 7.5	7.7 5.2	7.8 3.8	8.6 3.4	10.0 4.0	11.7 5.5	13.3 7.8	14.2 10.2	14.3 12.1	13.6 13.2

Time meridian 135° W. 0 is midnight. 12 is noon.
 Heights are referred to mean lower low water (N.O.S. chart datum).

MARCH

Predicted hourly heights in feet

Day	Hours 0/12	Hours 1/13	Hours 2/14	Hours 3/15	Hours 4/16	Hours 5/17	Hours 6/18	Hours 7/19	Hours 8/20	Hours 9/21	Hours 10/22	Hours 11/23
1 F	13.3 14.1	12.5 12.7	10.9 10.4	9.1 7.6	7.9 4.9	7.5 3.1	7.9 2.5	9.2 3.1	11.0 5.1	12.8 7.8	14.1 10.7	14.6 13.0
2 Sa	14.3 15.4	14.4 14.8	13.2 13.0	11.2 10.2	8.8 6.8	7.1 3.8	6.5 1.9	7.0 1.5	8.6 2.7	10.8 5.3	13.1 8.7	14.8 12.0
3 Su	14.4 15.9	15.5 16.3	15.1 15.3	13.3 12.8	10.4 9.2	7.5 5.3	5.6 2.1	5.2 0.6	6.2 0.9	8.5 3.0	11.5 6.5	14.2 10.5
4 M	13.9 15.7	16.0 17.2	16.5 17.1	15.2 15.1	12.4 11.7	8.8 7.4	5.6 3.2	4.0 0.4	4.2 -0.3	6.1 1.1	9.2 4.3	12.8 8.5
5 Tu	12.8 14.5	16.0 17.3	17.4 18.2	16.8 17.1	14.4 14.2	10.6 9.8	6.5 5.0	3.5 1.1	2.6 -0.9	3.8 -0.4	6.7 2.3	10.6 6.4
6 W	11.1 12.4	15.2 16.3	17.7 18.5	18.1 18.5	16.2 16.4	12.7 12.4	8.2 7.4	4.1 2.7	1.7 -0.6	1.8 -1.2	4.2 0.6	8.0 4.4
7 Th	9.1 9.8	13.8 14.3	17.3 17.7	18.7 19.0	17.8 17.9	14.7 14.7	10.3 10.1	5.6 5.0	1.9 0.8	0.7 -1.2	2.0 -0.4	5.4 2.7
8 F	7.2 7.1	12.1 11.7	16.2 15.8	18.7 18.3	18.8 18.6	16.5 16.5	12.4 12.5	7.6 7.6	3.2 3.0	0.6 -0.1	0.5 -0.7	3.0 1.5
9 Sa	5.4 4.6	10.1 9.0	14.6 13.3	17.9 16.6	19.0 18.1	17.8 17.4	14.4 14.5	9.8 10.3	5.2 5.7	1.6 2.0	0.1 0.2	1.3 1.0
10 Su	4.1 2.7	8.4 6.4	12.8 10.5	16.5 14.1	18.5 16.6	18.3 17.1	16.0 15.6	12.0 12.4	7.4 8.4	3.4 4.6	0.8 2.0	0.6 1.5
11 M	3.3 1.6	6.8 4.2	11.0 7.7	14.7 11.3	17.3 14.1	18.2 15.8	16.9 15.6	13.9 13.8	9.8 10.7	5.7 7.3	2.5 4.5	1.0 3.1
12 Tu	3.4 1.7	5.7 2.7	9.2 5.3	12.8 8.4	15.6 11.2	17.2 13.4	17.2 14.5	15.3 14.1	12.1 12.4	8.3 9.8	4.9 7.3	2.5 5.3
13 W	4.6 3.0	5.4 2.5	7.7 3.5	10.7 5.6	13.6 8.1	15.6 10.4	16.5 12.2	16.0 13.2	14.0 13.0	11.0 11.7	7.7 9.9	4.9 8.0
14 Th	6.6 5.6	6.2 3.8	6.9 3.0	8.8 3.6	11.2 5.1	13.4 7.1	15.0 9.2	15.6 11.0	15.1 12.3	13.4 12.6	10.9 12.0	8.1 10.8
15 F	9.3 9.0	8.0 6.4	7.2 4.2	7.5 2.9	8.8 2.8	10.6 3.9	12.5 5.7	14.1 7.9	15.0 10.3	14.9 12.2	13.7 13.2	11.6 13.2
16 Sa	12.2 12.9	10.6 10.2	8.9 7.1	7.4 4.1	7.0 2.0	7.7 1.4	9.3 2.2	11.3 4.3	13.4 7.2	15.0 10.4	15.5 13.1	14.8 14.7
17 Su	14.9 16.4	13.7 14.4	11.5 11.2	8.9 7.2	6.6 3.3	5.5 0.5	5.9 -0.4	7.6 0.7	10.3 3.4	13.2 7.2	15.7 11.4	16.8 14.8
18 M	16.6 18.6	16.6 18.1	14.9 15.6	11.7 11.5	8.0 6.5	4.8 1.8	3.2 -1.4	3.8 -2.1	6.1 -0.3	9.7 3.4	13.7 8.3	16.9 13.2
19 Tu	17.0 18.5	18.7 20.2	18.1 19.4	15.3 16.2	10.9 11.1	6.2 5.2	2.3 0.0	0.8 -3.1	1.9 -3.1	5.2 -0.3	9.8 4.5	14.7 10.3
20 W	15.6 16.0	19.2 19.9	20.3 21.4	18.7 19.9	14.7 15.9	9.3 10.0	3.7 3.5	-0.2 -1.6	-1.3 -4.0	0.7 -3.0	5.0 0.8	10.6 6.6
21 Th	12.8 11.7	18.0 17.3	21.0 20.9	21.2 21.7	18.4 19.5	13.3 14.7	7.0 8.3	1.2 1.9	-2.3 -2.6	-2.5 -3.9	0.5 -1.8	5.6 3.0
22 F	9.2 6.7	15.3 12.9	19.9 18.1	22.0 21.1	21.0 21.1	17.1 18.2	11.2 12.9	4.6 6.6	-0.8 0.9	-3.5 -2.6	-2.7 -2.7	1.1 0.4
23 Sa	5.7 2.4	11.8 8.0	17.3 13.7	20.9 18.2	21.8 20.3	19.7 19.6	15.0 16.3	8.9 11.1	2.7 5.4	-1.9 0.7	-3.5 -1.5	-1.8 -0.4
24 Su	3.2 -0.2	8.4 4.0	13.9 9.1	18.4 14.0	20.8 17.5	20.5 18.8	17.6 17.6	12.7 14.2	6.9 9.6	1.6 4.9	-1.9 1.6	-2.4 0.6
25 M	2.3 -0.7	6.0 1.7	10.6 5.4	15.1 9.7	18.4 13.5	19.6 16.1	18.5 16.8	15.2 15.4	10.6 12.5	5.7 8.8	1.5 5.4	-0.8 3.2
26 Tu	3.0 0.9	5.0 1.3	8.3 3.4	11.9 6.3	15.2 9.6	17.4 12.5	17.7 14.4	16.2 14.7	13.1 13.6	9.3 11.5	5.4 8.9	2.4 6.5
27 W	5.2 3.8	5.4 2.7	7.1 3.0	9.6 4.4	12.2 6.5	14.5 8.9	15.8 11.2	15.6 12.7	14.2 13.2	11.7 12.6	8.8 11.3	6.0 9.6
28 Th	8.0 7.0	7.0 5.2	7.1 4.1	8.2 4.0	9.9 4.7	11.6 6.1	13.2 7.9	14.1 10.0	14.0 11.6	13.0 12.5	11.3 12.5	9.2 11.8
29 F	10.7 10.0	9.3 8.1	8.2 6.1	7.9 4.7	8.3 4.1	9.3 4.3	10.5 5.3	11.9 7.1	12.8 9.3	13.1 11.3	12.7 12.6	11.6 13.1
30 Sa	12.7 12.3	11.6 10.8	10.0 8.7	8.5 6.3	7.6 4.4	7.5 3.5	8.2 3.5	9.4 4.7	11.0 6.9	12.4 9.5	13.1 11.9	13.1 13.6
31 Su	14.1 14.1	13.6 13.2	12.0 11.2	9.8 8.5	7.7 5.6	6.4 3.4	6.2 2.4	7.0 2.8	8.8 4.6	10.9 7.5	12.8 10.7	14.0 13.3

Time meridian 135° W. 0 is midnight. 12 is noon.
 Heights are referred to mean lower low water (N.O.S. chart datum).

APRIL

Predicted hourly heights in feet

Day	Hours 0/12	Hours 1/13	Hours 2/14	Hours 3/15	Hours 4/16	Hours 5/17	Hours 6/18	Hours 7/19	Hours 8/20	Hours 9/21	Hours 10/22	Hours 11/23
1	14.9	15.1	13.9	11.5	8.6	6.1	4.8	4.9	6.3	8.8	11.7	14.0
M	15.2	15.1	13.6	10.9	7.4	4.1	2.0	1.5	2.7	5.4	9.0	12.6
2	15.2	16.3	15.6	13.4	10.1	6.5	3.9	3.0	3.9	6.3	9.7	13.1
Tu	15.6	16.5	15.7	13.3	9.7	5.6	2.3	0.7	1.1	3.4	7.1	11.3
3	14.9	17.0	17.1	15.4	12.0	7.9	4.0	1.8	1.8	3.7	7.2	11.3
W	14.9	17.1	17.3	15.6	12.2	7.8	3.5	0.6	0.0	1.7	5.1	9.6
4	13.9	17.1	18.2	17.2	14.1	9.8	5.1	1.5	0.2	1.3	4.5	8.8
Th	13.3	16.7	18.2	17.5	14.6	10.4	5.6	1.6	-0.4	0.4	3.3	7.7
5	12.4	16.5	18.7	18.6	16.2	12.0	7.0	2.4	-0.5	-0.6	1.8	5.9
F	10.8	15.2	18.0	18.6	16.7	13.0	8.2	3.5	0.3	-0.3	1.8	5.7
6	10.5	15.1	18.4	19.4	17.9	14.3	9.3	4.2	0.1	-1.5	-0.3	3.1
Sa	7.8	12.7	16.6	18.5	18.1	15.3	11.0	6.1	2.1	0.1	0.8	4.0
7	8.6	13.3	17.2	19.3	19.0	16.3	11.8	6.6	1.8	-1.2	-1.6	0.8
Su	4.9	9.7	14.2	17.3	18.2	16.8	13.4	9.0	4.7	1.6	0.9	2.8
8	6.7	11.3	15.5	18.4	19.2	17.7	14.1	9.3	4.3	0.4	-1.5	-0.7
M	2.4	6.7	11.2	14.9	17.1	17.2	15.2	11.6	7.5	4.0	2.1	2.5
9	5.2	9.2	13.4	16.7	18.5	18.3	15.9	11.9	7.2	2.9	-0.1	-0.9
Tu	0.6	4.0	8.1	11.9	14.8	16.2	15.7	13.5	10.2	6.9	4.3	3.4
10	4.5	7.4	11.1	14.5	16.9	17.8	16.8	14.1	10.2	6.0	2.5	0.4
W	0.2	2.0	5.2	8.6	11.8	14.0	14.9	14.3	12.3	9.7	7.1	5.3
11	4.9	6.2	8.9	12.0	14.6	16.3	16.6	15.4	12.8	9.3	5.8	2.9
Th	1.3	1.3	2.9	5.6	8.4	11.0	12.9	13.8	13.4	12.0	9.9	7.9
12	6.6	6.2	7.3	9.4	11.7	13.8	15.2	15.5	14.4	12.3	9.4	6.5
F	3.9	2.3	2.0	3.2	5.2	7.6	10.0	12.0	13.2	13.3	12.4	10.9
13	9.1	7.6	6.8	7.3	8.7	10.6	12.5	14.0	14.7	14.3	12.7	10.4
Sa	7.6	5.0	3.0	2.1	2.6	4.2	6.5	9.1	11.7	13.4	14.1	13.6
14	12.1	10.0	7.9	6.5	6.2	7.2	8.9	11.0	13.2	14.6	14.9	13.9
Su	11.7	8.8	5.7	3.0	1.5	1.6	3.1	5.7	9.0	12.2	14.5	15.5
15	15.0	13.2	10.4	7.4	5.1	4.3	5.1	7.1	10.0	13.0	15.3	16.2
M	15.4	13.1	9.7	5.8	2.3	0.3	0.4	2.2	5.5	9.7	13.6	16.3
16	17.3	16.4	13.7	9.9	5.9	2.9	1.9	2.9	5.7	9.5	13.5	16.5
Tu	17.7	16.8	14.1	9.9	5.2	1.1	-0.9	-0.5	2.1	6.3	11.2	15.6
17	18.3	18.9	17.1	13.4	8.5	3.7	0.4	-0.4	1.3	5.0	9.9	14.6
W	17.9	19.1	17.8	14.4	9.4	4.0	-0.2	-1.9	-0.7	2.8	8.0	13.4
18	17.8	20.1	19.9	17.1	12.2	6.4	1.1	-2.0	-2.2	0.5	5.2	10.8
Th	15.9	19.2	20.0	18.1	13.9	8.3	2.7	-1.2	-2.1	0.0	4.5	10.2
19	15.8	19.8	21.3	20.0	16.0	10.3	4.0	-1.2	-3.7	-2.9	0.7	6.1
F	12.1	17.1	20.0	20.2	17.5	12.7	6.8	1.5	-1.6	-1.4	1.7	6.8
20	12.7	17.8	21.0	21.4	19.0	14.2	7.9	1.6	-2.9	-4.4	-2.6	1.7
Sa	7.5	13.4	17.9	20.1	19.5	16.2	11.1	5.5	0.9	-1.1	0.2	4.0
21	9.3	14.8	19.1	21.2	20.5	17.2	11.8	5.6	0.0	-3.6	-3.9	-1.3
Su	3.4	9.0	14.3	18.1	19.4	18.1	14.5	9.6	4.6	1.1	0.3	2.4
22	6.5	11.5	16.2	19.4	20.4	18.7	14.8	9.5	3.9	-0.7	-3.0	-2.4
M	0.6	5.2	10.2	14.7	17.5	18.1	16.3	12.8	8.4	4.5	2.1	2.3
23	4.8	8.7	13.0	16.6	18.7	18.7	16.4	12.5	7.7	3.0	-0.4	-1.6
Tu	-0.4	2.6	6.6	10.8	14.3	16.3	16.3	14.5	11.4	7.9	5.0	3.7
24	4.5	6.9	10.2	13.6	16.1	17.2	16.5	14.1	10.6	6.7	3.1	0.8
W	0.3	1.7	4.3	7.5	10.8	13.5	14.8	14.7	13.1	10.7	8.2	6.2
25	5.4	6.3	8.4	10.9	13.2	14.9	15.4	14.5	12.4	9.5	6.5	4.0
Th	2.4	2.2	3.3	5.3	7.8	10.3	12.4	13.5	13.4	12.4	10.7	8.8
26	7.4	6.9	7.5	8.9	10.6	12.2	13.4	13.7	13.0	11.4	9.3	7.1
F	5.1	3.8	3.5	4.3	5.6	7.5	9.6	11.5	12.7	12.9	12.3	11.2
27	9.7	8.3	7.6	7.8	8.6	9.7	11.0	12.1	12.6	12.3	11.2	9.7
Sa	8.0	6.2	4.8	4.2	4.5	5.4	7.1	9.2	11.2	12.6	13.2	12.8
28	11.8	10.2	8.5	7.4	7.1	7.5	8.5	9.9	11.3	12.2	12.4	11.7
Su	10.4	8.7	6.7	5.0	4.1	4.1	5.1	6.9	9.4	11.7	13.3	13.9
29	13.5	12.1	10.1	7.9	6.4	5.8	6.2	7.5	9.4	11.4	12.7	13.1
M	12.5	11.1	8.9	6.5	4.4	3.4	3.6	5.0	7.4	10.3	12.9	14.5
30	14.9	14.0	11.9	9.2	6.5	4.7	4.2	5.1	7.0	9.7	12.1	13.8
Tu	14.2	13.3	11.3	8.5	5.6	3.4	2.6	3.4	5.5	8.6	12.0	14.6

Time meridian 135° W. 0 is midnight. 12 is noon.
 Heights are referred to mean lower low water (N.O.S. chart datum).

MAY

Predicted hourly heights in feet

Day	Hours 0/12	Hours 1/13	Hours 2/14	Hours 3/15	Hours 4/16	Hours 5/17	Hours 6/18	Hours 7/19	Hours 8/20	Hours 9/21	Hours 10/22	Hours 11/23
1	15.9	15.6	13.8	10.9	7.4	4.3	2.7	2.8	4.4	7.3	10.6	13.5
W	15.1	15.1	13.6	10.9	7.5	4.2	2.3	2.1	3.8	6.8	10.6	14.1
2	16.5	17.1	15.8	12.9	9.0	5.0	1.9	0.8	1.8	4.5	8.3	12.2
Th	15.1	16.4	15.8	13.4	9.9	6.0	2.7	1.4	2.2	4.9	8.8	13.0
3	16.4	18.0	17.6	15.2	11.2	6.5	2.3	-0.3	-0.4	1.7	5.4	9.9
F	14.0	16.7	17.3	15.8	12.6	8.4	4.3	1.5	1.1	3.1	6.8	11.3
4	15.4	18.2	18.9	17.3	13.7	8.8	3.8	-0.2	-1.9	-0.9	2.4	7.0
Sa	11.8	15.7	17.8	17.5	15.2	11.2	6.7	2.9	0.9	1.7	4.8	9.1
5	13.8	17.5	19.4	19.0	16.1	11.5	6.1	1.2	-2.1	-2.6	-0.4	3.8
Su	8.8	13.5	16.9	18.2	17.1	14.0	9.6	5.2	2.0	1.2	3.0	6.9
6	11.6	15.9	18.9	19.8	18.1	14.3	9.1	3.6	-0.8	-3.0	-2.4	0.8
M	5.5	10.5	14.8	17.5	18.0	16.1	12.5	8.1	4.2	1.9	2.1	4.9
7	9.1	13.6	17.4	19.5	19.2	16.6	12.2	6.8	1.7	-1.9	-3.0	-1.4
Tu	2.4	7.1	11.7	15.4	17.4	17.1	14.8	11.1	7.1	3.9	2.5	3.6
8	6.8	11.0	15.0	17.9	19.1	18.0	14.9	10.2	5.1	0.7	-1.9	-2.2
W	0.0	3.9	8.2	12.3	15.4	16.7	16.0	13.5	10.1	6.7	4.3	3.6
9	5.2	8.4	12.1	15.4	17.6	18.1	16.5	13.2	8.8	4.3	0.7	-1.3
Th	-1.0	1.4	4.9	8.8	12.3	14.8	15.7	14.9	12.7	9.8	7.0	5.1
10	4.8	6.4	9.2	12.3	15.0	16.6	16.7	15.1	12.1	8.2	4.4	1.4
F	-0.2	0.2	2.3	5.4	8.8	11.8	14.1	14.9	14.3	12.5	10.0	7.6
11	6.0	5.6	6.8	9.1	11.6	13.8	15.3	15.5	14.2	11.7	8.5	5.2
Sa	2.5	1.0	1.1	2.8	5.4	8.4	11.3	13.6	14.7	14.4	12.9	10.7
12	8.4	6.5	5.7	6.4	8.0	10.1	12.3	14.0	14.7	14.0	12.1	9.4
Su	6.3	3.5	1.8	1.5	2.7	5.0	8.0	11.1	13.7	15.1	15.1	13.8
13	11.5	8.8	6.3	5.0	5.0	6.3	8.4	10.9	13.2	14.5	14.5	13.0
M	10.5	7.4	4.3	2.1	1.4	2.4	4.7	7.9	11.4	14.4	16.1	16.2
14	14.7	12.0	8.6	5.4	3.4	3.1	4.3	6.8	9.9	12.9	14.9	15.4
Tu	14.2	11.6	8.1	4.5	1.9	1.0	2.1	4.7	8.4	12.5	15.7	17.5
15	17.4	15.4	11.9	7.7	3.8	1.3	1.0	2.5	5.7	9.6	13.3	15.8
W	16.5	15.2	12.3	8.3	4.3	1.4	0.6	2.0	5.3	9.6	14.0	17.4
16	18.9	18.2	15.4	11.1	6.1	1.7	-0.9	-0.9	1.3	5.3	10.0	14.2
Th	16.9	17.5	15.9	12.5	8.0	3.6	0.8	0.4	2.5	6.4	11.3	15.9
17	19.0	19.9	18.4	14.7	9.6	4.0	-0.6	-2.7	-2.1	1.0	5.7	11.0
F	15.4	18.0	18.2	16.1	12.1	7.2	2.8	0.4	0.8	3.6	8.1	13.3
18	17.6	20.1	20.2	17.8	13.3	7.5	1.7	-2.5	-3.9	-2.3	1.6	6.9
Sa	12.3	16.5	18.7	18.3	15.6	11.1	6.1	2.1	0.4	1.7	5.2	10.1
19	15.1	18.9	20.6	19.8	16.5	11.3	5.3	-0.2	-3.6	-4.0	-1.6	2.9
Su	8.4	13.6	17.3	18.8	17.8	14.5	9.9	5.1	1.8	1.1	3.2	7.1
20	12.0	16.5	19.5	20.3	18.5	14.5	9.1	3.3	-1.4	-3.8	-3.2	-0.1
M	4.6	9.9	14.6	17.6	18.3	16.7	13.1	8.6	4.4	2.1	2.3	5.0
21	9.0	13.5	17.3	19.3	19.1	16.6	12.3	7.1	1.9	-1.8	-3.1	-1.6
Tu	1.8	6.4	11.2	15.1	17.3	17.3	15.2	11.7	7.6	4.3	2.9	3.9
22	6.8	10.6	14.4	17.2	18.4	17.4	14.5	10.2	5.5	1.3	-1.3	-1.6
W	0.3	3.8	7.9	12.0	15.0	16.4	15.9	13.7	10.5	7.2	4.8	4.1
23	5.5	8.3	11.5	14.5	16.5	16.9	15.4	12.4	8.6	4.7	1.5	-0.2
Th	0.2	2.3	5.3	8.9	12.2	14.5	15.3	14.6	12.5	9.8	7.3	5.6
24	5.4	6.9	9.2	11.8	14.0	15.3	15.2	13.6	10.9	7.7	4.6	2.3
F	1.3	1.9	3.8	6.4	9.3	12.0	13.8	14.3	13.6	11.8	9.7	7.7
25	6.4	6.4	7.6	9.4	11.4	13.0	13.9	13.6	12.2	10.0	7.4	5.0
Sa	3.3	2.7	3.3	4.9	7.0	9.5	11.7	13.3	13.7	13.1	11.7	9.9
26	8.1	7.0	6.8	7.6	9.0	10.5	11.9	12.7	12.5	11.5	9.7	7.7
Su	5.7	4.2	3.7	4.2	5.5	7.3	9.6	11.7	13.1	13.6	13.1	11.8
27	10.0	8.2	6.9	6.5	7.0	8.1	9.5	11.0	12.0	12.1	11.4	10.0
M	8.2	6.3	4.8	4.2	4.5	5.7	7.6	9.9	12.1	13.6	14.0	13.4
28	11.9	9.9	7.8	6.2	5.5	5.9	7.0	8.7	10.5	11.9	12.4	11.8
Tu	10.5	8.7	6.6	4.9	4.2	4.6	5.9	8.1	10.7	13.0	14.5	14.7
29	13.8	11.8	9.3	6.7	4.8	4.1	4.6	6.1	8.4	10.7	12.5	13.1
W	12.6	11.0	8.9	6.5	4.6	3.9	4.6	6.3	9.0	11.9	14.4	15.6
30	15.4	13.8	11.2	8.0	4.9	2.9	2.4	3.5	5.7	8.7	11.6	13.5
Th	14.2	13.3	11.3	8.7	5.9	3.9	3.5	4.7	7.2	10.4	13.7	16.0
31	16.8	15.9	13.5	10.0	6.1	2.7	0.9	1.0	2.8	5.9	9.6	12.9
F	14.9	15.2	13.9	11.3	8.0	5.0	3.2	3.3	5.2	8.5	12.2	15.6

Time meridian 135° W. 0 is midnight. 12 is noon.
 Heights are referred to mean lower low water (N.O.S. chart datum).

JUNE

Predicted hourly heights in feet

Day	Hours 0/12	Hours 1/13	Hours 2/14	Hours 3/15	Hours 4/16	Hours 5/17	Hours 6/18	Hours 7/19	Hours 8/20	Hours 9/21	Hours 10/22	Hours 11/23
1 Sa	17.6 14.4	17.7 16.2	15.9 16.0	12.5 14.0	8.2 10.7	3.8 7.0	0.4 3.9	-0.9 2.5	0.0 3.4	2.8 6.3	6.8 10.2	11.0 14.2
2 Su	17.4 12.7	18.8 15.9	18.1 17.2	15.3 16.4	10.9 13.7	5.9 9.8	1.3 5.8	-1.7 2.9	-2.2 2.3	-0.3 4.1	3.5 7.7	8.2 12.0
3 M	16.1 9.8	18.9 14.2	19.6 17.1	17.9 17.8	14.1 16.2	9.0 12.9	3.6 8.6	-0.9 4.7	-3.3 2.3	-2.8 2.5	0.2 5.1	4.7 9.3
4 Tu	13.8 6.2	17.7 11.3	19.8 15.5	19.6 17.8	17.0 17.8	12.5 15.6	6.9 11.8	1.4 7.5	-2.6 3.8	-4.1 2.2	-2.6 3.2	1.2 6.5
5 W	10.9 2.5	15.3 7.6	18.6 12.5	20.1 16.2	19.1 17.9	15.8 17.3	10.7 14.7	5.0 10.7	-0.1 6.6	-3.4 3.5	-4.0 2.5	-1.7 4.2
6 Th	7.7 -0.4	12.0 3.9	16.1 8.8	18.9 13.2	19.6 16.4	18.0 17.6	14.3 16.6	9.1 13.7	3.7 9.9	-0.9 6.1	-3.4 3.6	-3.2 3.2
7 F	5.1 -1.9	8.6 1.0	12.6 5.1	16.1 9.5	18.3 13.5	18.6 16.2	16.7 17.0	12.9 15.8	8.0 13.0	3.0 9.4	-0.8 6.1	-2.7 4.0
8 Sa	3.9 -1.5	5.8 -0.6	8.9 2.2	12.4 6.0	15.4 10.0	17.2 13.6	17.3 15.9	15.4 16.5	11.8 15.3	7.4 12.7	3.2 9.4	-0.1 6.4
9 Su	4.5 1.1	4.3 -0.1	5.8 0.7	8.5 3.2	11.5 6.5	14.1 10.2	15.8 13.5	16.0 15.7	14.4 16.3	11.4 15.2	7.6 12.8	3.9 9.7
10 M	6.8 4.9	4.7 2.3	4.1 1.1	5.2 1.7	7.4 3.8	10.0 6.9	12.6 10.4	14.5 13.6	14.9 15.8	13.9 16.4	11.4 15.5	8.3 13.1
11 Tu	10.1 9.2	6.8 6.1	4.4 3.4	3.4 2.0	4.0 2.4	5.9 4.3	8.4 7.2	11.2 10.8	13.4 14.0	14.4 16.3	13.9 16.9	12.0 15.9
12 W	13.5 12.8	10.1 10.2	6.5 6.9	3.6 4.1	2.2 2.5	2.5 2.8	4.2 4.6	7.0 7.7	10.2 11.4	12.9 14.8	14.4 17.1	14.4 17.6
13 Th	16.4 15.2	13.6 13.7	9.8 10.9	5.6 7.4	2.3 4.3	0.6 2.7	0.9 3.0	2.9 5.0	6.1 8.4	9.9 12.4	13.1 15.8	15.0 18.0
14 F	18.3 15.8	16.6 16.0	13.3 14.3	8.9 11.2	4.3 7.4	0.7 4.2	-1.0 2.6	-0.4 3.2	2.1 5.7	5.9 9.4	10.2 13.6	13.8 17.0
15 Sa	18.8 14.8	18.6 16.7	16.4 16.5	12.5 14.5	10.9 7.5	2.6 6.9	-1.0 3.7	-2.2 2.5	-1.1 3.6	2.1 6.6	6.5 10.7	11.1 14.9
16 Su	18.0 12.4	19.3 15.9	18.5 17.4	15.6 16.7	11.1 14.1	5.8 10.2	0.8 6.1	-2.3 3.2	-2.9 2.6	-1.0 4.3	2.8 7.8	7.7 12.1
17 M	16.1 9.2	18.8 13.8	19.4 16.8	17.9 17.7	14.3 16.4	9.3 13.3	3.9 9.1	-0.7 5.1	-3.1 2.8	-2.8 3.0	-0.1 5.4	4.2 9.2
18 Tu	13.4 5.9	17.1 10.9	19.1 14.9	18.9 17.3	16.7 17.4	12.6 15.5	7.4 12.0	2.1 7.8	-1.8 4.4	-3.2 2.8	-2.0 3.8	1.3 6.6
19 W	10.6 3.2	14.6 7.8	17.6 12.3	18.8 15.7	17.9 17.2	15.0 16.7	10.6 14.2	5.5 10.6	0.8 6.8	-2.1 4.0	-2.5 3.3	-0.5 4.9
20 Th	8.0 1.3	11.8 5.1	15.3 9.4	17.6 13.3	18.0 15.9	16.4 16.7	13.1 15.6	8.6 12.8	3.9 9.3	0.1 6.1	-1.7 4.1	-1.2 4.2
21 F	6.1 0.5	9.2 3.3	12.6 6.9	15.4 10.7	17.0 13.9	16.7 15.7	14.6 15.9	11.1 14.3	7.0 11.6	3.0 8.4	0.2 5.8	-0.7 4.5
22 Sa	5.1 0.7	7.2 2.3	10.0 5.0	12.8 8.3	15.0 11.5	15.9 14.1	15.2 15.3	12.8 14.9	9.5 13.1	5.9 10.6	2.7 7.9	0.8 5.9
23 Su	5.2 1.8	6.0 2.2	7.9 3.9	10.3 6.5	12.6 9.4	14.2 12.1	14.6 14.0	13.6 14.7	11.3 14.1	8.4 12.3	5.4 10.0	3.0 7.8
24 M	6.1 3.7	5.6 3.0	6.4 3.6	8.1 5.3	10.0 7.6	11.9 10.1	13.2 12.4	13.4 14.0	12.4 14.4	10.4 13.6	7.9 11.9	5.5 9.7
25 Tu	7.7 6.0	6.1 4.5	5.7 4.0	6.3 4.7	7.7 6.3	9.4 8.4	11.0 10.7	12.2 12.8	12.5 14.2	11.7 14.3	10.0 13.4	8.0 11.7
26 W	9.5 8.4	7.4 6.6	5.8 5.2	5.2 4.7	5.7 5.4	6.9 7.0	8.5 9.0	10.3 11.4	11.6 13.4	12.1 14.6	11.6 14.6	10.2 13.5
27 Th	11.5 10.8	9.1 9.0	6.7 7.1	4.9 5.6	4.2 5.0	4.6 5.7	5.9 7.4	7.8 9.7	9.9 12.2	11.6 14.3	12.4 15.4	12.0 15.2
28 F	13.7 12.9	11.3 11.6	8.4 9.5	5.6 7.3	3.5 5.6	2.7 4.9	3.3 5.8	5.0 7.7	7.4 10.4	10.1 13.2	12.2 15.5	13.2 16.4
29 Sa	15.8 14.3	13.8 13.9	10.8 12.2	7.3 9.8	4.0 7.1	1.7 5.1	1.0 4.5	2.1 5.7	4.4 8.2	7.5 11.4	10.8 14.6	13.2 16.8
30 Su	17.5 14.6	16.4 15.6	13.7 14.9	10.0 12.6	5.8 9.5	2.0 6.4	-0.3 4.2	-0.6 4.0	1.2 5.7	4.3 8.9	8.2 12.6	12.0 16.1

Time meridian 135° W. 0 is midnight. 12 is noon.
 Heights are referred to mean lower low water (N.O.S. chart datum).

JULY

Predicted hourly heights in feet

Day	Hours 0/12	Hours 1/13	Hours 2/14	Hours 3/15	Hours 4/16	Hours 5/17	Hours 6/18	Hours 7/19	Hours 8/20	Hours 9/21	Hours 10/22	Hours 11/23
1 M	18.3 13.5	18.5 16.1	16.8 16.8	13.3 15.5	8.7 12.6	3.9 8.8	-0.2 5.3	-2.2 3.2	-1.8 3.5	0.8 6.0	4.8 9.8	9.4 14.0
2 Tu	17.6 10.9	19.5 15.1	19.3 17.5	16.8 17.6	12.4 15.6	7.1 12.0	1.8 7.7	-2.2 4.1	-3.7 2.4	-2.4 3.3	1.1 6.5	5.9 10.9
3 W	15.4 7.2	18.9 12.5	20.4 16.5	19.5 18.4	16.3 17.9	11.2 15.2	5.3 11.0	-0.1 6.4	-3.8 3.0	-4.5 1.8	-2.3 3.5	1.9 7.2
4 Th	11.9 3.3	16.5 8.8	19.7 13.9	20.8 17.6	19.2 18.9	15.3 17.7	9.7 14.4	3.6 9.8	-1.6 5.3	-4.6 2.2	-4.5 1.7	-1.5 3.9
5 F	8.0 -0.1	12.7 4.9	17.1 10.3	19.9 15.1	20.4 18.1	18.4 18.8	14.0 17.1	8.2 13.4	2.3 8.7	-2.4 4.5	-4.6 1.9	-3.6 1.9
6 Sa	4.5 -2.2	8.6 1.6	13.1 6.5	17.0 11.5	19.4 15.8	19.5 18.2	17.1 18.4	12.6 16.2	7.1 12.4	1.7 8.0	-2.3 4.1	-3.7 2.0
7 Su	2.4 -2.1	4.9 -0.3	8.7 3.3	12.8 7.9	16.3 12.4	18.3 16.1	18.0 18.0	15.6 17.7	11.4 15.4	6.4 11.7	1.8 7.6	-1.4 4.2
8 M	2.3 0.1	2.7 -0.3	5.0 1.6	8.3 4.9	11.9 9.0	15.0 13.0	16.7 16.1	16.5 17.6	14.3 17.1	10.7 14.8	6.5 11.4	2.6 7.7
9 Tu	4.4 3.9	2.7 1.8	2.8 1.6	4.7 3.2	7.4 6.1	10.6 9.7	13.4 13.2	15.1 15.9	15.1 17.2	13.4 16.7	10.5 14.6	7.1 11.4
10 W	7.9 8.1	4.7 5.3	2.8 3.4	2.6 3.1	3.9 4.4	6.2 6.9	9.1 10.1	11.9 13.3	13.7 15.8	14.2 17.0	13.1 16.5	10.9 14.6
11 Th	11.6 11.7	8.0 9.2	4.7 6.6	2.5 4.6	1.9 4.1	2.8 5.1	4.9 7.4	7.8 10.3	10.7 13.5	12.9 15.9	13.9 17.0	13.4 16.6
12 F	14.7 14.1	11.6 12.6	7.9 10.1	4.3 7.4	1.8 5.2	0.9 4.5	1.7 5.4	3.8 7.6	6.9 10.6	10.2 13.8	12.8 16.2	14.2 17.3
13 Sa	16.8 14.9	14.8 14.9	11.5 13.3	7.4 10.6	3.5 7.6	0.8 5.2	-0.1 4.5	0.8 5.5	3.2 7.8	6.8 11.1	10.5 14.4	13.4 16.8
14 Su	17.7 14.4	17.0 15.8	14.6 15.5	10.9 13.6	6.5 10.5	2.3 7.1	-0.3 4.7	-1.0 4.2	0.3 5.5	3.3 8.3	7.4 11.8	11.3 15.2
15 M	17.5 12.7	18.1 15.6	16.9 16.6	14.0 15.8	9.8 13.3	5.0 9.7	0.9 6.1	-1.4 4.0	-1.5 3.9	0.5 5.8	4.2 9.1	8.6 12.9
16 Tu	16.2 10.3	18.1 14.2	18.2 16.6	16.4 17.1	12.9 15.5	8.2 12.3	3.3 8.4	-0.5 4.9	-2.2 3.3	-1.4 3.9	1.4 6.5	5.6 10.2
17 W	14.1 7.5	17.1 12.1	18.6 15.6	18.0 17.4	15.4 16.9	11.3 14.6	6.3 10.8	1.6 6.8	-1.6 3.8	-2.3 3.0	-0.6 4.4	2.9 7.5
18 Th	11.5 4.9	15.3 9.6	17.8 13.8	18.6 16.7	17.2 17.5	13.9 16.2	9.3 13.1	4.3 9.1	0.1 5.4	-2.1 3.1	-1.7 3.1	0.9 5.3
19 F	8.8 2.9	12.8 7.1	16.2 11.6	18.1 15.2	18.0 17.1	15.8 17.0	11.9 14.9	7.2 11.4	2.6 7.5	-0.7 4.3	-1.8 2.9	-0.3 3.8
20 Sa	6.5 1.6	10.1 5.1	13.8 9.3	16.6 13.2	17.7 16.0	16.7 16.9	13.9 15.9	9.8 13.3	5.3 9.7	1.5 6.2	-0.8 3.8	-0.7 3.3
21 Su	4.9 1.0	7.8 3.8	11.2 7.3	14.3 11.1	16.3 14.3	16.7 16.1	15.1 16.2	11.9 14.6	8.0 11.7	4.1 8.4	1.1 5.5	0.0 3.8
22 M	4.0 1.4	5.9 3.1	8.7 5.9	11.7 9.2	14.2 12.4	15.5 14.8	15.2 15.9	13.3 15.2	10.2 13.2	6.7 10.4	3.6 7.5	1.6 5.2
23 Tu	4.2 2.7	4.8 3.1	6.7 5.0	9.2 7.8	11.7 10.7	13.6 13.2	14.4 14.9	13.7 15.3	11.8 14.3	9.0 12.1	6.1 9.5	3.8 7.0
24 W	5.2 4.6	4.5 4.0	5.3 4.8	7.0 6.7	9.1 9.1	11.2 11.6	12.7 13.6	13.2 14.9	12.5 14.8	10.8 13.6	8.5 11.5	6.3 9.0
25 Th	6.8 6.9	5.2 5.7	4.6 5.3	5.3 6.0	6.8 7.8	8.6 9.9	10.3 12.1	11.8 13.9	12.3 14.8	11.9 14.7	10.5 13.4	8.7 11.3
26 F	8.9 9.4	6.6 7.9	4.9 6.6	4.2 6.1	4.7 6.7	5.9 8.2	7.6 10.2	9.5 12.3	11.1 14.1	12.0 15.1	11.9 14.9	10.9 13.6
27 Sa	11.4 11.9	8.8 10.4	6.3 8.7	4.2 7.1	3.2 6.2	3.5 6.6	4.8 8.1	6.7 10.2	9.0 12.6	11.1 14.7	12.4 15.9	12.7 15.7
28 Su	14.2 13.9	11.7 13.1	8.6 11.3	5.5 9.0	3.0 6.9	1.7 5.7	2.0 6.0	3.5 7.7	6.0 10.3	9.0 13.1	11.7 15.6	13.4 17.0
29 M	16.8 15.0	14.9 15.4	11.9 14.2	8.1 11.8	4.3 8.8	1.2 6.0	-0.2 4.6	0.3 5.1	2.5 7.2	5.8 10.5	9.6 14.0	12.9 17.0
30 Tu	18.4 14.6	18.0 16.7	15.6 16.8	11.8 14.9	7.1 11.7	2.5 7.9	-0.9 4.6	-2.1 3.2	-1.0 4.1	2.1 7.0	6.3 11.0	10.9 15.2
31 W	18.4 12.6	19.9 16.5	19.0 18.3	15.9 17.8	11.2 15.0	5.7 10.9	0.5 6.4	-2.9 2.9	-3.6 1.8	-1.6 3.4	2.4 7.1	7.5 11.8

Time meridian 135° W. 0 is midnight. 12 is noon.
 Heights are referred to mean lower low water (N.O.S. chart datum).

AUGUST

Predicted hourly heights in feet

Day	Hours 0/12	Hours 1/13	Hours 2/14	Hours 3/15	Hours 4/16	Hours 5/17	Hours 6/18	Hours 7/19	Hours 8/20	Hours 9/21	Hours 10/22	Hours 11/23
1 Th	16.5 9.2	19.8 14.5	21.0 18.2	19.5 19.5	15.7 18.1	10.1 14.5	4.0 9.5	-1.4 4.6	-4.5 1.3	-4.4 0.8	-1.4 3.1	3.5 7.5
2 F	12.8 5.2	17.6 11.2	20.8 16.4	21.5 19.5	19.4 20.0	14.8 17.8	8.6 13.3	2.2 7.9	-2.9 3.0	-5.2 0.1	-4.2 0.3	-0.3 3.3
3 Sa	8.2 1.5	13.6 7.3	18.3 13.2	21.1 17.8	21.2 20.2	18.5 19.8	13.4 16.8	7.1 11.9	0.9 6.4	-3.5 1.8	-4.9 -0.4	-2.9 0.4
4 Su	3.9 -0.9	8.8 3.8	14.0 9.4	18.3 14.7	20.6 18.6	20.2 20.1	17.0 19.0	11.9 15.5	5.8 10.5	0.3 5.3	-3.2 1.3	-3.6 -0.2
5 M	1.0 -1.5	4.5 1.5	9.1 6.0	13.8 11.1	17.5 15.6	19.3 18.7	18.5 19.4	15.3 17.8	10.5 14.2	5.2 9.5	0.6 4.9	-1.8 1.5
6 Tu	0.4 0.2	1.8 1.0	4.9 3.9	9.0 7.9	13.0 12.2	16.1 15.9	17.4 18.1	16.6 18.3	13.8 16.5	9.7 13.1	5.3 9.0	1.8 5.0
7 W	2.2 3.6	1.3 2.4	2.4 3.3	5.0 5.8	8.3 9.1	11.7 12.6	14.4 15.5	15.5 17.2	14.9 17.2	12.7 15.5	9.6 12.6	6.2 9.1
8 Th	5.6 7.6	3.0 5.4	2.0 4.5	2.7 5.1	4.6 6.9	7.3 9.5	10.2 12.4	12.6 14.9	13.9 16.3	13.8 16.3	12.4 15.0	10.1 12.5
9 F	9.5 11.1	6.3 9.0	3.7 7.0	2.4 5.9	2.6 6.1	3.9 7.4	6.1 9.5	8.8 11.9	11.3 14.2	13.0 15.7	13.5 15.9	12.7 14.9
10 Sa	12.8 13.5	10.0 12.2	6.8 10.1	4.0 7.9	2.3 6.4	2.0 6.2	3.0 7.2	5.1 9.1	8.0 11.6	10.8 13.9	12.8 15.5	13.8 16.0
11 Su	15.2 14.6	13.2 14.4	10.2 12.9	6.8 10.5	3.6 7.9	1.7 6.1	1.2 5.8	2.2 6.7	4.6 8.8	7.8 11.5	11.0 14.2	13.4 16.0
12 M	16.5 14.6	15.6 15.7	13.4 15.1	10.0 13.1	6.1 10.1	2.7 7.1	0.7 5.2	0.4 5.0	1.8 6.3	4.8 8.9	8.5 12.1	12.0 15.0
13 Tu	16.8 13.6	17.1 15.9	15.8 16.5	13.0 15.3	9.1 12.5	4.8 8.9	1.3 5.7	-0.4 4.1	-0.1 4.3	2.1 6.3	5.8 9.6	9.9 13.2
14 W	16.1 11.9	17.7 15.3	17.5 17.1	15.5 16.8	12.0 14.7	7.4 11.1	3.0 7.1	-0.2 4.1	-1.1 3.0	0.1 4.1	3.2 7.0	7.5 10.8
15 Th	14.6 9.8	17.4 14.0	18.4 16.9	17.4 17.7	14.5 16.4	10.2 13.3	5.3 9.2	1.1 5.1	-1.3 2.6	-1.2 2.5	1.2 4.6	5.1 8.2
16 F	12.4 7.5	16.1 12.2	18.3 15.9	18.5 17.9	16.6 17.6	12.8 15.2	8.0 11.4	3.1 7.0	-0.5 3.3	-1.6 1.8	-0.3 2.7	3.0 5.7
17 Sa	9.7 5.4	14.0 10.1	17.2 14.4	18.7 17.3	17.9 18.1	15.0 16.7	10.6 13.4	5.7 9.1	1.3 4.9	-1.2 2.1	-1.0 1.7	1.4 3.7
18 Su	7.2 3.8	11.4 8.1	15.2 12.5	17.8 16.1	18.3 17.8	16.5 17.4	12.9 15.0	8.3 11.2	3.7 7.0	0.3 3.5	-0.8 1.7	0.5 2.4
19 M	5.1 2.8	8.8 6.5	12.7 10.7	15.9 14.4	17.5 16.9	17.1 17.5	14.6 16.1	10.7 13.0	6.4 9.1	2.6 5.4	0.4 2.8	0.5 2.1
20 Tu	3.5 2.5	6.5 5.4	10.1 9.0	13.5 12.6	15.8 15.5	16.6 16.9	15.4 16.5	12.6 14.4	8.8 11.1	5.1 7.5	2.4 4.5	1.4 2.8
21 W	2.9 3.1	4.8 4.8	7.8 7.7	10.9 11.0	13.5 13.8	15.1 15.8	15.2 16.3	13.6 15.2	10.9 12.8	7.7 9.7	4.8 6.6	3.1 4.3
22 Th	3.3 4.5	3.8 4.9	5.8 6.8	8.4 9.5	10.9 12.1	12.9 14.3	13.9 15.5	13.7 15.5	12.2 14.1	9.9 11.7	7.4 8.9	5.4 6.4
23 F	4.5 6.5	3.8 5.9	4.4 6.5	6.1 8.1	8.2 10.4	10.3 12.5	11.9 14.2	12.8 15.1	12.6 14.9	11.5 13.5	9.7 11.4	7.9 8.9
24 Sa	6.6 8.9	4.9 7.7	4.1 7.0	4.4 7.3	5.7 8.6	7.4 10.4	9.2 12.2	10.9 13.8	12.0 14.8	12.2 14.8	11.6 13.7	10.3 11.7
25 Su	9.3 11.5	7.0 10.1	5.0 8.5	3.7 7.4	3.6 7.2	4.6 8.1	6.2 9.7	8.2 11.7	10.3 13.6	11.9 15.0	12.7 15.4	12.5 14.6
26 M	12.7 14.0	10.0 12.8	7.2 10.9	4.5 8.7	2.6 6.9	2.2 6.2	3.0 6.9	4.9 8.8	7.5 11.3	10.3 13.9	12.6 15.9	13.9 16.7
27 Tu	15.9 15.7	13.8 15.6	10.6 13.9	6.9 11.2	3.4 8.0	0.9 5.5	0.3 4.5	1.4 5.4	4.0 7.9	7.5 11.2	11.2 14.7	14.1 17.3
28 W	18.4 16.2	17.5 17.6	14.7 17.0	10.7 14.4	6.0 10.6	1.6 6.5	-1.1 3.4	-1.6 2.5	0.3 4.0	3.8 7.3	8.4 11.7	12.8 16.0
29 Th	19.0 15.0	20.1 18.3	18.7 19.3	15.2 17.8	10.1 14.1	4.5 9.2	-0.4 4.4	-3.1 1.2	-2.9 0.7	-0.1 3.0	4.6 7.3	10.0 12.5
30 F	17.4 12.3	20.6 17.3	21.3 20.2	19.3 20.3	14.9 17.7	8.9 13.0	2.6 7.2	-2.3 2.1	-4.4 -0.8	-3.2 -0.5	0.7 2.7	6.3 7.9
31 Sa	13.7 8.6	18.7 14.7	21.7 19.3	21.9 21.4	19.1 20.5	13.8 16.8	7.3 11.2	0.9 5.1	-3.6 0.1	-4.7 -2.1	-2.5 -1.0	2.4 3.1

Time meridian 135° W. 0 is midnight. 12 is noon.
 Heights are referred to mean lower low water (N.O.S. chart datum).

SEPTEMBER

Predicted hourly heights in feet

Day	Hours 0/12	Hours 1/13	Hours 2/14	Hours 3/15	Hours 4/16	Hours 5/17	Hours 6/18	Hours 7/19	Hours 8/20	Hours 9/21	Hours 10/22	Hours 11/23
1	8.7	14.7	19.5	22.0	21.4	18.0	12.3	5.7	-0.3	-3.8	-3.8	-0.6
Su	4.8	11.0	16.8	20.6	21.7	19.7	15.2	9.3	3.3	-1.1	-2.5	-0.5
2	3.9	9.6	15.2	19.5	21.3	20.1	16.3	10.6	4.5	-0.5	-2.9	-1.9
M	1.9	7.4	13.2	18.1	20.9	21.0	18.2	13.4	7.5	2.1	-1.3	-1.9
3	0.5	4.9	10.2	15.2	18.7	19.8	18.3	14.4	9.3	4.1	0.3	-1.0
Tu	0.7	4.7	9.7	14.6	18.5	20.2	19.5	16.4	11.7	6.5	2.0	-0.6
4	-0.6	1.8	5.8	10.3	14.4	17.1	17.8	16.2	12.9	8.7	4.7	2.0
W	1.5	3.5	7.0	11.2	15.1	17.9	18.8	17.6	14.6	10.5	6.2	2.7
5	0.7	0.9	3.0	6.2	9.8	13.0	15.2	15.7	14.5	12.0	8.9	6.0
Th	4.1	4.0	5.8	8.6	11.8	14.7	16.7	17.1	15.9	13.4	10.2	6.8
6	3.9	2.3	2.3	3.7	6.0	8.8	11.5	13.4	14.1	13.5	11.9	9.8
F	7.6	6.2	6.0	7.2	9.2	11.5	13.7	15.2	15.6	14.8	13.0	10.5
7	7.7	5.2	3.5	3.1	3.8	5.4	7.6	10.1	12.1	13.2	13.3	12.5
Sa	11.0	9.1	7.7	7.1	7.7	8.9	10.6	12.5	14.0	14.7	14.4	13.2
8	11.2	8.7	6.2	4.2	3.2	3.3	4.5	6.6	9.2	11.6	13.3	13.9
Su	13.4	12.1	10.1	8.3	7.2	7.2	8.1	9.7	11.7	13.5	14.6	14.7
9	13.9	12.0	9.3	6.4	4.0	2.6	2.5	3.8	6.2	9.3	12.1	14.1
M	14.9	14.4	12.7	10.2	7.9	6.4	6.2	7.1	9.1	11.6	13.8	15.2
10	15.5	14.5	12.4	9.2	5.8	3.0	1.6	1.8	3.6	6.7	10.2	13.3
Tu	15.3	15.9	14.8	12.4	9.3	6.6	5.0	5.1	6.5	9.2	12.2	14.8
11	16.3	16.3	14.9	12.0	8.2	4.4	1.7	0.7	1.6	4.2	8.0	11.9
W	15.0	16.6	16.5	14.6	11.3	7.6	4.7	3.6	4.3	6.6	10.0	13.6
12	16.2	17.4	16.8	14.5	10.8	6.4	2.5	0.3	0.2	2.2	5.8	10.1
Th	14.1	16.8	17.6	16.4	13.4	9.3	5.3	2.8	2.5	4.2	7.5	11.6
13	15.3	17.7	18.1	16.6	13.3	8.8	4.2	0.7	-0.5	0.6	3.7	8.1
F	12.7	16.3	18.1	17.8	15.3	11.4	6.8	3.0	1.3	2.1	4.9	9.0
14	13.5	17.0	18.7	18.2	15.6	11.4	6.5	2.1	-0.4	-0.4	2.1	6.1
Sa	10.9	15.2	18.1	18.7	17.0	13.5	8.8	4.3	1.2	0.6	2.6	6.4
15	11.0	15.3	18.2	18.9	17.4	13.8	9.1	4.2	0.6	-0.6	0.9	4.4
Su	9.0	13.7	17.3	18.9	18.3	15.4	11.0	6.2	2.1	0.2	0.9	4.0
16	8.3	12.9	16.7	18.6	18.3	15.8	11.6	6.8	2.6	0.2	0.4	3.0
M	7.2	11.8	15.9	18.5	18.8	16.8	13.1	8.4	3.9	0.8	0.2	2.1
17	5.8	10.2	14.3	17.3	18.2	16.9	13.7	9.4	5.1	1.9	0.8	2.3
Tu	5.8	10.1	14.2	17.3	18.6	17.7	14.8	10.6	6.1	2.4	0.5	1.0
18	3.7	7.6	11.7	15.1	17.0	17.1	15.1	11.7	7.7	4.3	2.3	2.5
W	4.8	8.5	12.4	15.7	17.7	17.8	16.0	12.6	8.4	4.6	1.9	1.1
19	2.4	5.4	9.0	12.4	15.0	16.1	15.5	13.3	10.1	6.9	4.5	3.6
Th	4.6	7.3	10.7	13.9	16.3	17.2	16.5	14.1	10.7	7.0	4.0	2.2
20	2.1	3.8	6.6	9.7	12.3	14.2	14.7	13.9	11.9	9.3	7.0	5.5
F	5.3	6.6	9.1	12.0	14.4	16.0	16.3	15.1	12.7	9.6	6.6	4.2
21	3.0	3.1	4.7	7.1	9.5	11.6	13.0	13.5	12.9	11.4	9.5	7.8
Sa	6.8	6.8	8.0	10.1	12.3	14.1	15.2	15.3	14.2	12.1	9.5	7.0
22	4.9	3.7	3.7	4.8	6.6	8.6	10.5	12.0	12.8	12.7	11.7	10.4
Su	9.0	8.0	7.7	8.4	9.9	11.7	13.2	14.4	14.8	14.1	12.5	10.3
23	7.9	5.7	4.1	3.5	4.1	5.5	7.4	9.5	11.5	12.9	13.4	12.8
M	11.6	10.1	8.5	7.6	7.7	8.8	10.4	12.3	14.0	14.9	14.9	13.6
24	11.5	8.8	6.1	3.8	2.5	2.7	4.1	6.3	9.1	11.9	14.0	14.8
Tu	14.4	12.8	10.6	8.2	6.5	6.1	7.1	9.1	11.6	14.2	15.9	16.3
25	15.2	12.8	9.5	5.8	2.7	0.9	1.0	2.8	5.9	9.6	13.3	15.8
W	16.7	15.8	13.5	10.2	6.8	4.4	3.9	5.2	8.0	11.5	15.1	17.5
26	18.2	16.8	13.8	9.5	4.9	1.0	-0.9	-0.4	2.2	6.3	11.1	15.3
Th	18.0	18.5	16.8	13.4	8.9	4.6	1.9	1.6	3.6	7.4	12.1	16.5
27	19.3	19.9	18.0	14.1	8.8	3.4	-0.8	-2.4	-1.1	2.6	7.8	13.3
F	17.7	20.1	19.8	17.1	12.4	6.9	2.0	-0.7	-0.3	2.7	7.6	13.2
28	18.0	20.9	21.0	18.4	13.6	7.5	1.6	-2.3	-3.1	-0.7	4.0	10.0
Sa	15.8	20.0	21.6	20.3	16.3	10.6	4.4	-0.6	-2.7	-1.4	2.7	8.4
29	14.5	19.4	21.9	21.4	18.0	12.4	5.9	0.2	-3.0	-2.7	0.7	6.3
Su	12.6	18.2	21.7	22.3	19.8	14.8	8.3	2.0	-2.5	-3.7	-1.4	3.4
30	9.6	15.7	20.2	22.0	20.8	16.7	10.8	4.5	-0.5	-2.6	-1.2	3.0
M	8.9	15.0	19.9	22.3	21.8	18.3	12.6	6.1	0.2	-3.4	-3.5	-0.5

Time meridian 135° W. 0 is midnight. 12 is noon.
 Heights are referred to mean lower low water (N.O.S. chart datum).

Lat. 59° 27'N Long. 151° 43'W

OCTOBER

Predicted hourly heights in feet

Day	Hours 0/12	Hours 1/13	Hours 2/14	Hours 3/15	Hours 4/16	Hours 5/17	Hours 6/18	Hours 7/19	Hours 8/20	Hours 9/21	Hours 10/22	Hours 11/23
1	4.7	10.8	16.4	20.1	21.2	19.3	15.0	9.3	3.7	-0.3	-1.2	1.1
Tu	5.7	11.4	16.7	20.5	21.8	20.3	16.2	10.5	4.4	-0.6	-3.1	-2.4
2	1.1	6.1	11.6	16.3	19.2	19.6	17.5	13.3	8.3	3.7	1.0	1.0
W	3.8	8.2	13.1	17.4	20.1	20.3	18.2	14.0	8.8	3.6	-0.2	-1.7
3	-0.5	2.8	7.2	11.8	15.6	17.7	17.6	15.5	12.0	8.0	4.6	2.9
Th	3.6	6.3	10.0	13.9	17.0	18.6	18.3	15.9	12.2	7.9	3.9	1.0
4	0.2	1.5	4.2	7.7	11.3	14.2	15.8	15.7	14.1	11.4	8.5	6.1
F	5.1	5.9	8.0	10.8	13.6	15.8	16.7	16.1	14.2	11.2	7.9	4.9
5	2.8	2.2	3.1	5.0	7.6	10.4	12.7	14.1	14.3	13.4	11.6	9.6
Sa	7.8	7.0	7.4	8.8	10.7	12.6	14.2	14.9	14.5	13.2	11.1	8.7
6	6.3	4.5	3.7	4.0	5.1	7.0	9.3	11.5	13.1	13.7	13.4	12.3
Su	10.8	9.1	8.1	8.0	8.6	9.8	11.3	12.7	13.6	13.7	13.0	11.7
7	9.8	7.6	5.6	4.4	4.1	4.7	6.2	8.5	10.9	12.8	14.0	14.1
M	13.3	11.6	9.7	8.2	7.5	7.6	8.5	10.1	11.8	13.2	13.8	13.6
8	12.5	10.7	8.2	5.8	4.2	3.6	4.1	5.8	8.4	11.2	13.5	14.8
Tu	15.0	13.9	11.8	9.3	7.3	6.2	6.3	7.5	9.5	11.8	13.7	14.6
9	14.5	13.3	11.0	8.0	5.2	3.3	2.8	3.7	6.0	9.2	12.4	14.8
W	16.0	15.7	13.9	11.1	8.0	5.6	4.6	5.1	7.0	9.7	12.6	14.8
10	15.8	15.3	13.5	10.5	7.0	3.9	2.3	2.3	4.0	7.1	10.9	14.3
Th	16.4	17.0	15.8	13.0	9.4	5.9	3.6	3.2	4.5	7.3	10.8	14.1
11	16.3	16.8	15.6	12.9	9.2	5.3	2.4	1.4	2.4	5.2	9.1	13.2
F	16.3	17.8	17.3	15.0	11.3	7.0	3.4	1.7	2.2	4.7	8.4	12.6
12	15.9	17.6	17.4	15.2	11.6	7.3	3.4	1.2	1.2	3.4	7.2	11.7
Sa	15.7	18.2	18.6	16.9	13.3	8.8	4.2	1.2	0.5	2.2	5.8	10.2
13	14.5	17.5	18.5	17.2	14.1	9.7	5.2	1.8	0.7	2.0	5.4	9.9
Su	14.4	17.9	19.3	18.4	15.4	10.9	5.9	1.7	-0.4	0.2	3.1	7.5
14	12.3	16.4	18.6	18.5	16.2	12.3	7.6	3.4	0.9	1.2	3.8	8.0
M	12.7	16.9	19.3	19.5	17.3	13.2	8.1	3.2	-0.2	-1.0	0.9	4.8
15	9.6	14.2	17.6	18.9	17.8	14.6	10.3	5.7	2.3	1.1	2.7	6.3
Tu	10.8	15.3	18.5	19.8	18.6	15.3	10.5	5.4	1.1	-1.1	-0.6	2.4
16	6.8	11.5	15.6	18.1	18.3	16.4	12.7	8.4	4.5	2.2	2.3	4.9
W	9.0	13.4	17.1	19.2	19.2	16.9	12.8	7.9	3.3	0.0	-0.9	0.7
17	4.3	8.7	12.9	16.2	17.7	17.1	14.7	11.0	7.1	4.2	3.0	4.2
Th	7.4	11.4	15.2	17.9	18.9	17.8	14.8	10.5	5.9	2.1	0.0	0.0
18	2.3	6.0	10.0	13.6	16.0	16.7	15.6	13.0	9.7	6.7	4.7	4.5
F	6.3	9.5	13.0	16.0	17.7	17.8	16.1	12.8	8.8	4.9	2.0	0.7
19	1.4	3.9	7.2	10.6	13.4	15.1	15.4	14.2	12.0	9.3	7.0	5.8
Sa	6.1	8.0	10.8	13.7	15.8	16.9	16.5	14.6	11.5	8.0	4.8	2.6
20	1.8	2.6	4.8	7.6	10.4	12.6	14.1	14.4	13.5	11.7	9.7	8.0
Su	7.0	7.3	8.9	11.1	13.3	14.9	15.7	15.3	13.7	11.1	8.2	5.5
21	3.6	2.8	3.3	5.0	7.3	9.6	11.8	13.3	13.9	13.5	12.2	10.6
M	9.0	7.9	7.8	8.7	10.4	12.1	13.7	14.7	14.7	13.6	11.7	9.2
22	6.6	4.5	3.2	3.3	4.5	6.4	8.7	11.2	13.2	14.3	14.3	13.3
Tu	11.6	9.6	7.9	7.1	7.5	8.8	10.6	12.5	14.1	14.9	14.5	12.9
23	10.5	7.6	4.9	3.0	2.5	3.4	5.5	8.2	11.3	14.0	15.6	15.8
W	14.6	12.3	9.6	7.0	5.5	5.5	6.8	9.1	11.8	14.4	15.9	15.9
24	14.4	11.7	8.2	4.8	2.2	1.4	2.4	4.9	8.5	12.4	15.6	17.4
Th	17.4	15.6	12.4	8.6	5.2	3.1	3.1	4.9	8.0	11.8	15.2	17.3
25	17.5	15.8	12.5	8.2	4.0	1.0	0.2	1.7	5.1	9.6	14.2	17.7
F	19.3	18.7	15.9	11.7	6.8	2.6	0.5	0.9	3.5	7.7	12.5	16.6
26	18.9	19.0	16.7	12.6	7.5	2.8	-0.2	-0.5	1.8	6.2	11.5	16.5
Sa	19.9	20.9	19.3	15.5	10.1	4.4	-0.1	-1.9	-0.7	2.9	8.1	13.7
27	18.1	20.3	19.9	16.9	12.1	6.4	1.5	-1.1	-0.5	2.8	8.0	13.8
Su	18.8	21.6	21.8	19.1	14.1	7.9	1.8	-2.4	-3.5	-1.4	3.2	9.2
28	15.0	19.3	21.1	20.1	16.4	11.0	5.1	0.6	-1.1	0.4	4.6	10.3
M	16.1	20.6	22.6	21.6	17.9	12.1	5.5	-0.4	-3.9	-4.0	-0.9	4.3
29	10.5	16.2	20.1	21.2	19.4	15.2	9.6	4.1	0.3	-0.4	2.2	6.9
Tu	12.6	18.0	21.5	22.5	20.5	16.0	9.8	3.4	-1.9	-4.3	-3.4	0.4
30	5.9	11.9	17.0	20.0	20.4	18.1	13.7	8.4	3.6	0.9	1.2	4.4
W	9.2	14.5	18.9	21.4	21.3	18.6	13.7	7.7	2.0	-2.2	-3.5	-1.8
31	2.2	7.4	12.8	17.0	19.3	19.0	16.4	12.3	7.6	3.8	2.2	3.3
Th	6.7	11.1	15.5	18.9	20.3	19.4	16.3	11.6	6.3	1.6	-1.4	-1.8

Time meridian 135° W. 0 is midnight. 12 is noon.
 Heights are referred to mean lower low water (N.O.S. chart datum).

NOVEMBER

Predicted hourly heights in feet

Day	Hours 0/12	Hours 1/13	Hours 2/14	Hours 3/15	Hours 4/16	Hours 5/17	Hours 6/18	Hours 7/19	Hours 8/20	Hours 9/21	Hours 10/22	Hours 11/23
1 F	0.3 5.5	4.1 8.5	8.6 12.2	13.1 15.6	16.4 17.9	17.9 18.5	17.3 17.1	14.8 14.1	11.2 10.0	7.5 5.7	4.8 2.1	4.0 0.2
2 Sa	0.3 5.9	2.3 7.2	5.5 9.6	9.2 12.4	12.8 14.8	15.3 16.3	16.4 16.4	15.7 15.1	13.7 12.5	10.9 9.2	8.1 6.0	6.2 3.4
3 Su	2.0 7.5	2.3 7.3	4.0 8.2	6.4 9.9	9.3 11.7	12.1 13.5	14.1 14.6	15.0 14.6	14.6 13.6	13.1 11.7	11.1 9.3	9.0 6.9
4 M	4.9 9.9	3.7 8.5	3.8 7.9	4.9 8.3	6.6 9.2	8.9 10.6	11.3 12.0	13.2 13.1	14.2 13.4	14.1 12.9	13.2 11.6	11.7 9.9
5 Tu	8.0 12.3	6.1 10.4	4.8 8.7	4.5 7.7	5.1 7.5	6.5 8.1	8.5 9.3	10.8 10.9	12.9 12.3	14.1 13.0	14.4 13.0	13.7 12.2
6 W	10.7 14.3	8.8 12.5	6.7 10.2	5.2 8.0	4.6 6.6	4.9 6.2	6.3 6.8	8.5 8.3	11.1 10.4	13.3 12.3	14.7 13.5	15.0 13.7
7 Th	13.0 15.8	11.3 14.4	9.0 12.0	6.6 9.1	4.8 6.4	4.2 4.9	4.7 4.7	6.4 5.8	9.1 8.0	12.1 10.7	14.5 13.1	15.8 14.5
8 F	14.7 16.9	13.6 16.2	11.4 14.0	8.6 10.7	5.8 7.2	4.1 4.3	3.7 3.1	4.8 3.5	7.2 5.4	10.5 8.5	13.7 11.8	16.0 14.4
9 Sa	15.7 17.6	15.5 17.6	13.7 15.9	10.9 12.7	7.6 8.7	4.7 4.7	3.2 2.1	3.5 1.5	5.5 2.9	8.8 5.8	12.5 9.7	15.8 13.4
10 Su	16.0 17.7	16.8 18.8	15.9 17.7	13.3 14.8	9.8 10.7	6.1 6.1	3.4 2.2	2.7 0.2	4.0 0.6	7.0 3.1	10.9 7.0	14.9 11.5
11 M	15.2 17.1	17.4 19.3	17.5 19.2	15.7 17.0	12.3 13.0	8.3 8.1	4.6 3.3	-2.5 -0.1	-2.8 -1.0	5.2 0.6	9.1 4.2	13.4 8.8
12 Tu	13.4 15.8	16.8 18.9	18.3 20.0	17.5 18.8	14.8 15.4	10.9 10.6	6.6 5.4	3.4 0.9	2.3 -1.6	3.7 -1.3	7.1 1.5	11.5 5.8
13 W	10.8 13.8	15.2 17.7	18.0 20.0	18.6 19.9	16.9 17.6	13.5 13.3	9.2 8.0	5.2 2.9	2.8 -0.9	2.8 -2.2	5.3 -0.7	9.3 3.0
14 Th	7.7 11.6	12.6 15.8	16.4 18.9	18.4 20.1	18.1 19.0	15.8 15.8	12.0 11.0	7.8 5.7	4.4 1.1	2.9 -1.7	4.0 -1.8	7.3 0.6
15 F	4.8 9.3	9.5 13.4	13.8 16.9	16.9 19.2	18.1 19.5	17.2 17.5	14.4 13.8	10.6 8.9	6.8 4.0	4.2 0.3	3.7 -1.5	5.7 -0.8
16 Sa	2.2 7.3	6.4 10.8	10.7 14.4	14.4 17.2	16.8 18.7	17.3 18.2	16.0 15.9	13.1 12.0	9.6 7.5	6.5 3.3	4.7 0.3	5.0 -0.7
17 Su	0.6 6.2	3.7 8.5	7.5 11.5	11.3 14.5	14.4 16.7	16.2 17.6	16.4 16.8	14.9 14.4	12.2 10.9	9.3 6.9	6.8 3.4	5.6 1.1
18 M	0.5 6.4	1.9 7.0	4.7 8.9	8.1 11.3	11.3 13.7	14.0 15.5	15.5 16.3	15.6 15.6	14.3 13.6	12.0 10.5	9.5 7.1	7.5 4.2
19 Tu	2.1 8.1	1.6 6.8	2.8 6.9	5.2 8.3	8.1 10.3	11.0 12.3	13.6 14.1	15.1 15.1	15.4 14.9	14.4 13.4	12.4 11.0	10.1 8.0
20 W	5.2 10.7	3.1 8.3	2.4 6.5	3.2 6.0	5.2 6.9	7.8 8.6	10.8 10.7	13.5 12.9	15.3 14.5	15.8 14.9	15.0 14.0	13.2 12.0
21 Th	9.2 13.9	6.3 11.0	3.8 7.8	2.6 5.3	3.1 4.3	4.9 4.9	7.6 6.6	10.9 9.2	13.9 12.1	16.1 14.5	16.8 15.5	16.0 15.1
22 F	13.2 17.0	10.3 14.3	6.9 10.6	4.0 6.6	2.4 3.5	2.7 2.1	4.6 2.7	7.8 4.9	11.5 8.3	15.1 12.0	17.5 15.1	18.2 16.6
23 Sa	16.4 19.4	14.3 17.7	11.0 14.2	7.1 9.5	3.7 4.7	2.0 1.2	2.4 -0.2	4.7 0.8	8.5 3.8	12.8 8.1	16.7 12.6	19.1 16.2
24 Su	17.9 20.6	17.5 20.3	15.1 17.7	11.2 13.3	6.8 7.8	3.1 2.5	1.5 -1.1	2.3 -2.1	5.3 -0.4	9.7 3.5	14.5 8.6	18.5 13.7
25 M	17.4 20.1	19.1 21.6	18.3 20.5	15.3 17.0	10.9 11.8	6.1 5.7	2.4 0.3	1.2 -3.0	2.8 -3.2	6.5 -0.6	11.4 4.1	16.4 9.7
26 Tu	15.0 18.1	18.6 21.2	19.8 21.9	18.4 19.9	14.9 15.6	10.0 9.8	5.2 3.5	-1.9 -1.6	-1.4 -4.0	3.7 -3.3	8.0 0.1	13.3 5.4
27 W	11.2 14.9	16.2 19.2	19.3 21.6	19.9 21.4	17.9 18.6	13.9 13.7	8.9 7.7	4.4 1.7	1.8 -2.6	2.2 -4.0	5.2 -2.4	9.8 1.6
28 Th	7.0 11.5	12.6 16.2	17.1 19.7	19.5 21.1	19.4 20.1	16.9 16.7	12.7 11.6	7.9 5.8	3.9 0.6	2.3 -2.7	3.5 -3.1	6.9 -0.7
29 F	3.5 8.6	8.7 12.8	13.7 16.7	17.4 19.3	19.0 19.9	18.3 18.2	15.5 14.5	11.4 9.6	7.1 4.5	4.0 0.3	3.3 -1.9	5.1 -1.4
30 Sa	1.3 6.7	5.4 9.9	10.0 13.5	14.3 16.6	17.1 18.3	18.1 18.1	16.9 16.1	14.1 12.5	10.4 8.2	6.9 4.0	4.7 0.8	4.6 -0.4

Time meridian 135° W. 0 is midnight. 12 is noon.
 Heights are referred to mean lower low water (N.O.S. chart datum).

Lat. 59° 27'N Long. 151° 43'W

DECEMBER

Predicted hourly heights in feet

Day	Hours 0/12	Hours 1/13	Hours 2/14	Hours 3/15	Hours 4/16	Hours 5/17	Hours 6/18	Hours 7/19	Hours 8/20	Hours 9/21	Hours 10/22	Hours 11/23
1 Su	0.6 6.0	3.3 7.9	6.9 10.6	10.9 13.5	14.3 15.7	16.5 16.8	16.9 16.2	15.5 14.1	13.0 11.0	9.9 7.4	7.1 4.1	5.6 1.9
2 M	1.4 6.6	2.6 7.1	5.0 8.6	8.0 10.7	11.3 12.8	14.0 14.5	15.6 15.1	15.7 14.5	14.5 12.7	12.3 10.1	9.8 7.3	7.7 4.9
3 Tu	3.3 8.2	3.0 7.3	4.1 7.5	6.1 8.6	8.7 10.1	11.3 11.8	13.6 13.1	14.9 13.7	14.9 13.2	13.9 11.9	12.1 9.9	10.0 7.7
4 W	5.8 10.3	4.5 8.5	4.3 7.3	5.2 7.2	6.8 7.9	9.0 9.1	11.4 10.7	13.4 12.1	14.6 12.8	14.7 12.7	13.8 11.7	12.2 10.2
5 Th	8.4 12.3	6.6 10.2	5.4 8.1	5.1 6.7	5.8 6.3	7.2 6.8	9.3 8.1	11.6 9.8	13.6 11.5	14.8 12.6	14.9 12.8	14.0 12.1
6 F	10.8 14.1	9.0 12.1	7.1 9.5	5.7 7.0	5.4 5.4	6.0 5.0	7.6 5.6	9.8 7.2	12.3 9.5	14.3 11.6	15.4 13.1	15.3 13.5
7 Sa	12.8 15.8	11.3 14.0	9.3 11.3	7.1 8.2	5.6 5.4	5.3 3.7	6.2 3.5	8.1 4.6	10.7 6.9	13.5 9.8	15.5 12.4	16.3 14.1
8 Su	14.5 17.2	13.5 16.0	11.6 13.4	9.1 10.0	6.7 6.3	5.2 3.3	5.1 1.9	6.5 2.3	9.0 4.2	12.1 7.3	15.0 10.8	16.9 13.7
9 M	15.4 18.2	15.4 17.8	14.0 15.7	11.5 12.2	8.5 8.0	5.8 4.0	4.6 1.1	5.1 0.3	7.2 1.5	10.3 4.5	13.8 8.4	16.7 12.3
10 Tu	15.3 18.4	16.6 19.2	16.1 17.9	14.0 14.8	10.8 10.5	7.4 5.7	4.8 1.5	4.1 -0.8	5.4 -0.8	8.3 1.5	12.0 5.4	15.7 9.9
11 W	14.0 17.6	16.8 19.7	17.6 19.7	16.4 17.4	13.5 13.4	9.8 8.4	6.2 3.3	3.9 -0.6	3.9 -2.2	6.1 -1.0	9.8 2.3	13.9 6.8
12 Th	11.7 15.7	15.7 19.0	18.0 20.4	18.1 19.5	16.1 16.4	12.6 11.6	8.5 6.1	5.0 1.1	3.4 -2.2	4.3 -2.8	7.3 -0.6	11.5 3.5
13 F	8.5 13.1	13.4 17.2	17.0 19.9	18.6 20.6	18.0 18.8	15.3 14.9	11.3 9.6	7.2 4.0	4.1 -0.6	3.3 -3.0	5.1 -2.5	8.7 0.5
14 Sa	5.1 10.1	10.2 14.4	14.7 18.1	17.8 20.1	18.7 20.0	17.3 17.5	14.2 13.1	10.0 7.7	6.2 2.5	3.7 -1.4	3.7 -2.9	6.2 -1.5
15 Su	2.0 7.3	6.7 11.2	11.5 15.1	15.6 18.2	18.0 19.6	18.3 18.9	16.4 16.0	13.0 11.5	9.0 6.4	5.6 1.7	3.8 -1.4	4.5 -2.1
16 M	-0.2 5.2	3.6 8.0	8.1 11.6	12.5 15.0	16.0 17.6	17.8 18.5	17.6 17.5	15.5 14.6	12.1 10.4	8.4 5.8	5.5 1.8	4.3 -0.6
17 Tu	-0.8 4.7	1.4 5.7	5.0 8.1	9.1 11.2	13.0 14.2	16.1 16.4	17.5 17.2	17.0 16.2	14.8 13.6	11.6 9.8	8.3 5.9	5.7 2.5
18 W	0.6 6.0	0.7 4.9	2.7 5.6	6.0 7.5	9.8 10.1	13.3 12.8	16.0 14.9	17.1 15.8	16.6 15.2	14.5 13.1	11.6 10.0	8.5 6.6
19 Th	3.7 8.7	2.0 6.1	2.0 4.6	3.8 4.8	6.7 6.3	10.1 8.6	13.5 11.2	16.0 13.5	17.1 14.8	16.6 14.7	14.7 13.2	11.8 10.7
20 F	7.7 12.2	5.0 8.8	3.2 5.7	3.0 3.7	4.6 3.5	7.2 4.6	10.4 6.9	13.7 9.7	16.3 12.5	17.4 14.4	17.0 14.9	15.1 13.9
21 Sa	11.8 15.6	8.9 12.3	6.0 8.4	4.0 4.8	3.6 2.4	4.9 1.8	7.5 2.9	10.8 5.4	14.2 8.7	16.9 12.1	18.1 14.6	17.6 15.5
22 Su	14.9 18.2	12.8 15.8	9.9 12.0	6.7 7.5	4.4 3.4	3.9 0.7	5.1 0.1	7.8 1.4	11.3 4.4	15.0 8.4	17.8 12.4	18.9 15.3
23 M	16.5 19.7	15.9 18.6	13.7 15.7	10.4 11.2	6.8 6.2	4.3 1.7	3.8 -1.0	5.2 -1.3	8.2 0.6	12.2 4.3	16.0 8.9	18.8 13.3
24 Tu	16.4 19.7	17.6 20.3	16.7 18.6	14.1 15.0	10.3 10.0	6.5 4.5	3.9 0.0	3.6 -2.4	5.5 -2.1	9.0 0.6	13.2 4.9	17.2 10.0
25 W	14.6 18.3	17.5 20.4	18.4 20.3	17.0 18.0	13.9 13.8	9.6 8.3	5.7 2.7	3.4 -1.5	3.6 -3.2	6.1 -2.1	10.0 1.4	14.5 6.3
26 Th	11.5 15.7	15.9 19.1	18.5 20.6	18.7 19.9	16.8 16.9	13.0 12.1	8.6 6.4	4.8 1.1	3.1 -2.4	3.9 -3.2	7.0 -1.2	11.2 2.8
27 F	8.0 12.5	13.1 16.7	17.1 19.5	19.0 20.3	18.5 18.8	15.9 15.2	11.8 10.1	7.3 4.6	4.0 -0.1	3.1 -2.7	4.7 -2.4	8.2 0.4
28 Sa	4.8 9.5	9.9 13.6	14.6 17.3	17.8 19.4	18.9 19.4	17.6 17.2	14.5 13.1	10.3 8.1	6.2 3.1	3.7 -0.7	3.6 -2.1	5.8 -0.8
29 Su	2.4 7.1	6.8 10.7	11.6 14.4	15.6 17.3	17.9 18.6	18.2 17.9	16.3 15.2	13.0 11.1	9.0 6.5	5.5 2.3	3.9 -0.4	4.5 -0.8
30 M	1.1 5.6	4.5 8.3	8.7 11.5	12.9 14.6	16.1 16.8	17.5 17.3	17.1 16.0	14.8 13.2	11.5 9.3	8.0 5.4	5.4 2.2	4.5 0.6
31 Tu	1.0 5.3	3.3 6.7	6.5 9.0	10.3 11.8	13.7 14.2	16.1 15.7	16.8 15.7	15.8 14.2	13.5 11.5	10.4 8.2	7.5 5.0	5.6 2.8

Time meridian 135° W. 0 is midnight. 12 is noon.
 Heights are referred to mean lower low water (N.O.S. chart datum).

JANUARY

Predicted hourly heights in feet

Day	Hours 0/12	Hours 1/13	Hours 2/14	Hours 3/15	Hours 4/16	Hours 5/17	Hours 6/18	Hours 7/19	Hours 8/20	Hours 9/21	Hours 10/22	Hours 11/23
1 Tu	7.1 9.6	5.5 7.1	4.2 4.4	3.6 2.3	3.9 1.1	5.2 1.1	7.1 2.2	9.2 4.1	11.1 6.2	12.3 8.1	12.5 9.3	11.6 9.6
2 W	9.0 11.4	7.6 9.3	6.0 6.5	4.6 3.6	3.9 1.3	4.2 0.1	5.6 0.4	7.6 1.9	9.8 4.2	11.7 6.5	12.7 8.5	12.7 9.8
3 Th	10.0 12.6	9.3 11.1	7.9 8.6	6.1 5.5	4.6 2.5	3.9 0.2	4.4 -0.6	6.1 0.2	8.3 2.2	10.6 4.7	12.3 7.2	13.0 9.2
4 F	10.3 13.2	10.3 12.4	9.4 10.4	7.8 7.6	5.8 4.3	4.3 1.3	3.9 -0.6	4.8 -0.9	6.8 0.5	9.2 2.9	11.4 5.7	12.8 8.1
5 Sa	9.9 13.1	10.7 13.1	10.4 11.8	9.2 9.4	7.3 6.3	5.3 2.9	4.0 0.2	4.0 -1.1	5.3 -0.7	7.6 1.3	10.1 4.0	12.0 6.8
6 Su	9.1 12.5	10.5 13.2	10.9 12.6	10.2 10.9	8.6 8.1	6.5 4.8	4.6 1.6	3.7 -0.5	4.3 -1.1	6.1 0.0	8.5 2.4	10.9 5.3
7 M	7.9 11.5	9.9 12.8	10.9 12.9	10.8 11.8	9.7 9.6	7.7 6.6	5.7 3.4	4.1 0.7	3.7 -0.9	4.8 -0.7	6.9 1.0	9.4 3.7
8 Tu	6.6 10.1	8.9 11.9	10.5 12.6	11.0 12.2	10.4 10.7	8.9 8.2	6.8 5.2	4.9 2.3	3.8 0.1	4.0 -0.7	5.5 0.2	7.8 2.3
9 W	5.1 8.5	7.8 10.6	9.7 11.8	10.7 12.1	10.7 11.2	9.7 9.4	8.0 6.8	6.0 4.0	4.4 1.5	3.8 0.0	4.4 0.0	6.2 1.4
10 Th	3.8 6.9	6.5 9.0	8.7 10.6	10.2 11.4	10.7 11.1	10.3 10.0	9.0 8.1	7.2 5.6	5.4 3.2	4.2 1.3	4.0 0.4	5.0 1.0
11 F	2.8 5.5	5.2 7.3	7.6 9.0	9.4 10.2	10.4 10.5	10.5 10.0	9.8 8.8	8.4 7.0	6.6 4.8	5.0 2.8	4.1 1.5	4.2 1.3
12 Sa	2.3 4.5	4.2 5.7	6.5 7.3	8.5 8.7	9.8 9.4	10.4 9.6	10.3 9.0	9.4 7.9	7.9 6.3	6.2 4.5	4.7 2.9	4.1 2.1
13 Su	2.3 4.1	3.6 4.5	5.5 5.5	7.5 6.8	9.1 7.9	10.1 8.5	10.5 8.7	10.1 8.3	9.1 7.4	7.6 6.1	5.9 4.6	4.6 3.4
14 M	2.9 4.3	3.4 3.8	4.7 4.1	6.4 4.9	8.1 6.0	9.5 7.0	10.4 7.8	10.6 8.1	10.2 8.1	9.1 7.4	7.4 6.2	5.6 5.0
15 Tu	4.0 5.4	3.8 3.9	4.3 3.2	5.5 3.2	7.0 3.9	8.6 5.0	9.9 6.2	10.8 7.3	11.0 8.0	10.5 8.2	9.1 7.7	7.2 6.7
16 W	5.6 7.1	4.7 5.0	4.4 3.2	4.8 2.2	5.8 2.0	7.3 2.7	9.0 4.1	10.5 5.7	11.4 7.3	11.6 8.3	10.9 8.7	9.2 8.3
17 Th	7.4 9.4	6.2 6.9	5.2 4.3	4.6 2.1	4.8 0.8	5.9 0.6	7.5 1.7	9.5 3.5	11.2 5.7	12.2 7.6	12.3 9.0	11.3 9.5
18 F	9.1 11.8	8.0 9.4	6.5 6.4	5.2 3.4	4.4 0.8	4.5 -0.7	5.8 -0.6	7.8 0.9	10.1 3.4	12.1 6.0	13.1 8.3	13.1 9.8
19 Sa	10.3 13.7	9.8 12.1	8.4 9.3	6.5 5.7	4.8 2.2	3.8 -0.7	4.1 -2.0	5.7 -1.5	8.2 0.6	10.9 3.7	13.0 6.8	14.0 9.3
20 Su	10.8 14.7	11.1 14.1	10.2 12.1	8.4 8.8	6.1 4.7	4.1 0.9	3.1 -1.9	3.7 -2.9	5.7 -1.8	8.7 0.9	11.6 4.4	13.8 7.7
21 M	10.3 14.3	11.7 15.1	11.7 14.2	10.4 11.7	8.0 8.0	5.4 3.6	3.2 -0.3	2.4 -2.8	3.4 -3.3	5.9 -1.5	9.2 1.7	12.2 5.4
22 Tu	8.8 12.6	11.2 14.5	12.3 15.0	11.9 13.7	10.1 10.9	7.4 6.9	4.5 2.6	2.4 -1.1	1.9 -3.1	3.3 -3.0	6.2 -0.7	9.6 2.9
23 W	6.7 9.8	9.9 12.6	12.0 14.2	12.7 14.3	11.8 12.8	9.6 9.8	6.7 5.9	3.7 1.8	1.8 -1.4	1.7 -2.8	3.4 -2.0	6.4 0.6
24 Th	4.3 6.6	7.9 9.7	10.8 12.1	12.4 13.3	12.7 13.2	11.5 11.6	9.0 8.7	6.0 5.1	3.2 1.5	1.6 -1.1	1.7 -1.9	3.6 -0.6
25 F	2.2 3.8	5.7 6.5	9.0 9.2	11.3 11.2	12.5 12.1	12.4 11.8	11.0 10.3	8.5 7.8	5.5 4.6	2.9 1.7	1.6 -0.2	1.9 -0.5
26 Sa	1.1 2.2	3.8 3.9	7.0 6.2	9.7 8.3	11.5 9.8	12.4 10.6	12.0 10.4	10.5 9.3	8.1 7.2	5.3 4.6	3.0 2.3	1.8 1.0
27 Su	1.2 2.2	2.8 2.4	5.2 3.7	7.8 5.5	10.0 7.1	11.4 8.5	12.0 9.3	11.6 9.3	10.2 8.6	7.9 7.0	5.3 5.0	3.2 3.3
28 M	2.5 3.5	2.8 2.4	4.2 2.4	6.2 3.2	8.2 4.5	10.0 6.0	11.2 7.3	11.8 8.3	11.4 8.7	10.0 8.3	7.8 7.2	5.5 5.7
29 Tu	4.4 5.7	3.8 3.7	4.0 2.5	5.1 2.1	6.6 2.5	8.3 3.6	9.9 5.0	11.1 6.6	11.6 7.8	11.2 8.5	9.9 8.5	7.9 7.7
30 W	6.6 8.0	5.4 5.7	4.8 3.6	4.7 2.1	5.4 1.5	6.7 1.8	8.3 2.9	9.8 4.6	11.1 6.4	11.6 7.9	11.2 8.8	9.9 8.9
31 Th	8.3 9.9	7.2 7.9	6.1 5.4	5.2 3.1	4.9 1.4	5.4 0.7	6.7 1.2	8.3 2.7	10.0 4.7	11.3 6.7	11.8 8.4	11.3 9.3

Time meridian 135° W. 0 is midnight. 12 is noon.
 Heights are referred to mean lower low water (N.O.S. chart datum).

Lat. 61° 08'N Long. 146° 22'W

FEBRUARY

Predicted hourly heights in feet

Day	Hours 0/12	Hours 1/13	Hours 2/14	Hours 3/15	Hours 4/16	Hours 5/17	Hours 6/18	Hours 7/19	Hours 8/20	Hours 9/21	Hours 10/22	Hours 11/23
1 F	9.4 11.4	8.8 9.8	7.6 7.5	6.1 4.7	5.0 2.2	4.7 0.5	5.3 0.1	6.8 1.0	8.6 2.9	10.4 5.3	11.6 7.4	12.0 9.1
2 Sa	9.9 12.2	9.8 11.3	8.9 9.3	7.4 6.6	5.7 3.7	4.5 1.1	4.3 -0.3	5.3 -0.2	7.1 1.3	9.2 3.7	11.0 6.2	12.1 8.4
3 Su	9.9 12.5	10.5 12.2	10.0 10.9	8.6 8.4	6.7 5.4	4.9 2.3	3.8 0.0	4.1 -0.8	5.5 0.0	7.7 2.1	9.9 4.8	11.6 7.4
4 M	9.5 12.2	10.6 12.7	10.7 11.9	9.7 10.0	7.8 7.2	5.7 3.9	3.9 1.0	3.3 -0.7	4.1 -0.8	6.1 0.8	8.5 3.4	10.7 6.2
5 Tu	8.7 11.5	10.5 12.6	11.1 12.5	10.5 11.2	8.9 8.7	6.7 5.6	4.5 2.4	3.1 0.0	3.1 -1.0	4.5 -0.2	6.9 2.0	9.4 4.9
6 W	7.7 10.2	9.9 11.9	11.1 12.5	11.1 11.8	9.9 10.0	7.9 7.2	5.5 4.0	3.5 1.2	2.6 -0.5	3.3 -0.6	5.2 0.9	7.8 3.6
7 Th	6.6 8.7	9.2 10.8	10.8 12.0	11.3 12.0	10.7 10.8	9.0 8.5	6.6 5.7	4.4 2.8	2.8 0.6	2.6 -0.4	3.8 0.4	6.1 2.5
8 F	5.4 6.9	8.2 9.3	10.3 10.9	11.3 11.5	11.1 11.0	9.9 9.4	7.9 7.1	5.5 4.4	3.5 2.0	2.5 0.5	2.8 0.4	4.5 1.8
9 Sa	4.3 5.2	7.1 7.5	9.5 9.5	10.9 10.6	11.3 10.7	10.6 9.8	9.0 8.2	6.8 5.9	4.6 3.6	2.9 1.8	2.4 1.0	3.3 1.6
10 Su	3.5 3.7	6.1 5.7	8.6 7.7	10.3 9.2	11.2 9.9	11.0 9.7	9.9 8.7	8.2 7.2	6.0 5.2	4.0 3.4	2.7 2.2	2.6 2.0
11 M	3.1 2.9	5.2 4.0	7.5 5.8	9.5 7.4	10.7 8.5	11.1 8.9	10.6 8.7	9.4 7.9	7.5 6.6	5.4 5.1	3.6 3.7	2.7 3.0
12 Tu	3.3 2.7	4.5 2.9	6.5 3.9	8.4 5.3	10.0 6.7	10.8 7.6	10.9 8.1	10.3 8.1	9.1 7.6	7.2 6.6	5.2 5.4	3.6 4.4
13 W	3.9 3.5	4.4 2.6	5.6 2.6	7.2 3.3	8.8 4.4	10.1 5.7	10.8 6.7	10.9 7.5	10.4 7.9	9.1 7.7	7.2 7.0	5.2 6.1
14 Th	5.2 5.3	4.8 3.5	5.1 2.2	6.0 1.8	7.3 2.3	8.8 3.3	10.1 4.7	10.9 6.2	11.2 7.5	10.7 8.2	9.4 8.3	7.5 7.8
15 F	6.8 7.8	5.9 5.4	5.2 3.1	5.1 1.4	5.7 0.6	7.0 1.0	8.5 2.3	10.1 4.2	11.3 6.2	11.8 7.9	11.4 9.0	10.0 9.2
16 Sa	8.6 10.6	7.5 8.1	6.2 5.2	5.1 2.4	4.6 0.2	5.0 -0.7	6.4 -0.2	8.4 1.6	10.4 4.1	12.0 6.7	12.6 8.8	12.2 10.0
17 Su	10.2 12.9	9.4 11.1	7.8 8.1	5.9 4.6	4.3 1.3	3.6 -1.1	4.1 -1.9	5.9 -0.9	8.4 1.5	10.9 4.6	12.7 7.6	13.5 9.9
18 M	11.1 14.2	11.1 13.5	9.8 11.2	7.6 7.7	5.2 3.7	3.2 0.1	2.4 -2.3	3.3 -2.7	5.6 -1.0	8.6 2.1	11.5 5.6	13.5 8.9
19 Tu	11.2 14.1	12.1 14.6	11.7 13.5	9.8 10.8	7.0 6.9	4.0 2.6	1.9 -1.0	1.3 -3.0	2.7 -2.7	5.5 -0.4	8.9 3.2	12.0 7.0
20 W	10.3 12.4	12.3 14.3	12.9 14.5	11.8 13.0	9.3 10.0	6.0 5.8	2.8 1.6	0.7 -1.7	0.6 -3.0	2.4 -2.1	5.7 0.8	9.3 4.7
21 Th	8.6 9.6	11.5 12.4	13.2 14.0	13.1 13.9	11.4 12.1	8.4 8.8	4.8 4.8	1.7 0.9	-0.1 -1.7	0.3 -2.4	2.5 -0.7	6.0 2.5
22 F	6.5 6.3	10.0 9.6	12.5 12.0	13.5 13.1	12.9 12.7	10.7 10.8	7.4 7.6	3.9 4.0	1.0 0.7	-0.3 -1.1	0.4 -1.0	2.9 1.0
23 Sa	4.4 3.4	8.0 6.5	11.0 9.3	12.8 11.2	13.2 11.9	12.2 11.3	9.8 9.5	6.5 6.7	3.2 3.7	0.7 1.2	-0.1 0.0	0.9 0.7
24 Su	3.0 1.6	6.1 3.8	9.2 6.4	11.5 8.6	12.6 10.0	12.6 10.5	11.3 9.9	8.9 8.4	5.9 6.2	3.0 3.9	0.9 2.1	0.4 1.6
25 M	2.6 1.2	4.7 2.2	7.4 4.0	9.7 6.0	11.3 7.6	12.0 8.7	11.8 9.2	10.5 8.9	8.3 7.8	5.6 6.2	3.1 4.5	1.5 3.3
26 Tu	3.2 2.2	4.2 1.9	6.0 2.6	8.0 3.8	9.6 5.2	10.8 6.5	11.3 7.6	11.0 8.3	9.9 8.3	8.0 7.7	5.7 6.6	3.6 5.4
27 W	4.6 4.1	4.5 2.8	5.3 2.3	6.5 2.5	7.9 3.3	9.2 4.4	10.1 5.7	10.6 6.9	10.5 7.9	9.6 8.3	8.0 8.0	6.0 7.2
28 Th	6.3 6.4	5.6 4.5	5.3 3.0	5.7 2.2	6.5 2.1	7.5 2.7	8.7 3.8	9.7 5.3	10.3 6.8	10.4 8.0	9.6 8.6	8.2 8.5

Time meridian 135° W. 0 is midnight. 12 is noon.
 Heights are referred to mean lower low water (N.O.S. chart datum).

MARCH

Predicted hourly heights in feet

Day	Hours 0/12	Hours 1/13	Hours 2/14	Hours 3/15	Hours 4/16	Hours 5/17	Hours 6/18	Hours 7/19	Hours 8/20	Hours 9/21	Hours 10/22	Hours 11/23
1	7.8	6.9	6.0	5.5	5.5	6.0	7.1	8.3	9.6	10.4	10.5	9.8
F	8.4	6.5	4.5	2.7	1.6	1.4	2.2	3.6	5.5	7.2	8.6	9.2
2	9.0	8.3	7.1	5.9	5.0	4.8	5.5	6.8	8.4	9.8	10.7	10.8
Sa	10.0	8.5	6.3	4.0	2.0	0.8	0.9	2.1	4.0	6.1	8.1	9.4
3	9.8	9.4	8.3	6.7	5.1	4.1	4.2	5.2	7.0	8.9	10.4	11.3
Su	11.2	10.1	8.1	5.6	3.0	0.9	0.1	0.7	2.5	4.9	7.2	9.1
4	10.2	10.3	9.4	7.7	5.7	4.0	3.2	3.7	5.3	7.5	9.6	11.1
M	11.8	11.3	9.7	7.3	4.3	1.7	0.0	-0.2	1.1	3.5	6.2	8.6
5	10.2	10.9	10.3	8.8	6.6	4.3	2.8	2.5	3.7	5.9	8.4	10.5
Tu	11.8	12.0	11.0	8.8	5.9	2.9	0.5	-0.6	0.1	2.2	5.0	7.8
6	10.0	11.1	11.1	9.9	7.7	5.1	2.9	1.8	2.3	4.1	6.7	9.3
W	11.3	12.2	11.8	10.2	7.5	4.4	1.5	-0.3	-0.5	1.0	3.7	6.7
7	9.4	11.1	11.6	10.8	8.9	6.2	3.6	1.8	1.3	2.5	5.0	7.8
Th	10.2	11.8	12.1	11.1	9.0	6.0	2.9	0.6	-0.4	0.3	2.6	5.6
8	8.5	10.8	11.8	11.5	10.0	7.5	4.7	2.3	1.0	1.4	3.2	6.0
F	8.8	10.9	11.9	11.6	10.0	7.5	4.6	1.9	0.2	0.2	1.7	4.5
9	7.5	10.1	11.7	11.9	10.9	8.8	6.1	3.3	1.4	0.8	1.8	4.1
Sa	7.0	9.5	11.1	11.4	10.6	8.7	6.1	3.5	1.4	0.6	1.4	3.5
10	6.5	9.3	11.2	12.0	11.5	9.9	7.5	4.7	2.3	0.9	1.0	2.5
Su	5.1	7.7	9.8	10.7	10.6	9.4	7.5	5.1	3.0	1.6	1.6	2.9
11	5.4	8.2	10.5	11.7	11.8	10.8	8.9	6.4	3.8	1.7	0.9	1.4
M	3.3	5.7	8.0	9.5	10.0	9.5	8.3	6.6	4.6	3.0	2.3	2.9
12	4.6	7.1	9.4	11.1	11.7	11.3	10.0	8.0	5.6	3.3	1.6	1.1
Tu	2.0	3.8	6.0	7.8	8.8	9.0	8.6	7.6	6.2	4.7	3.6	3.3
13	4.2	6.0	8.1	10.0	11.1	11.3	10.7	9.4	7.5	5.3	3.2	1.8
W	1.5	2.3	3.9	5.6	7.0	7.9	8.2	8.0	7.4	6.3	5.2	4.4
14	4.3	5.2	6.7	8.5	9.9	10.7	10.9	10.4	9.3	7.6	5.5	3.5
Th	2.1	1.7	2.2	3.4	4.8	6.1	7.1	7.8	8.0	7.7	6.9	5.9
15	5.2	5.0	5.6	6.7	8.1	9.4	10.3	10.7	10.6	9.7	8.0	5.9
F	3.9	2.3	1.5	1.6	2.5	3.8	5.3	6.7	7.9	8.5	8.4	7.6
16	6.6	5.7	5.2	5.3	6.0	7.3	8.7	10.0	10.9	11.1	10.3	8.7
Sa	6.5	4.1	2.1	0.9	0.7	1.4	3.0	5.0	7.0	8.5	9.4	9.3
17	8.4	7.1	5.7	4.6	4.3	4.9	6.3	8.2	10.1	11.4	11.8	11.2
Su	9.4	6.9	4.1	1.6	-0.1	-0.5	0.6	2.7	5.3	7.7	9.6	10.5
18	10.2	9.0	7.1	5.0	3.4	2.8	3.6	5.5	8.0	10.4	12.1	12.7
M	11.9	9.9	6.9	3.6	0.6	-1.2	-1.3	0.3	3.0	6.2	9.0	10.9
19	11.6	11.0	9.2	6.5	3.8	1.8	1.3	2.5	5.0	8.1	10.9	12.8
Tu	13.4	12.4	10.0	6.5	2.7	-0.4	-2.0	-1.6	0.6	4.0	7.5	10.5
20	12.2	12.6	11.3	8.8	5.4	2.3	0.3	0.1	1.9	5.0	8.5	11.5
W	13.3	13.7	12.4	9.5	5.7	1.8	-1.2	-2.3	-1.2	1.7	5.5	9.2
21	11.9	13.3	13.0	11.1	7.8	4.1	0.8	-1.0	-0.6	1.7	5.2	8.9
Th	11.9	13.5	13.6	11.8	8.7	4.7	0.9	-1.5	-1.9	-0.1	3.3	7.3
22	10.7	13.1	13.8	12.9	10.3	6.6	2.7	-0.4	-1.7	-0.8	2.0	5.7
F	9.3	12.0	13.3	12.9	10.9	7.6	3.8	0.5	-1.2	-0.8	1.6	5.2
23	8.9	11.9	13.6	13.7	12.1	9.1	5.3	1.6	-1.0	-1.7	-0.3	2.7
Sa	6.3	9.5	11.7	12.5	11.8	9.7	6.6	3.3	0.7	-0.3	0.8	3.5
24	7.0	10.2	12.6	13.5	13.0	11.0	7.9	4.2	1.0	-1.1	-1.2	0.5
Su	3.5	6.7	9.4	11.0	11.4	10.5	8.5	5.9	3.2	1.4	1.1	2.6
25	5.3	8.3	10.9	12.5	12.8	11.8	9.7	6.8	3.6	0.9	-0.5	-0.3
M	1.5	4.2	6.8	8.9	10.0	10.2	9.4	7.7	5.6	3.6	2.5	2.7
26	4.3	6.7	9.1	10.9	11.8	11.7	10.6	8.7	6.1	3.5	1.3	0.4
Tu	0.9	2.5	4.6	6.6	8.1	8.9	9.1	8.5	7.3	5.7	4.4	3.7
27	4.2	5.6	7.4	9.2	10.3	10.8	10.6	9.7	8.0	5.9	3.8	2.1
W	1.4	1.8	3.0	4.6	6.0	7.2	8.0	8.4	8.1	7.3	6.2	5.3
28	4.9	5.3	6.3	7.5	8.6	9.4	9.8	9.8	9.1	7.8	6.1	4.3
Th	2.9	2.2	2.3	3.1	4.2	5.3	6.5	7.5	8.2	8.2	7.7	6.8
29	6.0	5.6	5.7	6.2	7.0	7.8	8.6	9.2	9.4	9.0	8.0	6.5
F	4.8	3.5	2.6	2.4	2.8	3.7	4.9	6.3	7.6	8.4	8.6	8.2
30	7.4	6.5	5.8	5.4	5.6	6.2	7.1	8.1	9.0	9.5	9.2	8.3
Sa	6.8	5.1	3.6	2.4	1.9	2.3	3.3	4.9	6.6	8.1	9.0	9.1
31	8.6	7.5	6.3	5.2	4.6	4.7	5.5	6.8	8.2	9.3	9.9	9.6
Su	8.5	6.9	5.0	3.1	1.8	1.4	2.0	3.5	5.5	7.5	9.0	9.7

Time meridian 135° W. 0 is midnight. 12 is noon.
 Heights are referred to mean lower low water (N.O.S. chart datum).

APRIL

Predicted hourly heights in feet

Day	Hours 0/12	Hours 1/13	Hours 2/14	Hours 3/15	Hours 4/16	Hours 5/17	Hours 6/18	Hours 7/19	Hours 8/20	Hours 9/21	Hours 10/22	Hours 11/23
1	9.6	8.7	7.2	5.6	4.2	3.5	3.9	5.1	6.9	8.6	9.9	10.4
M	9.9	8.6	6.6	4.3	2.2	1.0	1.0	2.2	4.2	6.6	8.7	10.0
2	10.4	9.8	8.3	6.3	4.3	2.8	2.5	3.5	5.3	7.5	9.4	10.6
Tu	10.8	10.0	8.2	5.8	3.2	1.2	0.4	1.1	3.0	5.5	8.0	10.0
3	11.0	10.8	9.5	7.4	4.9	2.7	1.6	1.9	3.5	5.9	8.3	10.2
W	11.2	11.0	9.6	7.4	4.6	2.0	0.4	0.3	1.8	4.3	7.2	9.6
4	11.2	11.5	10.6	8.6	5.9	3.2	1.3	0.7	1.8	4.0	6.8	9.3
Th	11.0	11.5	10.7	8.9	6.2	3.3	1.1	0.2	0.9	3.2	6.1	8.9
5	11.1	12.0	11.6	9.9	7.2	4.2	1.6	0.1	0.4	2.2	5.0	7.9
F	10.2	11.4	11.4	10.1	7.7	4.9	2.3	0.6	0.6	2.2	4.9	8.0
6	10.6	12.1	12.3	11.1	8.7	5.6	2.5	0.3	-0.5	0.6	3.0	6.0
Sa	8.8	10.8	11.5	10.9	9.1	6.5	3.8	1.7	0.8	1.6	3.8	6.9
7	9.8	11.8	12.6	12.0	10.1	7.2	3.9	1.1	-0.5	-0.5	1.2	4.0
Su	7.1	9.5	10.9	11.0	10.0	8.0	5.5	3.1	1.6	1.5	3.0	5.7
8	8.7	11.1	12.5	12.5	11.1	8.8	5.7	2.6	0.2	-0.8	-0.1	2.1
M	5.0	7.8	9.8	10.6	10.3	9.0	7.0	4.8	2.9	2.1	2.7	4.6
9	7.4	10.1	11.9	12.5	11.8	10.1	7.5	4.5	1.8	-0.1	-0.6	0.6
Tu	3.0	5.7	8.1	9.5	9.9	9.4	8.1	6.4	4.6	3.2	3.0	4.0
10	6.1	8.6	10.8	12.0	12.0	11.0	9.1	6.6	3.9	1.5	0.0	0.0
W	1.3	3.6	6.0	7.8	8.9	9.1	8.7	7.6	6.2	4.8	3.8	3.9
11	5.1	7.1	9.2	10.8	11.5	11.3	10.3	8.5	6.2	3.8	1.6	0.4
Th	0.5	1.8	3.7	5.7	7.2	8.2	8.5	8.3	7.6	6.5	5.3	4.5
12	4.7	5.7	7.3	9.0	10.2	10.8	10.6	9.9	8.4	6.4	4.1	2.1
F	0.9	0.9	1.9	3.4	5.1	6.5	7.7	8.3	8.5	8.0	7.0	5.9
13	5.1	5.0	5.7	6.9	8.2	9.3	10.0	10.3	9.9	8.7	6.8	4.6
Sa	2.6	1.3	0.9	1.5	2.8	4.5	6.1	7.6	8.7	9.1	8.7	7.6
14	6.3	5.2	4.7	4.9	5.7	7.0	8.4	9.6	10.3	10.3	9.3	7.5
Su	5.2	3.0	1.3	0.6	0.9	2.2	4.1	6.2	8.2	9.6	10.1	9.5
15	8.2	6.4	4.8	3.7	3.5	4.3	5.8	7.7	9.5	10.7	10.9	10.0
M	8.1	5.6	3.0	1.0	0.0	0.3	1.9	4.3	7.0	9.3	10.8	11.1
16	10.2	8.4	6.0	3.8	2.2	1.9	2.9	4.9	7.5	9.7	11.3	11.6
Tu	10.6	8.5	5.7	2.7	0.4	-0.6	0.0	2.2	5.1	8.2	10.6	12.0
17	12.0	10.6	8.1	5.1	2.3	0.5	0.3	1.8	4.5	7.6	10.2	11.8
W	12.1	11.0	8.5	5.3	2.1	-0.2	-0.9	0.3	3.1	6.5	9.7	12.0
18	13.0	12.5	10.5	7.3	3.7	0.6	-1.1	-0.8	1.4	4.6	8.0	10.7
Th	12.3	12.4	10.9	8.1	4.7	1.5	-0.6	-0.7	1.2	4.5	8.1	11.2
19	13.2	13.6	12.4	9.7	6.0	2.1	-0.9	-2.1	-1.2	1.5	5.0	8.5
F	11.1	12.4	12.2	10.4	7.4	4.0	1.0	-0.4	0.2	2.6	6.1	9.7
20	12.4	13.8	13.7	11.8	8.6	4.6	0.7	-1.9	-2.5	-1.0	2.0	5.7
Sa	9.0	11.3	12.3	11.7	9.6	6.6	3.4	1.0	0.2	1.4	4.3	7.8
21	11.0	13.1	13.9	13.0	10.7	7.2	3.2	-0.3	-2.3	-2.3	-0.3	3.0
Su	6.4	9.4	11.2	11.7	10.8	8.7	5.9	3.1	1.4	1.3	3.0	5.9
22	9.1	11.7	13.2	13.3	11.9	9.3	5.8	2.2	-0.7	-2.0	-1.4	0.8
M	3.9	7.0	9.4	10.7	10.8	9.8	7.8	5.4	3.3	2.2	2.6	4.5
23	7.3	10.0	11.9	12.6	12.2	10.5	7.9	4.8	1.7	-0.5	-1.2	-0.3
Tu	2.0	4.8	7.3	9.1	10.0	9.9	8.9	7.2	5.3	3.7	3.2	4.0
24	5.8	8.2	10.2	11.4	11.6	10.9	9.3	6.9	4.2	1.8	0.1	-0.1
W	1.0	3.0	5.3	7.2	8.5	9.2	9.1	8.3	7.0	5.5	4.4	4.2
25	5.1	6.7	8.4	9.8	10.5	10.4	9.7	8.3	6.3	4.1	2.2	1.0
Th	1.0	2.0	3.6	5.4	6.8	7.9	8.5	8.6	8.0	7.0	5.9	5.1
26	5.0	5.7	6.9	8.1	9.0	9.4	9.4	8.9	7.8	6.2	4.3	2.8
F	1.9	1.8	2.6	3.8	5.2	6.4	7.5	8.3	8.5	8.1	7.3	6.3
27	5.6	5.4	5.8	6.5	7.4	8.0	8.6	8.8	8.5	7.7	6.3	4.7
Sa	3.3	2.5	2.3	2.8	3.7	4.9	6.3	7.6	8.5	8.8	8.4	7.6
28	6.6	5.7	5.3	5.3	5.7	6.5	7.3	8.1	8.6	8.6	7.8	6.6
Su	5.1	3.7	2.7	2.3	2.6	3.5	5.0	6.6	8.1	9.0	9.3	8.7
29	7.7	6.4	5.3	4.5	4.3	4.8	5.7	6.9	8.1	8.8	8.8	8.1
M	6.8	5.2	3.6	2.5	2.0	2.4	3.7	5.5	7.4	9.0	9.8	9.8
30	8.9	7.5	5.8	4.3	3.4	3.2	4.0	5.4	7.0	8.5	9.3	9.2
Tu	8.3	6.8	4.9	3.2	2.0	1.7	2.5	4.3	6.5	8.6	10.0	10.6

Time meridian 135° W. 0 is midnight. 12 is noon.
 Heights are referred to mean lower low water (N.O.S. chart datum).

MAY

Predicted hourly heights in feet

Day	Hours 0/12	Hours 1/13	Hours 2/14	Hours 3/15	Hours 4/16	Hours 5/17	Hours 6/18	Hours 7/19	Hours 8/20	Hours 9/21	Hours 10/22	Hours 11/23
1 W	10.1 9.5	8.7 8.3	6.8 6.5	4.7 4.4	2.9 2.5	2.0 1.5	2.3 1.7	3.6 3.1	5.6 5.4	7.6 7.9	9.1 9.9	9.8 11.1
2 Th	11.1 10.3	10.0 9.6	8.0 8.0	5.5 5.9	3.1 3.6	1.4 1.9	0.9 1.3	1.8 2.2	3.7 4.2	6.2 6.9	8.3 9.5	9.8 11.2
3 F	11.9 10.4	11.3 10.5	9.5 9.5	6.8 7.5	3.9 5.0	1.4 2.8	0.0 1.4	0.1 1.5	1.8 3.1	4.3 5.8	7.0 8.6	9.2 11.0
4 Sa	12.3 10.0	12.3 10.8	10.9 10.5	8.4 9.0	5.3 6.7	2.2 4.2	-0.1 2.2	-1.0 1.5	0.0 2.3	2.3 4.5	5.2 7.5	8.0 10.3
5 Su	12.2 8.9	12.9 10.5	12.1 10.9	10.1 10.1	7.0 8.3	3.6 5.8	0.5 3.5	-1.3 2.0	-1.4 1.9	0.3 3.5	3.1 6.1	6.2 9.1
6 M	11.6 7.2	12.9 9.5	12.9 10.7	11.5 10.7	8.9 9.5	5.5 7.5	2.0 5.1	-0.7 3.2	-1.9 2.2	-1.3 2.8	1.0 4.8	4.1 7.7
7 Tu	10.5 5.0	12.4 7.8	13.1 9.7	12.5 10.5	10.5 10.1	7.5 8.8	4.1 6.8	0.9 4.7	-1.4 3.2	-1.9 2.8	-0.7 3.8	1.9 6.1
8 W	8.9 2.7	11.3 5.7	12.7 8.1	12.8 9.6	11.7 10.0	9.4 9.5	6.4 8.2	3.1 6.4	0.2 4.6	-1.5 3.5	-1.6 3.5	0.0 4.8
9 Th	7.1 0.8	9.6 3.4	11.5 6.0	12.4 8.0	12.1 9.2	10.8 9.5	8.5 9.1	5.6 8.0	2.6 6.4	0.1 4.8	-1.2 3.9	-1.0 4.1
10 F	5.4 -0.3	7.5 1.4	9.6 3.7	11.1 5.9	11.6 7.7	11.2 8.8	10.0 9.2	7.9 9.0	5.3 8.0	2.6 6.6	0.4 5.2	-0.7 4.3
11 Sa	4.5 0.0	5.6 0.3	7.3 1.8	9.0 3.7	10.2 5.7	10.7 7.4	10.4 8.7	9.5 9.4	7.7 9.3	5.4 8.4	2.9 7.0	0.9 5.5
12 Su	4.5 1.5	4.4 0.5	5.2 0.7	6.5 1.8	7.9 3.6	9.0 5.6	9.8 7.5	10.0 9.0	9.4 9.9	7.9 9.9	5.8 9.0	3.4 7.4
13 M	5.6 4.0	4.3 2.0	3.8 0.9	4.1 0.8	5.2 1.8	6.6 3.6	8.0 5.8	9.2 8.0	9.8 9.8	9.6 10.8	8.3 10.7	6.3 9.5
14 Tu	7.5 6.8	5.4 4.5	3.6 2.3	2.6 0.9	2.7 0.7	3.7 1.8	5.4 3.8	7.3 6.4	8.9 8.9	10.0 10.9	9.9 11.7	8.8 11.3
15 W	9.8 9.2	7.4 7.2	4.7 4.7	2.5 2.3	1.1 0.8	1.1 0.7	2.4 2.1	4.5 4.6	7.0 7.5	9.1 10.2	10.3 12.0	10.4 12.6
16 Th	11.8 10.7	9.7 9.5	6.8 7.3	3.6 4.6	1.0 2.1	-0.4 0.8	-0.2 1.0	1.6 2.8	4.2 5.7	7.1 8.8	9.4 11.4	10.7 13.0
17 F	13.1 11.1	11.8 10.9	9.2 9.5	5.7 7.1	2.2 4.3	-0.6 1.9	-1.7 0.8	-1.0 1.6	1.3 3.9	4.5 7.0	7.5 10.2	9.9 12.5
18 Sa	13.6 10.3	13.2 11.3	11.3 10.9	8.2 9.2	4.4 6.6	0.7 3.8	-1.8 1.8	-2.4 1.2	-1.1 2.5	1.7 5.2	5.0 8.4	8.1 11.3
19 Su	13.2 8.7	13.7 10.6	12.8 11.3	10.4 10.5	6.9 8.6	3.0 6.0	-0.5 3.5	-2.5 1.9	-2.5 2.0	-0.6 3.7	2.5 6.5	5.9 9.6
20 M	12.1 6.7	13.4 9.2	13.4 10.7	11.9 10.9	9.1 9.9	5.5 7.9	1.7 5.5	-1.2 3.4	-2.6 2.3	-2.0 2.9	0.3 4.9	3.5 7.7
21 Tu	10.4 4.6	12.3 7.4	13.1 9.4	12.5 10.5	10.6 10.4	7.7 9.2	4.2 7.3	0.9 5.1	-1.5 3.5	-2.2 3.0	-1.0 3.9	1.5 6.1
22 W	8.6 2.7	10.8 5.5	12.1 7.8	12.3 9.4	11.3 10.0	9.3 9.7	6.4 8.5	3.3 6.8	0.5 5.0	-1.2 3.8	-1.3 3.8	0.2 4.9
23 Th	6.9 1.4	9.1 3.7	10.7 6.1	11.5 7.9	11.2 9.1	10.1 9.5	8.0 9.1	5.4 8.0	2.7 6.5	0.5 5.1	-0.6 4.3	-0.2 4.5
24 F	5.7 0.9	7.4 2.5	9.1 4.5	10.2 6.4	10.5 7.8	10.1 8.8	8.9 9.1	7.1 8.7	4.8 7.8	2.6 6.5	0.9 5.3	0.3 4.7
25 Sa	5.0 1.1	6.1 1.8	7.4 3.2	8.6 4.9	9.4 6.5	9.5 7.7	9.1 8.6	8.1 9.0	6.5 8.6	4.6 7.7	2.7 6.5	1.5 5.4
26 Su	4.9 2.0	5.2 1.9	6.0 2.5	7.0 3.7	7.8 5.1	8.4 6.6	8.7 7.9	8.4 8.8	7.6 9.2	6.3 8.8	4.6 7.8	3.0 6.5
27 M	5.4 3.4	4.9 2.5	4.9 2.3	5.4 2.9	6.2 4.0	7.0 5.4	7.7 6.9	8.1 8.4	8.1 9.3	7.5 9.5	6.3 9.0	4.8 7.8
28 Tu	6.4 5.0	5.1 3.7	4.3 2.8	4.1 2.6	4.5 3.1	5.3 4.3	6.3 5.9	7.3 7.7	8.0 9.2	8.2 10.0	7.6 10.0	6.4 9.1
29 W	7.6 6.6	5.9 5.1	4.4 3.7	3.4 2.8	3.0 2.6	3.5 3.3	4.6 4.8	6.0 6.8	7.3 8.7	8.2 10.2	8.4 10.8	7.8 10.4
30 Th	9.0 8.1	7.1 6.7	5.0 5.1	3.2 3.6	2.1 2.7	1.9 2.7	2.7 3.7	4.3 5.7	6.1 7.9	7.7 10.0	8.7 11.2	8.8 11.4
31 F	10.5 9.2	8.6 8.3	6.2 6.7	3.8 4.8	1.7 3.3	0.7 2.5	0.9 2.9	2.3 4.5	4.4 6.9	6.6 9.3	8.3 11.2	9.3 12.1

Time meridian 135° W. 0 is midnight. 12 is noon.
 Heights are referred to mean lower low water (N.O.S. chart datum).

JUNE

Predicted hourly heights in feet

Day	Hours 0/12	Hours 1/13	Hours 2/14	Hours 3/15	Hours 4/16	Hours 5/17	Hours 6/18	Hours 7/19	Hours 8/20	Hours 9/21	Hours 10/22	Hours 11/23
1 Sa	11.8 9.8	10.3 9.5	7.9 8.3	5.0 6.4	2.2 4.4	0.2 2.9	-0.5 2.5	0.3 3.4	2.3 5.5	4.9 8.2	7.3 10.7	9.1 12.3
2 Su	12.7 9.8	11.9 10.3	9.8 9.7	6.8 8.1	3.5 6.0	0.6 3.9	-1.2 2.6	-1.3 2.7	0.2 4.2	2.8 6.8	5.7 9.6	8.2 11.9
3 M	13.1 8.9	13.0 10.3	11.5 10.5	8.9 9.5	5.4 7.7	1.9 5.4	-0.9 3.5	-2.2 2.6	-1.7 3.1	0.5 5.1	3.5 8.0	6.5 10.8
4 Tu	12.8 7.4	13.6 9.5	12.9 10.6	10.9 10.5	7.8 9.2	4.0 7.2	0.5 4.9	-1.9 3.2	-2.7 2.7	-1.5 3.8	1.1 6.1	4.4 9.0
5 W	11.7 5.2	13.3 8.0	13.6 9.9	12.4 10.6	10.0 10.2	6.6 8.8	2.8 6.7	-0.5 4.6	-2.5 3.1	-2.7 3.0	-1.0 4.4	1.9 6.9
6 Th	9.8 2.8	12.1 5.9	13.2 8.5	13.1 10.0	11.6 10.5	9.0 9.9	5.6 8.4	2.0 6.4	-1.0 4.4	-2.5 3.2	-2.2 3.4	-0.2 4.9
7 F	7.4 0.6	10.0 3.6	11.9 6.5	12.7 8.7	12.3 10.0	10.7 10.3	8.1 9.7	4.9 8.2	1.5 6.2	-1.0 4.4	-2.2 3.4	-1.5 3.7
8 Sa	5.2 -0.6	7.5 1.5	9.7 4.3	11.3 6.8	11.8 8.8	11.4 9.9	9.9 10.3	7.5 9.7	4.5 8.2	1.5 6.3	-0.7 4.5	-1.5 3.5
9 Su	3.7 -0.6	5.1 0.3	7.0 2.3	8.9 4.7	10.2 7.0	10.7 8.9	10.4 10.1	9.3 10.5	7.2 9.9	4.5 8.4	1.8 6.4	0.0 4.5
10 M	3.5 0.8	3.5 0.3	4.5 1.1	6.1 2.9	7.7 5.1	8.9 7.3	9.7 9.2	9.7 10.5	8.9 10.9	7.1 10.3	4.8 8.6	2.4 6.5
11 Tu	4.5 3.1	3.1 1.6	2.8 1.1	3.5 1.8	4.8 3.4	6.3 5.5	7.8 7.8	8.9 9.8	9.3 11.2	8.8 11.5	7.3 10.7	5.2 8.8
12 W	6.4 5.8	4.1 3.8	2.5 2.3	1.8 1.7	2.2 2.2	3.4 3.8	5.2 6.1	7.0 8.5	8.5 10.6	9.2 11.9	9.0 12.0	7.7 10.9
13 Th	8.8 8.1	6.1 6.3	3.5 4.3	1.5 2.7	0.6 2.0	0.9 2.6	2.4 4.4	4.5 6.8	6.7 9.4	8.5 11.5	9.4 12.6	9.2 12.4
14 F	11.0 9.6	8.5 8.4	5.5 6.6	2.5 4.5	0.3 2.8	-0.6 2.2	-0.1 3.0	1.8 5.1	4.3 7.8	6.8 10.3	8.7 12.2	9.7 13.0
15 Sa	12.5 10.1	10.7 9.9	7.9 8.6	4.5 6.6	1.3 4.4	-0.9 2.8	-1.5 2.5	-0.5 3.6	1.8 6.0	4.6 8.8	7.2 11.2	9.2 12.8
16 Su	13.2 9.7	12.3 10.4	10.1 10.0	6.9 8.5	3.3 6.3	0.1 4.1	-1.8 2.8	-2.0 2.8	-0.4 4.4	2.3 6.9	5.3 9.7	7.9 11.9
17 M	13.1 8.6	13.1 10.2	11.7 10.6	9.1 9.8	5.7 8.1	2.1 5.8	-0.9 3.8	-2.3 2.8	-1.8 3.3	0.2 5.3	3.2 7.9	6.2 10.5
18 Tu	12.3 7.1	13.1 9.2	12.6 10.4	10.8 10.4	7.9 9.4	4.4 7.4	1.0 5.3	-1.5 3.6	-2.3 3.0	-1.2 4.0	1.2 6.2	4.2 8.8
19 W	11.0 5.4	12.4 7.9	12.7 9.7	11.7 10.4	9.6 10.1	6.6 8.7	3.2 6.8	0.1 4.8	-1.7 3.5	-1.8 3.4	-0.2 4.8	2.4 7.0
20 Th	9.4 3.7	11.3 6.4	12.2 8.5	12.0 9.8	10.6 10.2	8.3 9.5	5.3 8.0	2.2 6.2	-0.3 4.5	-1.4 3.6	-1.0 4.0	1.0 5.5
21 F	7.7 2.3	9.8 4.8	11.1 7.2	11.6 8.9	11.0 9.8	9.4 9.8	7.0 8.9	4.2 7.4	1.6 5.7	-0.3 4.3	-0.8 3.8	0.1 4.5
22 Sa	6.1 1.3	8.1 3.5	9.7 5.8	10.6 7.8	10.7 9.1	9.9 9.6	8.2 9.4	6.0 8.5	3.5 7.0	1.3 5.4	0.0 4.3	0.0 4.1
23 Su	4.9 1.1	6.4 2.5	8.1 4.6	9.3 6.5	9.8 8.1	9.7 9.2	8.8 9.5	7.3 9.2	5.2 8.2	3.1 6.7	1.4 5.3	0.6 4.3
24 M	4.3 1.5	5.1 2.1	6.4 3.6	7.7 5.4	8.6 7.1	8.9 8.5	8.7 9.3	8.0 9.6	6.6 9.1	4.8 8.0	3.1 6.5	1.8 5.1
25 Tu	4.3 2.4	4.2 2.3	4.9 3.1	5.9 4.4	7.0 6.0	7.7 7.6	8.1 8.9	8.1 9.7	7.5 9.9	6.3 9.2	4.7 7.9	3.3 6.2
26 W	4.8 3.7	4.0 3.0	3.8 3.0	4.3 3.7	5.2 5.0	6.1 6.6	7.0 8.2	7.7 9.5	7.8 10.3	7.3 10.2	6.3 9.3	4.9 7.7
27 Th	5.9 5.2	4.3 4.1	3.3 3.5	3.0 3.5	3.4 4.2	4.3 5.5	5.5 7.2	6.7 8.9	7.5 10.3	7.9 10.9	7.5 10.6	6.5 9.3
28 F	7.4 6.9	5.4 5.6	3.6 4.5	2.3 3.7	1.9 3.7	2.4 4.5	3.6 6.1	5.1 8.0	6.7 9.9	7.8 11.2	8.2 11.6	7.8 10.9
29 Sa	9.2 8.3	7.0 7.3	4.6 5.9	2.4 4.5	1.1 3.7	0.7 3.7	1.5 4.8	3.2 6.7	5.2 9.0	7.1 10.9	8.3 12.1	8.7 12.2
30 Su	11.1 9.4	9.0 8.8	6.3 7.5	3.5 5.8	1.1 4.3	-0.3 3.4	-0.4 3.7	1.0 5.2	3.2 7.5	5.6 10.0	7.7 12.0	9.0 12.9

Time meridian 135° W. 0 is midnight. 12 is noon.
 Heights are referred to mean lower low water (N.O.S. chart datum).

JULY

Predicted hourly heights in feet

Day	Hours 0/12	Hours 1/13	Hours 2/14	Hours 3/15	Hours 4/16	Hours 5/17	Hours 6/18	Hours 7/19	Hours 8/20	Hours 9/21	Hours 10/22	Hours 11/23
1 M	12.6 9.7	11.1 10.0	8.5 9.1	5.3 7.5	2.1 5.5	-0.4 3.9	-1.6 3.1	-1.1 3.7	0.8 5.7	3.5 8.4	6.3 11.0	8.5 12.9
2 Tu	13.6 9.3	12.9 10.4	10.9 10.4	7.8 9.2	4.2 7.2	0.7 5.0	-1.7 3.3	-2.5 2.8	-1.4 3.9	1.0 6.3	4.2 9.2	7.1 11.9
3 W	13.5 8.0	13.9 10.1	12.8 11.0	10.4 10.6	6.9 9.0	3.0 6.7	-0.5 4.4	-2.7 2.8	-3.0 2.7	-1.3 4.1	1.7 6.8	5.0 9.9
4 Th	12.4 6.0	13.9 8.8	13.9 10.7	12.4 11.2	9.6 10.5	5.8 8.7	1.9 6.2	-1.4 3.8	-3.2 2.5	-2.9 2.6	-0.7 4.4	2.5 7.3
5 F	10.3 3.6	12.6 7.0	13.8 9.6	13.5 11.1	11.7 11.3	8.7 10.3	4.9 8.2	1.0 5.7	-1.9 3.4	-3.1 2.3	-2.3 2.7	0.2 4.6
6 Sa	7.5 1.4	10.3 4.7	12.3 7.8	13.1 10.1	12.6 11.3	10.8 11.3	7.8 10.0	4.1 7.9	0.6 5.3	-1.9 3.2	-2.6 2.2	-1.4 2.8
7 Su	4.7 -0.1	7.4 2.7	9.9 5.8	11.5 8.5	12.1 10.4	11.5 11.3	9.8 11.2	7.0 9.9	3.7 7.7	0.6 5.2	-1.3 3.1	-1.6 2.2
8 M	2.8 -0.3	4.6 1.3	6.9 3.9	8.9 6.6	10.3 9.0	10.9 10.6	10.4 11.4	8.9 11.2	6.5 9.8	3.7 7.6	1.1 5.1	-0.4 3.1
9 Tu	2.2 0.8	2.6 1.0	4.1 2.6	6.0 4.8	7.7 7.2	9.0 9.3	9.7 10.8	9.5 11.6	8.4 11.3	6.4 9.9	4.0 7.6	1.9 5.1
10 W	3.1 2.9	2.1 2.0	2.2 2.2	3.3 3.5	4.8 5.4	6.4 7.6	7.8 9.6	8.8 11.1	8.9 11.8	8.2 11.4	6.5 9.9	4.6 7.6
11 Th	5.1 5.3	3.0 3.8	1.7 3.0	1.5 3.1	2.3 4.1	3.7 5.9	5.4 7.9	7.0 9.9	8.3 11.4	8.7 12.1	8.2 11.6	7.0 10.0
12 F	7.6 7.5	5.0 6.0	2.7 4.6	1.1 3.6	0.7 3.5	1.3 4.5	2.8 6.2	4.7 8.3	6.7 10.4	8.2 11.8	8.8 12.3	8.6 11.6
13 Sa	9.9 9.0	7.4 8.0	4.6 6.5	2.0 4.9	0.3 3.8	-0.2 3.7	0.6 4.7	2.4 6.6	4.7 8.8	6.8 10.9	8.4 12.2	9.2 12.5
14 Su	11.6 9.7	9.7 9.4	6.9 8.3	3.9 6.5	1.2 4.8	-0.5 3.7	-0.8 3.7	0.4 5.0	2.5 7.1	5.0 9.5	7.3 11.4	9.0 12.5
15 M	12.5 9.6	11.4 10.1	9.1 9.6	6.1 8.1	2.9 6.2	0.2 4.4	-1.3 3.4	-1.0 3.8	0.6 5.4	3.1 7.8	5.8 10.1	8.1 11.9
16 Tu	12.7 8.9	12.4 10.2	10.8 10.3	8.3 9.4	5.0 7.7	1.7 5.5	-0.7 3.8	-1.6 3.2	-0.8 4.0	1.3 6.0	4.1 8.5	6.8 10.8
17 W	12.3 7.8	12.7 9.7	11.9 10.5	10.0 10.2	7.1 8.9	3.7 6.9	0.6 4.7	-1.3 3.3	-1.6 3.2	-0.2 4.5	2.4 6.8	5.3 9.3
18 Th	11.3 6.5	12.4 8.8	12.4 10.3	11.2 10.6	8.8 9.8	5.7 8.1	2.4 5.9	-0.2 4.0	-1.5 3.0	-1.1 3.4	0.9 5.1	3.7 7.6
19 F	9.9 5.1	11.6 7.7	12.3 9.6	11.7 10.5	10.1 10.3	7.4 9.1	4.3 7.2	1.3 5.1	-0.7 3.5	-1.2 3.0	-0.1 3.9	2.3 5.9
20 Sa	8.3 3.8	10.3 6.5	11.6 8.7	11.7 10.1	10.7 10.5	8.8 9.8	6.1 8.3	3.1 6.3	0.7 4.4	-0.7 3.2	-0.5 3.2	1.2 4.5
21 Su	6.5 2.7	8.7 5.3	10.4 7.7	11.1 9.4	10.8 10.3	9.5 10.2	7.4 9.2	4.9 7.6	2.3 5.6	0.5 4.0	-0.2 3.2	0.7 3.6
22 M	5.0 2.1	7.0 4.3	8.9 6.6	10.0 8.6	10.3 9.8	9.7 10.3	8.3 9.9	6.3 8.7	4.0 6.9	2.0 5.1	0.8 3.7	0.8 3.3
23 Tu	3.9 2.0	5.4 3.5	7.1 5.6	8.6 7.7	9.3 9.2	9.3 10.0	8.7 10.2	7.4 9.6	5.6 8.2	3.6 6.5	2.1 4.7	1.5 3.6
24 W	3.4 2.4	4.1 3.2	5.4 4.8	6.8 6.7	7.9 8.3	8.5 9.5	8.4 10.2	7.9 10.2	6.8 9.4	5.2 8.0	3.7 6.2	2.6 4.5
25 Th	3.5 3.4	3.3 3.4	3.9 4.3	5.0 5.7	6.2 7.3	7.1 8.8	7.7 9.9	7.9 10.4	7.5 10.3	6.6 9.4	5.3 7.8	4.1 5.9
26 F	4.3 4.7	3.2 4.1	2.9 4.2	3.4 4.9	4.3 6.2	5.4 7.7	6.4 9.1	7.2 10.3	7.7 10.9	7.5 10.7	6.8 9.6	5.7 7.8
27 Sa	5.8 6.3	3.9 5.3	2.7 4.6	2.2 4.5	2.4 5.1	3.3 6.3	4.6 7.9	6.0 9.6	7.2 10.9	7.9 11.5	7.9 11.1	7.3 9.8
28 Su	7.8 7.9	5.5 6.8	3.4 5.6	1.8 4.7	1.0 4.4	1.3 4.9	2.5 6.3	4.2 8.3	6.0 10.2	7.5 11.7	8.4 12.2	8.5 11.7
29 M	10.1 9.3	7.8 8.5	5.0 7.1	2.5 5.6	0.5 4.3	-0.3 3.9	0.2 4.6	1.9 6.4	4.2 8.7	6.4 11.0	8.2 12.5	9.2 13.0
30 Tu	12.3 10.1	10.3 10.0	7.5 8.9	4.3 7.1	1.3 5.1	-0.9 3.6	-1.5 3.2	-0.5 4.3	1.7 6.5	4.5 9.3	7.2 11.8	9.1 13.3
31 W	13.7 10.2	12.7 11.0	10.3 10.5	7.0 8.9	3.2 6.6	-0.1 4.3	-2.1 2.7	-2.3 2.5	-0.7 4.0	2.1 6.8	5.3 9.8	8.2 12.5

Time meridian 135° W. 0 is midnight. 12 is noon.
 Heights are referred to mean lower low water (N.O.S. chart datum).

Lat. 61° 08'N Long. 146° 22'W

AUGUST

Predicted hourly heights in feet

Day	Hours 0/12	Hours 1/13	Hours 2/14	Hours 3/15	Hours 4/16	Hours 5/17	Hours 6/18	Hours 7/19	Hours 8/20	Hours 9/21	Hours 10/22	Hours 11/23
1 Th	14.0 9.3	14.1 11.1	12.7 11.6	9.9 10.7	6.1 8.6	2.1 5.9	-1.3 3.3	-3.0 1.8	-2.7 2.0	-0.4 4.0	2.9 7.1	6.4 10.3
2 F	12.9 7.7	14.3 10.4	14.1 12.0	12.4 12.0	9.1 10.6	5.1 8.0	1.0 5.0	-2.1 2.4	-3.3 1.2	-2.4 1.8	0.4 4.1	4.1 7.4
3 Sa	10.6 5.5	13.1 8.9	14.2 11.4	13.7 12.4	11.6 12.0	8.2 10.2	4.0 7.4	0.2 4.2	-2.4 1.8	-3.0 0.8	-1.4 1.7	1.7 4.3
4 Su	7.5 3.3	10.6 6.9	12.7 10.0	13.5 11.9	12.7 12.6	10.5 11.8	7.1 9.7	3.3 6.7	-0.1 3.7	-2.1 1.4	-2.1 0.7	0.0 1.9
5 M	4.4 1.6	7.5 4.9	10.1 8.1	11.9 10.6	12.3 12.1	11.5 12.4	9.4 11.4	6.3 9.2	3.0 6.3	0.2 3.4	-1.2 1.4	-0.6 0.9
6 Tu	2.1 1.1	4.4 3.3	7.0 6.2	9.2 8.9	10.6 10.9	11.0 12.0	10.3 12.0	8.5 10.9	5.9 8.8	3.1 6.1	0.9 3.4	0.2 1.6
7 W	1.3 1.7	2.3 2.7	4.2 4.7	6.3 7.0	8.1 9.2	9.3 10.8	9.7 11.7	9.3 11.7	7.9 10.7	5.8 8.6	3.6 6.1	2.1 3.7
8 Th	2.0 3.3	1.6 3.1	2.2 3.9	3.7 5.5	5.3 7.4	6.9 9.2	8.1 10.6	8.8 11.5	8.7 11.5	7.7 10.5	6.2 8.6	4.5 6.3
9 F	4.0 5.5	2.3 4.5	1.6 4.2	1.9 4.7	2.9 5.8	4.3 7.4	5.9 9.0	7.3 10.4	8.3 11.3	8.5 11.4	8.0 10.5	6.8 8.7
10 Sa	6.5 7.5	4.2 6.3	2.4 5.2	1.4 4.6	1.3 4.8	2.2 5.8	3.6 7.2	5.3 8.9	7.0 10.5	8.3 11.4	8.7 11.5	8.4 10.6
11 Su	8.8 8.9	6.5 8.0	4.1 6.7	2.1 5.3	0.8 4.5	0.7 4.6	1.6 5.6	3.3 7.2	5.4 9.1	7.3 10.7	8.6 11.7	9.2 11.7
12 M	10.7 9.8	8.8 9.4	6.3 8.2	3.6 6.5	1.4 5.0	0.1 4.1	0.2 4.3	1.5 5.5	3.6 7.5	5.9 9.5	7.9 11.1	9.3 12.0
13 Tu	11.8 10.0	10.6 10.2	8.4 9.4	5.6 7.8	2.7 5.9	0.5 4.2	-0.5 3.5	0.1 4.1	1.9 5.8	4.3 8.0	6.8 10.1	8.8 11.7
14 W	12.3 9.7	11.8 10.6	10.2 10.3	7.6 9.1	4.5 7.0	1.5 4.9	-0.4 3.3	-0.8 3.0	0.4 4.2	2.7 6.3	5.4 8.8	7.9 10.9
15 Th	12.2 9.1	12.4 10.6	11.4 10.9	9.3 10.1	6.3 8.2	3.1 5.9	0.4 3.8	-0.9 2.6	-0.6 2.9	1.3 4.6	4.0 7.1	6.8 9.6
16 F	11.5 8.2	12.4 10.2	12.1 11.1	10.6 10.8	8.0 9.3	4.8 7.1	1.8 4.7	-0.4 2.8	-1.0 2.3	0.2 3.2	2.6 5.4	5.5 8.0
17 Sa	10.4 7.2	11.9 9.6	12.3 11.0	11.4 11.2	9.4 10.2	6.5 8.3	3.4 5.8	0.7 3.6	-0.7 2.2	-0.4 2.3	1.5 3.8	4.3 6.3
18 Su	8.9 6.1	10.9 8.7	11.9 10.5	11.7 11.3	10.3 10.8	8.0 9.3	5.1 7.1	2.3 4.7	0.3 2.8	-0.3 2.0	0.8 2.7	3.1 4.6
19 M	7.1 5.0	9.5 7.7	11.0 9.9	11.4 11.1	10.7 11.1	9.0 10.1	6.6 8.3	3.9 6.0	1.6 3.8	0.4 2.3	0.7 2.1	2.4 3.3
20 Tu	5.4 4.1	7.8 6.7	9.7 9.1	10.6 10.6	10.5 11.1	9.5 10.7	7.7 9.3	5.5 7.4	3.2 5.1	1.6 3.2	1.1 2.2	2.0 2.5
21 W	3.9 3.6	6.0 5.8	8.0 8.1	9.4 9.9	9.9 10.8	9.5 10.9	8.4 10.1	6.7 8.6	4.8 6.6	3.1 4.6	2.1 3.0	2.3 2.4
22 Th	2.9 3.6	4.4 5.1	6.2 7.1	7.8 8.9	8.7 10.2	9.0 10.7	8.6 10.6	7.6 9.7	6.2 8.2	4.7 6.3	3.4 4.4	3.0 3.0
23 F	2.6 4.0	3.2 4.7	4.4 6.1	5.9 7.8	7.2 9.2	7.9 10.2	8.2 10.6	8.0 10.4	7.3 9.6	6.2 8.1	5.0 6.2	4.1 4.4
24 Sa	3.1 4.9	2.6 4.8	3.0 5.4	4.0 6.5	5.2 7.9	6.3 9.2	7.2 10.2	7.7 10.7	7.8 10.6	7.4 9.8	6.5 8.3	5.6 6.3
25 Su	4.4 6.2	3.0 5.5	2.3 5.2	2.4 5.5	3.1 6.4	4.3 7.6	5.6 9.0	6.8 10.3	7.7 11.1	8.1 11.2	7.9 10.4	7.2 8.7
26 M	6.6 7.9	4.4 6.8	2.6 5.7	1.5 5.0	1.3 4.9	2.0 5.7	3.4 7.2	5.2 9.0	6.9 10.7	8.2 11.8	8.8 12.0	8.7 11.1
27 Tu	9.2 9.5	6.7 8.4	4.1 6.9	1.8 5.3	0.4 4.1	0.1 4.0	1.1 4.9	3.0 6.9	5.3 9.2	7.5 11.3	9.1 12.6	9.8 12.8
28 W	11.8 10.8	9.6 10.3	6.6 8.7	3.4 6.5	0.7 4.3	-0.9 2.9	-1.0 2.8	0.5 4.2	3.1 6.7	6.0 9.6	8.5 12.0	10.2 13.5
29 Th	13.6 11.5	12.2 11.8	9.6 10.7	6.1 8.4	2.4 5.6	-0.6 3.1	-2.0 1.6	-1.6 1.8	0.6 3.8	3.8 6.8	7.1 10.1	9.8 12.7
30 F	14.1 11.2	14.0 12.6	12.3 12.3	9.2 10.6	5.2 7.8	1.3 4.5	-1.6 1.7	-2.6 0.4	-1.5 1.1	1.4 3.6	5.0 7.1	8.6 10.6
31 Sa	13.2 10.1	14.4 12.4	14.0 13.3	11.9 12.5	8.4 10.1	4.2 6.8	0.3 3.2	-2.2 0.6	-2.6 -0.3	-0.7 0.9	2.7 3.8	6.6 7.5

Time meridian 135° W. 0 is midnight. 12 is noon.
 Heights are referred to mean lower low water (N.O.S. chart datum).

SEPTEMBER

Predicted hourly heights in feet

Day	Hours 0/12	Hours 1/13	Hours 2/14	Hours 3/15	Hours 4/16	Hours 5/17	Hours 6/18	Hours 7/19	Hours 8/20	Hours 9/21	Hours 10/22	Hours 11/23
1	10.9	13.3	14.2	13.4	11.0	7.3	3.2	-0.2	-2.1	-1.8	0.7	4.4
Su	8.2	11.4	13.2	13.5	12.1	9.3	5.7	2.2	-0.1	-0.6	1.0	4.1
2	7.7	10.9	12.9	13.5	12.4	9.9	6.3	2.7	-0.2	-1.3	-0.4	2.4
M	6.1	9.7	12.3	13.5	13.2	11.4	8.4	4.8	1.6	-0.3	-0.4	1.4
3	4.5	7.8	10.5	12.1	12.3	11.1	8.8	5.7	2.6	0.4	0.0	1.4
Tu	4.3	7.6	10.6	12.5	13.2	12.5	10.6	7.6	4.3	1.5	-0.1	0.2
4	2.0	4.8	7.5	9.7	10.9	11.0	9.9	8.0	5.4	3.0	1.6	1.6
W	3.2	5.8	8.6	10.9	12.2	12.5	11.7	9.8	7.1	4.2	1.8	0.6
5	0.9	2.5	4.8	6.9	8.6	9.6	9.8	9.1	7.6	5.7	3.9	2.9
Th	3.2	4.7	6.9	9.0	10.6	11.5	11.7	11.0	9.3	7.0	4.5	2.4
6	1.4	1.6	2.8	4.5	6.1	7.5	8.5	8.9	8.6	7.6	6.2	4.9
F	4.3	4.6	5.7	7.2	8.7	10.0	10.8	11.0	10.5	9.2	7.2	5.0
7	3.2	2.1	2.0	2.7	3.9	5.2	6.6	7.9	8.6	8.7	8.0	7.0
Sa	5.9	5.3	5.3	5.9	7.0	8.2	9.3	10.3	10.7	10.4	9.3	7.5
8	5.5	3.7	2.4	2.0	2.3	3.2	4.6	6.3	7.8	8.8	9.0	8.6
Su	7.6	6.6	5.7	5.3	5.6	6.4	7.6	8.9	10.1	10.7	10.6	9.5
9	7.8	5.8	3.8	2.2	1.5	1.7	2.8	4.5	6.4	8.2	9.3	9.6
M	9.1	8.0	6.7	5.5	4.8	5.0	5.9	7.3	9.0	10.3	11.1	10.9
10	9.8	7.9	5.6	3.3	1.6	0.9	1.4	2.9	5.0	7.1	8.9	10.0
Tu	10.1	9.3	7.9	6.2	4.7	4.0	4.3	5.6	7.5	9.4	10.9	11.5
11	11.1	9.7	7.6	4.9	2.5	0.8	0.4	1.4	3.5	5.9	8.2	9.9
W	10.6	10.3	9.1	7.2	5.1	3.6	3.1	4.0	5.8	8.1	10.1	11.5
12	11.9	11.1	9.3	6.7	3.8	1.4	0.1	0.4	2.1	4.6	7.3	9.5
Th	10.8	11.1	10.2	8.3	6.0	3.8	2.5	2.6	4.1	6.5	9.0	10.9
13	12.0	11.9	10.7	8.4	5.4	2.5	0.4	-0.1	1.0	3.3	6.2	8.8
F	10.7	11.5	11.1	9.5	7.1	4.5	2.5	1.7	2.6	4.7	7.4	9.9
14	11.6	12.3	11.6	9.8	7.0	4.0	1.3	0.0	0.3	2.2	5.0	7.9
Sa	10.3	11.6	11.7	10.5	8.3	5.6	3.0	1.5	1.5	3.0	5.6	8.5
15	10.7	12.0	12.1	10.8	8.5	5.6	2.7	0.7	0.2	1.3	3.9	6.9
Su	9.6	11.4	12.1	11.4	9.5	6.8	4.0	1.8	1.0	1.7	3.9	6.7
16	9.4	11.3	12.0	11.4	9.7	7.1	4.3	1.9	0.7	1.0	2.9	5.8
M	8.7	11.0	12.1	11.9	10.5	8.2	5.3	2.7	1.1	1.0	2.4	4.9
17	7.7	10.1	11.3	11.4	10.4	8.4	5.8	3.4	1.7	1.3	2.4	4.8
Tu	7.7	10.2	11.8	12.1	11.3	9.4	6.8	4.1	1.9	0.9	1.4	3.3
18	5.9	8.5	10.2	10.9	10.5	9.2	7.2	4.9	3.0	2.1	2.4	4.1
W	6.7	9.3	11.2	12.0	11.7	10.3	8.2	5.6	3.2	1.5	1.1	2.1
19	4.2	6.7	8.8	9.9	10.2	9.5	8.2	6.4	4.6	3.3	2.9	3.8
Th	5.8	8.2	10.3	11.5	11.7	10.9	9.4	7.3	4.9	2.8	1.6	1.6
20	2.8	4.8	6.9	8.5	9.3	9.2	8.6	7.5	6.1	4.7	3.9	4.0
F	5.2	7.1	9.1	10.7	11.3	11.2	10.3	8.8	6.8	4.6	2.8	1.9
21	2.1	3.3	5.0	6.7	7.8	8.4	8.5	8.2	7.3	6.3	5.2	4.7
Sa	5.0	6.1	7.8	9.3	10.5	10.9	10.7	10.0	8.6	6.8	4.8	3.1
22	2.2	2.3	3.2	4.6	6.0	7.0	7.8	8.2	8.2	7.7	6.8	5.9
Su	5.4	5.6	6.5	7.7	9.0	9.9	10.5	10.6	10.1	8.9	7.1	5.1
23	3.4	2.3	2.1	2.7	3.8	5.1	6.5	7.6	8.4	8.7	8.3	7.4
M	6.5	5.8	5.6	6.1	7.0	8.2	9.4	10.4	10.9	10.7	9.6	7.7
24	5.5	3.5	2.1	1.4	1.8	2.9	4.5	6.4	8.0	9.2	9.6	9.1
Tu	8.0	6.7	5.5	4.9	5.0	5.9	7.4	9.2	10.7	11.5	11.5	10.3
25	8.3	5.8	3.3	1.4	0.4	0.8	2.2	4.4	6.9	9.0	10.3	10.6
W	9.9	8.3	6.4	4.6	3.6	3.6	4.8	6.9	9.2	11.2	12.4	12.4
26	11.0	8.7	5.7	2.7	0.4	-0.6	0.1	2.2	5.0	8.0	10.3	11.6
Th	11.6	10.4	8.2	5.6	3.2	1.9	2.1	3.9	6.6	9.6	12.0	13.2
27	13.1	11.4	8.6	5.1	1.8	-0.6	-1.3	0.0	2.8	6.2	9.5	11.8
F	12.8	12.3	10.4	7.5	4.2	1.6	0.3	1.0	3.4	6.8	10.1	12.6
28	13.8	13.4	11.4	8.2	4.3	0.8	-1.3	-1.4	0.6	4.0	7.8	11.1
Sa	13.2	13.7	12.6	9.9	6.3	2.7	0.0	-0.9	0.4	3.4	7.1	10.6
29	13.1	14.0	13.3	10.9	7.4	3.4	0.2	-1.4	-0.7	1.9	5.7	9.5
Su	12.5	14.1	14.0	12.2	9.0	5.0	1.2	-1.2	-1.5	0.3	3.7	7.6
30	11.0	13.2	13.8	12.7	10.1	6.5	2.8	0.0	-0.8	0.5	3.6	7.5
M	11.1	13.5	14.5	13.8	11.4	7.8	3.7	0.2	-1.7	-1.5	0.8	4.3

Time meridian 135° W. 0 is midnight. 12 is noon.
 Heights are referred to mean lower low water (N.O.S. chart datum).

Lat. 61° 08'N Long. 146° 22'W

OCTOBER

Predicted hourly heights in feet

Day	Hours 0/12	Hours 1/13	Hours 2/14	Hours 3/15	Hours 4/16	Hours 5/17	Hours 6/18	Hours 7/19	Hours 8/20	Hours 9/21	Hours 10/22	Hours 11/23
1	8.0	11.1	12.8	13.0	11.7	9.1	5.7	2.5	0.5	0.3	2.2	5.4
Tu	9.1	12.1	13.9	14.2	12.9	10.2	6.6	2.8	-0.2	-1.6	-0.9	1.6
2	5.0	8.3	10.8	12.0	12.0	10.6	8.2	5.3	2.8	1.4	1.8	3.9
W	7.0	10.1	12.5	13.6	13.3	11.8	9.1	5.7	2.4	0.0	-0.9	0.1
3	2.5	5.5	8.2	10.1	11.0	10.8	9.6	7.6	5.3	3.5	2.7	3.5
Th	5.5	8.1	10.6	12.1	12.7	12.2	10.6	8.2	5.3	2.6	0.7	0.2
4	1.2	3.2	5.6	7.7	9.2	9.9	9.8	9.0	7.5	5.7	4.4	4.0
F	4.9	6.6	8.6	10.3	11.3	11.6	11.1	9.8	7.8	5.4	3.1	1.6
5	1.3	2.1	3.7	5.4	7.0	8.2	9.0	9.2	8.7	7.7	6.4	5.4
Sa	5.2	5.8	7.0	8.4	9.5	10.2	10.5	10.3	9.3	7.7	5.8	3.9
6	2.6	2.1	2.6	3.7	5.0	6.3	7.6	8.6	9.1	8.9	8.1	7.1
Su	6.2	5.8	6.1	6.8	7.6	8.5	9.3	9.6	9.9	9.3	8.0	6.3
7	4.5	3.2	2.6	2.6	3.3	4.5	5.9	7.5	8.7	9.4	9.3	8.6
M	7.6	6.5	5.9	5.7	6.0	6.8	7.8	8.8	9.7	10.0	9.5	8.3
8	6.7	4.9	3.4	2.4	2.3	3.0	4.3	6.1	7.9	9.3	10.0	9.8
Tu	8.9	7.6	6.3	5.2	4.8	5.1	6.1	7.4	8.9	10.0	10.4	9.9
9	8.6	6.8	4.8	3.0	2.0	1.9	2.9	4.6	6.8	8.7	10.1	10.6
W	10.1	8.9	7.2	5.4	4.1	3.7	4.4	5.8	7.6	9.4	10.5	10.8
10	10.1	8.5	6.4	4.1	2.3	1.4	1.8	3.3	5.6	8.0	9.9	11.0
Th	11.0	10.0	8.3	6.1	4.1	2.9	2.9	4.1	6.1	8.3	10.1	11.1
11	11.1	10.0	8.1	5.6	3.2	1.5	1.1	2.2	4.4	7.0	9.4	11.1
F	11.7	11.1	9.5	7.1	4.6	2.6	1.8	2.4	4.3	6.8	9.2	10.9
12	11.6	11.1	9.5	7.2	4.5	2.2	1.0	1.4	3.2	5.9	8.7	10.9
Sa	12.1	12.0	10.7	8.4	5.5	2.9	1.2	1.1	2.5	5.0	7.8	10.1
13	11.5	11.7	10.7	8.7	6.0	3.3	1.5	1.1	2.3	4.8	7.7	10.4
Su	12.1	12.6	11.7	9.7	6.8	3.8	1.4	0.4	1.0	3.2	6.1	8.9
14	10.9	11.8	11.5	10.0	7.5	4.8	2.5	1.3	1.8	3.8	6.6	9.6
M	11.8	12.8	12.5	10.9	8.2	5.1	2.2	0.3	0.1	1.5	4.2	7.2
15	9.8	11.4	11.7	10.8	8.9	6.4	3.9	2.1	1.8	3.0	5.6	8.5
Tu	11.1	12.7	13.0	11.9	9.6	6.6	3.4	1.0	-0.2	0.4	2.4	5.4
16	8.3	10.4	11.4	11.2	9.9	7.8	5.4	3.4	2.4	2.8	4.6	7.4
W	10.2	12.2	13.0	12.5	10.8	8.2	5.1	2.2	0.3	-0.1	1.1	3.5
17	6.4	9.0	10.5	11.0	10.4	8.9	6.9	4.9	3.4	3.1	4.1	6.3
Th	9.0	11.3	12.6	12.7	11.6	9.6	6.9	4.0	1.5	0.2	0.3	1.9
18	4.5	7.1	9.2	10.2	10.3	9.5	8.1	6.4	4.8	3.9	4.0	5.4
F	7.7	10.1	11.8	12.5	12.0	10.7	8.5	5.9	3.4	1.4	0.5	1.0
19	2.8	5.1	7.4	8.9	9.6	9.5	8.9	7.7	6.3	5.1	4.5	5.0
Sa	6.5	8.6	10.5	11.7	11.9	11.2	9.8	7.9	5.6	3.3	1.6	1.0
20	1.6	3.3	5.3	7.1	8.4	9.0	9.0	8.6	7.7	6.6	5.6	5.2
Su	5.8	7.1	8.8	10.2	11.0	11.1	10.6	9.5	7.8	5.7	3.6	2.0
21	1.5	2.0	3.4	5.1	6.6	7.8	8.6	9.0	8.8	8.1	7.1	6.1
M	5.7	6.0	6.9	8.2	9.4	10.2	10.5	10.4	9.6	8.1	6.1	4.0
22	2.4	1.7	2.0	3.0	4.5	6.1	7.5	8.7	9.5	9.5	8.8	7.6
Tu	6.4	5.6	5.5	6.1	7.1	8.3	9.4	10.3	10.6	10.1	8.7	6.7
23	4.5	2.7	1.6	1.6	2.5	4.0	5.9	7.9	9.5	10.4	10.4	9.4
W	7.9	6.2	4.9	4.4	4.7	5.7	7.3	9.0	10.4	11.1	10.8	9.4
24	7.2	4.8	2.6	1.2	1.0	2.0	3.9	6.4	8.8	10.7	11.6	11.3
Th	9.9	7.8	5.5	3.7	2.7	3.0	4.5	6.7	9.0	10.9	11.8	11.5
25	10.0	7.6	4.7	2.2	0.6	0.5	1.9	4.4	7.4	10.2	12.1	12.7
F	12.0	10.0	7.2	4.3	2.0	0.9	1.5	3.6	6.4	9.3	11.5	12.5
26	12.1	10.3	7.5	4.4	1.6	0.1	0.4	2.3	5.5	8.9	11.7	13.4
Sa	13.6	12.3	9.6	6.2	2.7	0.2	-0.6	0.5	3.2	6.6	9.8	12.1
27	13.0	12.3	10.3	7.2	3.8	1.1	-0.1	0.8	3.4	7.0	10.5	13.2
Su	14.4	14.1	12.0	8.7	4.7	1.0	-1.3	-1.7	0.1	3.4	7.1	10.4
28	12.5	13.2	12.2	9.8	6.6	3.2	0.8	0.3	1.8	4.9	8.7	12.0
M	14.2	14.9	13.9	11.3	7.4	3.2	-0.3	-2.3	-2.0	0.4	4.0	7.7
29	10.8	12.6	13.0	11.7	9.1	5.9	2.9	1.0	1.1	3.2	6.5	10.2
Tu	13.1	14.7	14.7	13.1	10.1	6.1	2.0	-1.2	-2.5	-1.6	1.1	4.8
30	8.3	11.0	12.4	12.4	10.9	8.4	5.4	2.9	1.7	2.4	4.7	8.0
W	11.3	13.6	14.5	14.0	11.9	8.7	4.9	1.2	-1.3	-2.0	-0.7	2.2
31	5.6	8.7	10.9	11.8	11.5	10.0	7.7	5.2	3.3	2.7	3.8	6.2
Th	9.2	11.8	13.4	13.7	12.8	10.6	7.5	4.1	1.0	-0.9	-1.0	0.5

Time meridian 135° W. 0 is midnight. 12 is noon.
 Heights are referred to mean lower low water (N.O.S. chart datum).

NOVEMBER

Predicted hourly heights in feet

Day	Hours 0/12	Hours 1/13	Hours 2/14	Hours 3/15	Hours 4/16	Hours 5/17	Hours 6/18	Hours 7/19	Hours 8/20	Hours 9/21	Hours 10/22	Hours 11/23
1 F	3.2 7.3	6.2 9.7	8.7 11.7	10.4 12.6	11.0 12.5	10.6 11.4	9.3 9.4	7.3 6.7	5.3 3.8	4.0 1.3	3.8 0.0	5.1 0.2
2 Sa	1.8 6.1	4.1 7.9	6.5 9.7	8.5 11.0	9.7 11.5	10.2 11.2	9.9 10.2	8.8 8.5	7.3 6.3	5.7 3.9	4.8 2.0	4.9 1.0
3 Su	1.4 5.7	2.7 6.6	4.6 7.9	6.5 9.1	8.0 9.9	9.1 10.3	9.6 10.1	9.5 9.4	8.7 8.1	7.5 6.3	6.3 4.3	5.6 2.8
4 M	2.0 6.1	2.3 6.0	3.3 6.5	4.8 7.3	6.2 8.2	7.6 8.9	8.7 9.3	9.4 9.5	9.5 9.1	8.9 8.0	7.8 6.5	6.8 4.8
5 Tu	3.5 7.0	2.7 6.1	2.8 5.7	3.5 5.9	4.7 6.4	6.0 7.2	7.5 8.0	8.8 8.8	9.6 9.3	9.8 9.1	9.2 8.2	8.1 6.8
6 W	5.2 8.2	3.9 6.8	3.0 5.6	2.9 4.9	3.5 4.9	4.6 5.4	6.2 6.5	7.9 7.7	9.3 8.8	10.2 9.5	10.2 9.4	9.4 8.5
7 Th	7.0 9.4	5.4 7.8	3.9 6.0	2.9 4.5	2.7 3.7	3.4 3.8	4.9 4.7	6.8 6.2	8.7 7.9	10.2 9.2	10.9 9.9	10.5 9.7
8 F	8.6 10.6	7.0 9.0	5.2 6.9	3.6 4.8	2.6 3.1	2.6 2.5	3.8 3.0	5.7 4.5	7.9 6.5	9.9 8.4	11.2 9.8	11.4 10.4
9 Sa	9.9 11.7	8.6 10.3	6.7 8.1	4.7 5.6	3.0 3.2	2.3 1.7	2.9 1.5	4.6 2.7	6.9 4.8	9.4 7.2	11.2 9.2	12.1 10.5
10 Su	10.7 12.6	9.9 11.6	8.2 9.5	6.1 6.8	3.9 3.9	2.5 1.6	2.3 0.5	3.6 1.0	5.9 2.9	8.5 5.5	10.9 8.1	12.3 10.1
11 M	11.0 13.1	10.9 12.7	9.6 11.0	7.6 8.3	5.2 5.1	3.3 2.1	2.3 0.2	-2.8 -0.2	4.8 1.1	7.5 3.6	10.2 6.5	12.2 9.1
12 Tu	10.8 13.2	11.3 13.4	10.7 12.2	9.0 9.9	6.8 6.7	4.5 3.3	2.9 0.6	2.6 -0.7	3.8 -0.3	6.3 1.7	9.2 4.6	11.7 7.6
13 W	9.9 12.8	11.2 13.7	11.3 13.2	10.2 11.3	8.3 8.4	5.9 5.0	3.9 1.8	2.8 -0.4	3.3 -1.0	5.2 0.1	7.9 2.6	10.7 5.7
14 Th	8.6 11.9	10.5 13.4	11.3 13.6	10.9 12.5	9.5 10.1	7.4 7.0	5.3 3.6	3.7 0.7	3.2 -0.9	4.3 -0.9	6.6 0.9	9.4 3.7
15 F	6.7 10.6	9.2 12.6	10.7 13.5	11.0 13.1	10.3 11.5	8.8 8.9	6.8 5.7	4.9 2.6	3.8 0.2	3.9 -0.9	5.4 -0.3	7.9 1.8
16 Sa	4.6 8.9	7.4 11.2	9.4 12.7	10.5 13.0	10.5 12.2	9.7 10.4	8.2 7.9	6.4 4.9	4.9 2.1	4.2 0.1	4.7 -0.5	6.5 0.4
17 Su	2.6 7.2	5.3 9.3	7.7 11.2	9.3 12.2	10.1 12.2	10.0 11.3	9.3 9.6	7.9 7.2	6.4 4.6	5.1 2.1	4.7 0.4	5.4 0.1
18 M	1.2 5.8	3.3 7.3	5.7 9.1	7.7 10.6	9.1 11.3	9.8 11.3	9.8 10.6	9.2 9.1	8.0 7.1	6.6 4.6	5.4 2.4	5.1 1.0
19 Tu	0.7 5.2	1.8 5.6	3.6 6.8	5.7 8.2	7.5 9.5	8.9 10.2	9.7 10.5	10.0 10.2	9.5 9.1	8.3 7.3	6.9 5.0	5.7 2.9
20 W	1.5 5.7	1.3 4.8	2.1 4.9	3.7 5.7	5.6 6.9	7.5 8.2	9.0 9.3	10.1 10.1	10.5 10.2	10.0 9.4	8.8 7.7	7.1 5.6
21 Th	3.5 7.1	2.0 5.2	1.6 4.0	2.2 3.6	3.7 4.2	5.7 5.5	7.7 7.1	9.6 8.7	11.0 10.0	11.4 10.4	10.7 9.9	9.1 8.3
22 F	6.1 9.3	3.9 6.8	2.3 4.3	1.6 2.6	2.2 2.0	3.8 2.6	6.0 4.2	8.5 6.4	10.7 8.6	12.1 10.3	12.3 10.9	11.3 10.4
23 Sa	8.8 11.6	6.5 9.1	4.1 6.0	2.3 3.0	1.6 1.0	2.2 0.3	4.1 1.2	6.8 3.4	9.7 6.2	12.0 8.8	13.2 10.7	13.1 11.4
24 Su	10.9 13.5	9.1 11.5	6.7 8.4	4.1 4.8	2.2 1.5	1.5 -0.6	2.5 -1.0	4.9 0.5	8.0 3.2	11.0 6.4	13.2 9.3	14.1 11.2
25 M	11.9 14.6	11.1 13.5	9.2 11.0	6.5 7.3	3.9 3.4	2.0 0.0	1.7 -1.9	3.2 -1.7	6.0 0.4	9.4 3.6	12.3 7.0	14.2 9.9
26 Tu	11.7 14.7	12.1 14.7	11.1 13.0	9.0 10.0	6.2 6.0	3.6 2.0	2.0 -1.1	2.2 -2.5	4.2 -1.7	7.3 0.9	10.7 4.3	13.3 7.7
27 W	10.4 13.9	11.9 14.8	12.1 14.2	10.8 12.1	8.5 8.7	5.7 4.7	3.4 0.9	2.3 -1.8	3.0 -2.5	5.4 -1.1	8.6 1.8	11.7 5.3
28 Th	8.5 12.3	10.8 14.0	11.9 14.3	11.7 13.2	10.2 10.8	7.9 7.3	5.3 3.5	3.4 0.2	2.9 -1.8	4.0 -1.8	6.6 -0.1	9.7 2.9
29 F	6.2 10.4	9.0 12.5	10.9 13.5	11.6 13.4	11.1 11.9	9.5 9.4	7.3 6.1	5.1 2.8	3.6 0.0	3.6 -1.3	5.1 -0.8	7.6 1.2
30 Sa	4.1 8.4	7.0 10.6	9.3 12.1	10.7 12.7	11.1 12.1	10.4 10.6	8.9 8.2	6.9 5.3	5.1 2.4	4.1 0.3	4.5 -0.4	6.1 0.4

Time meridian 135° W. 0 is midnight. 12 is noon.
 Heights are referred to mean lower low water (N.O.S. chart datum).

Lat. 61° 08'N Long. 146° 22'W

DECEMBER

Predicted hourly heights in feet

Day	Hours 0/12	Hours 1/13	Hours 2/14	Hours 3/15	Hours 4/16	Hours 5/17	Hours 6/18	Hours 7/19	Hours 8/20	Hours 9/21	Hours 10/22	Hours 11/23
1 Su	2.5 6.7	5.1 8.7	7.5 10.4	9.3 11.4	10.3 11.5	10.5 10.8	9.8 9.4	8.4 7.3	6.8 4.8	5.3 2.5	4.7 0.9	5.2 0.6
2 M	1.6 5.8	3.6 7.0	5.8 8.5	7.7 9.7	9.1 10.3	9.9 10.3	10.1 9.7	9.4 8.5	8.2 6.7	6.8 4.7	5.6 2.8	5.2 1.7
3 Tu	1.7 5.5	2.7 5.9	4.4 6.9	6.2 7.9	7.8 8.8	9.0 9.3	9.7 9.4	9.9 9.0	9.3 8.0	8.2 6.5	6.9 4.8	5.8 3.3
4 W	2.5 5.9	2.6 5.4	3.5 5.6	4.9 6.2	6.4 7.0	7.8 7.8	9.1 8.4	9.8 8.8	10.0 8.6	9.4 7.9	8.2 6.6	6.9 5.1
5 Th	3.8 6.7	3.1 5.6	3.2 4.9	4.0 4.8	5.2 5.3	6.7 6.1	8.2 7.1	9.5 8.0	10.3 8.6	10.3 8.6	9.5 7.9	8.2 6.7
6 F	5.4 7.9	4.2 6.3	3.5 4.8	3.5 3.9	4.3 3.8	5.6 4.3	7.2 5.4	8.9 6.8	10.2 8.0	10.9 8.8	10.6 8.9	9.5 8.2
7 Sa	7.0 9.3	5.6 7.4	4.4 5.4	3.7 3.7	3.7 2.7	4.6 2.7	6.1 3.6	8.0 5.2	9.9 6.9	11.1 8.4	11.5 9.3	10.8 9.2
8 Su	8.4 10.8	7.1 8.8	5.6 6.4	4.3 4.1	3.6 2.2	3.9 1.4	5.1 1.8	7.0 3.3	9.2 5.4	11.0 7.5	12.0 9.1	11.9 9.8
9 M	9.6 12.1	8.6 10.4	7.0 7.9	5.4 5.1	4.1 2.5	3.5 0.8	4.2 0.4	5.9 1.4	8.2 3.5	10.5 6.0	12.1 8.3	12.7 9.8
10 Tu	10.3 13.2	9.9 12.0	8.6 9.7	6.8 6.7	4.9 3.5	3.7 0.9	3.6 -0.4	4.8 -0.2	7.0 1.5	9.6 4.2	11.8 6.9	13.1 9.2
11 W	10.5 13.7	10.7 13.2	9.9 11.5	8.3 8.6	6.2 5.2	4.4 1.9	3.5 -0.4	3.9 -1.2	5.7 -0.3	8.3 2.1	10.9 5.1	12.9 7.9
12 Th	10.0 13.7	11.0 14.0	10.9 12.9	9.7 10.6	7.7 7.3	5.6 3.7	4.0 0.5	3.5 -1.4	4.5 -1.5	6.7 0.1	9.5 2.9	12.1 6.1
13 F	8.8 12.9	10.6 14.1	11.2 13.9	10.7 12.3	9.2 9.5	7.1 6.0	5.0 2.4	3.7 -0.5	3.7 -1.9	5.2 -1.4	7.8 0.8	10.7 3.9
14 Sa	7.0 11.4	9.5 13.3	10.9 14.0	11.2 13.3	10.4 11.3	8.7 8.3	6.5 4.8	4.6 1.4	3.7 -1.0	4.1 -1.8	6.0 -0.8	8.7 1.7
15 Su	4.9 9.3	7.8 11.7	10.0 13.2	11.0 13.4	11.0 12.4	10.0 10.3	8.2 7.3	6.1 4.0	4.4 0.9	3.8 -1.1	4.6 -1.4	6.7 0.0
16 M	2.7 7.0	5.7 9.5	8.4 11.5	10.2 12.6	11.0 12.5	10.8 11.5	9.6 9.4	7.8 6.6	5.9 3.5	4.4 0.9	4.0 -0.7	5.0 -0.6
17 Tu	1.0 5.1	3.6 6.9	6.4 9.0	8.8 10.7	10.3 11.5	10.9 11.5	10.6 10.6	9.5 8.8	7.7 6.3	5.8 3.5	4.4 1.2	4.1 0.0
18 W	0.3 4.0	2.0 4.8	4.4 6.3	6.9 8.0	9.0 9.5	10.4 10.3	11.0 10.5	10.8 9.9	9.6 8.5	7.8 6.3	5.9 3.9	4.4 1.9
19 Th	0.9 4.3	1.3 3.7	2.9 4.1	5.0 5.2	7.3 6.7	9.2 8.1	10.6 9.2	11.4 9.8	11.1 9.6	9.9 8.5	8.0 6.6	5.9 4.5
20 F	2.7 5.8	1.9 3.9	2.2 2.9	3.5 2.9	5.5 3.8	7.6 5.3	9.6 6.9	11.2 8.5	11.9 9.5	11.6 9.6	10.2 8.8	8.1 7.2
21 Sa	5.2 8.1	3.5 5.4	2.6 3.2	2.7 1.8	3.9 1.6	5.9 2.4	8.1 4.1	10.3 6.2	11.9 8.1	12.6 9.5	12.1 9.9	10.5 9.2
22 Su	7.7 10.5	5.9 7.8	4.1 4.8	3.1 2.1	3.1 0.5	4.3 0.2	6.3 1.4	8.8 3.5	11.1 6.0	12.8 8.3	13.3 9.8	12.5 10.4
23 M	9.8 12.6	8.3 10.3	6.3 7.2	4.4 3.8	3.2 0.9	3.3 -0.8	4.6 -0.7	7.0 0.8	9.6 3.4	12.0 6.3	13.5 8.7	13.7 10.3
24 Tu	10.8 13.9	10.2 12.5	8.5 9.8	6.4 6.2	4.4 2.6	3.2 -0.3	3.4 -1.7	5.1 -1.2	3.4 0.9	4.9 3.9	7.5 6.9	10.2 9.4
25 W	10.9 14.3	11.2 13.8	10.3 11.9	8.5 8.8	6.1 5.1	4.1 1.4	3.1 -1.2	3.7 -2.1	5.8 -1.0	8.6 1.5	11.4 4.7	13.4 7.7
26 Th	10.1 13.7	11.3 14.2	11.4 13.2	10.2 11.0	8.1 7.6	5.6 3.8	3.8 0.4	3.2 -1.8	4.2 -2.0	6.6 -0.3	9.5 2.5	12.1 5.8
27 F	8.6 12.5	10.6 13.7	11.6 13.7	11.2 12.3	9.7 9.7	7.4 6.3	5.1 2.6	3.5 -0.3	3.4 -1.8	4.9 -1.4	7.5 0.7	10.2 3.8
28 Sa	6.9 10.8	9.4 12.6	11.0 13.3	11.5 12.8	10.7 11.1	9.0 8.4	6.7 5.0	4.6 1.7	3.5 -0.6	3.9 -1.4	5.7 -0.3	8.3 2.1
29 Su	5.0 8.9	7.9 11.0	10.0 12.3	11.1 12.6	11.1 11.7	10.0 9.8	8.2 7.0	6.1 4.0	4.4 1.2	3.7 -0.4	4.5 -0.5	6.4 0.9
30 M	3.5 7.1	6.2 9.2	8.6 10.9	10.2 11.7	10.9 11.5	10.6 10.4	9.3 8.5	7.5 5.9	5.6 3.3	4.3 1.2	4.1 0.2	5.1 0.6
31 Tu	2.3 5.6	4.8 7.4	7.2 9.1	9.1 10.3	10.3 10.7	10.6 10.3	10.0 9.2	8.7 7.4	7.0 5.2	5.4 3.0	4.4 1.5	4.5 1.0

Time meridian 135° W. 0 is midnight. 12 is noon.
 Heights are referred to mean lower low water (N.O.S. chart datum).

GLOSSARY OF TERMS

- ANNUAL INEQUALITY**—Seasonal variation in the water level or current, more or less periodic, due chiefly to meteorological causes.
- APOGEAN TIDES OR TIDAL CURRENTS**—Tides of decreased range or currents of decreased speed occurring monthly as the result of the Moon being in apogee (farthest from the Earth).
- AUTOMATIC TIDE GAGE**—An instrument that automatically registers the rise and fall of the tide. In some instruments, the registration is accomplished by recording the heights at regular intervals in digital format, in others by a continuous graph in which the height versus corresponding time of the tide is recorded.
- BENCH MARK (BM)**—A fixed physical object or marks used as reference for a vertical datum. A *tidal bench mark* is one near a tide station to which the tide staff and tidal datums are referred. A *Geodetic bench mark* identifies a surveyed point in the National Geodetic Vertical Network.
- CHART DATUM**—The tidal datum to which soundings on a chart are referred. It is usually taken to correspond to low water elevation of the tide, and its depression below mean sea level is represented by the symbol Zo.
- CURRENT**—Generally, a horizontal movement of water. Currents may be classified as *tidal* and *nontidal*. Tidal currents are caused by gravitational interactions between the Sun, Moon, and Earth and are a part of the same general movement of the sea that is manifested in the vertical rise and fall, called *tide*. Nontidal currents include the permanent currents in the general circulatory systems of the sea as well as temporary currents arising from more pronounced meteorological variability.
- CURRENT DIFFERENCE**—Difference between the time of slack water (or minimum current) or strength of current in any locality and the time of the corresponding phase of the tidal current at a reference station, for which predictions are given in the *Tidal Current Tables*.
- CURRENT ELLIPSE**—A graphic representation of a rotary current in which the velocity of the current at different hours of the tidal cycle is represented by radius vectors and vectorial angles. A line joining the extremities of the radius vectors will form a curve roughly approximating an ellipse. The cycle is completed in one-half tidal day or in a whole tidal day according to whether the tidal current is of the semidiurnal or the diurnal type. A current of the mixed type will give a curve of two unequal loops each tidal day.
- CURRENT METER**—An instrument for measuring the speed and direction or just the speed of a current. The measurements are usually Eulerian since the meter is most often fixed or moored at a specific location.
- DATUM (vertical)**—For marine applications, a base elevation used as a reference from which to reckon heights or depths. It is called a *tidal datum* when defined by a certain phase of the tide. Tidal datums are local datums and should not be extended into areas which have differing topographic features without substantiating measurements. In order that they may be recovered when needed, such datums are referenced to fixed points known as *bench marks*.
- DAYLIGHT SAVING TIME**—A time used during the summer in some localities in which clocks are advanced 1 hour from the usual standard time.
- DIURNAL**—Having a period or cycle of approximately 1 tidal day. Thus, the tide is said to be diurnal when only one high water and one low water occur during a tidal day, and the tidal current is said to be diurnal when there is a single flood and single ebb period in the tidal day. A rotary current is diurnal if it changes its direction through all points of the compass once each tidal day.
- DIURNAL INEQUALITY**—The difference in height of the two high waters or of the two low waters of each day; also the difference in speed between the two flood tidal currents or the two ebb tidal currents of each day. The difference changes with the declination of the Moon and to a lesser extent with the declination of the Sun. In general, the inequality tends to increase with an increasing declination, either north or south, and to diminish as the Moon approaches the Equator. *Mean diurnal high water inequality* (DHQ) is one-half the average difference between the two high waters of each day observed over a specific 19-year Metonic cycle (the National Tidal Datum Epoch). It is obtained by subtracting the mean of all high waters from the mean of the higher high waters. *Mean diurnal low water inequality* (DLQ) is one-half the average difference between the two low waters of each day observed over a specific 19-year Metonic cycle (the National Tidal Datum Epoch). It is obtained by subtracting the mean of the lower low waters from the mean of all low waters. *Tropic high water inequality* (HWQ) is the average difference between the two high waters of the day at the times of the tropic tides. *Tropic low water inequality* (LWQ) is the average difference between the two low waters of the day at the times of the tropic tides. Mean and tropic inequalities as

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defined above are applicable only when the type of tide is either semidiurnal or mixed. Diurnal inequality is sometimes called *declinational inequality*.

DOUBLE EBB—An ebb tidal current where, after ebb begins, the speed increases to a maximum called *first ebb*; it then decreases, reaching a *minimum ebb* near the middle of the ebb period (and at some places it may actually run in a flood direction for a short period); it then again ebbs to a maximum speed called second ebb after which it decreases to slack water.

DOUBLE FLOOD—A flood tidal current where, after flood begins, the speed increases to a maximum called first flood; it then decreases, reaching a minimum flood near the middle of the flood period (and at some places it may actually run in an ebb direction for a short period); it then again floods to a maximum speed called second flood after which it decreases to slack water.

DOUBLE TIDE—A double-headed tide, that is, a high water consisting of two maxima of nearly the same height separated by a relatively small depression, or a low water consisting of two minima separated by a relatively small elevation. Sometimes, it is called an agger.

DURATION OF FLOOD AND DURATION OF EBB—Duration of flood is the interval of time in which a tidal current is flooding, and the *duration of ebb* is the interval in which it is ebbing. Together they cover, on an average, a period of 12.42 hours for a semidiurnal tidal current or a period of 24.84 hours for a diurnal current. In a normal semidiurnal tidal current, the duration of flood and duration of ebb will each be approximately equal to 6.21 hours, but the times may be modified greatly by the presence of a nontidal flow. In a river the duration of ebb is usually longer than the duration of flood because of the freshwater discharge, especially during the spring when snow and ice melt are the predominant influences.

DURATION OF RISE AND DURATION OF FALL—*Duration of rise* is the interval from low water to high water, and *duration of fall* is the interval from high water to low water. Together they cover, on an average, a period of 12.42 hours for a semidiurnal tide or a period of 24.84 hours for a diurnal tide. In a normal semidiurnal tide, the duration of rise and duration of fall will each be approximately equal to 6.21 hours, but in shallow waters and in rivers there is a tendency for a decrease in the duration of rise and a corresponding increase in the duration of fall.

EBB CURRENT—The movement of a tidal current away from shore or down a tidal river or estuary. In the

mixed type of reversing tidal current, the terms *greater ebb* and *lesser ebb* are applied respectively to the ebb tidal currents of greater and lesser speed of each day. The terms *maximum ebb* and *minimum ebb* are applied to the maximum and minimum speeds of a current running continuously ebb, the speed alternately increasing and decreasing without coming to a slack or reversing. The expression maximum ebb is also applicable to any ebb current at the time of greatest speed.

EQUATORIAL TIDAL CURRENTS—Tidal currents occurring semimonthly as a result of the Moon being over the Equator. At these times the tendency of the Moon to produce a diurnal inequality in the tidal current is at a minimum.

EQUATORIAL TIDES—Tides occurring semi monthly as the result of the Moon being over the Equator. At these times the tendency of the Moon to produce a diurnal inequality in the tide is at a minimum.

FLOOD CURRENT—The movement of a tidal current toward the shore or up a tidal river or estuary. In the mixed type of reversing current, the terms *greater flood* and *lesser flood* are applied respectively to the flood currents of greater and lesser speed of each day. The terms *maximum flood* and *minimum flood* are applied to the maximum and minimum speeds of a flood current, the speed of which alternately increases and decreases without coming to a slack or reversing. The expression maximum flood is also applicable to any flood current at the time of greatest speed.

GREAT DIURNAL RANGE (Gt)—The difference in height between mean higher high water and mean lower low water. The expression may also be used in its contracted form, *diurnal range*.

GREENWICH INTERVAL—An interval referred to the transit of the Moon over the meridian of Greenwich as distinguished from the local interval which is referred to the Moon's transit over the local meridian. The relation in hours between Greenwich and local intervals may be expressed by the formula:

$$\text{Greenwich interval} = \text{local interval} + 0.069 L$$

where L is the west longitude of the local meridian in degrees. For east longitude, L is to be considered negative.

GULF COAST LOW WATER DATUM—A chart datum. Specifically, the tidal datum formerly designated for the coastal waters of the Gulf Coast of the United States. It was defined as *mean lower low water* when the type of tide was mixed and *mean low water* when the type of tide was diurnal.

HALF-TIDE LEVEL—See *mean tide level*.

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- HARMONIC ANALYSIS**—The mathematical process by which the observed tide or tidal current at any place is separated into basic harmonic constituents.
- HARMONIC CONSTANTS**—The amplitudes and epochs of the harmonic constituents of the tide or tidal current at any place.
- HARMONIC CONSTITUENT**—One of the harmonic elements in a mathematical expression for the tide-producing force and in corresponding formulas for the tide or tidal current. Each constituent represents a periodic change or variation in the relative positions of the Earth, Moon, and Sun. A single constituent is usually written in the form $y=A \cos (at+\alpha)$, in which y is a function of time as expressed by the symbol t and is reckoned from a specific origin. The coefficient A is called the amplitude of the constituent and is a measure of its relative importance. The angle $(at+\alpha)$ changes uniformly and its value at any time is called the phase of the constituent. The speed of the constituent is the rate of change in its phase and is represented by the symbol a in the formula. The quantity α is the phase of the constituent at the initial instant from which the time is reckoned. The period of the constituent is the time required for the phase to change through 360° and is the cycle of the astronomical condition represented by the constituent.
- HIGH WATER (HW)**—The maximum height reached by a rising tide. The height may be due solely to the periodic tidal forces or it may have superimposed upon it the effects of prevailing meteorological conditions. Use of the synonymous term, *high tide*, is discouraged.
- HIGHER HIGH WATER (HHW)**—The higher of the two high waters of any tidal day.
- HIGHER LOW WATER (HLW)**—The higher of the two low waters of any tidal day.
- HYDRAULIC CURRENT**—A current in a channel caused by a difference in the surface level at the two ends. Such a current may be expected in a strait connecting two bodies of water in which the tides differ in time or range. The current in the East River, N.Y., connecting Long Island Sound and New York Harbor, is an example.
- KNOT**—A unit of speed, one international nautical mile (1,852.0 meters or 6,076.11549 international feet) per hour.
- LOW WATER (LW)**—The minimum height reached by a falling tide. The height may be due solely to the periodic tidal forces or it may have superimposed upon it the effects of meteorological conditions. Use of the synonymous term, *low tide*, is discouraged.
- LOWER HIGH WATER (LHW)**—The lower of the two high waters of any tidal day.
- LOWER LOW WATER (LLW)**—The lower of the two low waters of any tidal day.
- LUNAR DAY**—The time of the rotation of the Earth with respect to the Moon, or the interval between two successive upper transits of the Moon over the meridian of a place. The mean lunar day is approximately 24.84 solar hours long, or 1.035 times as long as the mean solar day.
- LUNAR INTERVAL**—The difference in time between the transit of the Moon over the meridian of Greenwich and over a local meridian. The average value of this interval expressed in hours is $0.069 L$, in which L is the local longitude in degrees, positive for west longitude and negative for east longitude. The lunar interval equals the difference between the local and Greenwich interval of a tide or current phase.
- LUNICURRENT INTERVAL**—The interval between the Moon's transit (upper or lower) over the local or Greenwich meridian and a specified phase of the tidal current following the transit. Examples: *strength of flood interval and strength of ebb interval*, which may be abbreviated to *flood interval and ebb interval*, respectively. The interval is described as local or Greenwich according to whether the reference is to the Moon's transit over the local or Greenwich meridian. When not otherwise specified, the reference is assumed to be local.
- LUNITIDAL INTERVAL**—The interval between the Moon's transit (upper or lower) over the local or Greenwich meridian and the following high or low water. The average of all high water intervals for all phases of the Moon is known as *mean high water lunitidal interval* and is abbreviated to high water interval (HWI). Similarly the *mean low water lunitidal interval* is abbreviated to low water interval (LWI). The interval is described as local or Greenwich according to whether the reference is to the transit over the local or Greenwich meridian. When not otherwise specified, the reference is assumed to be local.
- MEAN HIGH WATER (MHW)**—A tidal datum. The arithmetic mean of the high water heights observed over a specific 19-year Metonic cycle (the National Tidal Datum Epoch). For stations with shorter series, simultaneous observational comparisons are made with a primary control tide station in order to derive the equivalent of a 19-year value.

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- MEAN HIGHER HIGH WATER (MHHW)**—A tidal datum. The arithmetic mean of the higher high water heights of a mixed tide observed over a specific 19-year Metonic cycle (the National Tidal Datum Epoch). Only the higher high water of each pair of high waters, or the only high water of a tidal day is included in the mean.
- MEAN HIGHER HIGH WATER LINE (MHHWL)**—The intersection of the land with the water surface at the elevation of mean higher high water.
- MEAN LOW WATER (MLW)**—A tidal datum. The arithmetic mean of the low water heights observed over a specific 19-year Metonic cycle (the National Tidal Datum Epoch). For stations with shorter series, simultaneous observational comparisons are made with a primary control tide station in order to derive the equivalent of a 19-year value.
- MEAN LOW WATER SPRINGS (MLWS)**—A tidal datum. Frequently abbreviated *spring low water*. The arithmetic mean of the low water heights occurring at the time of the spring tides observed over a specific 19-year Metonic cycle (the National Tidal Datum Epoch).
- MEAN LOWER LOW WATER (MLLW)**—A tidal datum. The arithmetic mean of the lower low water heights of a mixed tide observed over a specific 19-year Metonic cycle (the National Tidal Datum Epoch). Only the lower low water of each pair of low waters, or the only low water of a tidal day is included in the mean.
- MEAN RANGE OF TIDE (Mn)**—The difference in height between mean high water and mean low water.
- MEAN RIVER LEVEL**—A tidal datum. The average height of the surface of a tidal river at any point for all stages of the tide observed over a 19-year Metonic cycle (the National Tidal Datum Epoch), usually determined from hourly height readings. In rivers subject to occasional freshets the river level may undergo wide variations, and for practical purposes certain months of the year may be excluded in the determination of tidal datums. For charting purposes, tidal datums for rivers are usually based on observations during selected periods when the river is at or near low water stage.
- MEAN SEA LEVEL (MSL)**—A tidal datum. The arithmetic mean of hourly water elevations observed over a specific 19-year Metonic cycle (the National Tidal Datum Epoch). Shorter series are specified in the name; e.g., monthly mean sea level and yearly mean sea level.
- MEAN TIDE LEVEL (MTL)**—Also called half-tide level. A tidal datum midway between mean high water and mean low water.
- MIXED TIDE**—Type of tide with a large inequality in the high and/or low water heights, with two high waters and two low waters usually occurring each tidal day. In strictness, all tides are mixed but the name is usually applied to the tides intermediate to those predominantly semidiurnal and those predominantly diurnal.
- NATIONAL TIDAL DATUM EPOCH**—The specific 19-year period adopted by the National Ocean Service as the official time segment over which tide observations are taken and reduced to obtain mean values (e.g., mean lower low water, etc.) for tidal datums. It is necessary for standardization because of periodic and apparent secular trends in sea level. The present National Tidal Datum Epoch is 1960 through 1978. It is reviewed annually for possible revision and must be actively considered for revision every 25 years.
- NEAP TIDES OR TIDAL CURRENTS**—Tides of decreased range or tidal currents of decreased speed occurring semimonthly as the result of the Moon being in quadrature. The *neap range* (N_p) of the tide is the average semidiurnal range occurring at the time of neap tides and is most conveniently computed from the harmonic constants. It is smaller than the mean range where the type of tide is either semidiurnal or mixed and is of no practical significance where the type of tide is diurnal. The average height of the high waters of the neap tides is called *neap high water* or *high water neaps* (MHWN) and the average height of the corresponding low waters is called neap low water or low water neaps (MLWN).
- PERIGEAN TIDES OR TIDAL CURRENTS**—Tides of increased range or tidal currents of increased speed occurring monthly as the result of the Moon being in perigee or nearest the Earth. The *perigean range* (P_n) of tide is the average semidiurnal range occurring at the time of perigean tides and is most conveniently computed from the harmonic constants. It is larger than the mean range where the type of tide is either semidiurnal or mixed, and is of no practical significance where the type of tide is diurnal.
- RANGE OF TIDE**—The difference in height between consecutive high and low waters, the *mean range* is the difference in height between mean high water and mean low water. Where the type of tide is diurnal the mean range is the same as the diurnal range.

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For other ranges, see great diurnal, spring, neap, perigean, apogean, and tropic tides.

REFERENCE STATION—A tide or current station for which independent daily predictions are given in the *Tide Tables and Tidal Current Tables*, and from which corresponding predictions are obtained for subordinate stations by means of differences and ratios.

REVERSING CURRENT—A tidal current which flows alternately in approximately opposite directions with a slack water at each reversal of direction. Currents of this type usually occur in rivers and straits where the direction of flow is more or less restricted to certain channels. When the movement is towards the shore or up a stream, the current is said to be flooding, and when in the opposite direction it is said to be ebbing. The combined flood and ebb movement including the slack water covers, on an average, 12.42 hours for the semidiurnal current. If unaffected by a nontidal flow, the flood and ebb movements will each last about 6 hours, but when combined with such a flow, the durations of flood and ebb may be quite unequal. During the flow in each direction the speed of the current will vary from zero at the time of slack water to a maximum about midway between the slacks.

ROTARY CURRENT—A tidal current that flows continually with the direction of flow changing through all points of the compass during the tidal period. Rotary currents are usually found offshore where the direction of flow is not restricted by any barriers. The tendency for the rotation in direction has its origin in the Coriolis force and, unless modified by local conditions, the change is clockwise in the Northern Hemisphere and counterclockwise in the Southern. The speed of the current usually varies throughout the tidal cycle, passing through the two maxima in approximately opposite directions and the two minima with the direction of the current at approximately 90° from the direction at time of maximum speed.

SEMIDIURNAL—Having a period or cycle of approximately one-half of a tidal day. The predominating type of tide throughout the world is semidiurnal, with two high waters and two low waters each tidal day. The tidal current is said to be semidiurnal when there are two flood and two ebb periods each day.

SET (OF CURRENT)—The direction *towards* which the current flows.

SLACK WATER—The state of a tidal current when its speed is near zero, especially the moment when a

reversing current changes direction and its speed is zero. The term is also applied to the entire period of low speed near the time of turning of the current when it is too weak to be of any practical importance in navigation. The relation of the time of slack water to the tidal phases varies in different localities. For standing tidal waves, slack water occurs near the times of high and low water, while for progressive tidal waves, slack water occurs midway between high and low water.

SPRING TIDES OR TIDAL CURRENTS—Tides of increased range or tidal currents of increased speed occurring semimonthly as the result of the Moon being new or full. The *spring range* (Sg) of tide is the average semidiurnal range occurring at the time of spring tides and is most conveniently computed from the harmonic constants. It is larger than the mean range where the type of tide is either semidiurnal or mixed, and is of no practical significance where the type of tide is diurnal. The mean of the high waters of the spring tide is called *spring high water or mean high water springs* (MHWS), and the average height of the corresponding low waters is called *spring low water or mean low water springs* (MLWS).

STAND OF TIDE—Sometimes called a platform tide. An interval at high or low water when there is no sensible change in the height of the tide. The water level is stationary at high and low water for only an instant, but the change in level near these times is so slow that it is not usually perceptible. In general, the duration of the apparent stand will depend upon the range of tide, being longer for a small range than for a large range, but where there is a tendency for a double tide the stand may last for several hours even with a large range of tide.

STANDARD TIME—A kind of time based upon the transit of the Sun over a certain specified meridian, called the *time meridian*, and adopted for use over a considerable area. With a few exceptions, standard time is based upon some meridian which differs by a multiple of 15° from the meridian of Greenwich.

STRENGTH OF CURRENT—Phase of tidal current in which the speed is a maximum; also the speed at this time. Beginning with slack before flood in the period of a reversing tidal current (or minimum before flood in a rotary current), the speed gradually increases to flood strength and then diminishes to slack before ebb (or minimum before ebb in a rotary current), after which the current turns in direction, the speed increases to ebb strength and then diminishes to slack before flood completing the cycle. If it is assumed that the speed throughout the cycle varies as the ordinates of a cosine curve, it can

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be shown that the average speed for an entire flood or ebb period is equal to $2/\pi$ or 0.6366 of the speed of the corresponding strength of current.

SUBORDINATE CURRENT STATION—(1) A current station from which a relatively short series of observations is reduced by comparison with simultaneous observations from a control current station. (2) A station listed in the *Tidal Current Tables* for which predictions are to be obtained by means of differences and ratios applied to the full predictions at a reference station .

SUBORDINATE TIDE STATION—(1) A tide station from which a relatively short series of observations is reduced by comparison with simultaneous observations from a tide station with a relatively long series of observations. (2) A station listed in the *Tide Tables* for which predictions are to be obtained by means of differences and ratios applied to the full predictions at a reference station.

TIDAL CURRENT TABLES—Tables which give daily predictions of the times and speeds of the tidal currents. These predictions are usually supplemented by current differences and constants through which additional predictions can be obtained for numerous other places.

TIDAL DIFFERENCE—Difference in time or height of a high or low water at a subordinate station and at a reference station for which predictions are given in the *Tide Tables*. The difference, when applied according to sign to the prediction at the reference station, gives the corresponding time or height for the subordinate station .

TIDE—The periodic rise and fall of the water resulting from gravitational interactions between the Sun, Moon, and Earth. The vertical component of the particulate motion of a tidal wave. Although the accompanying horizontal movement of the water is part of the same phenomenon, it is preferable to designate the motion as tidal current.

TIDE TABLES—Tables which give daily predictions of the times and heights of high and low waters. These predictions are usually supplemented by tidal differences and constants through which additional predictions can be obtained for numerous other places.

TIME MERIDIAN—A meridian used as a reference for time.

TROPIC CURRENTS—Tidal currents occurring semimonthly when the effect of the Moon's maximum declination is greatest. At these times the tendency of the Moon to produce a diurnal inequality in the current is at a maximum.

TROPIC RANGES—The *great tropic range* (G_c), or *tropic range*, is the difference in height between tropic higher high water and tropic lower low water. The *small tropic range* (S_c) is the difference in height between tropic lower high water and tropic higher low water. The *mean tropic range* (M_c) is the mean between the great tropic range and the small tropic range. The small tropic range and the mean tropic range are applicable only when the type of tide is semidiurnal or mixed. Tropic ranges are most conveniently computed from the harmonic constants.

TROPIC TIDES—Tides occurring semimonthly when the effect of the Moon's maximum declination is greatest. At these times there is a tendency for an increase in the diurnal range. The tidal datums pertaining to the tropic tides are designated as *tropic higher high water* (T_cHHW), *tropic lower high water* (T_cLHW), *tropic higher low water* (T_cHLW), and *tropic lower low water* (T_cLLW).

TYPE OF TIDE—A classification based on characteristic forms of a tide curve. Qualitatively, when the two high waters and two low waters of each tidal day are approximately equal in height, the tide is said to be *semidiurnal*; when there is a relatively large diurnal inequality in the high or low waters or both, it is said to be *mixed*; and when there is only one high water and one low water in each tidal day, it is said to be *diurnal*.

VANISHING TIDE—In a mixed tide with very large diurnal inequality, the lower high water (or higher low water) frequently becomes indistinct (or vanishes) at time of extreme declinations. During these periods the diurnal tide has such overriding dominance that the semidiurnal tide, although still present, cannot be readily seen on the tide curve.

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Kashega Bay, Alaska.....	2291	Kuluk Bay, Alaska.....	2363
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Kealakekua Bay, Hawaii.....	2607	Kyuquot Sound, British Columbia.....	1389
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Kell Bay, Alaska.....	1623	La Jolla, Calif.....	423
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		Lanai Island, Hawaii.....	2585

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Nasparti Inlet, British Columbia.....	1391	Old Harbor, Alaska.....	2107
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Necker Island, Alaska.....	1791	Orca Inlet, Alaska.....	1895-1901
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Point Arguello, Calif.....	481	Port Neville, British Columbia.....	1355
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Point Brown, Wash.....	1009	Port Orford, Oreg.....	837
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Point Chauncey, Calif.....	637	Port San Juan, British Columbia.....	1373
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	No.		No.
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Yukon River, Alaska.....	2483
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ASTRONOMICAL DATA, 2019

January			
	d	h	m
S	5	19	..
●	6	01	28
A	9	04	..
E	13	08	..
☉	14	06	46
N	20	00	..
○	21	05	16
P	21	20	..
E	26	01	..
●	27	21	10

February			
	d	h	m
S	2	01	..
●	4	21	04
A	5	09	..
E	9	15	..
☉	12	22	26
N	16	10	..
P	19	09	..
○	19	15	54
E	22	10	..
●	26	11	28

March			
	d	h	m
S	1	07	..
A	4	11	..
●	6	16	04
E	8	20	..
☉	14	10	27
N	15	19	..
P	19	20	..
☉ _m	20	21	58
○	21	01	43
E	21	20	..
●	28	04	10
S	28	13	..

April			
	d	h	m
A	1	00	..
E	5	02	..
●	5	08	50
N	12	00	..
☉	12	19	06
P	16	22	..
E	18	07	..
○	19	11	12
S	24	22	..
●	26	22	18
A	28	18	..

May			
	d	h	m
E	2	10	..
●	4	22	45
N	9	06	..
☉	12	01	12
P	13	22	..
E	15	15	..
○	18	21	11
S	22	07	..
A	26	13	..
●	26	16	34
E	29	19	..

June			
	d	h	m
●	3	10	02
N	5	13	..
P	7	23	..
☉	10	05	59
E	11	22	..
○	17	08	31
S	18	16	..
☉ _j	21	15	54
A	23	08	..
●	25	09	46
E	26	04	..

July			
	d	h	m
●	2	19	16
N	2	23	..
P	5	05	..
E	9	03	..
☉	9	10	55
S	15	23	..
○	16	21	38
A	21	00	..
E	23	11	..
●	25	01	18
N	30	09	..

August			
	d	h	m
●	1	03	12
P	2	07	..
E	5	10	..
☉	7	17	31
S	12	05	..
○	15	12	29
A	17	11	..
E	19	17	..
●	23	14	56
N	26	18	..
●	30	10	37
P	30	16	..

September			
	d	h	m
E	1	18	..
●	6	03	10
S	8	10	..
A	13	14	..
○	14	04	33
E	15	23	..
☉	22	02	41
N	23	02	..
☉ _s	23	07	50
P	28	02	..
●	28	18	26
E	29	05	..

October			
	d	h	m
☉	5	16	47
S	5	17	..
A	10	18	..
E	13	05	..
○	13	21	08
N	20	09	..
☉	21	12	39
P	26	11	..
E	26	16	..
●	28	03	38

November			
	d	h	m
S	2	01	..
●	4	10	23
A	7	09	..
E	9	12	..
○	12	13	34
N	16	14	..
☉	19	21	11
E	23	01	..
P	23	08	..
●	26	15	06
S	29	11	..

December			
	d	h	m
☉	4	06	58
A	5	04	..
E	6	21	..
○	12	05	12
N	13	21	..
P	18	20	..
☉	19	04	57
E	20	07	..
☉ _d	22	04	19
●	26	05	13
S	26	21	..
P	31	23	..

LUNAR DATA

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| <ul style="list-style-type: none"> ● -- new Moon ☉ -- first quarter ○ -- full Moon ☾ -- last quarter | <ul style="list-style-type: none"> A -- Moon in apogee P -- Moon in perigee N -- Moon farthest north of Equator E -- Moon on Equator S -- Moon farthest south of Equator |
|--|---|

SOLAR DATA

- ☉_m -- March equinox
- ☉_j -- June solstice
- ☉_s -- September equinox
- ☉_d -- December solstice

Greenwich mean time (GMT) or universal time (UT) is the mean solar time on the Greenwich meridian reckoned in days of 24 mean solar hours written as 00^h at midnight and 12^h at noon. To convert the above times to those of other standard time meridians, add 1 hour for each 15° of east longitude of the desired meridian and subtract 1 hour for each 15° of west longitude. This table was compiled from data supplied by the Nautical Almanac Office, United States Naval Observatory.



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