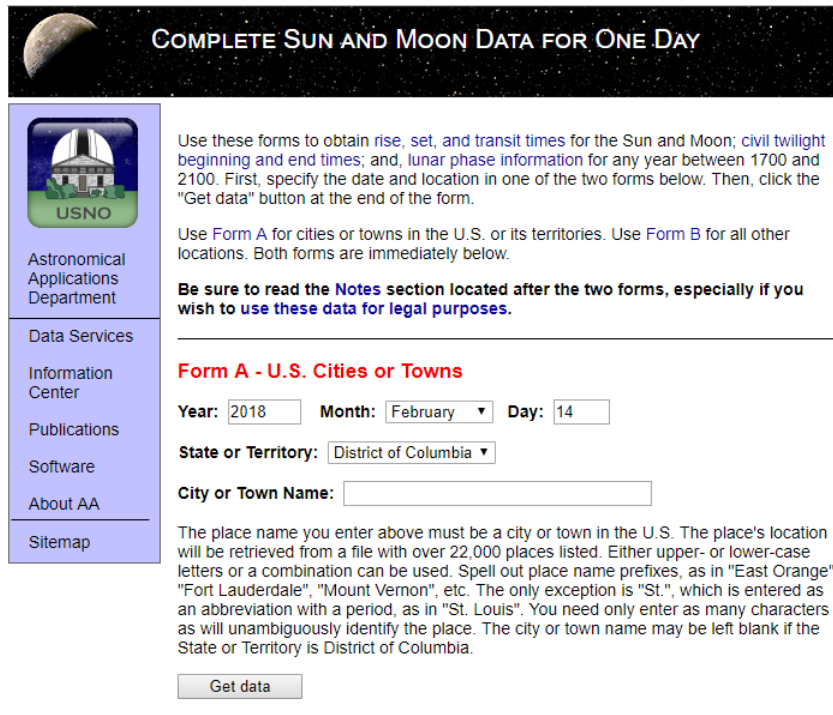


1.6: The United States Naval Observatory's Astronomical Applications

The United States Naval Observatory's Astronomical Applications

USNO Website Screenshot



COMPLETE SUN AND MOON DATA FOR ONE DAY

Use these forms to obtain [rise, set, and transit times](#) for the Sun and Moon; [civil twilight beginning and end times](#); and, [lunar phase information](#) for any year between 1700 and 2100. First, specify the date and location in one of the two forms below. Then, click the "Get data" button at the end of the form.

Use [Form A](#) for cities or towns in the U.S. or its territories. Use [Form B](#) for all other locations. Both forms are immediately below.

Be sure to read the [Notes](#) section located after the two forms, especially if you wish to [use these data for legal purposes](#).

Form A - U.S. Cities or Towns

Year: Month: Day:

State or Territory:

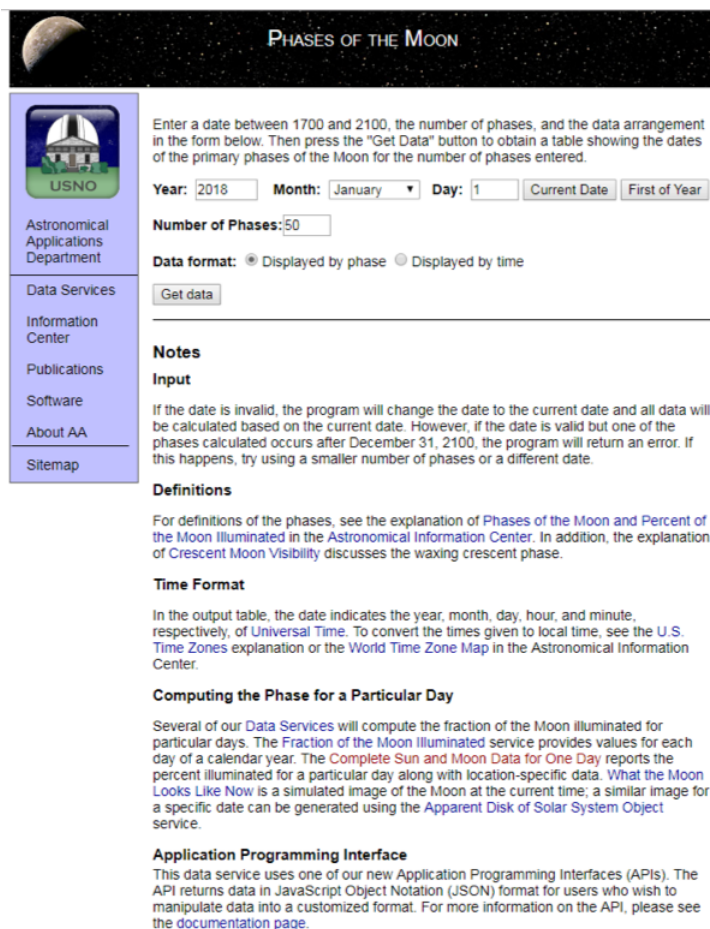
City or Town Name:

The place name you enter above must be a city or town in the U.S. The place's location will be retrieved from a file with over 22,000 places listed. Either upper- or lower-case letters or a combination can be used. Spell out place name prefixes, as in "East Orange", "Fort Lauderdale", "Mount Vernon", etc. The only exception is "St.", which is entered as an abbreviation with a period, as in "St. Louis". You need only enter as many characters as will unambiguously identify the place. The city or town name may be left blank if the State or Territory is District of Columbia.

The home page for the USNO Complete Sun and Moon Data for One Day website. ["USNO Page" by Florida State College at Jacksonville is licensed under [CC BY-SA 4.0](#)]

One of the contemporary services provided by the United States Naval Observatory to the public is its "Complete Sun and Moon Data for One Day" website. The user can obtain reliable and accurate sunrise, sunset, moonrise, and moonset dates and times for specific locations. Other useful information is also provided about the Sun and Moon's daily motions specific to the user's location and desired date.

Phases of the Moon Screenshot



PHASES OF THE MOON

Enter a date between 1700 and 2100, the number of phases, and the data arrangement in the form below. Then press the "Get Data" button to obtain a table showing the dates of the primary phases of the Moon for the number of phases entered.

Year: Month: Day:

Number of Phases:

Data format: ☒ Displayed by phase ☐ Displayed by time

Notes

Input

If the date is invalid, the program will change the date to the current date and all data will be calculated based on the current date. However, if the date is valid but one of the phases calculated occurs after December 31, 2100, the program will return an error. If this happens, try using a smaller number of phases or a different date.

Definitions

For definitions of the phases, see the explanation of [Phases of the Moon and Percent of the Moon Illuminated](#) in the [Astronomical Information Center](#). In addition, the explanation of [Crescent Moon Visibility](#) discusses the waxing crescent phase.

Time Format

In the output table, the date indicates the year, month, day, hour, and minute, respectively, of [Universal Time](#). To convert the times given to local time, see the [U.S. Time Zones](#) explanation or the [World Time Zone Map](#) in the [Astronomical Information Center](#).

Computing the Phase for a Particular Day

Several of our [Data Services](#) will compute the fraction of the Moon illuminated for particular days. The [Fraction of the Moon Illuminated](#) service provides values for each day of a calendar year. The [Complete Sun and Moon Data for One Day](#) reports the percent illuminated for a particular day along with location-specific data. [What the Moon Looks Like Now](#) is a simulated image of the Moon at the current time; a similar image for a specific date can be generated using the [Apparent Disk of Solar System Object](#) service.

Application Programming Interface

This data service uses one of our new Application Programming Interfaces (APIs). The API returns data in JavaScript Object Notation (JSON) format for users who wish to manipulate data into a customized format. For more information on the API, please see the [documentation page](#).

The USNO's Phases of the Moon website. This allows the user to create a calendar or matrix of when each Moon phase will occur – New Moon, 1st Quarter Moon, Full Moon, and Last Quarter Moon. [” USNO Page ” by Florida State College at Jacksonville is licensed under [CC BY-SA 4.0](#)]

The site provides accurate sunrise and sunset times for the location and date requested, as well as moonrise, moonset, and moon phase information. The transit information is the time when the Sun or Moon will cross the observer's meridian — that north-zenith-south line which divides the sky into two halves. One half of the sky is rising, the other half of the sky is setting.

Civil twilight is the time when sunlight is visible, even though the Sun has not yet risen. *Begin Civil twilight* is in the morning before the Sun rises; *End Civil twilight* is in the evening after the Sun sets.

Sun and Moon Data for One Day

U.S. Naval Observatory Astronomical Applications Department

Jacksonville, Duval County, FL (Longitude W81° 39', Latitude N30° 19')

Monday, January 1, 2018

Eastern Standard Time

Sun	
Begin civil twilight	6:57 a.m.
Sunrise	7:23 a.m.
Sun transit	12:30 p.m.
Sunset	5:37 p.m.
End civil twilight	6:04 p.m.
Moon	
Moonrise	4:30 p.m. on preceding day
Moon transit	11:34 p.m. on preceding day
Moonset	6:40 a.m.
Moonrise	5:31 p.m.

Phase of the Moon on January 1, 2018: Full Moon at 9:24 p.m. (local standard time)

Jacksonville, Florida Sun and Moon data for January 1, 2018. [” USNO Page ” by Florida State College at Jacksonville is licensed under [CC BY-SA 4.0](#)]

The data provided for the Moon covers not only moonrise and moonset, but the current lunar phase, percent illuminated, and a photo of what the Moon will look like in the sky.

Moon	
Moonrise	4:30 p.m. on preceding day
Moon transit	11:34 p.m. on preceding day
Moonset	6:40 a.m.
Moonrise	5:31 p.m.

Phase of the Moon on January 1, 2018: Full Moon at 9:24 p.m. (local standard time)



Jacksonville, Florida Moon data for January 1, 2018. Note the information on the Moon's phase as well as the image of the Moon. The site also provides a Back to form line to click and return the user to the information page, so another date and/or location can be provided by the user. [" USNO Page " by Florida State College at Jacksonville is licensed under [CC BY-SA 4.0](#)]

The USNO also maintains a website cataloging the phases of the Moon. This site allows you to find the phases of the Moon for a specific period of time and number of phases. ¹

[Phases of the Moon : U.S. Naval Observatory: Astronomical Applications Department](#)

Date and Time (Universal Time)			
New Moon	First Quarter	Full Moon	Last Quarter
<p>Universal Time (UT) is also referred to as Greenwich Mean Time (GMT), and is based on the Prime Meridian.</p>			

Date and Time (Universal Time)			
New Moon	First Quarter	Full Moon	Last Quarter
—	—	2018 Jan 02 02:24	2018 Jan 08 22:25
2018 Jan 17 02:17	2018 Jan 24 22:20	2018 Jan 31 13:27	2018 Feb 07 15:54
2018 Feb 15 21:05	2018 Feb 23 08:09	2018 Mar 02 00:51	2018 Mar 09 11:20
2018 Mar 17 13:12	2018 Mar 24 15:35	2018 Mar 31 12:37	2018 Apr 08 07:17
2018 Apr 16 01:57	2018 Apr 22 21:46	2018 Apr 30 00:58	2018 May 08 02:09
2018 May 15 11:48	2018 May 22 03:49	2018 May 29 14:19	2018 Jun 06 18:32
2018 Jun 13 19:43	2018 Jun 20 10:51	2018 Jun 28 04:53	2018 Jul 06 07:51
2018 Jul 13 02:48	2018 Jul 19 19:52	2018 Jul 27 20:20	2018 Aug 04 18:18
2018 Aug 11 09:58	2018 Aug 18 07:48	2018 Aug 26 11:56	2018 Sep 03 02:37
2018 Sep 09 18:01	2018 Sep 16 23:15	2018 Sep 25 02:52	2018 Oct 02 09:45
2018 Oct 09 03:47	2018 Oct 16 18:02	2018 Oct 24 16:45	2018 Oct 31 16:40
2018 Nov 07 16:02	2018 Nov 15 14:54	2018 Nov 23 05:39	2018 Nov 30 00:19
2018 Dec 07 07:20	2018 Dec 15 11:49	2018 Dec 22 17:49	2018 Dec 29 09:34

Universal Time (UT) is also referred to as Greenwich Mean Time (GMT), and is based on the Prime Meridian.

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