

1. The percent of the Moon's surface illuminated is a more refined, quantitative description of the Moon's appearance than is the phase. Considering the Moon as a circular disk, at New Moon the percent illuminated is 0; at First and Last Quarters it is 50%; and at Full Moon it is 100%. During the crescent phases the percent illuminated is between 0 and 50% and during gibbous phases it is between 50% and 100%.

2. For practical purposes, phases of the Moon and the percent of the Moon illuminated are independent of the location on the Earth from where the Moon is observed. That is, all the phases occur at the same time regardless of the observer's position.

3. For more detailed information, refer to the United States Naval Observatory site referenced below.

d. Access to Astronomical Data for Determination of Moon Rise, Moon Set, and Percentage of Lunar Disk Illuminated

1. Astronomical data for the determination of Moon rise and set and Moon phase may be obtained from the United States Naval Observatory using an interactive query available at: <http://aa.usno.navy.mil/>

2. Click on "Data Services," and then on "Complete Sun and Moon Data for One Day."

3. You can obtain the times of sunrise, sunset, moonrise, moonset, transits of the Sun and Moon, and the beginning and end of civil twilight, along with information on the Moon's phase by specifying the date and location in one of the two forms on this web page and clicking on the "Get data" button at the end of the form. Form "A" is used for cities or towns in the U.S. or its territories. Form "B" for all other locations. An example of the data available from this site is shown in TBL 10-2-2.

4. Additionally, a yearly table may be constructed for a particular location by using the "Table of Sunrise/Sunset, Moonrise/Moonset, or Twilight Times for an Entire Year" selection.

TBL 10-2-2

Sample of Astronomical Data Available from the Naval Observatory

The following information is provided for New Orleans, Orleans Parish, Louisiana (longitude W90.1, latitude N30.0)	
Tuesday 29 May 2007	Central Daylight Time
SUN	
Begin civil twilight	5:34 a.m.
Sunrise	6:01 a.m.
Sun transit	12:58 p.m.
Sunset	7:55 p.m.
End civil twilight	8:22 p.m.
MOON	
Moonrise	5:10 p.m. on preceding day
Moonset	4:07 a.m.
Moonrise	6:06 p.m.
Moon transit	11:26 p.m.
Moonset	4:41 a.m. on following day
Phase of the Moon on 29 May: waxing gibbous with 95% of the Moon's visible disk illuminated.	
Full Moon on 31 May 2007 at 8:04 p.m. Central Daylight Time.	