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Composite image illustrates various phases of the Moon over the synodic month.

SIX MILLENNIUM CATALOG OF PHASES OF THE MOON

MOON PHASES FROM -1999 TO +4000 (2000 BCE TO 4000 CE)
FRED ESPENAK

The two tables below contain links to a series of pages giving the phases of the Moon for the 6,000-year period -1999 to +4000 (2000 BCE to 4000 CE). Each page covers a century and lists the date and time ([Universal Time](#)) of the Moon's phases during that 100-year period. This data is provided primarily to assist in historical research projects. For the year 2000, the length of the mean synodic month (New Moon to New Moon) is 29.530588 days (=29d12h44m03s). However, the length of any one synodic month can vary from 29.26 to 29.80 days due to the perturbing effects of the Sun's gravity on the Moon's eccentric orbit. For example, see [Length of the Synodic Month: 2001 to 2100](#).

Each 100-year table of lunar phases also indicates when an eclipse of the Sun or Moon takes place. An eclipse of the Sun can occur only at New Moon, while an eclipse of the Moon can occur only at Full Moon.

Historians should note that the astronomical dating system used in these tables includes the year "0" while the traditional [BCE - CE dating convention](#) does not. Thus, the year "0" here corresponds to "1 BCE", the year "-100" is "101 BCE", and so on. The old style Julian calendar is used for dates prior to 1582, while the modern Gregorian calendar is used after that date. For more information, see [calendar dates](#).

Moon Phases in Common Era (CE)					
Links to Century Tables	0001 - 0100	0101 - 0200	0201 - 0300	0301 - 0400	0401 - 0500
	0501 - 0600	0601 - 0700	0701 - 0800	0801 - 0900	0901 - 1000
	1001 - 1100	1101 - 1200	1201 - 1300	1301 - 1400	1401 - 1500
	1501 - 1600	1601 - 1700	1701 - 1800	1801 - 1900	1901 - 2000
	2001 - 2100	2101 - 2200	2201 - 2300	2301 - 2400	2401 - 2500
	2501 - 2600	2601 - 2700	2701 - 2800	2801 - 2900	2901 - 3000
	3001 - 3100	3101 - 3200	3201 - 3300	3301 - 3400	3401 - 3500
	3501 - 3600	3601 - 3700	3701 - 3800	3801 - 3900	3901 - 4000

Moon Phases Before Common Era (BCE)					
Links to Century Tables	-1999 - -1900	-1899 - -1800	-1799 - -1700	-1699 - -1600	-1599 - -1500
	-1499 - -1400	-1399 - -1300	-1299 - -1200	-1199 - -1100	-1099 - -1000
	-0999 - -0900	-0899 - -0800	-0799 - -0700	-0699 - -0600	-0599 - -0500
	-0499 - -0400	-0399 - -0300	-0299 - -0200	-0199 - -0100	-0099 - 0000

Acknowledgement

All calculations presented here are by Fred Espenak, and he assumes full responsibility for their accuracy. The computer software for predicting the phases of the Moon and eclipses is written in THINK Pascal and run on a PowerMac G4. It is based on procedures described in [Astronomical Algorithms](#) by *Jean Meeus* (Willmann-Bell, Inc., Richmond, 1998).

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Various phases of the Moon during the synodic month.

Additional Links About the Moon

Links to tables of dates for lunar perigees, apogees, super moons, lunar nodes and standstills, and length of the synodic month throughout the 21st Century.

- [Perigee and Apogee: 2001 to 2100](#)
- [Full Moon at Perigee \(Super Moon\): 2001 to 2100](#)
- [Ascending and Descending Node: 2001 to 2100](#)
- [Monthly Lunar Standstills: 2001 to 2100](#)
- [Greatest Annual Lunar Standstills: 2001 to 2100](#)
- [Length of Synodic Month: 2001 to 2100](#)

- [Moon in 2015](#)

The following links offer several galleries of Moon photographs.

- [Moon Photo Gallery](#)
- [Moon Phases Photo Gallery](#)
- [Moon Phases Mosaics](#)

Return to: [Planetary Ephemeris Data](#)