As seen from the [Earth](http://en.wikipedia.org/wiki/Earth), a **Solar eclipse** occurs when the [Moon](http://en.wikipedia.org/wiki/Moon) passes between the [Sun](http://en.wikipedia.org/wiki/Sun%22%20%5Co%20%22Sun)and the Earth, and the Moon fully or partially blocks the Sun. This can happen only during a[new moon](http://en.wikipedia.org/wiki/New_moon), when the Sun and the Moon are in [conjunction](http://en.wikipedia.org/wiki/Conjunction_%28astronomy_and_astrology%29) as seen from Earth. In a total[eclipse](http://en.wikipedia.org/wiki/Eclipse), the disk of the Sun is fully obscured by the Moon. In [partial and annular eclipses](http://en.wikipedia.org/wiki/Solar_eclipse#Types)only part of the Sun is obscured.

If the Moon were in a circular orbit close enough to the Earth and in the same [orbital plane](http://en.wikipedia.org/wiki/Ecliptic), there would be total solar eclipses every single month. However, the Moon's orbit is angled at more than 5 degrees to the earth's orbit around the sun (*see*[*ecliptic*](http://en.wikipedia.org/wiki/Ecliptic)) so its shadow at new moon often misses the Earth. The Earth's orbit is called the ecliptic plane as the Moon's orbit must cross this plane in order for an eclipse (both solar as well as [lunar](http://en.wikipedia.org/wiki/Lunar_eclipse)) to occur. In addition, the Moon's actual orbit is elliptical, often taking it far enough away from the Earth so that its [apparent size](http://en.wikipedia.org/wiki/Apparent_size) is not large enough to block the Sun totally. The orbital planes cross each year at a [line of nodes](http://en.wikipedia.org/wiki/Line_of_nodes) resulting in at least two, and up to five, solar eclipses occurring each year; no more than two of which can be total eclipses.[[1]](http://en.wikipedia.org/wiki/Solar_eclipse#cite_note-totality-0)[[2]](http://en.wikipedia.org/wiki/Solar_eclipse#cite_note-1) Total solar eclipses are nevertheless rare at any particular location because totality exists only along a narrow path on the Earth's surface traced by the Moon's shadow or [umbra](http://en.wikipedia.org/wiki/Umbra).

An eclipse is a [natural phenomenon](http://en.wikipedia.org/wiki/Natural_phenomenon). Nevertheless, in some ancient and modern cultures, solar eclipses have been attributed to[supernatural](http://en.wikipedia.org/wiki/Supernatural) causes or regarded as bad [omens](http://en.wikipedia.org/wiki/Omen). A total solar eclipse can be frightening to people who are unaware of their [astronomical](http://en.wikipedia.org/wiki/Astronomy%22%20%5Co%20%22Astronomy)explanation, as the Sun seems to disappear during the day and the sky darkens in a matter of minutes.

As it is dangerous to look directly at the Sun, observers should use special eye protection or indirect viewing techniques. People referred to as *eclipse chasers* or *umbraphiles* will travel to remote locations to observe or witness predicted central solar eclipses.[[3]](http://en.wikipedia.org/wiki/Solar_eclipse#cite_note-2)[[4]](http://en.wikipedia.org/wiki/Solar_eclipse#cite_note-3)