

# Eclipses of the sun and the moon

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Eclipses have always been seen as fascinating occurrences for people on Earth.

Human beings have also elicited a lot of superstitions tied to these phenomena for many years. The position of the Earth and the Moon, in respect to the Sun, is the main reason for people to experience the occurrence of these eclipses. Eclipse of the Sun, also known as the solar eclipse occurs at the moment when the Moon moves between the Sun and the Earth. At this time, the Moon, either fully or partially, is seen to block the Sun. This can only happen during the new moon.

There are various types of solar eclipses. A total solar eclipse is experienced when the Moon's dark silhouette totally obscures the light of the Sun. An annular solar eclipse takes place when the Moon's size is visually smaller than the Sun's. It happens because of the apparent positioning of the Sun and Moon in one line (Mobberley, 2007). Eclipse of the Moon occurs when the Moon is deemed to pass directly behind planet Earth into its own umbra. This can only take place when the Sun, the Moon, and the Earth are in total alignment, and their middle component is the Earth.

Hence, Eclipse of the Moon can only arise during a night with the full moon (Mobberley, 2007). There are several types of the lunar eclipse. The penumbral eclipse is known to occur when the Moon passes through penumbra of the Earth. A partial eclipse of the Moon occurs when only a given portion of the Moon enters its umbra. When the Moon totally travels into the Earth's umbra, there is a total lunar eclipse. There are many differences between solar and lunar eclipses.

Eclipse of the moon occurs when the Earth moves directly between the Sun and the Moon. On the one hand, it blocks the Sun's rays totally from reaching the Moon. Solar eclipse, on the other hand, occurs when the Sun completely disappears from people's view due to the passing of the Moon between the Earth and the Sun. Lunar eclipse occurs when there is the full moon. During such night, the Moon is always on the other side of the Earth, at a long distance from the Sun. Solar eclipse only occurs when there is the new moon.

This means at this moment that the Moon seems almost between the Sun and the Earth (Harrington, 1997). Observing the solar eclipse by looking directly at the Sun is dangerous. This can lead to permanent retina damage. It is always recommended that one uses a certified solar filter to shield the eyes from damage. Special glasses can be helpful.

In contrast to it, the lunar eclipse is safe to observe. There is no limitation on the amount of time one can take observing the lunar eclipse. It is entirely safe (Steel, 1999). The eclipse of the Sun is also only visible in few parts of the Earth. The enormous size of the Moon is the main cause of this. This means that the solar eclipse may not be visible in some regions of the Earth.

However, the lunar eclipse is always virtually visible to everyone on the Earth's nightside. This means if a person stays on the nightside of the Earth for a long time, he or she can observe the eclipse of the Moon (Harrington, 1997). Total time of the solar eclipse can only last for less than seven minutes. It is always short-lived. On the other hand, the totality of the lunar eclipse may last for more than an hour.

This allows people to study it for a long period. The next total solar eclipse will occur on the third of November, 2013 (Clarke, 2010).