Solar Eclipse

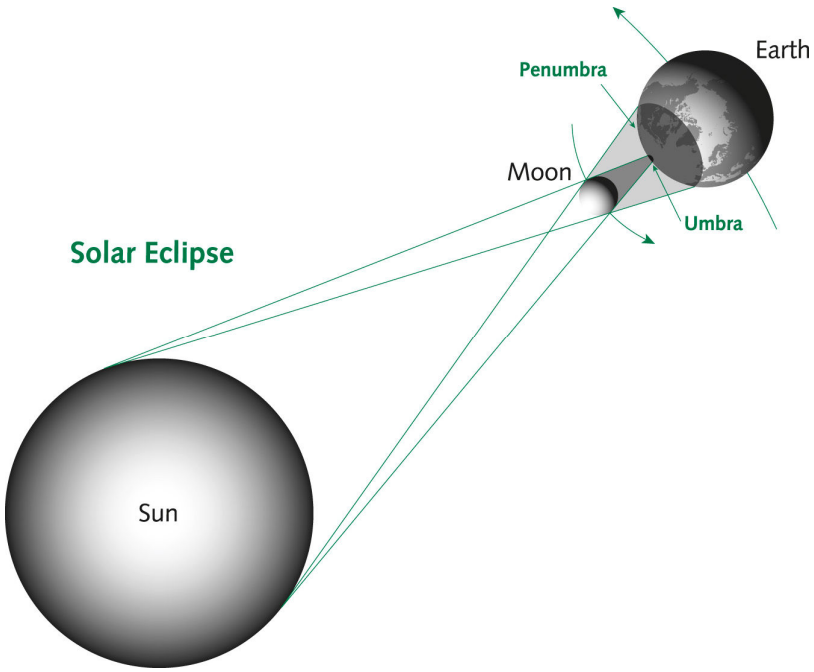
By Sokol Sota

Have you ever been walking along in the middle of the day when all of a sudden a black shadow rushes across the sky and the Sun disappears? And the next thing you know is that in a matter of seconds the day has turned into night. At that moment you might have thought you were dreaming or that aliens were invading Earth. Actually, that would have been a **solar eclipse**.

In order for a solar eclipse to occur, the Sun, moon and Earth have to be lined up with the moon in the middle. Solar Eclipses can occur two to five times a year, although they do not last for more than a couple of minutes. Some eclipses pass through in just seconds while the longest eclipse might only stay for about seven and a half minutes.

During an eclipse of the Sun, the moon gets in the way of the Sun, as seen from Earth. Because the moon and the Sun appear to be the same size in our sky, the moon can actually cover the Sun, blocking its light from our view.

When the moon is between the Sun and the Earth, it casts two kinds of shadows on the Earth. One shadow is called a **penumbra,** which means that the sunlight is partially blocked from Earth's view. The other shadow is called an **umbra,** which is where the sunlight is completely blocked from Earth's view. During a solar eclipse, these shadows fall upon a specific region of Earth, not the entire planet. A solar eclipse is visible only in the region where the shadows fall, and that region will always be on the daytime side of the planet.



A **total eclipse** is a type of eclipse where the umbra covers a certain region of a planet. If you were in that region you would only see darkness (like dusk) when you looked up – no sunlight. In contrast, an **annular eclipse** is an eclipse with a penumbra shadow that is not long enough to hit the planet. This happens because the moon and the Earth are sometimes closer to the Sun. When we're closer to the Sun, the Sun appears larger in the sky than the moon, meaning the moon cannot completely cover it. So in an annular eclipse, when you look to the sky you see a bright yellow ring around the moon.