

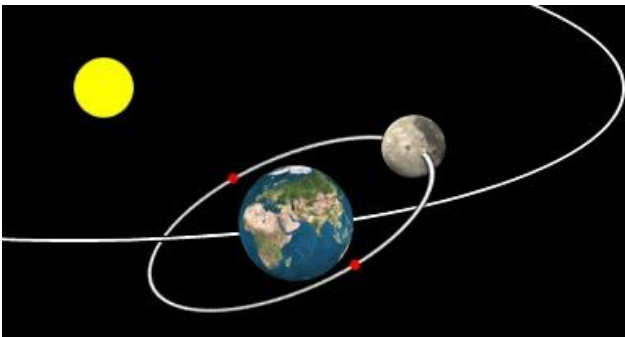
# Earth, Sun, and Moon System

## What Do You Think?

### Eclipses

How do you think the Earth, Sun, and Moon system can explain *eclipses* of the Sun and the Moon? An eclipse occurs when one celestial object passes through the shadow of another celestial object.

- A *solar eclipse* is when the Moon blocks the Sun and the Moon's shadow falls along a small path on Earth.
- A *lunar eclipse* is when the Moon moves into Earth's shadow.



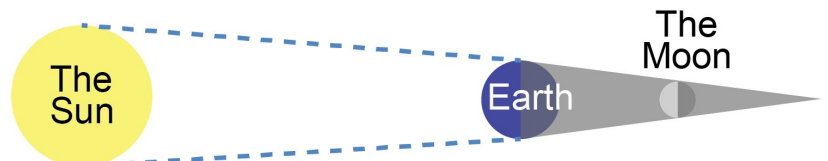
We do not see solar and lunar eclipses every month, because the Moon's orbital path around Earth is tilted with respect to the plane of the Earth's orbit. Eclipses only occur when all three celestial bodies line up in the same plane. The points in the Moon's orbit where this occurs are called *nodes* (shown on the left as red dots). Eclipses only occur at these nodes.

During a solar eclipse, sunlight is prevented from reaching only a very narrow path on Earth because the Moon casts a very small shadow.

During a lunar eclipse, Earth's shadow covers the entire Moon because Earth's shadow is much larger than the Moon.

Often, the Moon will appear a copper-red color during a lunar eclipse because light is refracted or bent through Earth's atmosphere and appears red. This is called a *blood moon*.

### Lunar Eclipse



### Solar Eclipse

