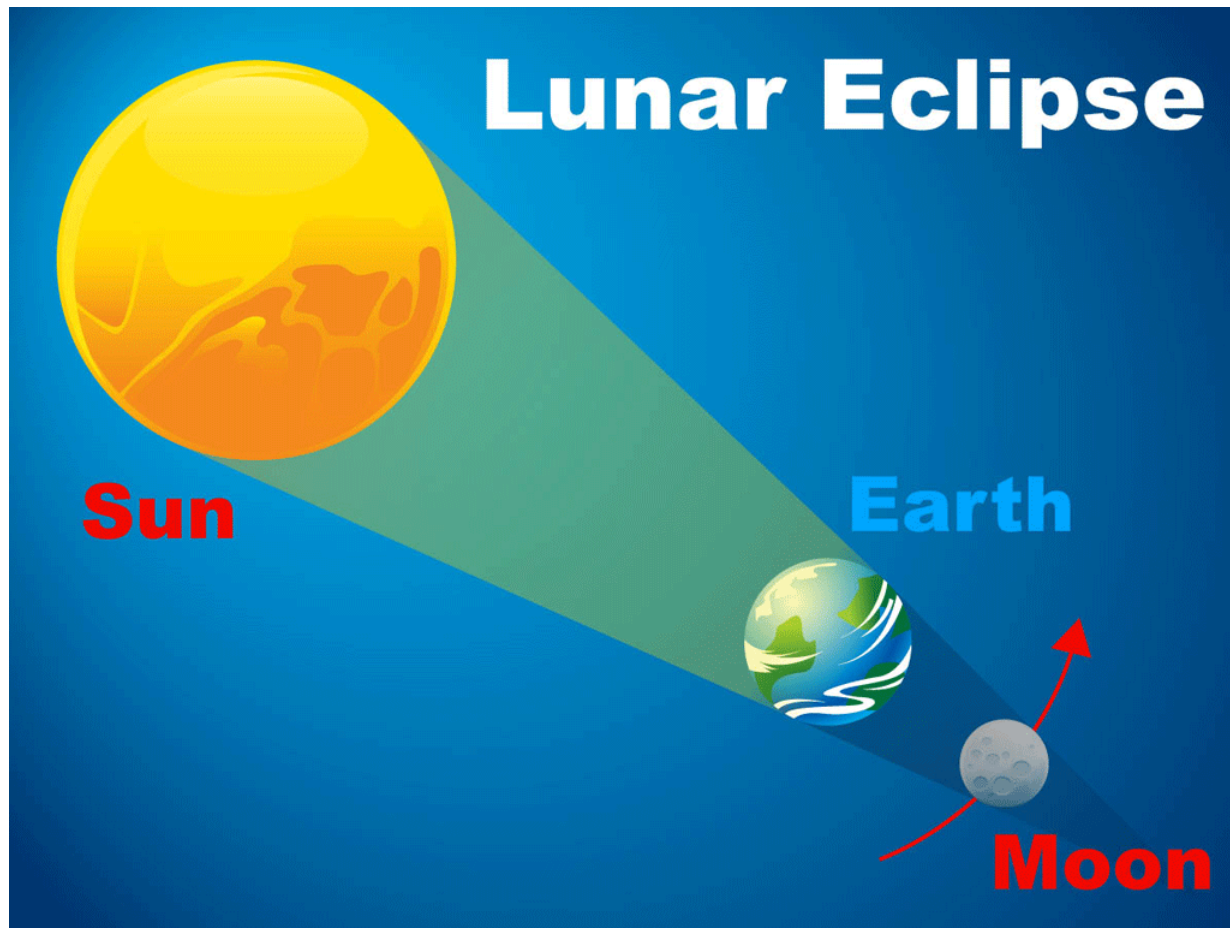


## 5.5: Earth and Moon

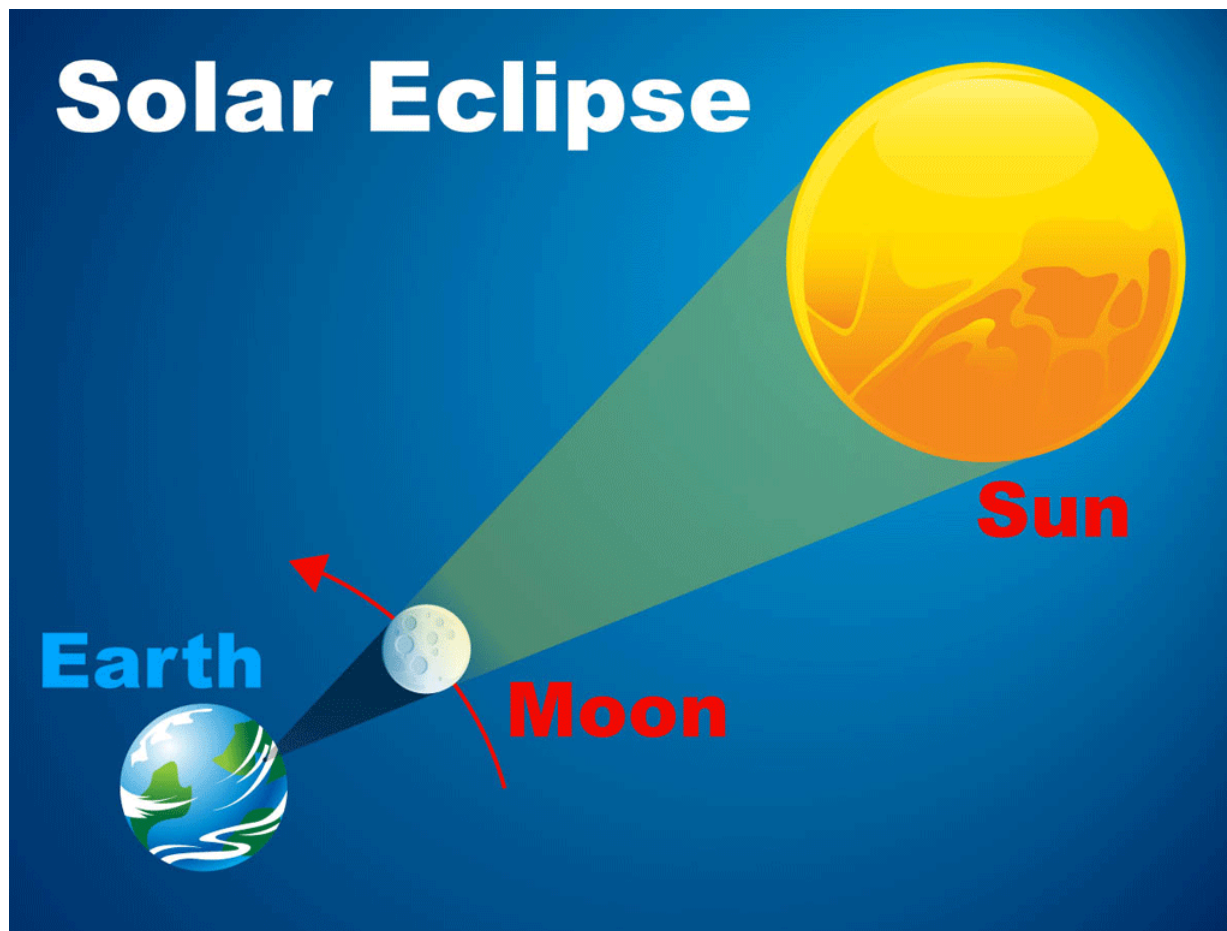
### Earth and Moon

Studying the Earth-Moon relationship gives you one of the best ways to understand distances as well as that special Earth-Moon relationship. For example, many Americans saw the solar eclipse in August 2017; millions traveled to the path of totality. Why do we see solar eclipses? And, how are solar eclipses different than lunar eclipses? Both solar and lunar eclipses depend on the revolution of the Moon around Earth, and that alignment between Sun-Earth-Moon.

A lunar eclipse can only happen at Full Moon, when Earth is directly between the Sun and Moon. The Earth's shadow falls on the Moon, thus eclipsing part or all of the Moon. And, a solar eclipse can only happen at New Moon, when the Moon is directly between the Sun and Earth. In this case the Moon blocks off part or all of the Sun from view on Earth.

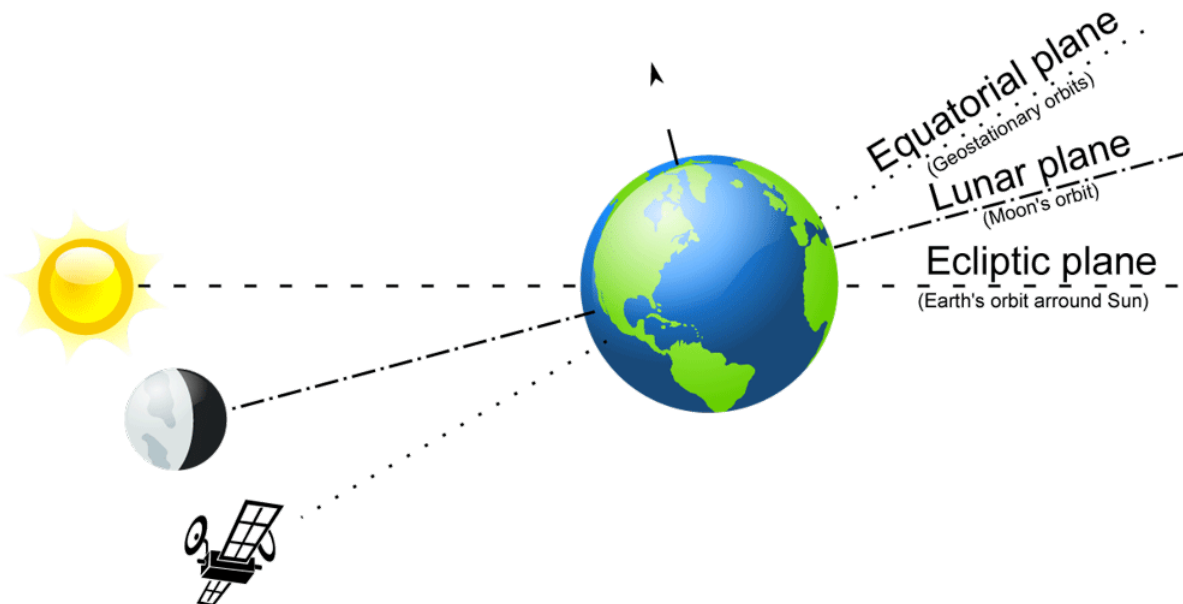


Lunar Eclipse by NASA is in the [Public Domain](#)



Solar Eclipse by NASA is in the [Public Domain](#)

Why don't we see an eclipse of the Moon and an eclipse of the Sun once a month? Because, the orbit of the Earth-Moon is slightly tilted to the orbit of the Sun-Earth. Most of the time, Earth's shadow just passes above or below the Moon, missing a lunar eclipse. Thus, the Moon passes just above or below the Sun, thus no solar eclipse. <sup>(1)</sup>



The reason we do not see both a lunar and a solar eclipse each month is because the Earth-Moon orbital plane is tilted about 5 degrees compared to the Earth-Sun orbital plane. [Orbital Planes](#) by T3rminatr is in the [Public Domain](#)  
CC licensed content, Original

- **Authored by:** Florida State College at Jacksonville. **License:** [CC BY: Attribution](#)

---

This page titled [5.5: Earth and Moon](#) is shared under a [CC BY 4.0](#) license and was authored, remixed, and/or curated by [Lumen Learning](#).