

Chapter 22.2: Earth-Moon-Sun System

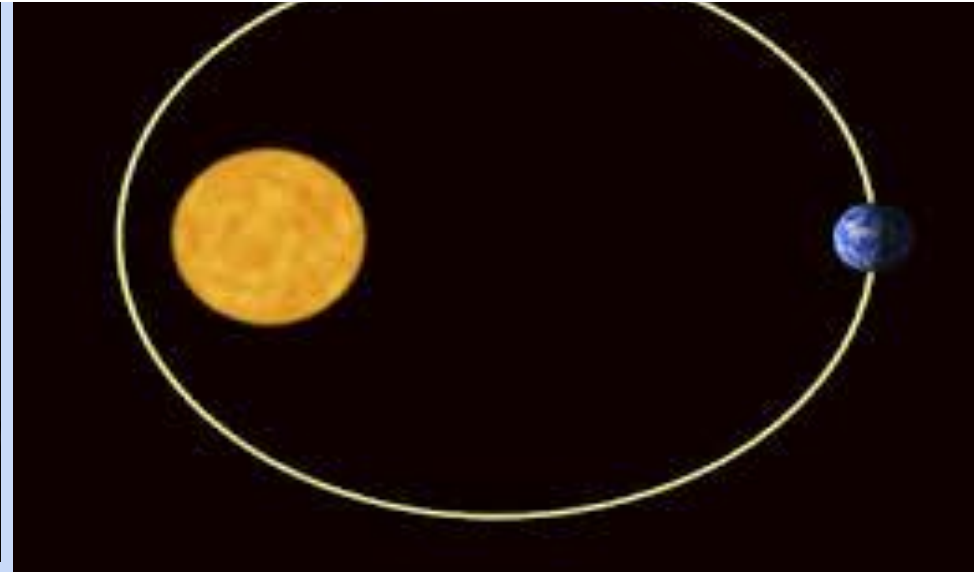


The two main motions of Earth are **rotation** and **revolution**.

Rotation: the Earth rotates on its axis



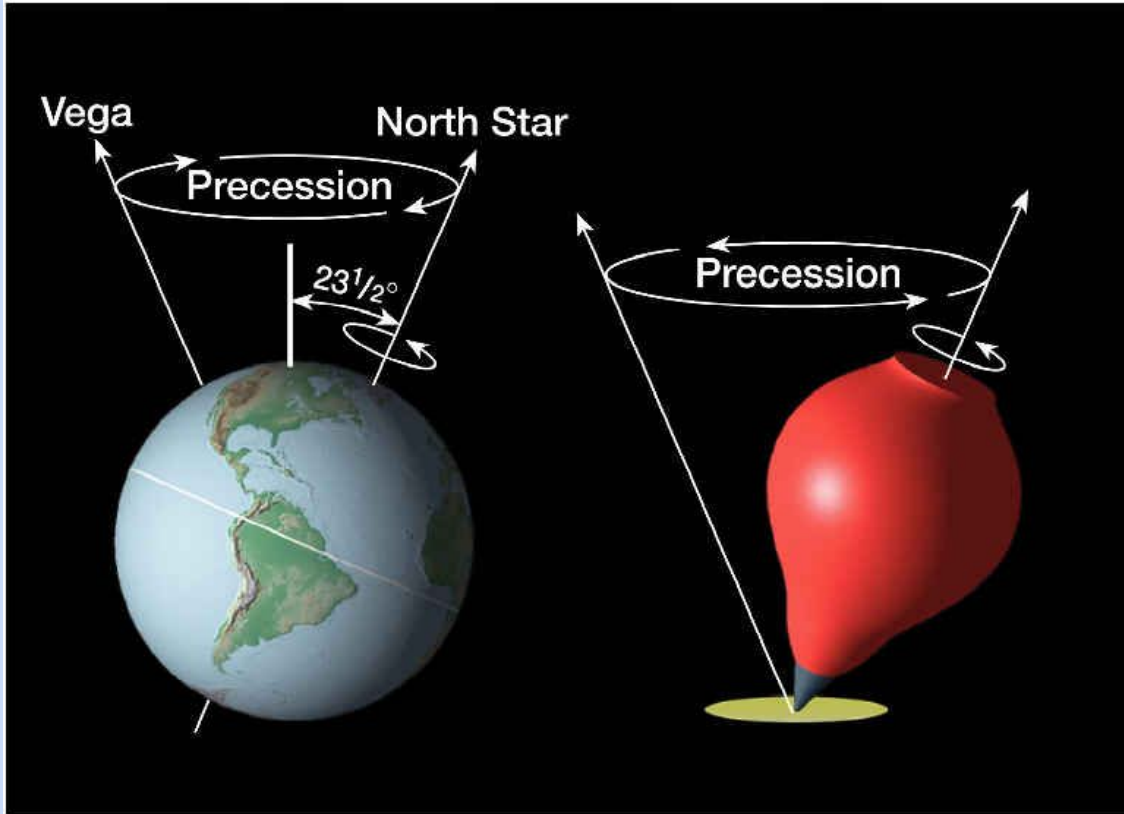
Revolution: the Earth revolves around the sun

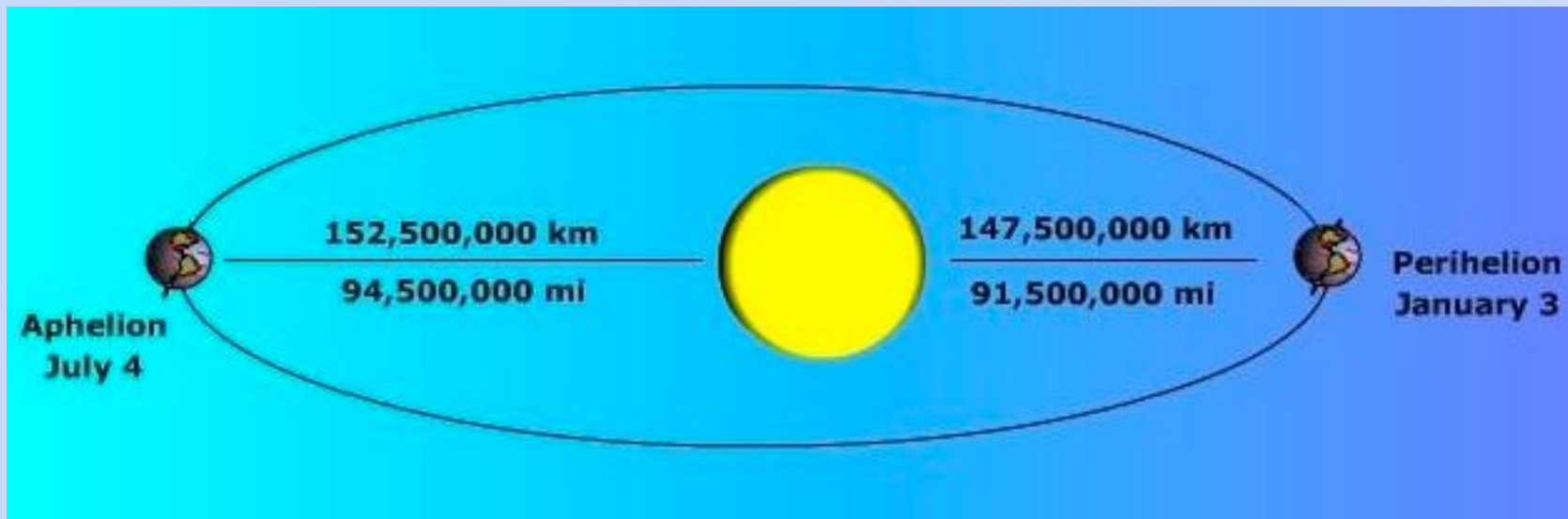


Precession: slow movement of the axis of a spinning object

Axis point of Earth's tilt continually changes.

Currently pointing towards the star Polaris.





The **Ecliptic** is the plane of which the Earth orbits the sun.

Aphelion: the point on the ellipse when Earth is farthest from the sun

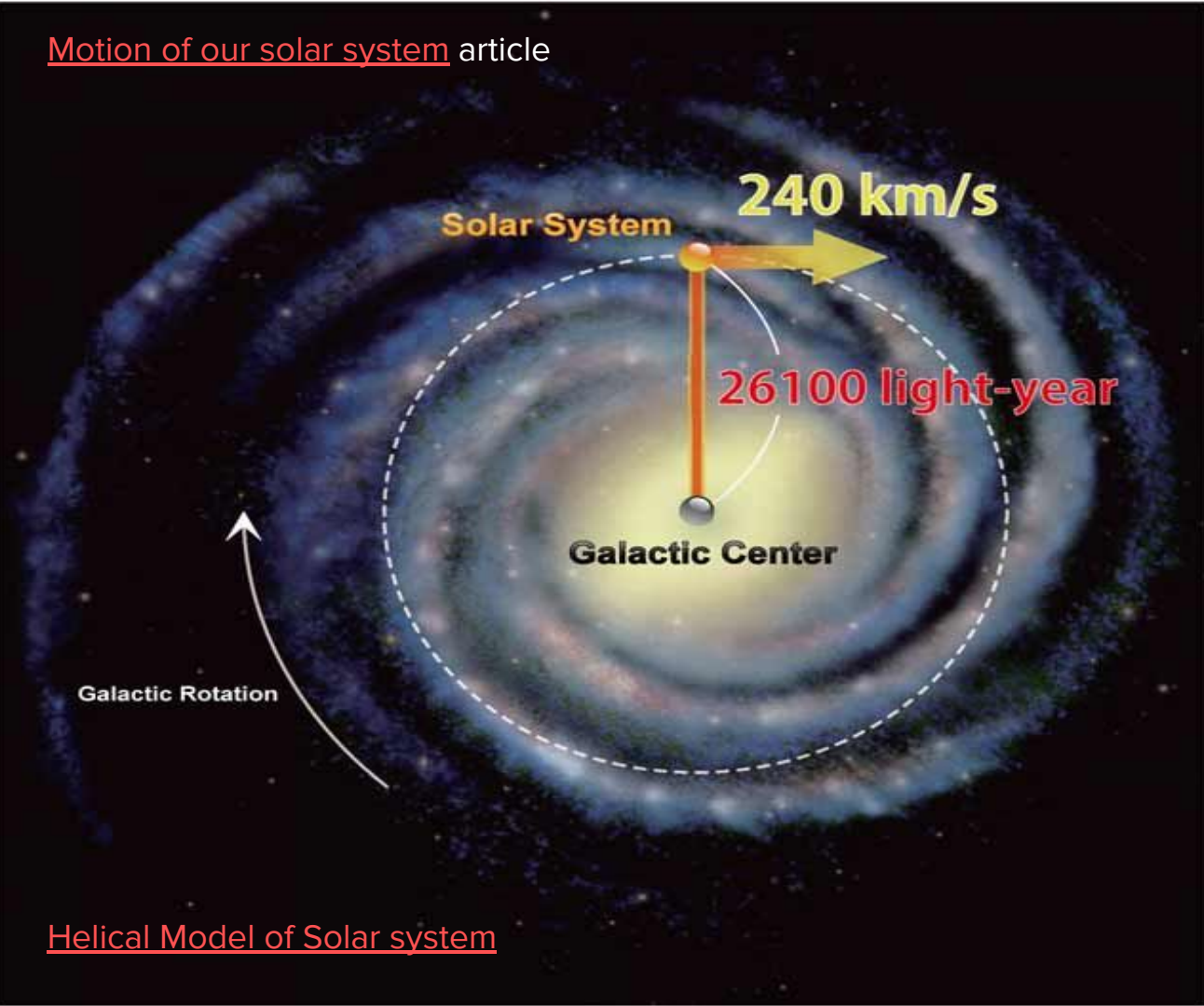
Perihelion: the point on the ellipse when Earth is closest to the sun

The entire solar system is spinning towards the bright star Vega at 240 km/sec!

All the stars are revolving around the galactic center.

A full revolution takes approximately **230 million years!**

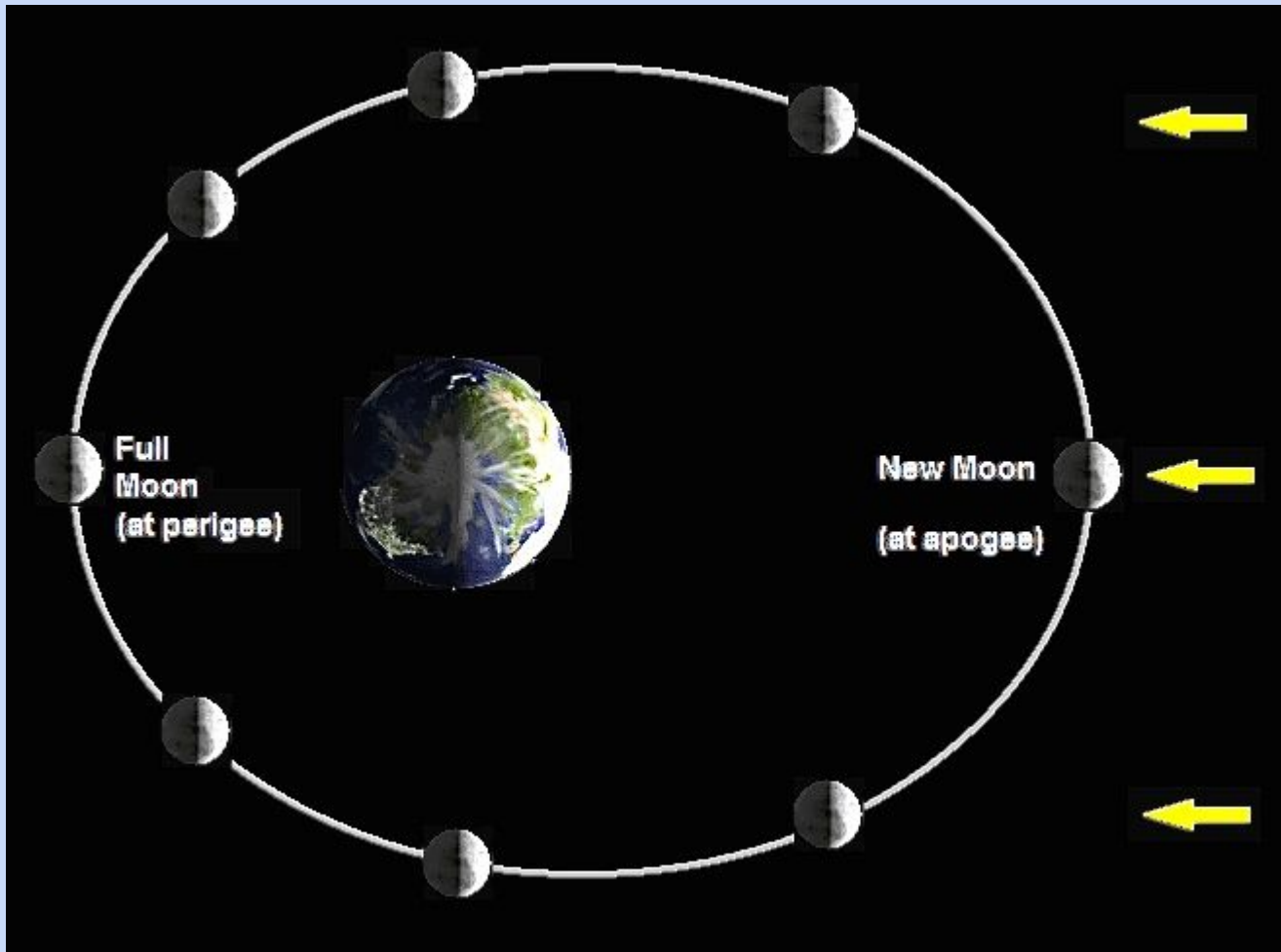
[Motion of our solar system](#) article



[Helical Model of Solar system](#)

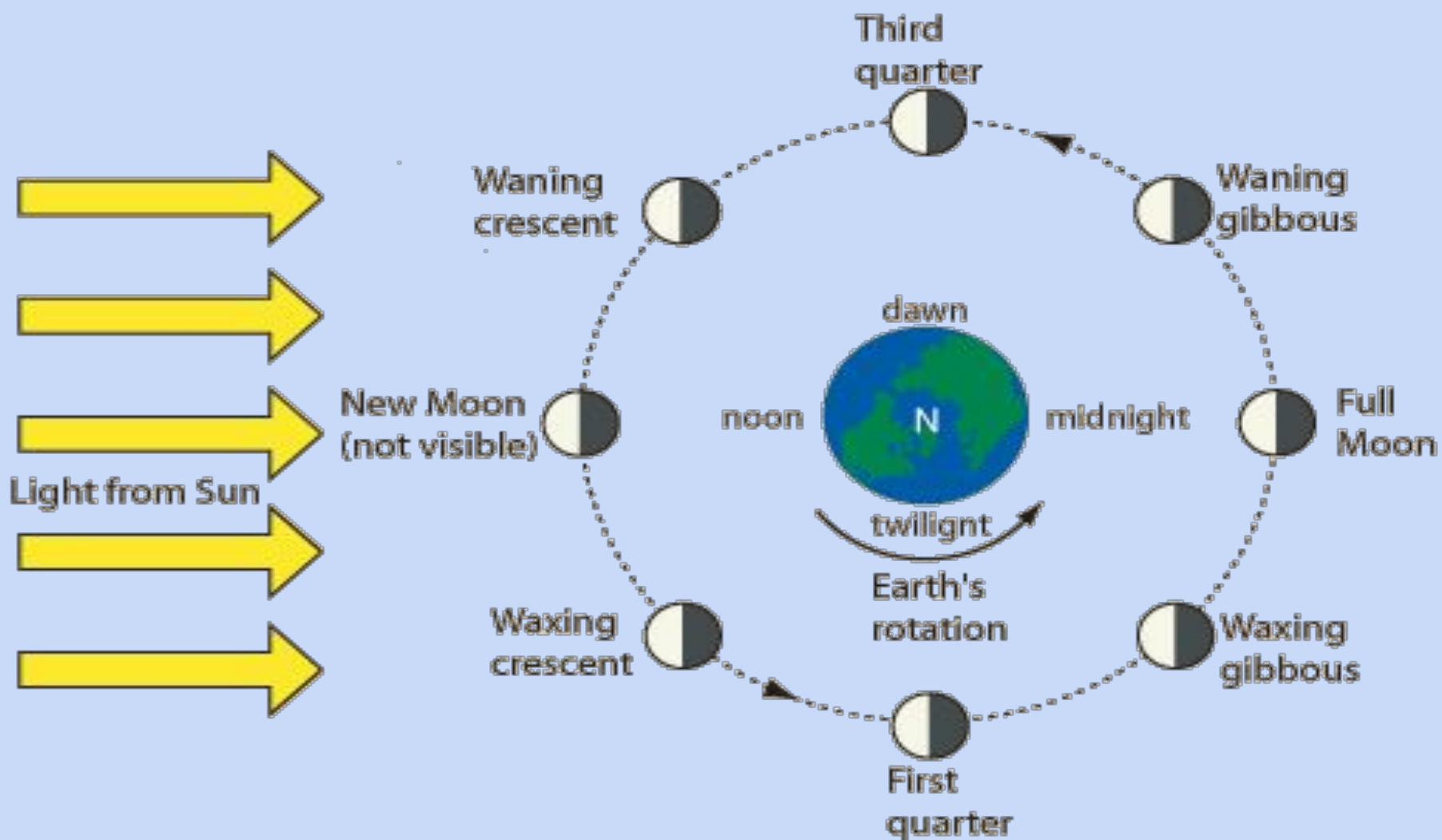
Let's look at our moon





Perigee: point on the ellipse when the moon is closest to Earth

Apogee: point on the ellipse when the moon is farthest from Earth



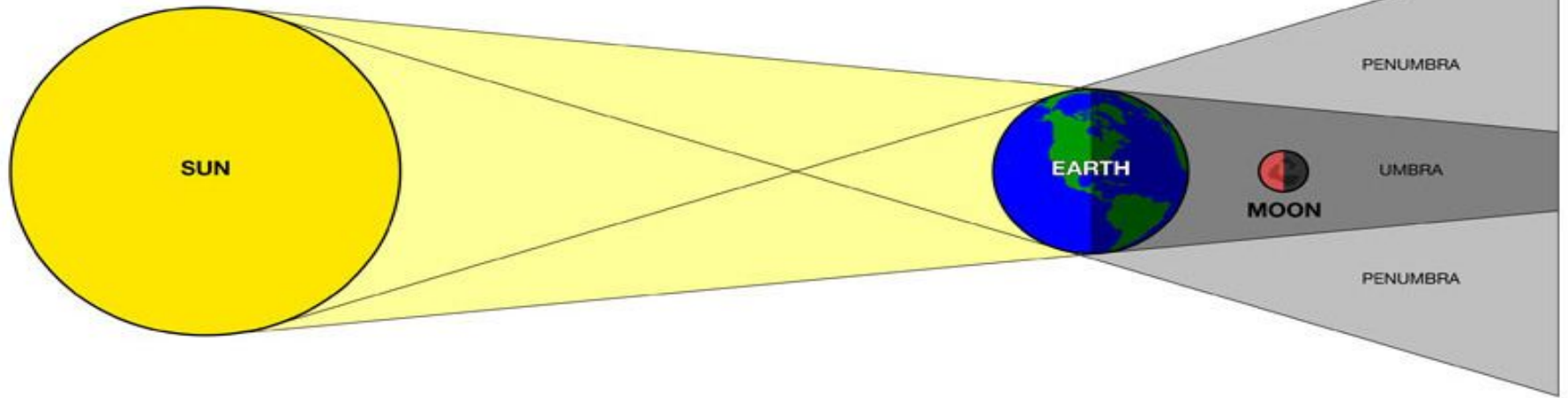


A **Solar eclipse** is when the moon is directly aligned between the Earth and the sun

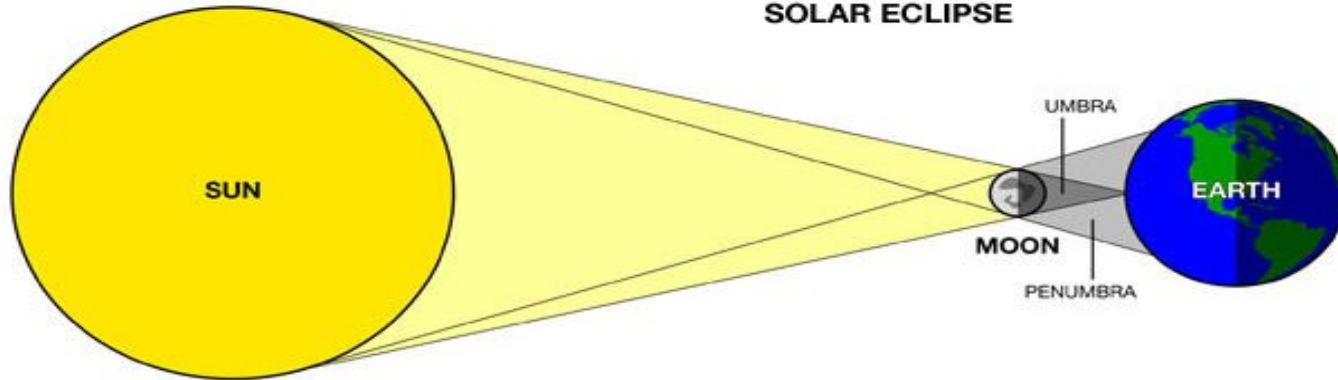


A **lunar eclipse** is when the moon moves into the Earth's shadow and turns a reddish orange color

LUNAR ECLIPSE



SOLAR ECLIPSE



Why doesn't an eclipse occur every month?

The moon is inclined about 5 degrees above the *plane of the ecliptic*.

[Next total
Solar eclipse](#)