Measuring Distances in Space

Astronomical Unit (AU)

* Measuring distances in KM in space is not practical, so the astronomical unit(AU) was created.

* 1 AU = the average distance between the Sun and the Earth, approximately 150 million km.

* For example mercury is 0.39 AU from the Sun while Mars is 1.52 AU from the Sun

Light Years

* Outside of our solar system, AUs become impractical to use so the Light Year (ly) was developed.

* 1 ly = the distance a beam of light can travel in one year. It is the equivalent of 63 000 AU or 9000 billion KM.
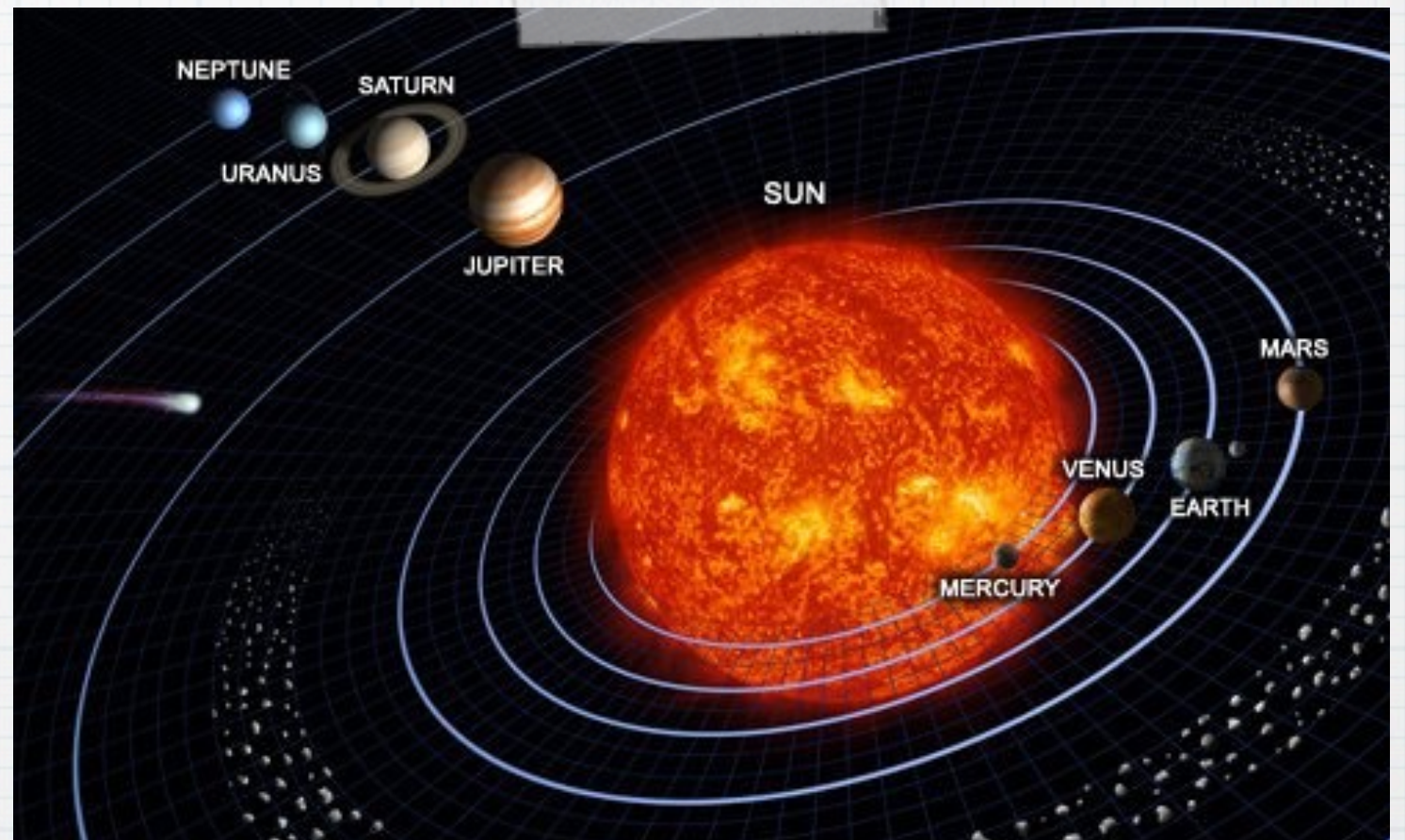
Models of Planetary Motion

Geocentric Model

* More than 2000 years ago thought that the Earth was the centre of the universe.
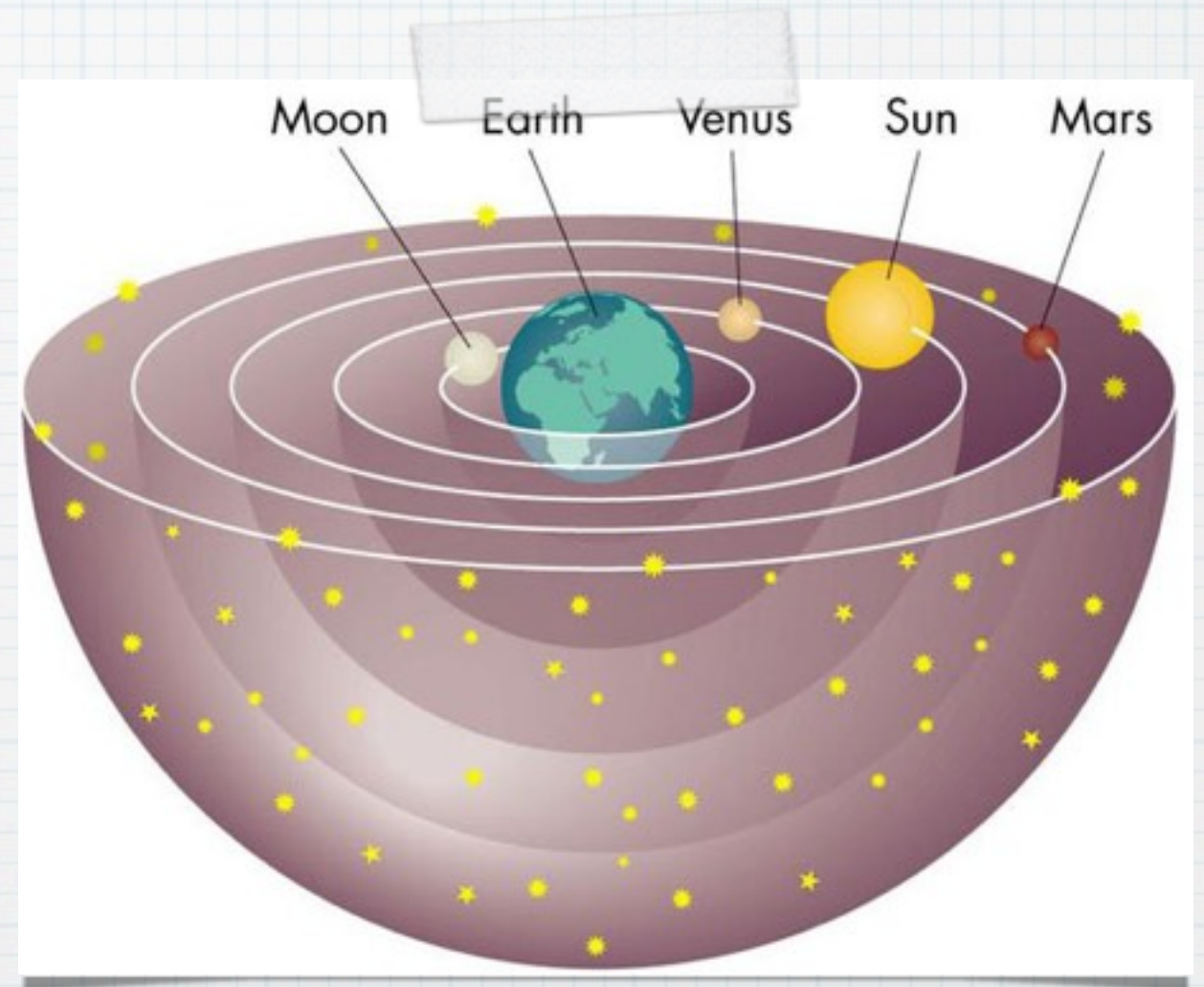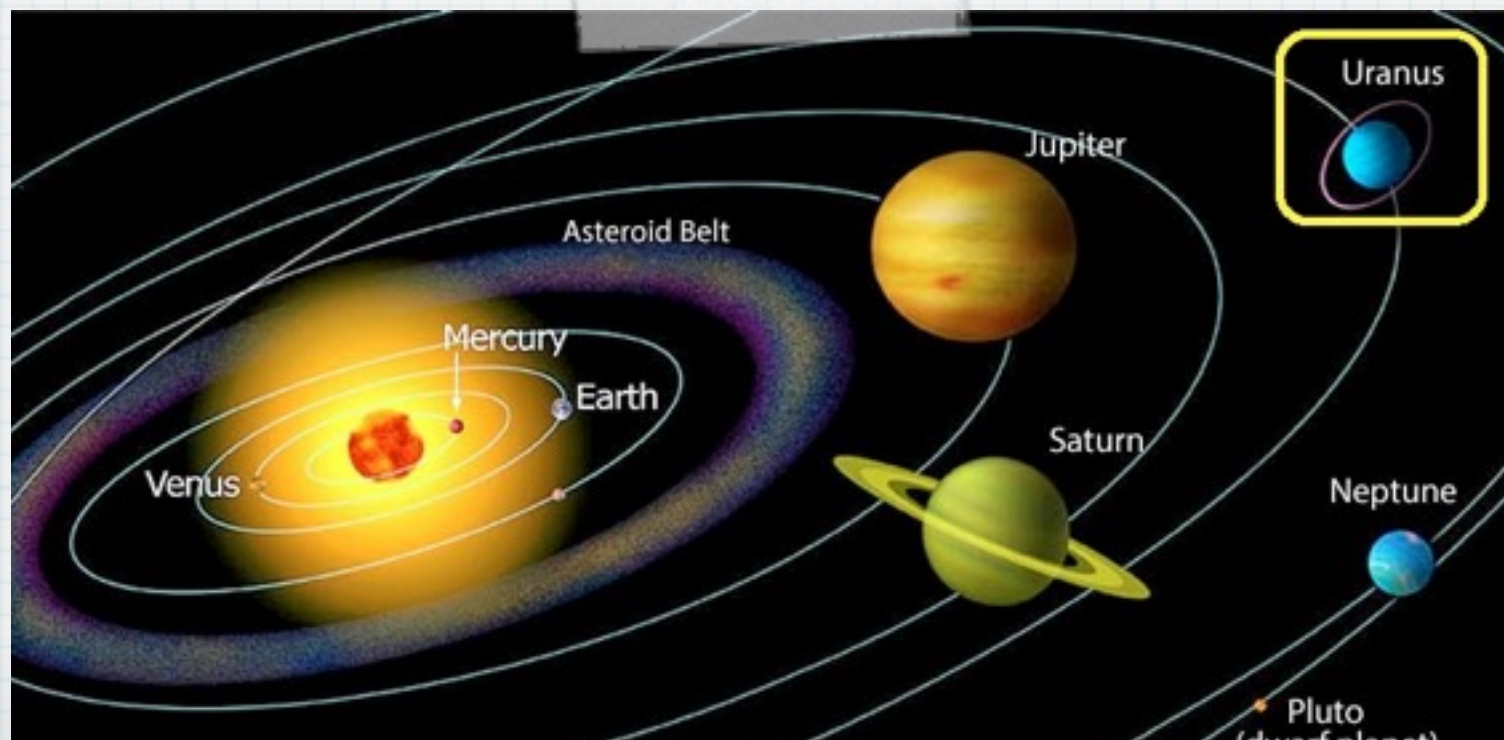
Heliocentric Model

* Heliocentric model is a Sun-centered model that was revived by Copernicus.

Heliocentric Model

* Two key pieces of support

    * i) Orbital Radius: each planet orbits the sun at a different <u>orbital radius</u>.

    * The shorter the orbital radius, the faster a planet moves in its orbit.

Heliocentric Model

* Two key pieces of support

  * i) Elliptical Orbits

    * Kepler noted that orbits are ellipses not circles. This observation made it easier to predict planetary motions.

* **Complete page 350 # 1-6**