

Name _____

HR _____

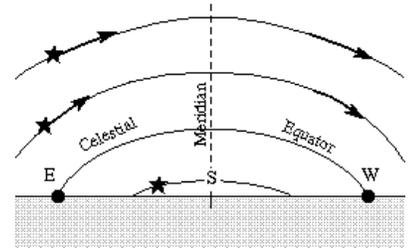
Space, Earth and Celestial Objects Outline

Celestial Objects

●The _____, _____, _____, _____ or any distant object visible in the _____, generally appear to rise in the _____ and set in the _____

●Most appear to move along _____ or _____ paths

●The motion occurs at an angular rate of _____° per _____ (_____° in _____ hours)



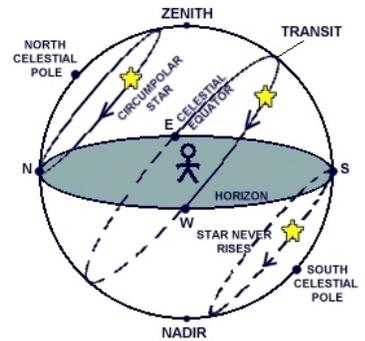
Motion of Stars and Planets

●_____ located over Earth's _____ follow nearly the same _____ as the _____

●Stars in the _____ portion of the _____ briefly arc across or appear over the _____

●Stars over the _____ Pole move in circles around _____

●In addition to their _____ motion, _____ change their _____ from night to night



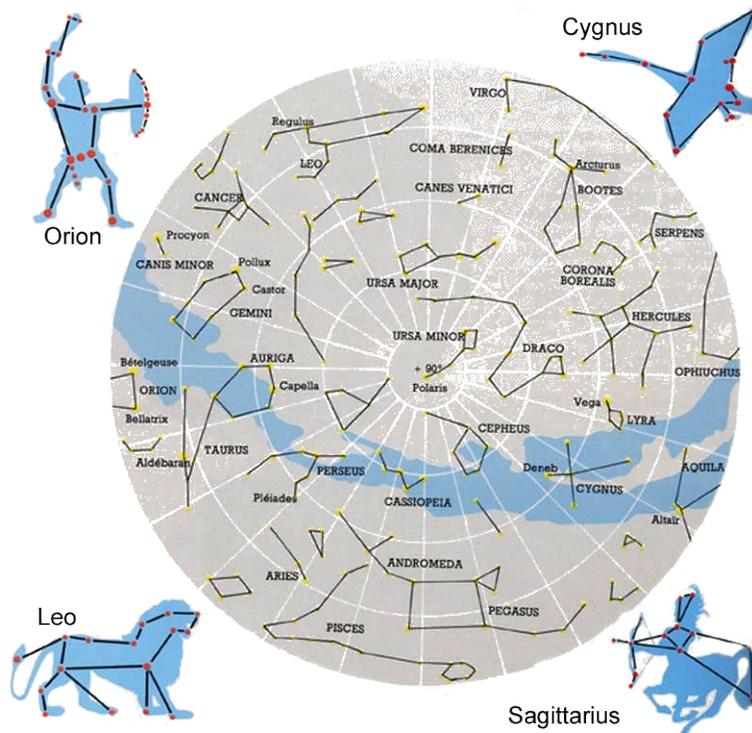
Constellations

●Although the _____ are randomly distributed throughout the _____, ancient people _____ they saw _____ among them

●These _____ were often associated with traditions and _____ that were part of the _____ of early civilizations

●Some were said to resemble _____, _____, or _____

Constellations

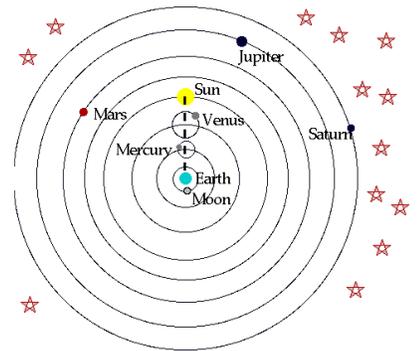


Regions in the Night Sky

- _____ have _____ the night sky into _____ regions
- Each _____ is associated with a _____

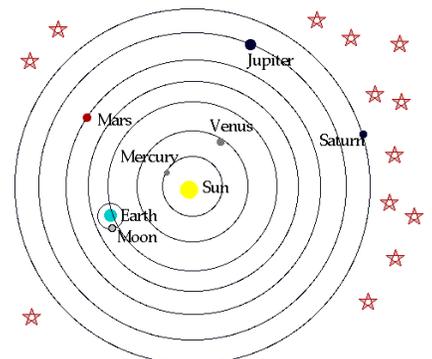
Night Sky Models

- Early civilizations considered _____ to be a _____ object located at the _____ of the universe
- This was because they could not _____ the Earth _____
- This early _____ of the universe was _____, or Earth-centered



Heliocentric Model

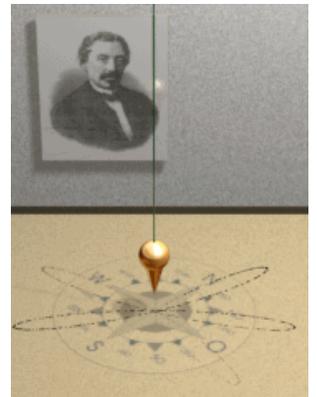
- When the _____ of the _____ were carefully measured by _____, some of the _____ motions were too _____ and hard to explain
- Therefore _____ support this more simple model



- This model includes all known _____ revolving around the _____
- Includes _____ motions of planet _____
- Each day _____ spins on its _____ is known as _____
 - From west to east at the rate of _____° per _____ (_____° in _____ hours)
- Earth also orbits the _____ once per _____ known as _____
 - The earth takes _____ days to revolve around the _____
 - About _____° per _____

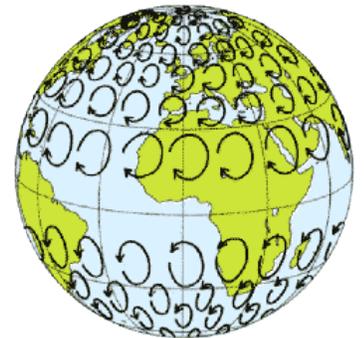
Foucault Pendulum

- In 1851 the French scientist Jean _____ suspended a long _____ and set it _____ along a north-south line
- The Foucault _____, mounted on a high support, is able to move in any _____
- _____ observed how the _____ appeared to change _____ as it swung freely in a clockwise direction
- He interpreted this motion as the _____ of _____ under the _____



Coriolis Effect

- _____ blowing out of a _____-pressure system always curve to the _____ in the _____ Hemisphere
- The system of prevailing _____ of Earth forms a series of symmetrical _____ located north and south of the _____
- The _____ effect is the result of _____ acting on a _____ planet



Motions of the Sun

- Before there were mechanical _____, the _____ of the _____ through the _____ was used to track the passage of _____
- _____ were among the first _____ devices used by humans
- A _____ reveals the passage of the _____ hours as the _____ of a stick (gnomon) shifts _____ a marked dial or _____

Motions of the Sun

- Our system of time is based upon the _____ of the _____
 - The motions of _____ objects through the _____ is called _____ because the object is not really _____ as it appears to be
- The apparent _____ and _____ of the _____ is actually caused by Earth's _____
- The **apparent day** is the interval of _____ during which the _____ passes from its _____ point on one day to its _____ point on the next

Seasons

- Because _____ moves in its _____, the sun's pathway from _____ to _____ in the sky also changes on a _____ cycle
- At the _____ *equinox* (about Sept 23), the _____ rises due east and sets due west
 - _____ lasts for _____ hours, and it is the beginning of _____, or autumn, in the _____ Hemisphere
- At the beginning of _____, the _____ *solstice* (about Dec 21), the _____ rises south of due east
 - This is the _____ daylight period of the _____

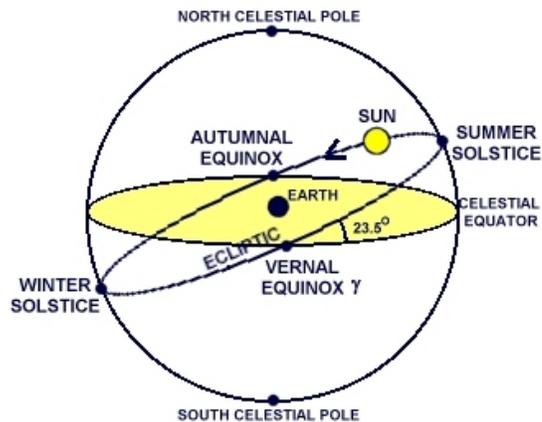
● At the _____ *equinox* (about March 21), the _____ rises exactly in the east and sets due west

● The _____ period is _____ hours long, and it is the beginning of _____ in the _____ Hemisphere

● When the _____ *solstice* (about June 21), arrives the _____ rises north of due east

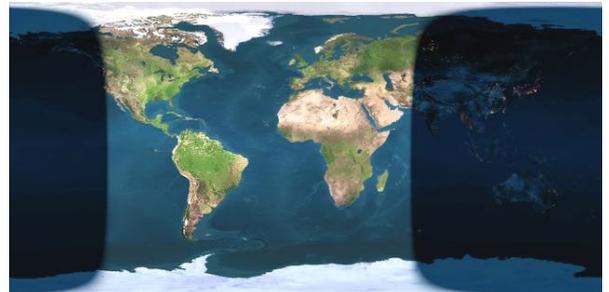
● The _____ solstice is the _____ daylight period of the _____; it is the beginning of _____

Seasons



Autumnal Equinox

- _____ in the Northern hemisphere
- Notice the amount of _____ and _____ are _____ in both hemispheres.



Winter Solstice

- _____ in the Northern hemisphere
- Notice the _____ is getting much _____ daylight
- Above the _____ circle is in 24 hour _____



Vernal Equinox

- _____ in the Northern hemisphere
 - _____ hemispheres are again getting the _____ number of _____ of daylight
- It is _____ to the _____ Equinox



Summer Solstice

- _____ in the Northern hemisphere
 - Notice that the _____ is now getting many hours of _____ and above the Arctic circle is in _____ hour daylight

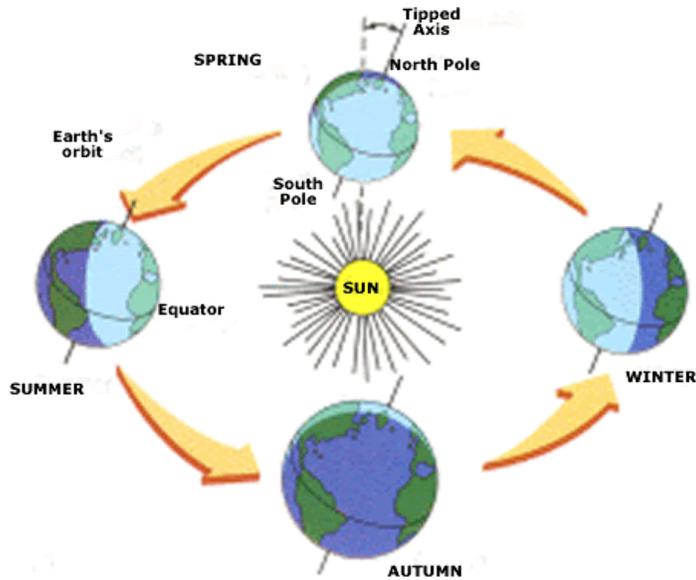


Latitude and the Angle of the Sun

- The _____ of the _____ through the _____ depends upon _____ you are when you _____ it
- As you travel _____ from any mid-latitude _____, the noon _____ will move _____ and _____ in the _____
- Observers at the _____ see _____ months of _____, followed by _____ months of _____ in a _____ cycle

● This is caused by a combination of the _____ ° tilt of Earth's _____ and our _____ around the _____

Earth's Axis



Daylight Hours

- At _____, for all locations (except the _____), _____ lasts _____ hours
- At the _____ throughout the year, there are _____ hours of _____ and _____ hours of _____
- As you approach the _____, the amount of seasonal variation in the length of daylight _____ until a maximum _____ months of _____ and _____ months of _____ is reached at the _____ or _____ Pole

Daylight Hours

