

History of Astronomy

- Erastotenes - first calculation of Earth's circumference
- Copernicus - heliocentric solar system; Earth is a planet around sun, not center of universe
- Kepler - laws of planetary motion
  - orbits of planets are elliptical
  - planets change speed depending on their location relative to the sun
  - time for revolution is proportional to distance from sun
  - Solve a problem involving proportions.
- Galileo - first telescope
- Newton - laws of gravity

Motions of Earth

- Revolution (around the sun) = 365.25 days (~ 1 year)
- Rotation (around its axis) = 24 hours (~ 1 day)
- Precession (wobbling of axis, same angle of tilt) = ~26,000 years

Lunar Eclipse - Earth is directly between sun and moon

Solar Eclipse - moon is directly between Earth and sun

Moon Phases

- what each phase is called, what it looks like, where the moon is located relative to the sun and the Earth

Locations of Earth Around the Sun

- Different seasons (approximate date range, which part of Earth receives most/least direct sunlight, length of day & night)
- Solstices & Equinoxes - when they occur, what happens on those days

Changing Position of Sun in the Sky

- When is the sun directly over the equator? What is the furthest point North or South that can receive sunlight directly overhead? What time of year is the sun moving north or south?

The H-R Diagram

- What does it measure? What are the variables on each axis?
- Where are the hottest stars located? What color are they?
- Where are the coolest stars located? What color are they?
- Absolute vs. Apparent Magnitude

Stellar Evolution

- What happens to a star that is about the size of the sun? What does it eventually become?
- What happens to a star that is larger than the sun? What does this type of star eventually become?

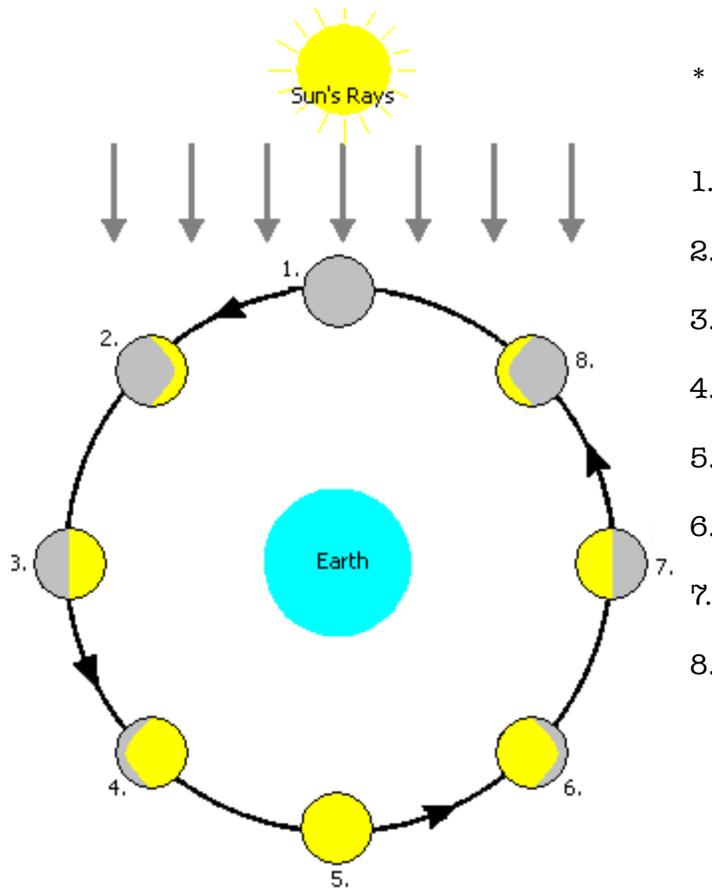
Origins of the Universe

- General progression of universe formation after the Big Bang
- Hubble's Law
- Evidence of Big Bang

Galaxies

- Three types of galaxies
- Specifics of Milky Way galaxy - dimensions, Earth's location in galaxy

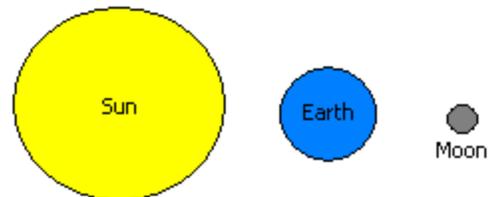
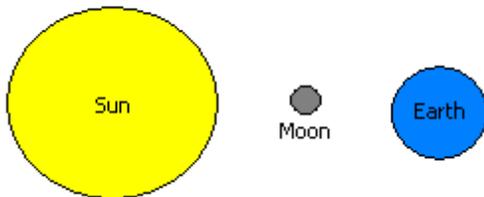
~ Label the phases of the moon from the diagram on the left.



\*\* Light on right - moon grows bright\*\*

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.

~ Which type of eclipse is shown in each diagram below? What moon phase must be present during each type of eclipse? Which type is safe to view with a naked eye? Which type happens more frequently?



~ When is the sun directly over the equator? What is the furthest point North or South that can receive sunlight directly overhead? What time of year is the sun moving north or south?

~ On the Hertzsprung-Russell diagram, where are the hottest stars located? What color are they? Where are the coolest stars located? What color are they?

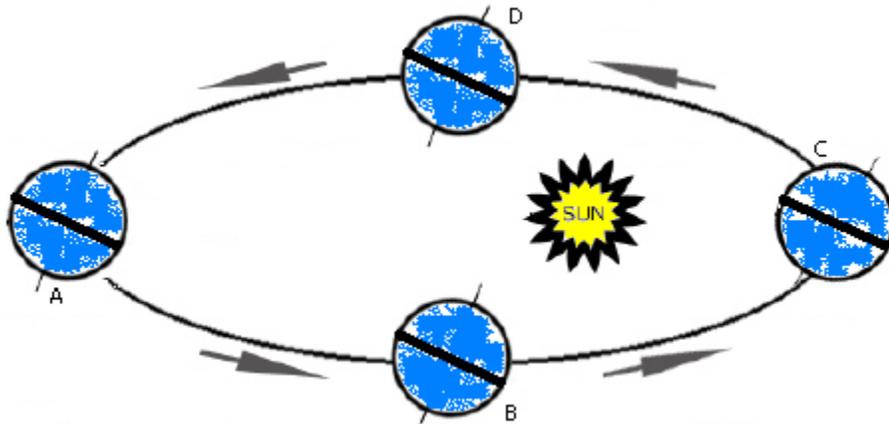
~ On the Hertzsprung-Russell diagram, what variable is plotted on the x-axis? What variable is plotted on the y-axis?

~ What happens to a star that is about the size of the sun? What does it eventually become? What happens to a star that is larger than the sun? What does this type of star eventually become?

**Astronomy Test Review**

**Spring 2014**

~ Fill in the information regarding the Earth's position around the sun using the diagram below.



A	B	C	D
Begins _____	Begins _____	Begins _____	Begins _____
season	season	season	season
Approx. start date = _____	Approx. start date = _____	Approx. start date = _____	Approx. start date = _____
Specific name of date = _____	Specific name of date = _____	Specific name of date = _____	Name of date = _____
Northern Hemisphere receives _____	Northern Hemisphere receives _____	Northern Hemisphere receives _____	North Hemisphere receives _____
hours of daylight than Southern Hemisphere	hours of daylight than Southern Hemisphere	hours of daylight than Southern Hemisphere	hrs of daylight than South Hemisphere

~ During what season does the Northern Hemisphere receive the most direct sunlight?

~ What is another name for absolute magnitude? What is the difference between absolute magnitude and apparent magnitude? What are the three factors that influence apparent magnitude?

~ What does a negative value for absolute magnitude tell you about a star?

~ Earth is 1 astronomical unit (AU) from the sun. 1 AU is equal to 150 million kilometers. If Pluto is 39.48 AU from the sun, how many kilometers is Pluto from the sun?

~ What type of stars (in general) have a high temperature and a low absolute magnitude? What is an example of this type of star?

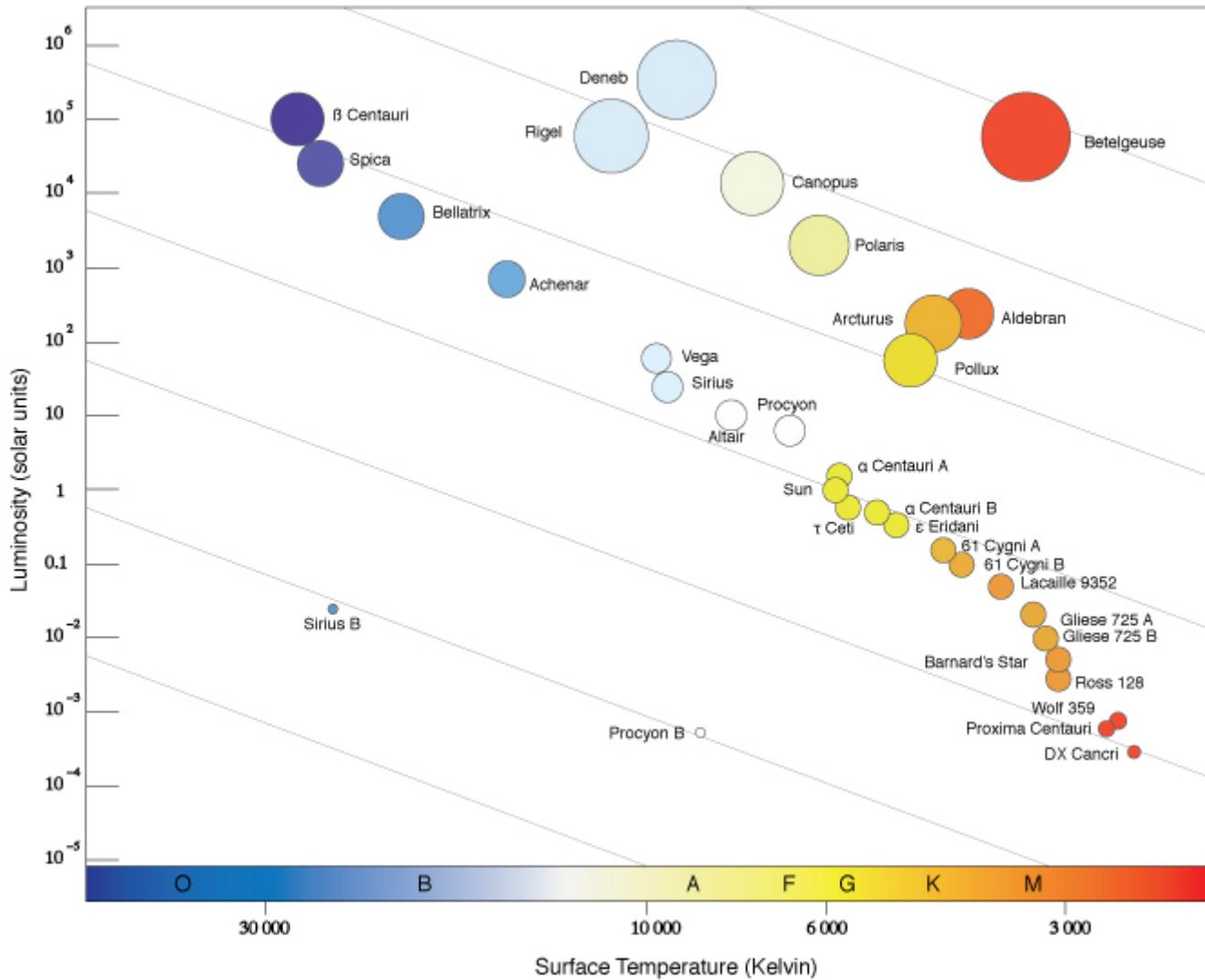
~ What type of stars (in general) have a low temperature and a high absolute magnitude? What is an example of this type of star?

~ What type of stars (in general) have a high temperature and a high absolute magnitude? What is an example of this type of star?

~ What type of stars (in general) have a low temperature and a low absolute magnitude? What is an example of this type of star?

~ Describe the life cycle of a star about the size of the sun. What does it eventually become?

~ Describe the life cycle of a star larger than the sun. What does it eventually become?



- ~ What are the three types of galaxies?
- ~ What type of galaxy is the Milky Way? Where is the sun located within the Milky Way?
- ~ Describe how the universe was formed. What were the first particles to appear? About how long ago did these particles appear?
- ~ What is one piece of evidence that supports the Big Bang theory?
- ~ What is Hubble's Law? What does Hubble's Law say about the universe?