Planets

Inner vs. outer

Composition – inner planets are rocky/outer are gas

Size – inner are smaller/outer are much larger

Distance from sun – inner are close/outer are farther. Earth is 1 AU from the sun

Life – no life due to no proper atmosphere or water

Asteroid belt location – between mars and Jupiter (between inner & outer)

Earth - Rotation vs. Revolution

Rotation - 1 day on earth is one rotation (24 hours)

Revolution - 1 year on earth is one revolution (365 days)

Eclipses

Solar – an eclipse that occurs when the new moon passes between Earth and the sun and the shadow formed reaches earth.

Lunar – occurs when the earth's shadow falls on the Moon

Celestial bodies involved and location –

solar = sun, moon, earth

lunar = sun, earth, moon

Moon phase associated with the eclipse –

solar eclipse = new moon

lunar eclipse = full moon

Moon & Moon Phases

Why we see the phases – because of the position of the moon around the earth and the earth around the sun. The moon doesn't give off light, it reflects the light of the sun.

Location of sun, earth & moon- know each location on a diagram of the phases of the moon. If I switch the location of the sun, the moon phases will change, so make sure you understand that.

Names of phases – New, waxing crescent, first quarter, waxing gibbous, full, waning gibbous, last quarter, waning crescent.

Rotation and revolutionary periods – rotation = 27.3 days / revolution 29.5 days

Tides – The interaction of the moon's gravity and the oceans

Formation (how it became the moon) – the earth collided with another celestial body and part of the earth broke off and became the moon.

The Sun

Describe – the sun is a medium sized star that is made up of gas and is held together by gravity

Layers and properties – Core, radiation zone, convection zone, photosphere, chromosphere, corona.

Sun spots

*cycle – 11 years

*Reason for - areas of gas on the sun that is cooler than the gases around it. Sunspots appear as dark spots on the sun photosphere.

Source of heat and energy – nuclear fusion

Size compared to other stars – low to medium mass star/medium size compared to others

Solar Activity

Flares – sudden violent eruption of electrically charged atomic particles from the sun's surface.

Prominences – cloud of glowing gases that arches high above the sun's surface

Winds – electrically charged particles that stream out into space through holes in the sun's corona

Auroras – sheets of colored light produced by a magnetic storm in the earth's upper atmosphere.

Life Cycle of Stars

Low to Medium Mass

Nebula

Protostar

Main Sequence

Red Giant

Planetary Nebula

White Dwarf

Black/Brown Dwarf

High Mass

Nebula

Protostar

Main Sequence

Super Red Giant

Supernova

Neutron Star

Black Hole

Stars

Temperature and color association – Blue stars are the hottest/red stars are the coolest.

Luminosity vs. brightness – Luminosity is how much light a star is actually giving off, and brightness is how much light the star appears to be given off. Distance effect brightness.

Spectroscopy – a measurement of the electromagnetic radiation (light) produced by a star or other object (called its spectrum)

Universe

Big Bang theory – says the universe began as a huge explosion

Age - between 10 & 20 billion years old

Evidence supporting the Big Bang Theory – an expanding universe, the presence of cosmic background radiation, and the ratio of hydrogen to helium present in the universe

Red/blue shift – redshift is caused by the motion that increases the distance between the source and the observer. The faster the source of light is moving away the greater the redshift. The opposite is a blue shift. When the object is moving toward the observer.

Galaxies

Types of – Spiral, Barred Spiral, Elliptical, Lenticular

Type/name of the galaxy we live in – Milky way and it is Spiral

Solar system age – about 4 billion years