Chapter 3: Earth in Space and Solar Energy

Galaxy: an enormous collection of stars.

Light Year: the distance light travels in one year.
>Closest Star=4.3 LY away (in mileage, that 24,300,000,000,000 miles)
>Closest Galaxy=75,000 LY away.

Solar System: a group of heavenly bodies orbiting around a central star.

Characters of the Solar System:

1) Planets

2) Satellites (moons)

3) Asteroids

4) Comets and Meteors

Good Ol' Mr. Sun (our star)
How does the sun shine? Thermonuclear Fusion

Release of Energy: Solar Wind

1) Auroras: result when the solar wind reacts with our magnetic field in the upper atmosphere.

>Aurora Borealis

>Aurora Australis

2) Sunspots

The Planets
1) Terrestrial Planets: the rocky ones

a) Mercury

b) Venus

c) Earth

d) Mars

2) The Jovian or Gas Planets

a) Jupiter
>Big or Famous moons: Io, Ganymede, Callisto, Europa

b) Saturn
>Famous Moon: Titan

c) Uranus

d) Neptune
>Famous Moon: Triton

3) The oddball: Pluto, and its moon Charon

<u>The Earth-Sun System</u>

Energy and the EM Spectrum
>41% of energy is from visible light

>9% is short wave radiation

Energy from out sun is incoming as Visible Light, outgoing as Infra-red Radiation, heating the atmosphere from the ground up.

Rate of Receipt of Solar Energy=Solar Constant

Movements of the Earth

1) Rotation

>Circle of Illumination

2) Revolution

>Perihelion and Aphelion

3) Galactic Movement

Plane of the Ecliptic:

Angle of Inclination:

Parallelism:

The Seasons

1) Solstice

2) Equinox

3) Important Reference Areas of the Earth

a) Arctic and Antarctic Circle:

b) Tropic of Cancer and Capricorn:

The Analemma and the Noon Sun Angle

Analemma:

Sun Declination: the latitude at which the sun is directly overhead.

Insolation:

Solar Duration: