The Sun-Statistics

* Diameter-865,000 miles
* Color-yellow
* Period of rotation- 35 days at poles, 25 at equator
* Mass- sun=332,000 Earths
* Surface Temp-12,000 F
* Composition- 76% H, 22% He, 2% heavy elements

Suns Energy

Nuclear Fusion- ligher atoms combine to form heavier elements

In Electromagnetic Energy, visible light, UV light, x-rays, and Gamma rays are released

H→He =Hydrogen “Burning”

H atomic mass=1.0079

He atomic mass=4.00260

However, 1.0079x4=4.0316

Extra mass is converted to energy

Sun’s core

Inner 10% of the sun

Nuclear fusion happens here

Radiative zone- 85% of the internal mass

Energy is transported by radiation from hot to cooler

Gamma waves to visible light rays

Convective zone-outer 15%

Energy is transported by convection

Hot areas rise and cooler layers sink

Photosphere

Visible surface of the sun

Sun spots

Solar flares

Solar prominences

Chromosphere

Pink glowing region of gas just above the photosphere

Can be seen during eclipse

Spicules- spikes on sun

Corona

Outer most layer

3 million F

Hot ionized glowing transparent gas

Sun spot

Magnetically disturbed region of the photosphere that is cooler than its surroundings

About 11 year cycles from solar min to max to min

Formed by coiling

Solar prominence

Huge plumes of glowing gas that erupt from disturbed regions of sun spots

If twist too much, pops and forms solar flare

Solar flare

Gigantic outbursts of charged particles as well as visible, uv, xrays, when hot gas spouts upward from the surface of the sun

EM Radiation

Wavelength- distance between successive crests of troughs

Frequency- # wave/time

Longer wavelength=lower the frequency

Higher frequency=shorter wavelength

Refraction-bending of light rays at the contact between two media

Absorption- ozone-absorbs UV high in atmosphere

Carbon Dioxide- absorbs mid and far infrared in lower atmosphere

Water vapor- absorbed in lower amosphere