

## Solar System Tidbits.....

Be sure you have this info some place on your planet info.....

Mercury: 1<sup>st</sup> planet from Sun, heavy cratering = old surface; Sun's energy & no atmosphere = most extreme temp range in solar system (really cold and really hot); highly elliptical orbit; smallest planet (now that Pluto has been reclassified) and smaller than two moons; 2nd most dense body (Earth);

Venus: 2nd planet from Sun, most circular orbit, Venus day LONGER than Venus year, high atmospheric pressure (equal to being 1100 yards under water) the atmospheric gases create a strong greenhouse effect = highest surface temps in the solar system other than the sun; few craters = young surface that weathers from the atmosphere; spins clockwise on its axis, though REALLY slow...why?

Mars: some atmosphere creates a temp range -270 to 80 F; some surface old and cratered other areas middle aged due to volcanism and dust other areas young and relatively un-cratered; largest mountain in solar system, Olympus Mons; meteorites found on earth likely from Mars; lots of evidence of water on Mars back in the day; "The Face"; thin atmosphere with strong winds creates dust storms; polar ice caps; longest valley in solar system? Spirit, Opportunity, Curiosity, +

Jupiter: largest planet, contains more mass than all other planets combined; Great Red Spot a 300 year-old hurricane type storm that could hold 2+ Earths; releases more energy than it absorbs; faint rings; ~~63~~, 64 you find out the latest on how many moons; strong magnetic field; planet made of gas; Voyager 1 and 2, Juno

Io: 4<sup>th</sup> largest moon in solar system; most volcanic body in solar system = young surface, lava hotter than hottest Earth lava; core still molten due to gravity of Jupiter and the other 3 Galilean moons; Voyager 1 and 2

Ganymede: largest moon in solar system, could contain a liquid ocean, ancient surface, only moon that generates own magnetic field; Voyager 1 and 2

Europa: icy surface, liquid water under the surface could contain "life"; Voyager 1 and 2

Callisto: 3<sup>rd</sup> largest moon in solar system (larger than Earth's moon and almost as big as Mercury), possible subsurface water, heavily cratered surface = very old surface due to lack of crust or atmospheric activity; Voyager 1 and 2

Saturn: 2nd largest planet, icy rings, lowest density planet (could float on water), 60 + moons (you find out the most recent number of moons), strong magnetic field, radiates more energy than it absorbs; arguably the most beautiful planet; made of gas, Cassini mission; Voyager 1 and 2

Titan: 2<sup>nd</sup> largest moon in solar system; smooth young surface, due to methane flows, only satellite in solar system with a significant atmosphere and it is a thicker and more cloudy atmosphere than Earth, is it a young Earth?? Methane lakes, methane rain, Huygens probe

Enceladus: liquid sub-surface water, probably more water than on Earth, geysers contribute to Saturn's rings, young surface due to ice plate tectonic-type activity.

Uranus: 7th planet from Sun, 3rd largest, 1st planet “discovered”, axis of spin is almost on the same plane as the solar system (all other planets spin axis is perpendicular to plane) we say it “spins on its side”, made of gas, Voyager 2

Neptune: 8th planet from Sun, 4th largest, strongest winds in the solar system at 1200 mph, radiates more energy than it receives, made of gas; Voyager 2

Pluto: now called a dwarf planet, smaller than 7 solar system moons (including Luna), eccentric orbit WAY more elliptical than the other planets and at a 17° angle with solar system plane, New Horizons mission discoveries

Earth: 3rd planet from Sun, most dense planet; 5th largest; young surface due to weather and plate tectonics; atmosphere of nitrogen, oxygen; 71% of surface is water; mild temps; magnetic field due to core = deflects most of the harmful cosmic energy.

Luna: heavy cratering = old surface due to no tectonic activity or atmosphere; no atmosphere = high hot temps and low low temps; tidally locked with Earth so same side always faces us, drifting away from earth at almost 4 cm per year; tides due to moon’s gravitational tug on Earth played critical role in evolution of life on earth

Sedna: first major body discovered in solar system since Pluto in 1930, INCREDIBLY slow orbital period of 10,500 years

Eris (Xena): largest body discovered since Pluto was discovered, most distant object in the known solar system, larger than Pluto;

Asteroids: small chunks rock; most found in a belt between Mars and Jupiter orbits; total mass probably = 1 Luna mass; a few orbit close to Earth and another two batches are ahead of and behind Jupiter; why are they asteroids and not a planet between Mars and Jupiter?

Comets: chunks of icy rock; which, like asteroids, the reason they exist and did not become part of a planet is a good question; when close enough to sun leave a glowing “vapor” trail; debris left behind results in meteor showers; highly elliptical orbits; 2 regions: Kuiper belt (30 au to 50 au) and Oort cloud (50 au to 50,000 au)