

Planets in the Solar System

Mercury



Mercury, it is the first planet in our solar system, hence the closest to our Sun. Roaming around the sun and in its own axis at a distance of 57.91 million kilometers from the Sun makes it the hottest planet in the solar system. Mercury consists of 3 layers. The Crust, 100km - 200km thick from the surface, Mantle 600km thick from the Crust and Core which is 1800km in radius. Mercury is made of 70% Metallic and Silicate material with a density of 5.427 g/cm^3 , the second highest density planet in the solar system. Due to being so close to the sun the years in mercury are extremely short as well. It takes 87.97 Earth days to complete one rotation around the sun and for being the fastest planet to complete a full revolution around the sun it was **named after** the Roman messenger god **Mercury**. However days in mercury are terrible long since it rotates extremely slow on its own axis. And so a day in Mercury is equal to 59 days on earth. Since Mercury is closest to the sun it's only natural that it would be the hottest planet reaching up to 430°C on the side facing the sun. However the interesting part is that even after being so close to the sun the night side of the planet reaches around -180°C , strange right? It happens due to the planet not having an atmosphere for which there is nothing to preserve the heat and so loses all acquired heat.

Venus



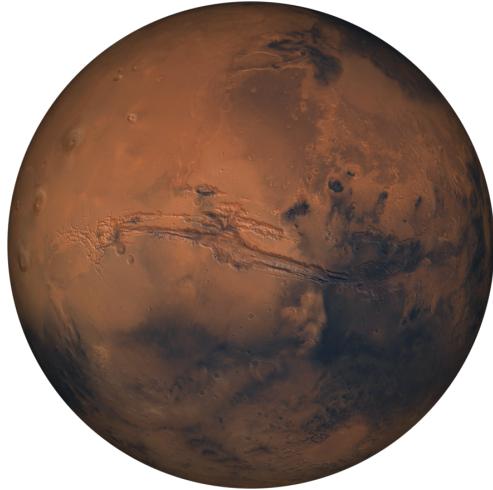
Venus is the second planet in the solar system. It is also called the Earth's Sister planet due to it's size being so identical to that of the Earth also it is spinning around the sun with in the Earths orbit. Unlike Mercury venus has an atmosphere which consists of 96.5% Carbondioxide and 3.5% Nitrogen. It's crust in 70km thick from the surface, the mantle is 2840km thick from the crust and the Core is 3000km in diametre. Venus's atmospheric pressure is equal to 90 atmosphere. Meaning on the surface a body would feel the same pressure as it would on Earth's oceans at a depth of around 1km. Venus is around 108.2 million km far from the sun. However it still heats up to 460°C during both day and night time. It is due to have the poles tilted about 3° in comparison to that of the earth that keeps the temperature consistant through out days and nights. A year on venus is slightly faster than that of the earth's. Venus completes one full rotation around the sun in 225 days. However on its own axis Venus takes around 117 Earth days to complete one rotation. So a day on Venus would be equal to half a year on the planet.

Earth



Our home planet earth is the third planet in the solar system. It is the only planet capable or have the right conditions for sustaining life. It is 149.6 million kilometres away from the sun. It consists of 5 layers. The crust is 40km on average from the surface, the upper mantle is 670km thick from the crust, the inner mantle extends upto 2900km from the surface, the outer core has a radius of 3400km while the inner core has a radius of 1220km with temperature exceeding 4500°C. Earths atmosphere consists of 78% Nitrogen 21% oxygen and trace amounts of Carbon Dioxide, neon, helium, methane, krypton, hydrogen, nitrous oxide, xenon, ozone, iodine, carbon monoxide, and ammonia. The average temperature on the surface of earth is around **14°C**. A year on earth consists of 365 days, and days are 24h long. Earth is one of the 4 terrestrial planets. Meaning the surface is made up of terrestrial materials like soil consisting of different metallic and minerals. However the surface of the earth is 75% water. Earth is the only Unique looking planet consisting of colors of fully different shades as shown in the pictures due to the coverage of water, land and life(plants) on the surface making it look alive in reference of life existing on it. Usually other planets have a lifeless look due to being or looking of the same color or colors if a similar shade.

Mars



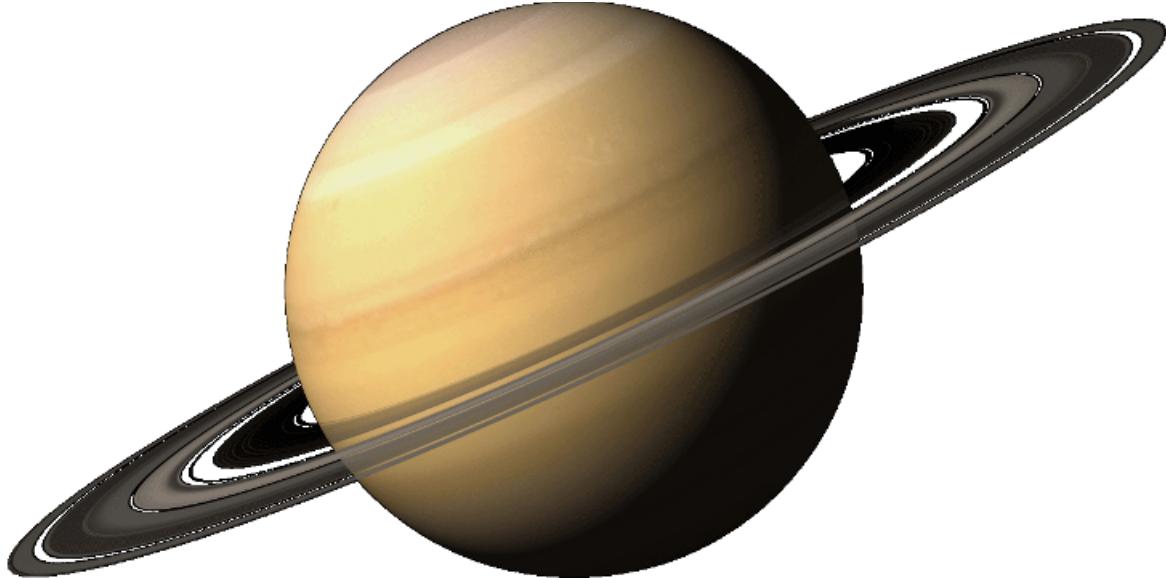
Mars is the 4th planet in the solar system and the only planet apart from Earth considered to have had held life in it and holding the potential to be repopulated with life due to the atmospheric environment which at it's current state cannot sustain life as earth does but the traces of certain bacteria fossils and water is keeping the hopes up for the scientists to spend time on the planet. Like the other terrestrial planets Mars is composed of three layers. The crust which is about 50km from the surface, the mantle is about 1,240 to 1,880km thick and the core is about 900 to 1200 km in radius. The surface temperature on mars can reach up to 20° C during day time and about -153° C during night time due to being further from the sun. Days on Mars are very similar to that of the Earth. 1 Day on Mars is equal to 1 day 37 minutes on Earth. However years on mars are almost twice the length of that of earth which is about 687 earth days.

Jupiter



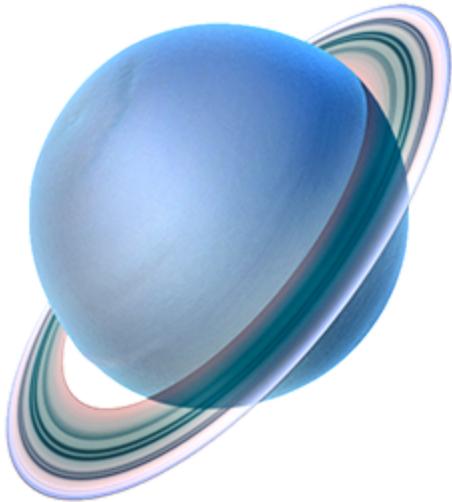
Jupiter is the largest planet in our solar system. The above four planets are the only terrestrial planets in our solar system. Meaning those are the only planets made out of rocky or solid state rocks or metallic surface. The rest starting from Jupiter are Gas giants which are also called Jovian Planets. Jupiter is 69,911km in diameter. Making it the largest of all planets in our solar system. About 1300 planets the size of our earth can fit in Jupiter. Jupiter is mostly composed of Hydrogen and helium, same gases you find in a star like our sun and trace amount of water and other gases. The only reason it remains a planet even after being so huge is because it's still not big enough or doesn't have enough mass to push it to a stellar state. The surface temperature of Jupiter ranges from 4° C to -128° C due to being about 778.5 million km from the sun and being composed of mostly gases. However the temperature of Jupiter's core is 35,700°C, hotter than the surface of our sun apparently! This planet just keeps on getting interesting. The length of a day in Jupiter is about 10h on Earth. And one year in the planet is equal to 12 Earth years.

Saturn



Saturn is the second gas giant in our solar system. It is about 1.434 billion km away from the sun. It is made up of mostly hydrogen and helium as well with trace amount of methane and ammonia. Saturn is 58,232 km in diameter. Slightly smaller than Jupiter still giant enough to fit 764 earths in it. Saturn is the only planet with a thick ring of asteroids surrounding it. The ring is 282,000 km across. This ring is made up of billions and billions of pieces of ice, dust and rocks sizing from a grain of salt to that of a mountain and larger. However this ring is continuously fading due to these small particles (comparing to the size of the planet) are being pulled in to the planet by its gravitational pull. Due to forming differently as a gas giant saturn is missing the Crust, mantle and core layer. So instead it has only an outer core and an inner core. Saturn's core is 11,700 C due to being so far from the sun saturn radiates more heat into space than it receives from the sun. Saturn's surface temperature is ranging from about -113° to -173°. The length of days in saturn is equal to 10h on earth. Due to being gaseous planets they don't spin on their own axis the same way other terrestrial planets do and for the reason being they spin around their own axis way faster. However 1 year in saturn is equal to 29 years on earth.

Uranus



Uranus is the 3rd gas giant in our solar system. It is also a ringed planet however its ring is barely visible and very thin compared to saturn's. Its ring start at about a distance of 38,000 km from the center of Uranus, and then extend out to about 98,000 km.Uranus is 25,362 km in diametre. Uranus is a frozen gaseous planet with a molten core. Uranus' atmosphere consists of 83% hydrogen, 15% helium and 2% methane. The surface temperature of Uranus is -224°C. Days in Uranus are 17h long on earth and a year on the plant is about 87 years on earth. Basically a lifetime of an average person. The Temperature of Uranus's core is relativey lower than the others at about 4,982° C.

Neptune



Neptune is the last planet of our solar system. It is about 4.495 billion km away from the sun making it the coolest planet of our solar system at present. Neptune is about 24,622 km in diameter. The planet is composed of 80% Hydrogen, 19% Helium, and 1.5% Methane. Unlike the rest of the gas giants Neptune has a mantle with a temperature ranging from 1,727 °C to 4,727°C. And its core temperature is around 7000°C. Days on Neptune are 16h long on Earth. However a year on Neptune is equal to 165 years on Earth. Only the luckiest would have been able to enjoy the New Year's if life was to exist on that planet.