Characteristic	Earth	Mars	Jupiter
Eccentricity	0.017	0.093	0.048
Perihelic distance	149.5 M km	204.52 M km	778 M km
Aphelic distance	149.7 M km	246.28 M km	817 M km
Mean distance to Sun	1 AU	1.524 AU	5,205 AU
Axis inclination	23° 27’	23* 59’	3.08*
Equatorial diameter	12.756 km	6787 km	142,800 km
Mass	598*1024 kg	0.646*1024 kg	$1{,}90*10^{27}$ kg
Mass ratio	1	0.108	317.83
Volume	1	0.15	1321.33
Density	5.5	3.9	0.16 kg/m3
Sphere flatness	0.003	0.009	----------
Gravity	1 (9.75 ms/s)	0.38 (3.71 ms/s)	2.53 ms/s
Solar constant	2	0.866	50.5
Apparent Sun diameter	31’ 59’’	21’’	----------
Reflectivity	0.30-0.35	0-.15-0.25	0.44
Mean temperature	286 K	216 K	120 K
Magnetic field	60.000 gamma	59-100 gamma	----------
Moons	1	2	63
Rotation period	0.9973 Earth days (24 hours)	1.026 Earth days	9.8 Earth days
Revolution period	365.26 Earth days (1 Earth year)	687 Earth days	11.86 Earth years
Escape velocity	----------	----------	59,500 m/sec

Definitions of Some of the Above Terms

Eccentricity = deviation of a curve or orbit from circularity.
Perihelic distance = the point in the orbit of a planet, asteroid, or comet at which it is closest to the sun.
Aphelic distance = the point in the orbit of a planet, asteroid, or comet at which it is furthest from the sun.
Axis inclination = The amount at which the planet is tilted along its vertical axis.
Equatorial diameter = The equator's diameter.
Mass = The planet's weight.
Volume = The planet's volume.
Density = The planet's density.
Sphere flatness = The degree of flatness of the planet.
Gravity = The gravitational constant for the planet.
Solar constant = the rate at which energy reaches the planet's surface from the Sun.
Apparent Sun diameter = The apparent diameter of the Sun as seen from the planet's surface.
Reflectivity = the property of reflecting light or radiation, esp. reflectance as measured independently of the thickness of a material.
Mean temperature = The average temperature of the planet.
Magnetic field = a region around a magnetic material or a moving electric charge within which the force of magnetism acts.

Orbital Characteristics by Planet

Earth

Earth's orbit around the Sun is nearly circular. This means that the difference between Earth's farthest and closest points to the Sun is very small. The Earth is moving through space at a rate of about 67,000 miles per hour. Earth's single moon has an orbit that is nearly circular around Earth. The moon is tilted at about 5 degrees to the plane of Earth's orbit around the Sun. The moon is on average 384,400 km away from Earth. The moon's orbital period around Earth is 27.322 Earth days. Due to this the moon appears to move about 13 degrees against the stars per day. The changing position of the moon in relation to the Sun results in the lunar phases. Because of tidal forces due to the Earth, the same side of the Moon always faces the Earth. This results is the term "far-side of the Moon" which is defined as simply the side of the Moon never seen by us here on Earth's surface.

Mars

Mars has similar seasons to Earth because the tilt of its rotational axis to the plane of orbit around the Sun is about the same as Earth's. However these seasons are affected by varying distance from the Sun vs. Earth (on Earth the seasons result simply from the tilt of the rotational axis). Due to the massively irregular shapes of Mars' moons Phobos and Deimos, scientists and astronomers believe that they weren't chunks of the

planet like Earth's moon is thought to be, but rather they are actually asteroids that got trapped in the gravitational pull of Mars.

Jupiter

Jupiter follows an elliptical orbit around the Sun that is fairly circular. The most distant point from the Sun in Jupiter's orbit is known as aphelion and is 817 million km from the Sun. The average distance that Jupiter is from the Sun is 778 million km. Jupiter is the third brightest object in the sky after the moon and Venus (the Sun is object 0 in that model). Out of the 63 moons, 47 are less than 10 km in diameter. The four largest moons are: Io, Europa, Ganymede, and Callisto; and are known as the "Gallilean moons." The Galilean moons have an orbit pattern known as Laplace resonance. For every four orbits Lo makes around Jupiter, Europa makes exactly two orbits and Ganymede makes exactly one. This causes the gravitational effects of the three large moons to distort their orbits into elliptical shapes since each moon receives an extra tug from its neighbors at the same point in every orbit it makes. On the other hand, the tidal force from Jupiter works to circularize their orbits. The eccentricity of the moons' orbits causes regular flexing of the three moons' shapes. Jupiter's gravity stretches them out as they approach the planet. As they get further away from the planet they spring back into their more spherical shapes.