

Mercury is one of the planets in the solar system. Mercury orbits closest to the Sun of all the planets, at an average distance of approximately 58 million km (about 36 million mi). The planet's diameter is 4,879 km (3,032 mi), and its volume and mass are about one-eighteenth that of Earth. Mercury's mean density is approximately equal to that of Earth and is higher than that of any of the other planets. The force of gravity on the planet's surface is about one-third of that on Earth's surface or about twice the surface gravity on the Moon.

Mercury orbits closer to the sun than any other planet, making it dry, hot, and virtually airless. Although the planet's cratered surface resembles that of the Moon, it is believed that the interior is actually similar to Earth's, consisting primarily of iron and other heavy elements.

Venus, one of the planets in the solar system, is second in distance from the Sun. Except for the Sun and the Moon, Venus is the brightest object in the sky. The planet is called the morning star when it appears in the east at sunrise, and the evening star when it is in the west at sunset. In ancient times the evening star was called Hesperus and the morning star Phosphorus or Lucifer. Because of the distances of the orbits of Venus and Earth from the Sun, Venus is never visible more than three hours before sunrise or three hours after sunset.

Venus is the brightest object in our sky, after the Sun and Moon. Swirling clouds of sulfur and sulfuric acid obscure Venus's surface and inhibited study of the planet from Earth until technology permitted space vehicles, outfitted with probes, to visit it. These probes determined that Venus is the hottest of the planets, with a surface temperature of about 460 degrees.

Earth, one of nine planets in the solar system, is the only planet known to harbor life, and the “home” of human beings. From space Earth resembles a big blue marble with swirling white clouds floating above blue oceans. About 71 percent of Earth’s surface is covered by water, which is essential to life. The rest is land, mostly in the form of continents that rise above the oceans.

Earth, an oxygen-rich and protective atmosphere, moderate temperatures, abundant water, and a varied chemical composition enable Earth to support life; the only planet known to harbor life. The planet is composed of rock and metal, which are present in molten form beneath its surface.

Mars, one of the planets in the solar system, is the fourth planet from the Sun and orbits the Sun at an average distance of about 228 million km (about 141 million mi). Mars is named for the Roman god of war and is sometimes called the red planet because it appears fiery red in Earth's night sky.

Mars is a relatively small planet, with about half the diameter of Earth and about one-tenth Earth's mass. The force of gravity on the surface of Mars is about one-third of that on Earth. Mars has twice the diameter and twice the surface gravity of Earth's Moon. The surface area of Mars is almost exactly the same as the surface area of the dry land on Earth. Mars is believed to be about the same age as Earth, having formed from the same spinning, condensing cloud of gas and dust that formed the Sun and the other planets about 4.6 billion years ago.

Jupiter is the fifth planet from the Sun and the largest planet in the solar system. It is the fourth brightest object in Earth's sky, after the Sun, the Moon, and Venus. Jupiter is more than three times brighter than Sirius, the brightest star. Due to its prominence in the sky, the Romans named the planet for their chief god, Jupiter.

Jupiter is the largest of the planets, with a volume 1400 times greater than that of the earth. Jupiter's colorful bands are caused by strong atmospheric currents and accentuated by a dense cloud cover.

Saturn is the sixth planet in order of distance from the sun, and the second largest in the solar system. Saturn's most distinctive feature is its ring system, which was first seen in 1610 by Italian scientist Galileo, using one of the first telescopes. He did not understand that the rings were separate from the body of the planet, so he described them as handles (*ansae*). The Dutch astronomer Christiaan Huygens was the first to describe the rings correctly. In 1655, desiring further time to verify his explanation without losing his claim to priority, Huygens wrote a series of letters in code, which when properly arranged formed a Latin sentence that read in translation, "It is girdled by a thin flat ring, nowhere touching, inclined to the ecliptic." The rings are named in order of their discovery, and from the planet outward they are known as the D, C, B, A, F, G, and E rings. These rings are now known to comprise more than 100,000 individual ringlets, each of which circles the planet.

Uranus is the seventh planet from the Sun. Uranus revolves outside the orbit of Saturn and inside the orbit of Neptune. The average distance from Uranus to the Sun is 2.87 billion km (1.78 billion mi). Uranus has an inner rocky core that is surrounded by a vast ocean of water mixed with rocky material. From the core, this ocean extends upward until it meets an atmosphere of hydrogen, helium, and methane. Uranus has 10 known rings and 21 confirmed moons. The mass of Uranus is 14.5 times greater than the mass of Earth, and its volume is 67 times greater than that of Earth. The force of gravity at the surface of Uranus is 1.17 times the force of gravity on Earth. Because of its size and mass, scientists classify Uranus as one of the giant or Jovian (like Jupiter) planets - along with Jupiter, Saturn, and Neptune.

Neptune is the eighth planet from the Sun and fourth largest in diameter. Neptune maintains an almost constant distance, about 4.5 billion km (about 2.8 billion mi), from the Sun. Neptune revolves outside the orbit of Uranus, and for most of its orbit moves inside the elliptical path of the outermost planet Pluto. Every 248 years, Pluto's elliptical orbit brings the planet inside Neptune's nearly circular orbit for about 20 years, temporarily making Neptune the farthest planet from the Sun. The last time Pluto's orbit brought it inside Neptune's orbit was in 1979. In 1999, Pluto's orbit carried it back outside Neptune's orbit.

Pluto, planetary body counted as the ninth planet in the solar system after its discovery in 1930 by astronomer Clyde Tombaugh. In 2006 the International Astronomical Union (IAU) reclassified Pluto as a dwarf planet. The new IAU definition of a planet that changed Pluto's status is not accepted by some scientists, who continue to recognize Pluto as the ninth planet. Pluto revolves about the Sun once in 247.9 Earth years at an average distance of 5,880 million km (3,650 million mi). Pluto is about 2,360 km (1,475 mi) in diameter, about two-thirds the size of Earth's moon. Its composition links Pluto with Kuiper Belt Objects (KBOs), icy bodies found beyond Neptune in the outer solar system. Pluto was named after the god of the underworld in Roman mythology.