

Terrestrial Planets

Terrestrial planets share a number of common features. They are all composed mostly of rock and heavy metals. These planets have a core made of heavy metals that is mostly iron; the core is surrounded by a mantle of silicate rock. Terrestrial planets are much smaller than gas giants. The terrestrial planets also have varied terrain such as volcanoes, canyons, mountains, and craters.

Another common feature among the terrestrial planets is that they have few or no moons. Mercury and Venus have none while Earth has one. Mars has two small moons. Also, the terrestrial planets do not have planetary rings like the gas planets do. The atmosphere of planets can vary from Venus' thick carbon dioxide atmosphere to almost nothing on Mercury.

Mercury is the smallest terrestrial planet in the Solar System. Its atmosphere is very thin, which is why the planet alternates between burning and freezing temperatures. Mercury is also a dense planet and is composed of mostly iron and nickel.

Venus is also a terrestrial planet and has a thick toxic atmosphere, which traps the heat making it the hottest planet in the Solar System. It is nearly the same size as Earth.

Earth is the densest of the planets because of its high percentage of iron, even for a terrestrial planet. Its atmosphere is composed mostly of oxygen, nitrogen, and carbon dioxide with traces of other substances. Mars is the fourth terrestrial planet in the Solar System. Its surface is red because of the iron in rocks that has rusted. Although the planet has a thin atmosphere, scientists believe that it used to be thicker. They believe the atmosphere's thinning caused any liquid water the planet had to evaporate.

Ceres is considered a terrestrial dwarf planet. It has a rocky inner core with an icy mantle with as much as one quarter of the planet water ice. The dwarf planet may also have a thin atmosphere and has varied terrain like the other terrestrial planets. There are also a number of extrasolar terrestrial planets that scientists believe they have identified, although they are much fewer than extrasolar gas giants. Because they are so far away and smaller than gas giants, scientists have been able to find very few extrasolar terrestrial planets.

Gas Giants

The gas giants in our Solar Systems have a number of similar characteristics. All of our Solar System's gas giants are outer planets, which means they are the furthest planets from the Sun.

Compared to terrestrial planets, gas giants are extremely large and massive. For example, Jupiter has a mass 318 times the mass of Earth, which is a terrestrial planet. Despite their size, gas giants are low-density planets because they are composed almost entirely of gas. In addition to being large, these planets rotate extremely quickly. Jupiter rotates so quickly that it has actually flattened at its poles. The gas giants are extremely cold planets, although that is mostly due to the fact that they are very far from the Sun. Gas giants also have dozens of satellites and ring systems. Saturn is famous for its beautiful rings, which can be seen with the unaided eye from Earth.

Astronomers have also discovered gas giants around stars in other solar systems. In fact, these are the only extra-solar planets that scientists have been able to discover as of yet. These extra-solar gas giants seem similar to Jupiter and the other gas giants in our own Solar System. Astronomers have been studying these planets using powerful telescopes, but they have not been able to find out much information about them so far. Some astronomers are actually searching for life on these planets. They have discovered some extra-solar planets in the habitable zones of other solar systems, and they believe that life could exist on these extra-solar planets or at least the moons of these planets.

Because the gas giants are farther away from Earth than the terrestrial planets, astronomers have not been able to study the gas giants extensively up close. Hopefully, that will change as NASA sends more spacecraft out to explore the outer planets.

