

# ABOUT THE PLANETS, SATELLITES AND COMETS

## 1. **Mercury:-** Mercury is the smallest planet in our solar system and nearest to the Sun.

Mercury is appropriately named for the swiftest of the ancient Roman gods. Its surface temperatures are both extremely hot and cold. Because it is so close to the sun, day temperature reach highs of 800F(30C) and at night it's temperatures can dip as low as - 290F(-180C). Life is not possible because of its temperatures and solar radiation coming from the sun. Mercury's atmosphere is very thin and primarily composed of oxygen, sodium, hydrogen, helium and potassium.

size:- the radius of the mercury is 1,516 miles (2,440 kilometers), Mercury is little more than 1/3 width of Earth.

Distance:- an average distance of 36million miles (58 millions kilometers) far from sun i.e 0.4 astronomical units(AU). From this distance, it takes sunlight 3.2 minutes to travel from the Sun to Mercury.

- **Discovery:** Known to the ancient Greeks and visible to the naked eye
- **Named** for the messenger of the Roman gods
- **Diameter:** 3,031 miles (4,878 km)
- **Orbit:** 88 Earth days
- **Day:** 58.6 Earth days
- **Number of moons:** 0

**2.venus:-** Venus is the second planet from the sun and is the hottest planet in the solar system. Venus is named for the ancient Roman goddess of love and beauty, who was known as Aphrodite to the ancient Greeks. Most features on Venus are named for women. It's the only planet named after a female god. Its thick atmosphere is extremely toxic and composed of sulfuric acid clouds. The average temperature on Venus' surface is 900 F (465 C). At 92 bar, the pressure at the surface would crush and kill you. Venus is similar in structure and size to Earth, and is sometimes called Earth's evil twin. [Venus spins slowly from east to west, the opposite direction of most of the other planets.](#) Venus orbits the Sun from an average distance of 67 million miles (108 million kilometers), or 0.72 astronomical units. it takes sunlight about six minutes to travel from the Sun to Venus. Its diameter at its equator is about 7,521 miles (12,104 kilometers), versus 7,926 miles (12,756 kilometers) for Earth. From Earth, Venus is the brightest object in the night sky after our own Moon. The ancients, therefore, gave it great importance in their cultures, even thinking it was two objects: a morning star and an evening star.

- **Discovery:** Known to the ancient Greeks and visible to the naked eye

- **Named** for the Roman goddess of love and beauty
- **Diameter:** 7,521 miles (12,104 km)
- **Orbit:** 225 Earth days
- **Day:** 241 Earth days
- **Number of moons:** 0

**3.Earth:-** When the solar system settled into its current layout about 4.5 billion years ago, Earth formed when gravity pulled swirling gas and dust in to become the third planet from the Sun. Like its fellow terrestrial planets, Earth has a central core, a rocky mantle, and a solid crust. Earth's global ocean, which covers nearly 70% of the planet's surface, has an average depth of about 2.5 miles (4 kilometers) and contains 97% of Earth's water. Earth has an atmosphere that consists of 78% nitrogen, 21% oxygen, and 1% other gases such as argon, carbon dioxide, and neon. The atmosphere affects Earth's long-term climate and short-term local weather and shields us from much of the harmful radiation coming from the Sun. It also protects us from meteoroids, most of which burn up in the atmosphere, seen as meteors in the night sky, before they can strike the surface as meteorites.

Earth is the biggest of the four planets closest to the Sun, all of which are made of rock and metal. The name Earth is at least 1,000 years old. All of the planets, except for Earth, were named after Greek and Roman gods and goddesses. However, the name Earth is a Germanic word, which simply means "the ground." It is the third planet from the sun. It is a water world with two-thirds of the planet covered by water. [Earth's atmosphere](#) is rich in nitrogen and oxygen and it is the only world known to harbor life. Earth rotates on its axis at 1,532 feet per second (467 meters per second) — slightly more than 1,000 mph (1,600 kph) — at the equator. The planet [zips around the sun](#) at more than 18 miles per second (29 km per second). Earth is the only planet that has a single moon. [Our Moon](#) is the brightest and most familiar object in the night sky. In many ways, the Moon is responsible for making Earth such a great home. It stabilizes our planet's wobble, which has made the climate less variable over thousands of years.

- **Name** originates from "Die Erde," the German word for "the ground."
- **Diameter:** 7,926 miles (12,760 km)
- **Orbit:** 365.24 days
- **Day:** 23 hours, 56 minutes
- **Number of moons:** 1

**4.Mars:-** Mars is one of the most explored bodies in our solar system, and it's the only planet where we've sent rovers to roam the alien landscape. NASA missions have found lots of evidence that Mars was much wetter and warmer, with a thicker atmosphere, billions of years ago. Mars was named by the Romans for their god of war because its reddish color was reminiscent of blood. The Egyptians called it "Her Desher,"

meaning "the red one." Even today, it is frequently called the "Red Planet" because iron minerals in the Martian dirt oxidize, or rust, causing the surface to look red. With a radius of 2,106 miles (3,390 kilometers), Mars is about half the size of Earth. From an average distance of 142 million miles (228 million kilometers), Mars is 1.5 astronomical units away from the Sun. It takes sunlight 13 minutes to travel from the Sun to Mars. Mars' axis of rotation is tilted 25 degrees with respect to the plane of its orbit around the Sun. This is another similarity with Earth, which has an axial tilt of 23.4 degrees.

Mars has two small moons, Phobos and Deimos, that may be captured asteroids. They're potato-shaped because they have too little mass for gravity to make them spherical.

The moons get their names from the horses that pulled the chariot of the Greek god of war, Ares. Mars has a thin atmosphere made up mostly of carbon dioxide, nitrogen, and argon gases. The temperature on Mars can be as high as 70 degrees Fahrenheit (20 degrees Celsius) or as low as about -225 degrees Fahrenheit (-153 degrees Celsius).

- **Discovery:** Known to the ancient Greeks and visible to the naked eye
- **Named** for the Roman god of war
- **Diameter:** 4,217 miles (6,787 km)
- **Day:** Just more than one Earth day (24 hours, 37 minutes)
- **Number of moons:** 2

**5. Jupiter:-** [Jupiter](#) is the fifth planet from the sun and the largest planet in the solar system. The gas giant is more than twice as massive as all the other planets combined, [according to NASA](#). Its swirling clouds are colorful due to different types of trace gases including ammonia ice, ammonium hydrosulfide crystals as well as water ice and vapor.

A famous feature in its swirling clouds is [Jupiter's Great Red Spot](#), a giant storm more than 10,000 miles wide, first observed in 1831 by amateur astronomer Samuel Heinrich Schwabe. It has raged at more than 400 mph for the last 150 years, at least.

Jupiter has the shortest day in the solar system. One day on Jupiter takes only about 10 hours (the time it takes for Jupiter to rotate or spin around once), and Jupiter makes a complete orbit around the Sun (a year in Jovian time) in about 12 Earth years (4,333 Earth days). Jupiter has 95 moons that are officially recognized by the International Astronomical Union. The four largest moons – Io, Europa, Ganymede, and Callisto – were first observed by the astronomer Galileo Galilei in 1610 using an early version of the telescope. These four moons are known today as the Galilean satellites. The rings are composed of small, dark particles, and they are difficult to see except when backlit by the Sun. Data from the Galileo spacecraft indicate that Jupiter's ring system may be formed by dust kicked up as interplanetary meteoroids smash into the giant planet's small innermost moons.

- **Discovery:** Known to the ancient Greeks and visible to the naked eye
- **Named** for the ruler of the Roman gods

- **Diameter:** 86,881 miles (139,822 km)
- **Orbit:** 11.9 Earth years
- **Day:** 9.8 Earth hours
- **Number of moons:** 95 confirmed

**6. Saturn:-** Saturn is a massive ball made mostly of hydrogen and helium. Saturn is not the only planet to *have* rings, but none are as spectacular or as complex as Saturn's. Saturn also has dozens of moons. From the jets of water that spray from Saturn's moon Enceladus to the methane lakes on smoggy Titan, the Saturn system is a rich source of scientific discovery and still holds many mysteries. With an equatorial diameter of about 74,897 miles (120,500 kilometers), Saturn is 9 times wider than Earth. From an average distance of 886 million miles (1.4 billion kilometers), Saturn is 9.5 astronomical units away from the Sun it takes sunlight 80 minutes to travel from the Sun to Saturn. Saturn's rings are thought to be pieces of comets, asteroids, or shattered moons that broke up before they reached the planet, torn apart by Saturn's powerful gravity. They are made of billions of small chunks of ice and rock coated with other materials such as dust. The ring particles mostly range from tiny, dust-sized icy grains to chunks as big as a house. Saturn's ring system extends up to 175,000 miles (282,000 kilometers) from the planet, yet the vertical height is typically about 30 feet (10 meters) in the main rings. Named alphabetically in the order they were discovered, the rings are relatively close to each other, with the exception of a gap measuring 2,920 miles (4,700 kilometers) in width called the Cassini Division that separates Rings A and B. Like Jupiter, Saturn is made mostly of hydrogen and helium. At Saturn's center is a dense core of metals like iron and nickel surrounded by rocky material and other compounds solidified by intense pressure and heat. It is enveloped by liquid metallic hydrogen inside a layer of liquid hydrogen –similar to Jupiter's core but considerably smaller. *As a gas giant, Saturn doesn't have a true surface.*

- **Discovery:** Known to the ancient Greeks and visible to the naked eye
- **Named** for Roman god of agriculture
- **Diameter:** 74,900 miles (120,500 km)
- **Orbit:** 29.5 Earth years
- **Day:** About 10.5 Earth hours
- **Number of moons:** 146

**7.Uranus:-** Uranus is a very cold and windy world. The ice giant is surrounded by 13 faint rings and 28 small moons. Uranus rotates at a nearly 90-degree angle from the plane of its orbit. This unique tilt makes Uranus appear to spin sideways, orbiting the Sun like a rolling ball. Uranus was the first planet found with the aid of a telescope. It was discovered in 1781 by astronomer William Herschel, although he originally thought it was

either a comet or a star. It has clouds made of hydrogen sulfide, the same chemical that makes rotten eggs smell so foul. It rotates from east to west like Venus. But unlike Venus or any other planet, its equator is nearly at right angles to its orbit — it basically orbits on its side.

Astronomers believe an object twice the [size of Earth](#) collided with Uranus roughly 4 billion years ago, causing Uranus to tilt. That tilt causes extreme seasons that last 20-plus years and the sun beats down on one pole or the other for 84 Earth years at a time.

The collision is also thought to have knocked rock and ice into Uranus' orbit. These later became some of the planet's [28 moons](#). Methane in [Uranus' atmosphere](#) gives the planet its blue-green tint. It also has 13 sets of faint rings.

Uranus holds the record for the [coldest temperature](#) ever measured in the solar system — minus 371.56 degrees F (minus 224.2 degrees C). The average [temperature of Uranus](#) is minus 320 degrees Fahrenheit (-195 degrees Celsius).

Uranus has two sets of rings. The inner system of nine rings consists mostly of narrow, dark grey rings. There are two outer rings: the innermost one is reddish like dusty rings elsewhere in the solar system, and the outer ring is blue like Saturn's E ring.

In order of increasing distance from the planet, the rings are called Zeta, 6, 5, 4, Alpha, Beta, Eta, Gamma, Delta, Lambda, Epsilon, Nu, and Mu. Some of the larger rings are surrounded by belts of fine dust.

. Most (80% or more) of the planet's mass is made up of a hot dense fluid of "icy" materials – water, methane, and ammonia – above a small rocky core. Near the core, it heats up to 9,000 degrees Fahrenheit (4,982 degrees Celsius). Uranus' atmosphere is mostly hydrogen and helium, with a small amount of methane and traces of water and ammonia. The methane gives Uranus its signature blue color.

- **Discovery:** 1781 by [William Herschel](#) (was originally thought to be a star)
- **Named** for the personification of heaven in ancient myth
- **Diameter:** 31,763 miles (51,120 km)
- **Orbit:** 84 Earth years
- **Day:** 18 Earth hours
- **Number of moons:** 28

**8.Neptune:-** [Neptune](#) is the eighth planet from the sun and is on average the coldest planet in the solar system. The average [temperature of Neptune](#) at the top of the clouds is minus 346 degrees Fahrenheit (minus 210 degrees Celsius).

Neptune is approximately the same size as Uranus and is known for its supersonic strong winds. The planet is more than 30 times as far from the sun as Earth.

Neptune was the first planet predicted to exist by using math, rather than being visually detected. Irregularities in the orbit of Uranus led French astronomer Alexis Bouvard to suggest some other planet might be exerting a gravitational tug. German astronomer Johann Galle used calculations to help find Neptune in a telescope. Neptune is about 17 times as massive as Earth and has a rocky core.

Neptune has at least five main rings and four prominent ring arcs that we know of so far. Starting near the planet and moving outward, the main rings are named Galle, Leverrier, Lassell, Arago, and Adams. The rings are thought to be relatively young and short-lived. Neptune's atmosphere is made up mostly of hydrogen and helium with just a little bit of methane. Neptune's neighbor Uranus has a similar makeup; the methane absorbs other colors but reflects blue, giving these ice giants their similar hue.

- **Named** for the Roman god of water
- **Diameter:** 30,775 miles (49,530 km)
- **Orbit:** 165 Earth years
- **Day:** 19 Earth hours
- **Number of moons:** 16