

THIS IS A CLASS SET - PLEASE TAKE NOTES ON THE HANDOUT AND IN YOUR NOTEBOOK

Jupiter

1. The Biggest Planet

With a radius of 43,440.7 miles (69,911 kilometers), Jupiter is 11 times wider than Earth. If Earth were the size of a nickel, Jupiter would be about as big as a basketball.

2. Fifth in Line

Jupiter orbits our sun, a star. Jupiter is the fifth planet from the sun at a distance of about 484 million miles (778 million km) or 5.2 Astronomical Units (AU). Earth is one AU from the sun.

3. Short Day / Long Year

One day on Jupiter takes about 10 hours (the time it takes for Jupiter to rotate or spin once). Jupiter makes a complete orbit around the sun (a year in Jovian time) in about 12 Earth years (4,333 Earth days).

4. What's Inside?

Jupiter is a gas-giant planet and therefore does not have a solid surface. Jupiter may have a solid, inner core about the size of Earth.

5. Atmosphere

Jupiter's atmosphere is made up mostly of hydrogen (H₂) and helium (He).

6. Many Moons

Jupiter has 53 known moons, with an additional 16 moons awaiting confirmation of their discovery -- that is a total of 69 moons.

7. Ringed World

Jupiter has a faint ring system that was discovered in 1979 by the Voyager 1 mission. All four giant planets in our solar system have ring systems.

8. Exploring Jupiter

Many missions have visited Jupiter and its system of moons. The Juno spacecraft is currently orbiting Jupiter.

9. Ingredients for Life?

Jupiter cannot support life as we know it. However, some of Jupiter's moons have oceans underneath their crusts that might support life.

10. Did You Know?

Jupiter's Great Red Spot is a gigantic storm (about the size of Earth) that has been raging for hundreds of years.

Formation

Jupiter took shape when the rest of the solar system formed about 4.5 billion years ago, when gravity pulled swirling gas and dust in to become this gas giant. Jupiter took most of the mass left over after the formation of the sun, ending up with more than twice the combined material of the other bodies in the solar system. In fact, Jupiter has the same ingredients as a star, but it did not grow massive enough to ignite.

About 4 billion years ago, Jupiter settled into its current position in the outer solar system, where it is the fifth planet from the sun.

Structure

The composition of Jupiter is similar to that of the sun — mostly hydrogen and helium. Deep in the atmosphere, pressure and temperature increase, compressing the hydrogen gas into a liquid. This gives Jupiter the largest ocean in the solar system — an ocean made of hydrogen instead of water. Scientists think that, at depths perhaps halfway to the planet's center, the pressure becomes so great that electrons are squeezed off the hydrogen atoms, making the liquid electrically conductive like metal. Jupiter's fast rotation is thought to drive electrical currents in this region, generating the planet's powerful magnetic field. It is still unclear if, deeper down, Jupiter has a central core of solid material or if it may be a thick, super-hot and dense soup. It could be up to 90,032 degrees Fahrenheit (50,000 degrees Celsius) down there, made mostly of iron and silicate minerals (similar to quartz).