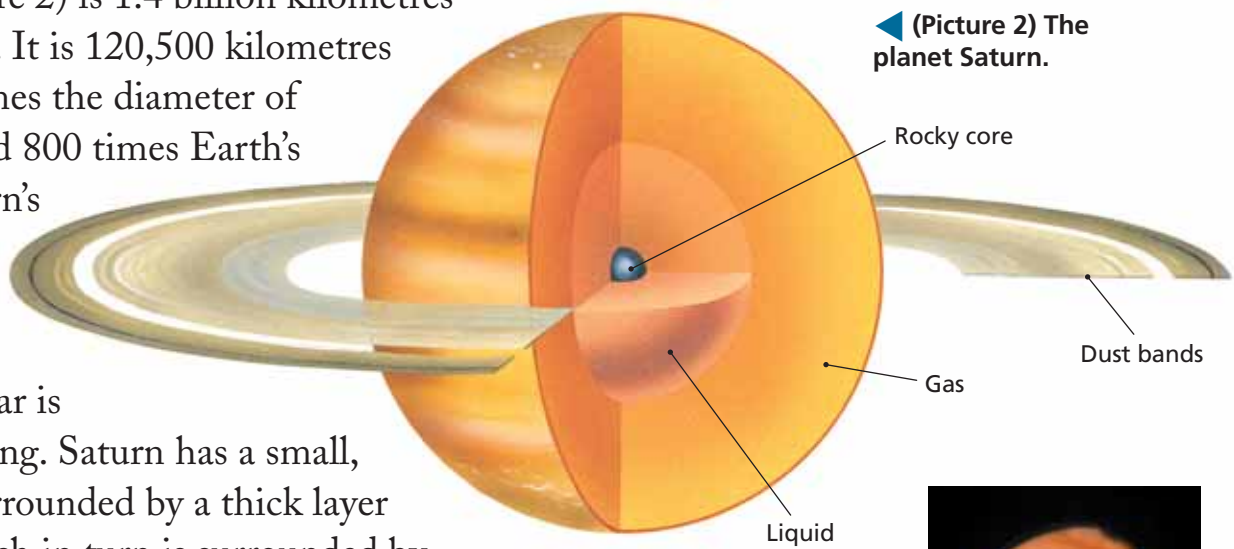
9 The giant gas planets

The outer planets are huge compared to the Earth, and made mainly of gas. Jupiter is almost big enough to be a sun.

The outer planets (Picture 1) are cold worlds, a long way from the Sun, and surrounded by gases. This is why they are such giant worlds.

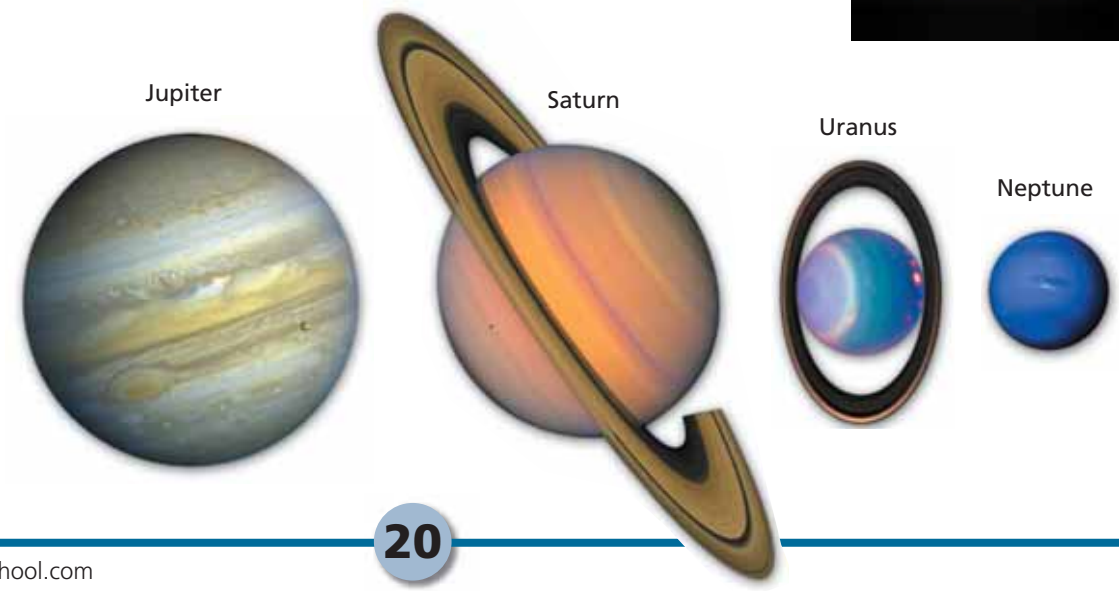
Saturn

Saturn (Picture 2) is 1.4 billion kilometres from the Sun. It is 120,500 kilometres across, ten times the diameter of the Earth, and 800 times Earth's volume. Saturn's day is a little less than half an Earth day, but its year is 29 times as long. Saturn has a small, rocky core surrounded by a thick layer of liquid, which in turn is surrounded by an enormously thick layer of gas. Saturn's most striking features – which can be seen even with a low power telescope – are the dust bands that surround its equator. Saturn has more moons than any other planet, the largest of which is Titan (Picture 3).



(Picture 2) The planet Saturn.

(Picture 3) Titan, the largest of Saturn's moons.



(Picture 1) The order of the gas giants out from the Sun is: Jupiter, Saturn, Uranus and Neptune.

Weblink: www.science-at-school.com

Jupiter

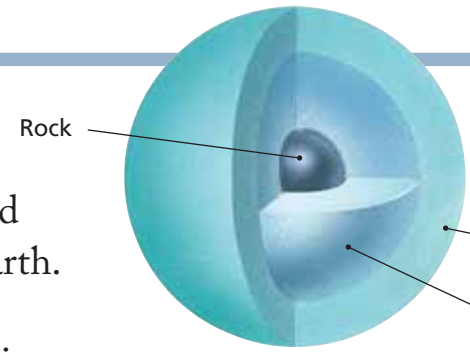
Jupiter is 143,000 kilometres across and a thousand times the volume of the Earth. In many ways it is like the Sun. It is made of the same gases as the Sun. It lies 780 million kilometres from the Sun and sends out twice as much heat as it gets from the Sun. If Jupiter were much bigger, the gravity of the planet would pull the gases together and turn it into a star.

The gases on Jupiter contain winds and clouds that run in bands. We can even see these coloured bands with a telescope. The most famous feature is the Great Red Spot, a single storm bigger than the entire Earth (Picture 4).

Uranus

Uranus (Picture 5), at 51,100 kilometres across, is about four times the diameter of the Earth. It lies 2.9 billion kilometres from the Sun. It is surrounded by gases over 8,000 kilometres thick. Beneath this

▼ **(Picture 4) A satellite photo of Jupiter with the Great Red Spot swirling in the coloured bands.**

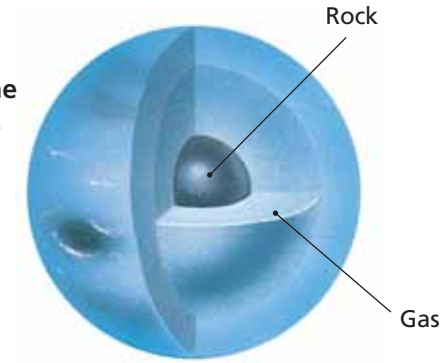


◀ **(Picture 5) The planet Uranus.**

is an ocean of hot water over 10,000 kilometres deep.

The solid part of the planet is made of rock and is about the same size as the Earth. There are many rings surrounding the planet, five major moons and ten smaller ones. Each year on Uranus lasts 84 Earth years.

▶ **(Picture 6) The planet Neptune.**



Neptune

Neptune (Picture 6) is 4.4 billion kilometres from the Sun. It is 49,500 kilometres across, about four times the diameter of the Earth. Its rocky core is surrounded by a thick layer of gases. The surface is very cold. It takes 165 Earth years to make one year on Neptune, but each day is just 16 hours long.

Summary

- **The giant gas planets are in the outer part of the Solar System, where it is colder.**
- **The gas giants (beginning with the closest to the Sun) are: Jupiter, Saturn, Uranus and Neptune.**

Weblink: www.science-at-school.com