

CHAPTER-1 THE EARTH IN THE SOLAR SYSTEM

How wonderful it is to watch the sky after sunset! One would first notice one or two bright dots shining in the sky. Soon you would see the number increasing. You cannot count them any more. The whole sky is filled with tiny shining objects – some are bright, others dim. It seems as if the sky is studded with diamonds. They all appear to be twinkling.

You can see the full moon only once in about a month's time. It is Full moon night or *Poornima*. A fortnight later, you cannot see it at all. It is a New moon night or *Amavasya*.

The sun, the moon and all those objects shining in the night sky are called celestial bodies. Some celestial bodies are very big and hot. They are made up of gases. They have their own heat and light, which they emit in large amounts. These celestial bodies are called stars. The sun is a star.

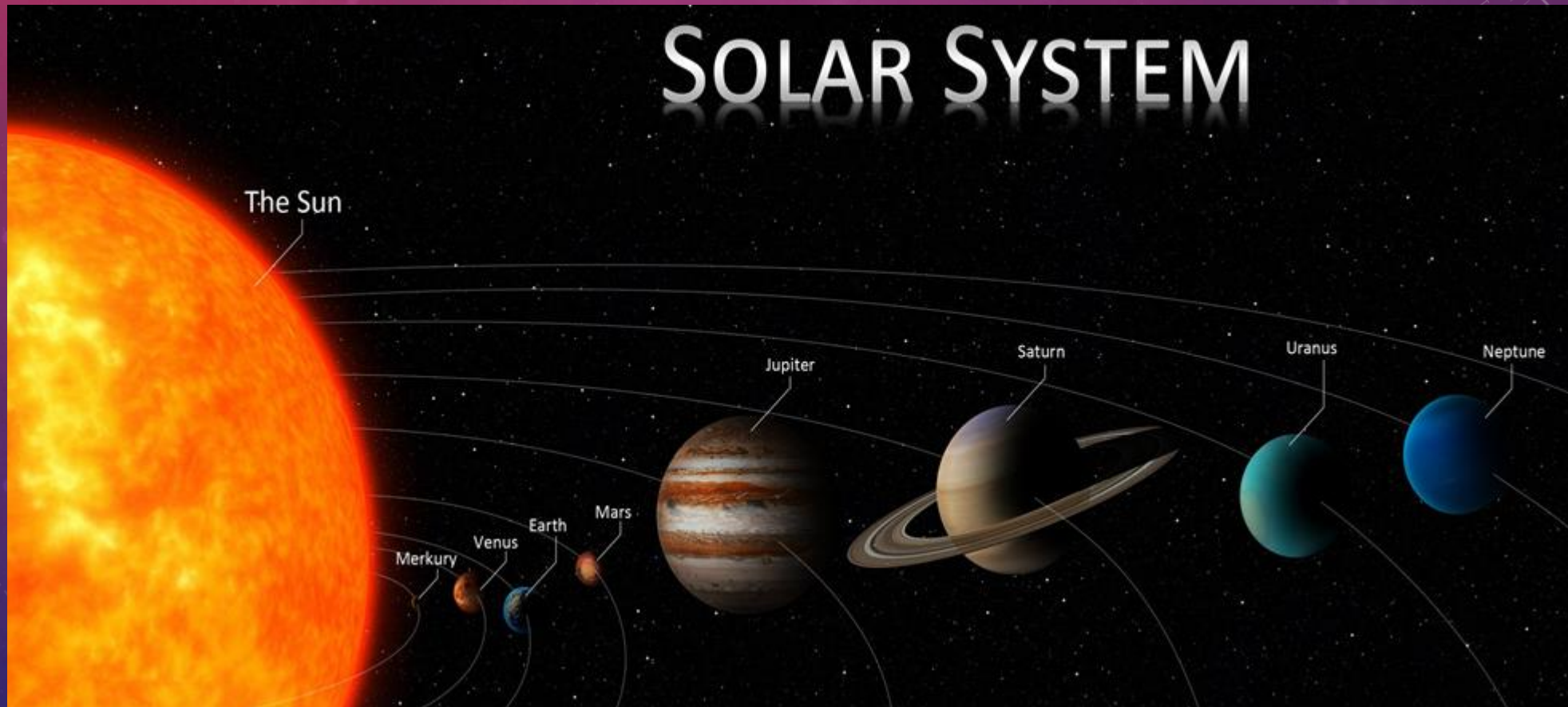
While watching the night sky, you may notice various patterns formed by different groups of stars. These are called *constellations*. Ursa Major or Big Bear is one such constellation. One of the most easily recognizable constellation is the *Saptarishi* (*Sapta*-seven, *rishi*-sages). It is a group of seven stars that forms a part of Ursa Major Constellation. In ancient times, people used to determine directions during the night with the help of stars.

The North star indicates the north direction. It is also called the Pole Star. It always remains in the same position in the sky. We can locate the position of the Pole Star with the help of the Saptarishi.

Some celestial bodies do not have their own heat and light. They are lit by the light of the stars. Such bodies are called planets. The word 'planet' comes from the Greek word "Planetai" which means 'wanderers'. The earth on which we live is a planet.

THE SOLAR SYSTEM

The sun, eight planets, satellites and some other celestial bodies known as asteroids and meteoroids form the solar system. We often call it a solar family, with the sun as its Head.



The Sun

The sun is in the centre of the solar system. It is huge and made up of extremely hot gases. It provides the pulling force that binds the solar system. The sun is the ultimate source of heat and light for the solar system. But that tremendous heat is not felt so much by us because despite being our nearest star, it is far away from us. The sun is about 150 million km away from the earth.

Planets

There are eight planets in our solar system. In order of their distance from the sun, they are: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune.

All the eight planets of the solar system move around the sun in fixed paths. These paths are elongated. They are called orbits. *Mercury* is nearest to the sun. It takes only about 88 days to complete one round along its orbit. *Venus* is considered as 'Earth's-twin' because its size and shape are very much similar to that of the earth.

The Earth

The earth *is* the third nearest planet to the sun.

In size, it is the fifth largest planet. It is slightly flattened at the poles. That is why, its shape is described as a Geoid. Geoid means an earth-like shape.

The Moon

Our earth has only one satellite, that is, the moon. Its diameter is only one-quarter that of the earth. It appears so big because it is nearer to our planet than other celestial bodies.

The moon moves around the earth in about 27 days. It takes exactly the same time to complete one spin. As a result, only one side of the moon is visible to us on the earth.

Asteroids

Apart from the stars, planets and satellites, there are numerous tiny bodies which also move around the sun. These bodies are called asteroids. They are found between the orbits of Mars and Jupiter.

Meteoroids

The small pieces of rocks which move around the sun are called meteoroids. Our solar system is a part of this galaxy. In ancient India, it was imagined to be a river of light flowing in the sky. Thus, it was named *Akash Ganga*. A galaxy is a huge system of billions of stars, and clouds of dust and gases. There are millions of such galaxies that make the Universe. It is difficult to imagine how big the universe is. Scientists are still trying to find out more and more about it. We are not certain about its size but we know that all of us – you and I belong to this universe.

MIND MAPPING

All objects belonging to space are celestial bodies.

Small celestial bodies that revolve around planets are called satellite.

Earth is the only planet in our solar system where life exists

*THE EARTH
IN THE
SOLAR
SYSTEM*

Small pieces of rocks which move around the sun are called meteoroids.

Galaxies are large clusters of millions of stars.

Numerous tiny bodies which also move around the sun are called asteroids.

All the eight planets of the solar system move around the sun in fixed path are called orbits.

Natural satellite & man made satellite.

The sun, eight planets, satellites & some other celestial bodies form the solar system.