Class : 8 Science
Revision Notes
Chapter – 17
Stars and the Solar System

- **Celestial Bodies:** All natural bodies visible in the sky, outside the Earth's atmosphere, constitute the celestial bodies, e.g. stars, planets, their moons, comets, asteroids, meteors, etc. The **Moon** is the celestial body closest to us.
- **Stars** are celestial bodies that emit light of their own. Our sun is also a star.
- It is convenient to express distances of stars in light years.A light year is the distance covered by light in one year.
- Stars appear to move from east to west.
- The pole star appears to be stationary from the Earth, because it is situated close to the direction of the axis of rotation of the Earth.
- **Solar system:** The Sun and the celestial bodies that revolve around it form the solar system. It comprises large number of bodies like planets(8 known till date), their moons, comets, asteroids, meteoroids, meteors and meteorites. These objects are held together in the solar system due to Sun's gravitational pull.
- **Sun:** It is the source of almost all energy on Earth. It continuously emits huge amounts of heat and light.
- **Planets:** Planets reflect sunlight that is incident on them. They have no light of their own, so they don't twinkle like the stars. Planets have definite paths called orbits in which they revolve around the sun. The time taken by a planet to complete one full revolution around the sun is called its period of revolution. The time taken by a planet to rotate a full 360 degrees on its axis is called its period of rotation. Time taken by a planet to complete one revolution increases as the distance from the sun increases.
- There are eight planets in our solar system: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune.
- Venus is the brightest planet in the night sky.
- Jupiter is the largest planet of the solar system

Other members in our solar system are:

(i) **Asteroids**: These are rocky planetary bits orbiting around sun. asteroid belt lies between Mars and Jupiter.

(ii) **Comets:** These are celestial bodies that revolve around the sun. It appears generally as a bright head with a long tail.The tail of a comet is always directed away from the Sun. A comet is made up of rock, dust, water, ice and frozen gases.

(iii) **Meteors and Meteorites:** Meteoroids are chunks of rock or particle of debris in our solar system. They are smaller than comets. When meteoroids enter the Earth's atmosphere they are called meteors. Most meteors burn up in the atmosphere, but if they survive the frictional heating and strike the surface of the Earth they are called meteorites. As a meteor glows brightly when it falls to the ground it is called a shooting star.

(iv) **Satellites**

- A body revolving around another body is called a satellite.
- Moon is the natural satellite of the Earth. Some planets also have natural satellites.
- **Artificial Satellites:** Man-made objects sent into space to orbit the earth. Example: IRS, EDUSAT, INSAR. The artificial satellites revolve around the Earth. They are much closer than the moon

Artificial satellites are used for weather forecasting, long distance communication and remote sensing.

Stars are luminous bodies which appear as points of light in the night sky. Our Sun is also a star. Many of the stars that we see in the sky are much bigger than the sun. But as they are quite far away from us, they appear very small.

Constellations: A group of stars forming some kind of recongnisable figures or patterns are known as constellations.

Constellations appear to move from east to west as Earth rotates from west to east.

Orion- the Hunter, Ursa Major- the Great Bear or Saptarishi, Cassiopeia are some constellations.

The Moon is the celestial body closest to us. It is the only natural satellite of the Earth. It is a non-luminous body and it reflects the sunlight incident on it. Due to its revolution around the Earth, when it is at different positions in its path, the apparent disc of the Moon changes, which gives rise to its phases.