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## Chapter - 17

### Stars and the Solar System

- The phases of the moon occur because we can see only that part of the moon which reflects the light of the Sun towards 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.
  - 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.
  - Constellations are groups of stars that appear to form recognisable shapes.
  - The solar system consists of eight planets and host of asteroids, comets and meteors.
  - A body revolving around another body is called a satellite.
  - Moon is the natural satellite of the Earth. Some planets also have natural satellites.
  - Venus is the brightest planet in the night sky.
  - Jupiter is the largest planet of the solar system.
  - 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.
  - **Sun:** It is the source of almost all energy on Earth. It continuously emits huge amounts of heat and light.
  - **Planets:** A planet has a definite path in which it revolves around the sun called orbit. 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.
  - 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 heavenly bodies that revolve around the sun. It appears generally as a bright head with a long tail.
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(iii) **Meteors and Meteorites:** Meteor is a brief streak of light in the night sky caused by a meteoroid. Smaller meteors melt and burn up creating streaks of light. Few meteoroids which survive as they pass through the Earth's atmosphere and reach the Earth surface are called meteorites.

(iv) **Artificial Satellites:** Man-made objects sent into space to orbit the earth. Example: IRS, EDUSAT, INSAR.

- **Constellations:** A group of stars forming some kind of recognisable 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.
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