

Lesson at a Glance

- The Stars and the MOON are **celestial bodies** which are visible only at night in the sky. During daytime, the power of the sun's light renders them invisible.
- The moon appears differently on different nights—like the **Full Moon** only once a month, on the *poornima* night whereas on the fifteenth night after that, there is **no moon** in the sky (*amavasya*).
- Some celestial bodies are big and hot since they are made of gases. They are called **Stars**. The sun is also a star. We do not feel the heat and light of the stars other than the sun since they are very far away from us.
- Groups of stars that are visible in definite patterns are called **Constellations**. Ursa Major (the Big Bear), The Small Bear (*Saptarishi*), etc are some well-known constellations.
- The **Pole Star** is known to retain the same position every night in the sky. It is also called the North Star since it helps in knowing the North direction.

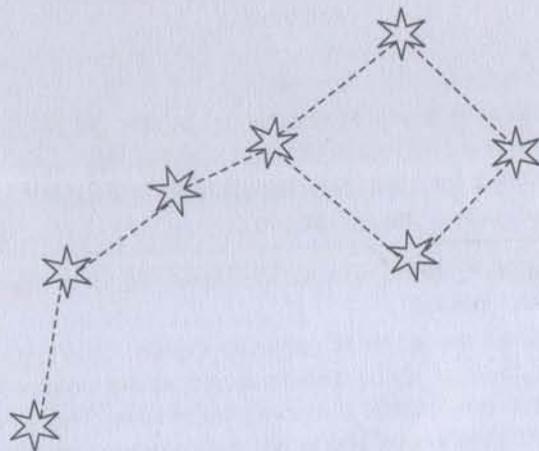


Fig. 1.1. The seven stars of *Saptarishi*.

- There are celestial bodies that do not have their own heat and light. They reflect the light they get from stars. Such bodies are the **Planets**. We live on the earth, a planet. Most planets have **Satellites**, which are celestial bodies that revolve around a particular planet. The moon is the only satellite of the earth.
- The earth and moon are part of a bigger system (or family) of celestial bodies, called the **Solar System**. The sun is the "head" of this system, and is present at its centre. The planets revolve around the sun, while the satellite **revolves** around the planets. The planets, in addition to revolving around the sun, also **rotate** about their own axis.
- The sun is made of extremely hot gases, and it provides heat and light to the rest of the solar system. It is about 150 million kilometres away from the earth.
- All the planets of the solar system are listed below: (in the order of their distance from sun)
 - (i) Mercury (planet nearest to the Sun)
 - (ii) Venus
 - (iii) Earth
 - (iv) Mars
 - (v) Jupiter
 - (vi) Saturn
 - (vii) Uranus
 - (viii) Neptune

Mnemonic.....

to memorise the names of the eight planets in the order of their distance from the sun

My Very Efficient Mother Just Served Us Nuts

where the beginning of each word is the same as the first letter of the planet existing at that position in the order (check the list above)

- Till August 2006, Pluto was also a planet. But it is now recognised as a "**dwarf planet**".
- The shape of the earth is called a **Geoid**. This means it is not perfectly spherical, since it is flattened at the poles. The earth is probably the only planet that can support life. This is because its temperature, resources like water and oxygen, etc are present in the proportions appropriate for life. The earth, with its 2/3 rd of surface covered with water, appears blue from space and is called **Blue Planet**.

- The Moon's diameter is $\frac{1}{4}$ th of that of the earth. It is 3,84,400 km away from earth. It completes a **revolution** around the earth in about 27 days. Incidentally, it also takes around the same time for a **rotation** about its own axis. It does not support life.
- There are several other tiny bodies in space (the Asteroids) that move around the sun. There is a "belt" of such objects, called the **Asteroid Belt**, between Mars and Jupiter.
- There exist small pieces of rocks (Meteoroids) which also move around the sun.
- The Milky Way is the galaxy (a huge system of billions of stars) we live in. The Milky Way is further a part of a bigger collection of galaxies, called the Universe.

TEXTBOOK QUESTIONS SOLVED

9. 1. Answer the following questions briefly.

- How does a planet differ from a star?
- What is meant by the 'Solar System'?
- Name all the planets according to their distance from the sun.
- Why is the Earth called a unique planet?
- Why do we see only one side of the moon always?
- What is the Universe?

Ans. (a) Differences between a planet and a star:

Planet	Star
<ul style="list-style-type: none"> • A planet does not have its own light and heat. It derives its light from a star. • A planet is usually smaller than stars. 	<ul style="list-style-type: none"> • A star possesses its own heat and light. • Stars are very huge objects compared to a planet in general.

- The term Solar System refers to the "family" of the Sun. The Sun is a star around which eight planets, among other celestial objects, revolve in orbits. This whole system of bodies is called the Solar System. The Sun is the "head" of this system.
- The list of planets in the order of their distance from the Sun is as follows:

(i) Mercury	(ii) Venus
(iii) Earth	(iv) Mars

- Jupiter
 - Uranus
- Saturn
 - Neptune
- The Earth is regarded as a unique planet because of the following reasons:
 - It is the only planet known to support life. It has oxygen and water present in proportions that allow life to thrive.
 - It also has a temperature range that supports life.
 - The proportion of water present is about two-thirds of the surface of earth when compared to land.
- One revolution of the moon around the earth takes about 27 days. Incidentally, the moon's rotation about its own axis also takes nearly the same time. One day of the moon is equal to 27 Earth days. So only one side of the moon can be seen from the earth.
- The Universe is the largest unit in which we live. It is a collection of galaxies. There is only one Universe, and everything that exists, exists in this Universe itself.

9. 2. Tick the correct answer.

- The planet known as the "Earth's Twin" is
 - Jupiter
 - Saturn
 - Venus.
- Which is the third nearest planet to the sun?
 - Venus
 - Earth
 - Mercury.
- All the planets move around the sun in a
 - Circular path
 - Rectangular path
 - Elongated path.
- The Pole Star indicates the direction to the
 - South
 - North
 - East.
- Asteroids are found between the orbits of
 - Saturn and Jupiter
 - Mars and Jupiter
 - The Earth and Mars.

Ans. (a)—(iii), (b)—(ii), (c)—(iii), (d)—(ii), (e)—(ii).

9. 3. Fill in the blanks.

- (a) A group of forming various patterns is called a
- (b) A huge system of stars is called
- (c) is the closest celestial body to our earth.
- (d) is the third nearest planet to the sun.
- (e) Planets do not have their own and

Ans. (a) stars, constellation (b) galaxy
(c) The moon (d) The earth
(e) heat, light.

