SCIENCE

MOON

THE MOON

Is there a change in the shape of the moon everyday? Are there days when the shape of the moon appears to be perfectly round? Are there days when the moon cannot be seen at all even if the sky is clear?

The day on which the whole disc of the moon is visible is known as the full moon day. Thereafter, every night the size of the bright part of the moon appears to become thinner and thinner. On the fifteenth day the moon is not visible. This day is known as the 'new moon day'. The next day, only a small portion of the moon appears in the sky. This is known as the crescent moon. Then again the moon grows larger every day. On the fifteenth day once again we get a full view of the moon.

The various shapes of the bright part of the moon as seen during a month are calledphases of the moon. Phases of the moon play an important role in our social life. Almost all festivals in India are celebrated according to the phases of the moon. For example, Diwali is celebrated on the new moon day; Budh Poornima and Guru Nanak's birthday are celebrated on full moon day; Maha Shivratri is celebrated on thirteenth night of waning moon; Eidul-Fitr is observed on the day following the sighting of crescent moon.

Let us try to understand why phases of the moon occur. the moon does not produce its own light, whereas the Sun and other stars do. We see the moon because the sunlight falling on it gets reflected towards us . We, therefore, see only that part of the moon, from which the light of the Sun is reflected towards us.

Can you now guess the relative positions of the Sun, moon and the Earth on the day of the full moon and on the day of the new moon? Sketch these positions in your notebook. In which part of the sky would you look for the full moon?

The size of the illuminated part of the moon visible from the Earth increases each day after the new moon day. After the full moon day, the sunlit part of the moon visible from the Earth decreases in size every day. The moon completes one rotation on its axis as it completes one revolution around the Earth.

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Some Other Members of the Solar System

There are some other bodies which revolve around the Sun. They are also members of the solar system. Let us learn about some of them.

Asteroids

There is a large gap in between the orbits of Mars and Jupiter. This gap is occupied by a large number of small objects that revolve around the Sun. These are called asteroids. Asteroids can only be seen through large telescopes.

Comets

Comets are also members of our solar system. They revolve around the Sun in highly elliptical orbits. However, their period of revolution round the Sun is usually very long. A Comet appears generally as a bright head with a long tail. The length of the tail grows in size as it approaches the sun. The tail of a comet is always directed away from the sun

Many comets are known to appear periodically. One such comet is Halley's comet, which appears after nearly every 76 years. It was last seen in 1986. Can you tell, when Halley's comet will be visible again?

Meteors and Meteorites

At night, when the sky is clear and the moon is not there, you may sometimes see bright streaks of light in the sky. These are commonly known as shooting stars, although they are not stars. They are called meteors. A meteor is usually a small object that occasionally enters the earth's atmosphere. At that time it has a very high speed. The friction due to the atmosphere heats it up. It glows and evaporates quickly. That is why the bright steak lasts for a very short time.

Some meteors are large and so they can reach the Earth before they evaporate completely. The body that reaches the Earth is called a meteorite. Meteorites help scientists in investigating the nature of the material from which the solar system was formed.

Artificial Satellites

You must have heard that there are a number of artificial satellites which are orbiting the Earth. You might wonder how artificial satellites are different from natural satellites. Artificial satellites are man-made. They are launched from the Earth. They revolve around the Earth much closer than earth's natural satellite, the moon.

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India has built and launched several artificial satellites. Aryabhata was the first Indian satellite. Some other Indian satellites are INSAT, IRS, Kalpana-1, EDUSAT, etc.

Artificial satellites have many practical applications. They are used for forecasting weather, transmitting television and radio signals. They are also used for telecommunication and remote sensing.