



MukundPura Meteorite

Why in News

A recent study has shed light on the mineralogy of the meteorite named Mukundpura CM2 which fell in Mukundpura village near Jaipur in **2017**.

- A meteorite is a **solid piece of debris** from an object, such as a **comet, asteroid, or meteoroid**, that **originates in outer space** and survives its passage through the atmosphere to reach the **surface of a planet or moon**.

Key Points

▪ About:

- The meteorite named **Mukundpura CM2** was classified to be a **carbonaceous chondrite**. The composition of carbonaceous chondrites are also similar to the Sun.
- Chondrites are silicate droplet bearing meteorites, and this Mukundpura chondrite is the **5th carbonaceous meteorite known to fall in India**.

▪ Classification Of Meteorite:

- Meteorites are classified into **three groups: Stony** (silicaterich), **Iron** (Fe-Ni alloy), and **Stony Iron** (mixed silicate iron alloy).
- **Mukundpura CM2** is a type of **stony meteorite**, considered the **most primitive meteorite** and a remnant of the first solid bodies to accrete in the solar system.

▪ Components of Meteorite:

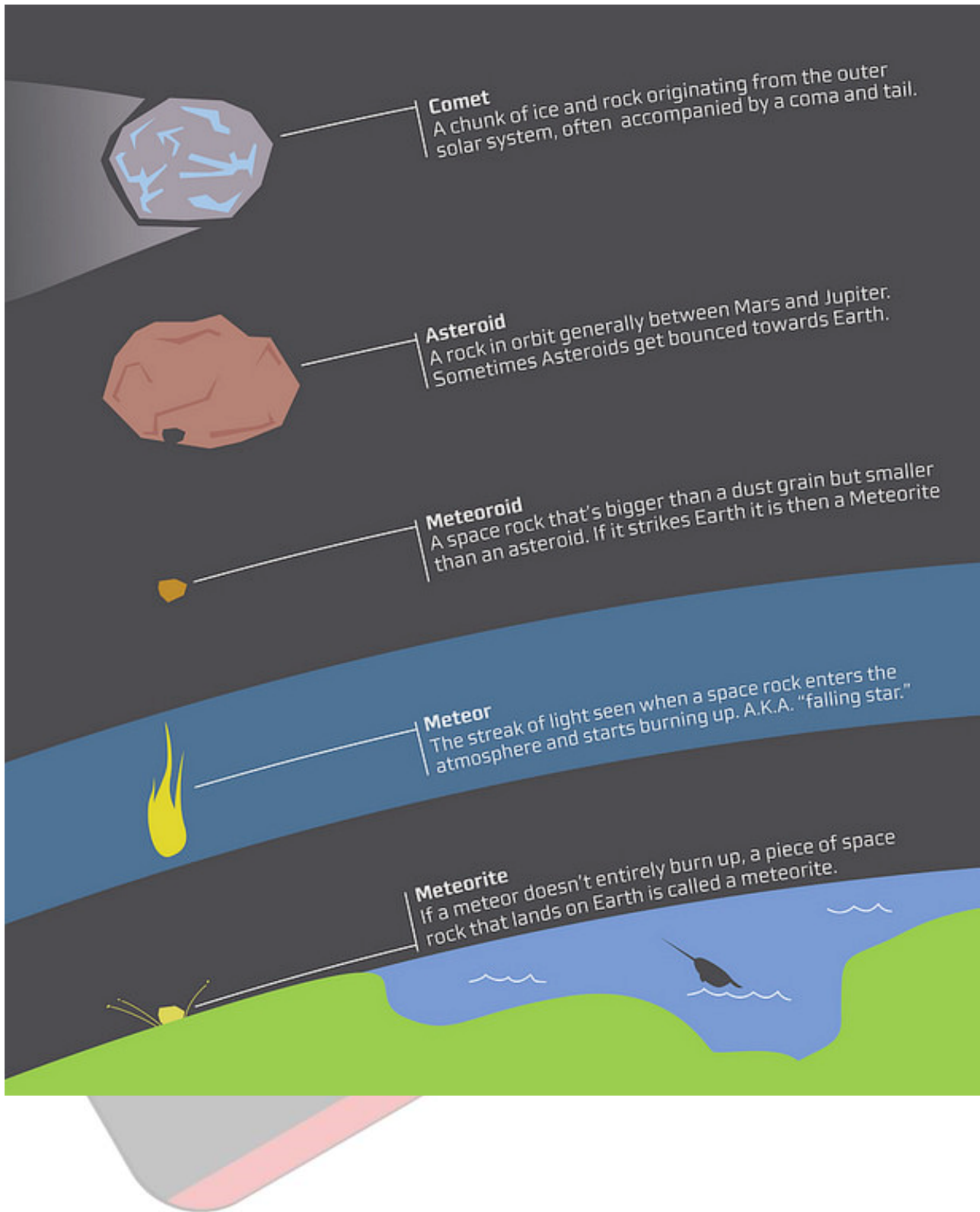
- Detailed spectroscopic studies revealed that the **meteorite had very high (about 90%) phyllosilicate minerals** comprising both **magnesium and iron**.
- **Forsterite and FeO olivine, calcium aluminium rich inclusion (CAI) minerals**.
- Few **magnetites, sulphides, aluminium complexes and calcites** were also found.

▪ Importance of studying Asteroid:

- **Understanding of Solar system's history**.
- How the solar system evolved into the Sun and planets of today.
- The effects of impact of meteorites.
- They are often rich in volatiles and other minerals and can be **exploited for future planetary exploration**.

Difference between Meteor, Meteorite and Meteoroid

- When **meteoroids** enter Earth's atmosphere (or that of another planet, like Mars) at **high speed and burn up**, the fireballs or "**shooting stars**" are called **meteors**.
- When a meteoroid **survives a trip through the atmosphere and hits the ground**, it's called a **meteorite**.



Source:TH

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