

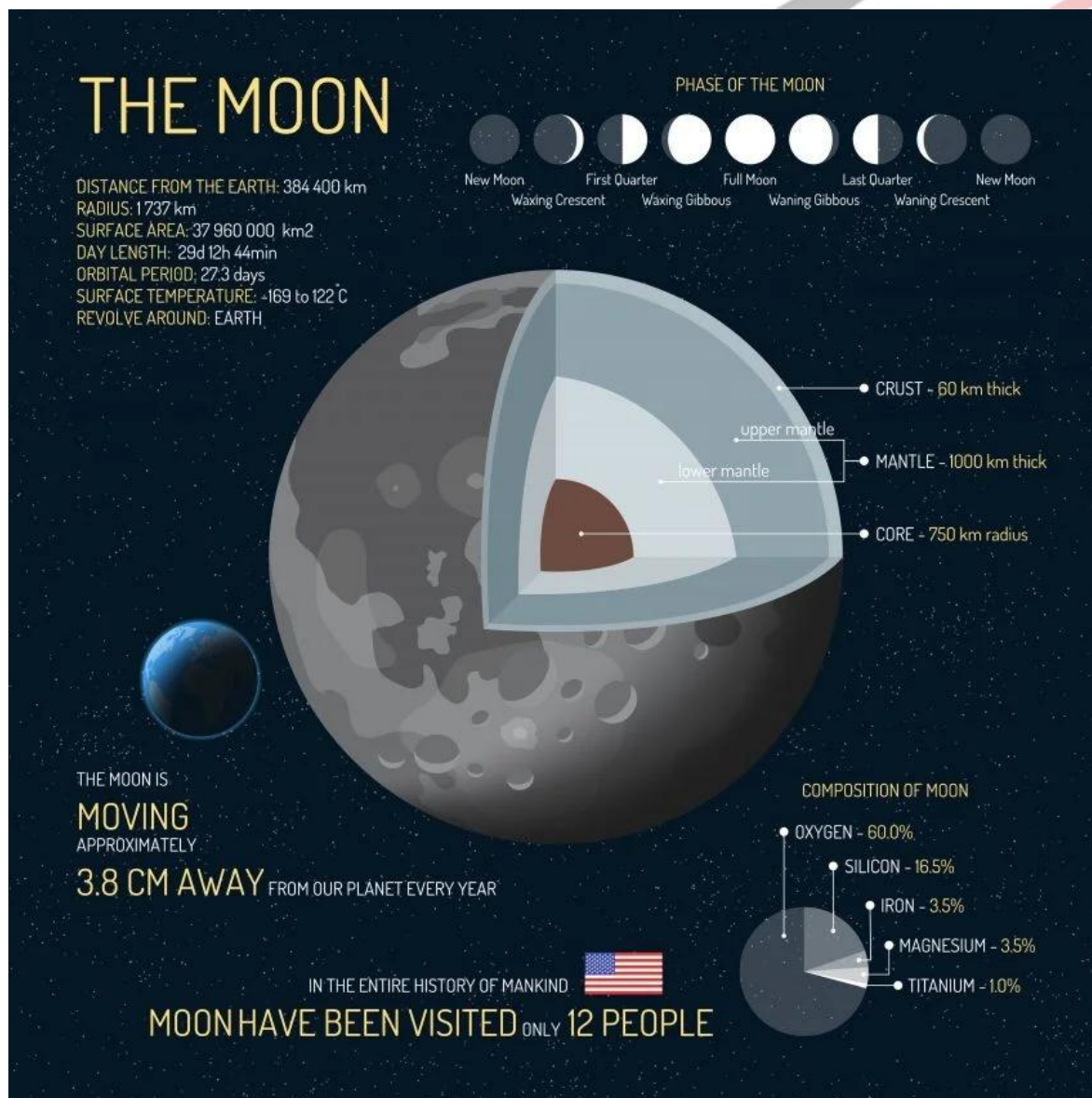


International Moon Day

[Source: TH](#)

20th July is observed annually as **International Moon Day** to mark the **historic first human landing on the Moon by the Apollo 11 mission in 1969**.

- The **United Nations General Assembly** officially recognised this observance in **2021**, following a recommendation by the **Committee on the Peaceful Uses of Outer Space (COPUOS)**, to promote **global cooperation in space exploration**.



Apollo 11 Mission

- **Apollo 11**, launched by **NASA** on **16th July 1969**, was the **first successful crewed mission to land on the Moon and return safely to Earth**.
- On **20th July 1969**, astronauts **Neil Armstrong** and **Buzz Aldrin** became the **first humans to set foot on the lunar surface**, while **Michael Collins** remained in lunar orbit aboard the Command Module.
 - In total, there were **six successful lunar landings** under the Apollo program: **Apollo 11, 12, 14, 15, 16, and 17**.

India's Lunar Mission

- India's Moon missions began with **Chandrayaan-1 (2008)**, which discovered water on the Moon, followed by **Chandrayaan-2 (2019)**, whose orbiter remains active despite a failed landing.
- **Chandrayaan-3 (2023)** achieved a historic **soft landing at the South Pole**, making India the **first to do so** (fourth nation to land on the Moon).
- Upcoming missions include **Chandrayaan-4 (2027)** for **sample return**, and **Chandrayaan-5 (LUPEX)**, a joint mission with **Japan (JAXA)** to explore **lunar water and ice**, planned for **2027-28**.



CHANDRAYAAN 3

India's 3rd lunar mission; a successful attempt at achieving a soft landing on lunar south

BRIEF HISTORY

○ Lunar Mission ○ Aim ○ Launch Vehicle ○ Success

● Chandrayaan 1 (2008)	Create a 3D atlas of moon & Mineralogical mapping	PSLV – C11	Detection of water and hydroxyl on lunar surface
● Chandrayaan 2 (2019)	Exploring lunar south pole	GSLV MkIII-M1	Lander and rover crashed but orbiter successfully collected data

COMPONENTS

- Lander - Vikram; Rover - Pragyan (same as Chandrayaan 2)
 - ▶ Both designed to last for 14 days; not supposed to come back to the earth
- Spectro-polarimetry of Habitable Planet Earth (SHAPE)
 - ▶ An experimental payload in propulsion module
 - ▶ Study spectro-polarimetric signatures of Earth (near-infrared wavelength range)

ASPECTS TO STUDY

- Lunar quakes
- Thermal properties of lunar surface
- Changes in plasma near the surface
- Accurately measuring distance b/w Earth and the moon

MISSION LIFE

- 1 lunar day (~14 Earth days)

LAUNCH VEHICLE

- LVM3 - M4

India became the 1st country to successfully land on Lunar south pole and 4th to achieve soft-landing on Lunar surface (after US, Russia and China)

Why Chandrayaan 3 Succeeded?

- A "failure-based design", unlike the "success-based design" of Chandrayaan-2
 - ▶ Even if all the sensors failed and engines stopped, **Vikram was sure to make the landing**
 - ▶ Provision of **multiple attempts** for landing if attempt 1 failed
- Developed accordingly to **rule out the scenario of crash landing**
 - ▶ Expanded landing area for more flexibility to land safely
 - ▶ Equipped with more fuel to enable longer-distance travel

Importance of Lunar South Pole

- Vastly different, more **challenging terrain** compared to lunar equatorial region
- Potential repositories of valuable **information about early Solar System**
- Impact **future deep space exploration** significantly
- **Water may be concentrated** in the moon's southern hemisphere



Read More: [Chandrayaan-5 \(LUPEX\)](#)

PDF Refernece URL: <https://www.drishtiias.com/printpdf/international-moon-day>