



KAMARAJ IAS ACADEMY
Only IAS Academy by Grandson of "Perunthalsivam Kamarajar"

First National Space Day

Published On: 23-08-2024

Context:

India to celebrate its **First National Space Day**, *marking the anniversary of Chandrayaan-3's historic moon landing.*

About:

The Indian government officially designated **August 23 as National Space Day** in recognition of this significant accomplishment, reflecting India's expanding capabilities in space exploration and highlighting the vital role of space science and technology in national development.

- The **Chandrayaan-3 mission**, *launched from the Satish Dhawan Space Centre in Sriharikota*, Andhra Pradesh, achieved a safe and **soft landing of the Vikram Lander on the Moon's surface**.
- This achievement **signifies a historic milestone for the nation**, as India became "**only the fourth country globally to successfully land a rover on the Moon**" and the "**first to do so in the southern polar region**".
- Accompanied by the **Pragyaan Rover**, *the Vikram Lander touched down at a site* designated as '**Shiv Shakti**.'
- Following the successful landing, the Pragyaan Rover was deployed, further advancing India's exploration efforts on the lunar surface.
- **The theme for National Space Day 2024** is "Touching Lives while Touching the Moon: India's Space Saga,".
- It highlighting the broader impact of space exploration on society and emphasising how advancements in space technology can enhance the quality of life on Earth.
- The day aims to engage the public and inspire future generations to pursue careers in **science, technology, engineering, and mathematics (STEM)**.
- National Space Day serves not only as a celebration of India's achievements in space but also as a platform to promote awareness and education about the importance of space exploration.

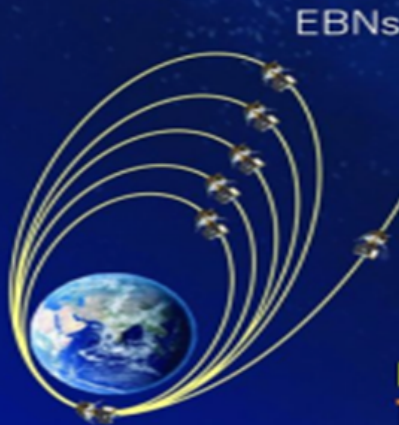
Kamaraj IAS Academy

Plot A P.127, AF block, 6 th street, 11th Main Rd, Shanthi Colony, Anna Nagar, Chennai, Tamil Nadu 600040

Phone: **044 4353 9988 / 98403 94477** / Whatsapp : **09710729833**

CHANDRAYAAN-3 MOON MISSION

Chandrayaan-3, the succeeding mission to Chandrayaan-2, is set to launch on Friday, July 14, 2023 at 2.35 pm



Take off from
Sriharikota

**LVM3-M4
Vehicle**

Height
43.5 m
Lift-off
Mass
642 t

Lunar
Orbit
Insertion

EBNs

100 km
Circular Lunar Orbit

**Integrated
Module Phase**

Lunar Transfer Trajectory

**Mission life
1 Lunar day**
(14 Earth days)

**Mass
1,749.86 kg**
including
Rover



Lander
Module
& Rover

Propulsion
module

Graphic: Ritesh Kumar

About Chandrayaan-3 Mission:

Chandrayaan-3 is India's third lunar mission and *second attempt at achieving a soft landing on the moon's surface.*

On July 14, 2023, Chandrayaan-3 took off from the Satish Dhawan Space Centre in Sriharikota. The spacecraft seamlessly entered lunar orbit on August 5, 2023. The historic moment unfolded when the lander made a successful touchdown near the Lunar south pole on Aug 23, 2023.

- **Mission Objectives :**
- To **demonstrate Safe and Soft Landing** on Lunar Surface
- To **demonstrate Rover roving** on the moon and
- To **conduct in-situ scientific experiments.**
- **Components:**
- Chandrayaan-3 is a *three-component mission* consisting of a **Propulsion Module, a Lander Module, and a Rover Module.**

Kamaraj IAS Academy

Plot A P.127, AF block, 6 th street, 11th Main Rd, Shanthi Colony, Anna Nagar, Chennai, Tamil Nadu 600040

Phone: **044 4353 9988 / 98403 94477 / Whatsapp : 09710729833**

- **The Propulsion Module :**It will carry the lander and rover configuration till 100 km lunar orbit.This propulsion module has *Spectro-polarimetry of Habitable Planet Earth (SHAPE)* payload to study the spectral and Polarimetric measurements of Earth from the lunar orbit.
- **The Lander Module: *The Lander Module (Vikram)*** is carrying a scientific payload that includes a suite of instruments to study the lunar surface and atmosphere *Chandra's Surface Thermophysical Experiment (ChaSTE)* to measure the thermal conductivity and temperature; *Instrument for Lunar Seismic Activity (ILSA)* for measuring the seismicity around the landing site; *Langmuir Probe (LP)* to estimate the plasma density and its variations. A passive *Laser Retroreflector Array* from NASA is accommodated for lunar laser ranging studies.
- **The Rover Module:**The *Rover Module (Pragyan)* is carrying a suite of instruments to study the lunar surface and subsurface which includes *Alpha Particle X-ray Spectrometer (APXS)* and *Laser Induced Breakdown Spectroscopy (LIBS)* for deriving the elemental composition in the vicinity of landing site.
- **Major Findings:**
- **Lunar Surface Temperature Surprise:** Chandra's Surface Thermophysical Experiment (ChaSTE) *measured temperatures reaching 70 degrees Celsius*, surprising scientists who expected temperatures between 20 to 30 degrees Celsius.
- **Lunar Surface Elements Confirmed:** *The Laser-Induced Breakdown Spectroscopy instrument onboard 'Pragyan' rover confirmed the presence of Sulphur on the lunar surface* near the south pole.Elements such as Aluminum, Calcium, Iron, Chromium, Titanium, Manganese, Silicon, and Oxygen were also detected.