



CURRENT AFFAIRS



Argasia Education PVT. Ltd. (GST NO.-09AAPCAI478E1ZH)
Address: Basement C59 Noida, opposite to Priyagold Building gate, Sector 02,
Pocket I, Noida, Uttar Pradesh, 201301, CONTACT NO:-8448440231

Date - 17 July 2023

CHANDRAYAAN 3

This article covers "Daily Current Affairs" and the topic details "Chandrayaan 3". The topic "Chandrayaan 3" has relevance in the "Science and Technology" section of the UPSC CSE exam.

For Prelims:

What is Chandrayaan? What are the components and features?

For Mains:

GS2: Achievements of Indians in Science and Technology, Awareness of Space

Why in the news?

India successfully launched its third Moon Mission named Chandrayaan- 3 on 14th July 2023 from the Satish Dhawan Space Centre, Sriharikota.

Chandrayaan-3:

Chandrayaan-3 is a mission that aims to prove the ability to land and move safely on the lunar surface. The lunar mission is a successor to Chandrayaan 2, which was launched in September 2019 but failed to land on the moon due to problems with its onboard computer and propulsion system.

Mission Objectives:

- To land safely on the lunar surface
- To deploy a rover to explore the surface of the moon
- To conduct scientific experiments on the moon

Components of Chandrayaan- 3:

- **Chandrayaan-3 is a mission comprising three modules: the Lander module (LM), the Propulsion module (PM), and the Rover.** The Lander and Rover both carry scientific equipment to conduct experiments on the moon's surface.
- **Propulsion module**
 - The Propulsion module's primary function is to transport the Lander from the launch vehicle to a final lunar orbit and then separate from it.
 - The Propulsion module also has a scientific payload that will be operated after the Lander module has separated.
- **Vikram Lander module**
 - It is capable of performing a soft landing on a specified lunar site.
- **Pragyan Rover**
 - The rover, which will be deployed by the lander, will analyse the chemical composition of the lunar surface as it travels.

- The GSLV-Mk3 rocket will launch Chandrayaan-3 into an Elliptic Parking Orbit (EPO) that is approximately 170 x 36500 km in size.

Propulsion Module Payload:

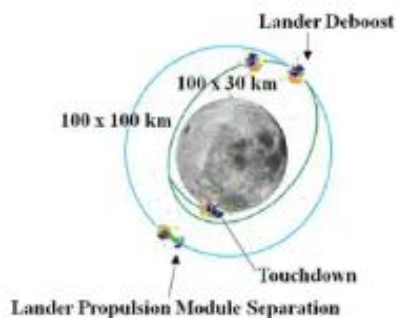
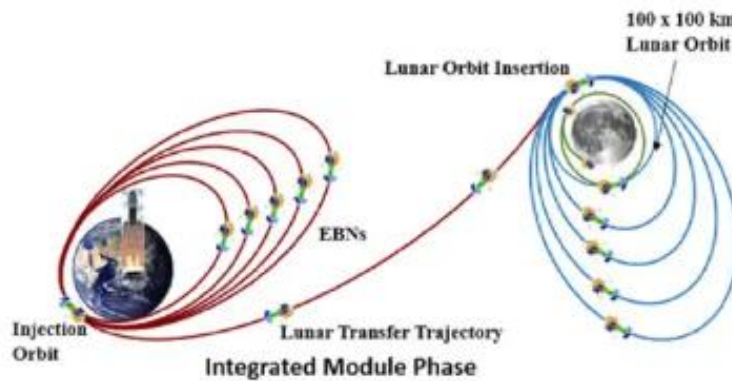
Spectro-polarimetry of Habitable Planet Earth (SHAPE)	Future discoveries of smaller exoplanets in reflected light could help us probe habitability and life on other worlds.
--	--

Lander payloads:

Chandra's Surface Thermophysical Experiment (ChaSTE)	Measures the thermal conductivity and temperature of the lunar surface.
Instrument for Lunar Seismic Activity (ILSA)	Measures the seismicity around the landing site.
Langmuir Probe (LP)	Estimates the plasma density and its variations.
Passive Laser Retroreflector Array from NASA	Accommodated for lunar laser ranging studies.

Rover payloads:

Alpha Particle X-ray Spectrometer (APXS)	For deriving the elemental composition in the vicinity of the landing site.
Laser Induced Breakdown Spectroscopy (LIBS)	



Chandrayaan- 3 Details

Feature	Details
Launcher	LVM3 M4 (GSLV Mk III)
Components	Lander module (LM), Propulsion module (PM), and Rover
Landing Site	Moon's South Pole- Around 70 degrees South of Equator
Rover Operating time	1 lunar day, equivalent to Forteen Earth days.
Trajectory	Same as Chandrayaan 2, with the propulsion module orbiting Earth several times before slingshotting towards the moon.
Orbit	The module will lower itself to a 100 x 100 km circular orbit before the lander detaches and descends to the surface.
Travel time	Approximately one month from the time of launch.
Landing date	Scheduled for August 23-24, but may change depending on when the Sun rises over the moon.

SHOOTING FOR THE MOON: 2019, 2023

CHANDRAYAAN-2

COMPONENTS
Orbiter, Lander, Rover

EXPERIMENTS ON BOARD
■ 8 on Orbiter, 4 on Lander, 2 on Rover

WEIGHT

Orbiter	2,379 kg
Lander	1,471 kg
Rover	27 kg (travels 500 m)
Payload total	3,850 kg

MISSION LIFE
ORBITER: Planned 1 year, estimated 7 years
LANDER, ROVER: 1 lunar day

LANDING SITE
70.9 degree S 22.7 degree E; high plain between two craters, Manzinus C and Simpeltus N

DAYS TO MOON

Around Earth	23 days
Towards Moon	7 days
Around Moon	13 days

Lander separation, de-boosting, powered descent: 5 days
TOTAL: 48 DAYS

LANDER
5 thrusters; was to land in a 500 m X 500 m space; was using pictures taken then and there to assess landing site

CHANDRAYAAN-3

COMPONENTS
Propulsion module, Lander, Rover

EXPERIMENTS ON BOARD
■ Same experiments on Lander and Rover as Chandrayaan-2
■ New experimental payload added to propulsion module

WEIGHT

Propulsion module	2,145 kg
Lander	1749.86 kg (including rover)
Rover	26 kg
Payload total	3,900 kg

MISSION LIFE
PROPULSION MODULE: 3 to 6 months
LANDER, ROVER: 1 lunar day

LANDING SITE
69.36 degree S, 32.34 degree E; slightly off the site for Chandrayaan-2

DAYS TO MOON
42 DAYS; SOONER THAN CHANDRAYAAN-2

LANDER
4 thrusters; stronger legs; built with redundancies for more scenarios, using data already generated by the C2 orbiter. Additional solar panels.

Isro's LVM3 carrying Chandrayaan-3 being moved to the launch pad ahead of its launch, at the Satish Dhawan Space Station, in Sriharikota. PTI

Significance of South Pole Landing:

- Chandrayaan-3 will be the first mission in the world to make a soft landing near the lunar south pole.
- The south pole is a challenging location for Earthlings to land, live, and work, but it has unique characteristics that could lead to unprecedented scientific discoveries.
- Lunar polar volatiles are chemical elements or compounds that melt or evaporate at moderately warm temperatures and can be found on the moon.
- Space missions could help us understand the distribution of lunar polar volatiles.
- If lunar polar volatiles contain elements like hydrogen and oxygen, this could have a profound impact on the future of deep space exploration and commerce.

Why India Wants to Do a Mission to the Moon

- **Scientific research:**

- The moon is a unique and valuable natural laboratory for scientific research.
- India's space program has a long history of conducting scientific research on the moon, and the Chandrayaan-3 mission will continue this tradition.
- The mission will study the composition of the lunar surface, the presence of water ice, and the history of lunar impacts.
- This information will help us to better understand the formation and evolution of the moon, and it could also have implications for the future of human exploration of the moon.

- **Technological development:**

- The Chandrayaan-3 mission will also help to develop India's space technology.
- The mission will require the development of new technologies for landing on the moon, exploring the lunar surface, and conducting scientific research.
- These technologies will have applications in other areas of space exploration, as well as in other fields such as agriculture, healthcare, and manufacturing.

- **National pride:**

- The Chandrayaan-3 mission will be a major achievement for India's space program, and it will be a source of pride for the Indian people.
- The mission will demonstrate India's capabilities in space exploration and will help to put the country at the forefront of this field.

Sources:

ISRO's Chandrayaan-3 takes off for the moon: Here's everything you need to know | Explained News, The Indian Express

Image Credits: ISRO, The Indian Express

Q1. With reference to Chandrayaan- 3, consider the following statements:

1. Chandrayaan-3 will become the world's third mission to soft-land near the lunar south pole.
2. The mission that aims to demonstrate the capability of landing and roving on the lunar surface safely.
3. Only the Lander and Rover module are designed to do scientific experiments and are fitted with payloads.

Which of the statements given above is/are NOT correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) None

Answer: (c)

Q2. Consider the following:

1. GSLV Mk-III has three stages- Solid, Liquid and Solid.
2. The GSLV is also called the workhorse of ISRO.
3. The Chandrayaan- 3 Mission is launched on GSLV Mk-III into Geostationary Orbit.
4. PSLV, another ISRO launcher, has four stages.

How many of the above-mentioned statements are correct ?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All Four

Answer: (a)

Q3. Explain the significance of India's Chandrayaan-3 mission and its potential impact

Gaurav Nikumbh

NATIONAL HUMAN RIGHTS COMMISSION (NHRC)

This article covers "Daily Current Affairs" and the topic details "National Human Rights Commission". The topic "National Human Rights Commission" has relevance in the Governance section of the UPSC CSE exam.

For Prelims:

About NHRC?

For Mains:

GS 2: Governance

Role and Function of NHRC?

Limitations of NHRC ?

About United Nations Human Rights Council (UNHRC)?

Why in the news?

The National Human Rights Commission (NHRC) has called for an action taken report from the Odisha government on a complaint filed by a Delhi-based advocate who had alleged that the State government and the Indian Railways failed to maintain the dignity of the dead in the case of the Balasore train accident

About NHRC:

- The NHRC ensures the protection of rights related to life, liberty, equality, and dignity of individuals.
- It upholds rights guaranteed by the Indian Constitution and international covenants enforceable by Indian courts.

Establishment:

- The NHRC was established on October 12, 1993, under the Protection of Human Rights Act (PHRA), 1993.
- It has been amended by the Protection of Human Rights (Amendment) Act, 2006, and the Human Rights (Amendment) Act, 2019.

- The establishment of the NHRC is in conformity with the Paris Principles, which were adopted to promote and protect human rights.

Composition:

- The NHRC consists of a chairperson, five full-time members, and seven deemed members.
- The chairman is a former Chief Justice of India or a Supreme Court judge.
- The chairman and members are appointed by the President based on the recommendations of a six-member committee.
- The committee comprises the Prime Minister, Speaker of the Lok Sabha, Deputy Chairman of the Rajya Sabha, leaders of the Opposition in both Houses of Parliament, and the Union Home Minister.
- The chairman and members hold office for a term of three years or until they reach the age of 70.

Role and Function:

- The NHRC possesses powers of a civil court with judicial proceedings.
- It is empowered to utilize the services of central or state government officers or investigation agencies for investigating human rights violations.
- The NHRC can investigate matters within one year of their occurrence.
- Its functions are primarily recommendatory in nature, meaning it can make recommendations and suggestions to the government regarding human rights issues.

Limitations:

- The NHRC cannot inquire into any matter after one year from the date of the alleged human rights violation.
- It has limited jurisdiction in cases of human rights violations by armed forces.
- The NHRC lacks authority to act in cases of human rights violations by private parties.

United Nations Human Rights Council (UNHRC):

- The United Nations Human Rights Council (UNHRC) is an inter-governmental body established within the framework of the United Nations. Its primary mandate is to promote and protect human rights globally.
- It was established in 2006 by the United Nations General Assembly, replacing the former United Nations Commission on Human Rights.
- The United Nations Human Rights Council (UNHRC) operates with the support of the Office of the High Commissioner for Human Rights (OHCHR), which serves as its Secretariat. The OHCHR is located in Geneva, Switzerland

Membership:

- The UNHRC consists of 47 United Nations Member States elected by the UN General Assembly.
- The membership is based on equitable geographical distribution, with seats allocated to different regions.
- Members serve for three-year terms and are not eligible for immediate re-election after two consecutive terms.

Procedures and Mechanisms:

- The Universal Periodic Review (UPR) assesses human rights situations in all UN Member States.
- The Advisory Committee provides expertise and advice on thematic human rights issues.
- The Complaint Procedure allows individuals and organizations to bring human rights violations to the Council's attention.

- UN Special Procedures monitor and report on specific thematic issues or human rights situations in countries.

Issues:

- The composition of membership in the UNHRC has raised concerns, as some countries accused of human rights abuses have been included.
- Disproportionate focus on certain countries, such as Israel, has been criticized.

India's involvement:

- In 2020, India's NHRC submitted its report as part of the third round of the Universal Periodic Review (UPR) process.
- India was elected to the UNHRC for a period of three years beginning on January 1, 2019.

SOURCE:

<https://www.thehindu.com/news/national/other-states/nhrc-calls-for-action-taken-report-on-balasore-train-accident/article67072053.ece>

Q.1 Which of the following statements accurately describes the National Human Rights Commission (NHRC)?

- NHRC is a constitutional body established under Article 356 of the Indian Constitution.
- NHRC is a statutory body established under the Protection of Human Rights Act, 1993.
- NHRC is an executive body established by an executive order of the President.
- NHRC is a judicial body established by the Supreme Court of India.

ANSWER: B

Q.2 Which of the following statements accurately describes the composition and tenure of the National Human Rights Commission (NHRC)?

- The NHRC consists of a chairperson and ten members appointed by the President, and their tenure is for a period of five years.
- The NHRC consists of a chairperson and five members appointed by the Prime Minister, and their tenure is for a period of three years.
- The NHRC consists of a chairperson and five members appointed by the President, and their tenure is for a period of three years.
- The NHRC consists of a chairperson and ten members appointed by the Chief Justice of India, and their tenure is for a period of six years.

ANSWER: C

Q.3 Discuss the role and significance of the National Human Rights Commission (NHRC) in safeguarding human rights in India. How does the NHRC contribute to the protection and promotion of fundamental rights, and what challenges does it face in fulfilling its mandate?

