

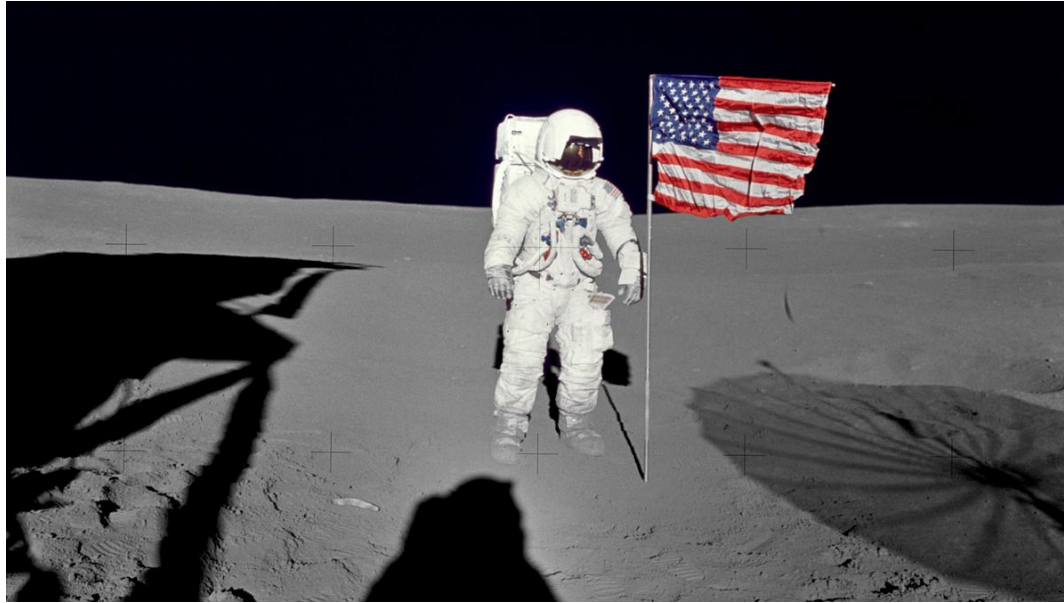
## What are the Artemis Accords?

By IAS Toppers | 2023-06-30 15:35:00



## What are the Artemis Accords?

India has signed the Artemis Accords, a US-led effort to send humans to the moon again by 2025, with the goal of expanding space exploration to Mars and beyond.



[Ref: The Hindu]

### What are the Artemis Accords?

- The U.S. State Department and NASA, along with the other founding members, established the Artemis Accords in 2020, which were based on the Outer Space Treaty of 1967 (OST).
- The seven founding members include Australia, Canada, Italy, Japan, Luxembourg, the United Arab Emirates, and the United Kingdom.
- It will set common principles to govern **civil exploration** and use of outer space, the **moon, Mars, comets, and asteroids**, for peaceful purposes.
- **27 signatories to the Artemis Accords:** the US, Australia, Canada, Italy, Japan, Luxembourg, the United Arab Emirates, the U.K, Ukraine, South Korea, New Zealand, Brazil, Poland, Mexico, Israel, Romania, Bahrain, Singapore, Colombia, France, Saudi Arabia, Rwanda, Nigeria, Czech Republic, Spain, Ecuador, and now, India.

### What are the commitments under the accords?

- The signatories of the accords will implement the **memorandum of understanding (MOUs)** between governments or agencies to conduct **space activities for peaceful purposes** in accordance with international law.
- They are committed to sharing **national space policies and scientific information** resulting from their activities in good faith with the public and the international scientific community.
- The signatories recognise common exploration infrastructure including **fuel storage and delivery systems, landing structures, communications systems, and power systems** to enhance scientific discovery and commercial utilisation.
- The members will have to render **necessary assistance to personnel** in outer space who are in distress.
- All relevant space objects must be registered by the signatories and they must **openly share scientific data** in a timely fashion.
- Private sectors are **exempted** from sharing scientific data unless they are performing space activities on behalf of a signatory.
- The members are expected to preserve **outer space heritage**, including **historic human** or



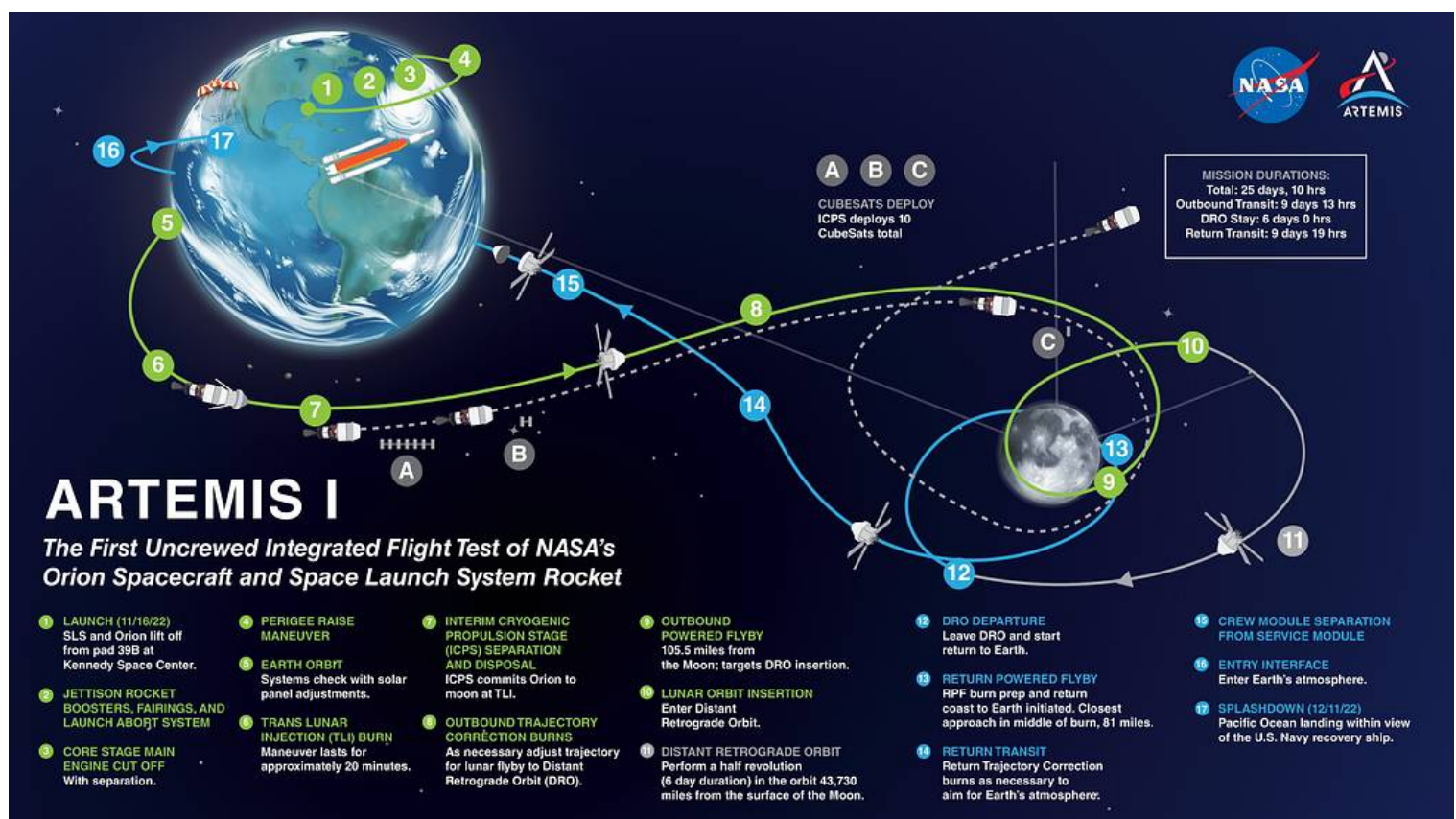
**robotic landing sites, artefacts, and evidence** of activity on celestial bodies.

- The utilisation of space resources, including recoveries from the **surface of the moon, Mars, comets, or asteroids** should be done in support of safe and sustainable space activities.
- The usage of such resources by a signatory must **not interfere** with that of another signatory and information regarding the location and nature of space-based activities must be shared to avoid this.
- Signatories must **notify and coordinate** with one another to create a 'safety zone' to avoid any such interference.
- Members must plan for mitigation of **orbital debris**, including **safe and timely disposal of spacecraft** at the end of missions.
- They must also limit the **generation of new, long-lived harmful debris** to a minimum.

**What are the activities under the Artemis programme?**

- The initial three missions of the programme are **Artemis-I, II and III**.

**Artemis-I Programme**



[Ref:NASA]

- NASA launched its spacecraft 'Orion' on its indigenously built super heavy-lift launch vehicle (SLS) directly to the moon on a single mission.
- The SLS carrying Orion began its **first uncrewed integrated flight test** from NASA's Kennedy Space Centre in Florida on November 16, 2022.
- The Orion completed a lunar flyby, performing a **half-circle around the moon** before returning to Earth's orbit and splashing down in the Pacific Ocean on December 11, 2022.

## Artemis-II Programme

- It will commence, with a crew of **four astronauts** onboard the SLS performing multiple manoeuvres on an expanding orbit around the Earth on the Orion, conducting a lunar flyby and returning to the Earth.
- The crew will perform tests on systems like **communication, life support, and navigation** and perform a proximity operations demonstration which will help in docking and undocking for Artemis-III.
- The four-member crew finalised by NASA are **Reid Wiseman** (commander) from Canada, **Victor Glover** (pilot), **Christina Hammock Koch** (mission specialist) and **Jeremy Hansen** (mission specialist) from the US.
- The mission will create history by sending the **first woman and person of colour** to land on the moon.

## Artemis-III Programme

- Humans will return to the **moon** in 2025.
- It will witness the **four-member crew** land on the moon, conduct a **week-long lunar exploration**, perform a lunar flyby, and return to Earth.
- It aims to land a **second crew on the moon** in 2028 and establish a **Lunar Gateway station** where astronauts will land in 2029.
- NASA also aims to set up a **permanent base on the lunar surface** and then proceed to send astronauts to Mars.

## What is India's Space/moon mission and role in Artemis?

- India's space agency ISRO has two existing programs: **Chandrayaan and Gaganyaan**.

### Gaganyaan

- [Gaganyaan](#) aims to demonstrate India's capability for **human spaceflight to Low Earth Orbit (LEO)** and a **safe return to Earth**.
- The Gaganyaan mission consists of two **unmanned flights** and **one manned flight** planned to the International Space Station (ISS).

### Chandrayaan-3

- [Chandrayaan-3](#), India's **second attempt** to 'soft land' on the moon.
- Similar to Chandrayaan-2, India plans to launch an **orbiter** to the lunar orbit and land a **rover** on the south pole of the lunar surface.

## Role in Artemis

- By signing the Artemis Accords, India joins the US initiative to **land humans on the moon** by 2025.
- ISRO is expected to collaborate on future Artemis missions, including the **Lunar Gateway, Mars landing**, and establishing a permanent lunar base.

- India aims to establish its own space station, like the **ISS and China's Tiangong space station**.
- India's signing of the Artemis Accords, highlighting the possibility of streamlined technology exchange and capital flow for **India's space programme**.

### What are the laws on the moon?

- **Modern space law** is built upon four international agreements, with the [Outer Space Treaty](#) being the main one.
- These agreements address important matters such as the peaceful use of space, registration, and liability, and were established between **1967 and 1976**, aligning with the **Space Race and Cold War detente**.

### Moon Agreement vs Artemis Accords

- The principles of the Artemis Accords generally align with these agreements.
- Although a fifth treaty called the **Moon Agreement** was introduced in 1979, major spacefaring nations like the U.S. and the Soviet Union did not show interest in it.
- **India signed the Moon Agreement** along with a few other countries, but it did not ratify it.
- This is where potential issues arise, as a provision in the Artemis Accords allows for the **extraction and utilization** of space resources.
- Many experts perceive this provision as conflicting with the Moon Agreement, which calls for the **fair distribution of gains** from the commercial exploitation of lunar resources.
- The U.S. stance on the Moon Agreement has since become **more lenient**, and countries like **Australia and France**, who are signatories of the Artemis Accords, have also **signed the Moon Agreement**.
- The provisions of both the Artemis Accords and Moon Agreement are open to interpretation, offering room for creative legal manoeuvring.
- Additionally, it is important not to exaggerate the **immediate implications of Moon mining**.
- Even if the Artemis program succeeds and private enterprises establish permanent settlements on the Moon, resource extraction will likely be primarily **limited** to using **lunar soil** for building habitats and lunar ice for sustaining life.