



Gaganyaan Mission

Why in News

Recently, the **Union Minister of Atomic Energy and Space** informed that the crewed [Gaganyaan mission](#) will finally be launched in 2023.

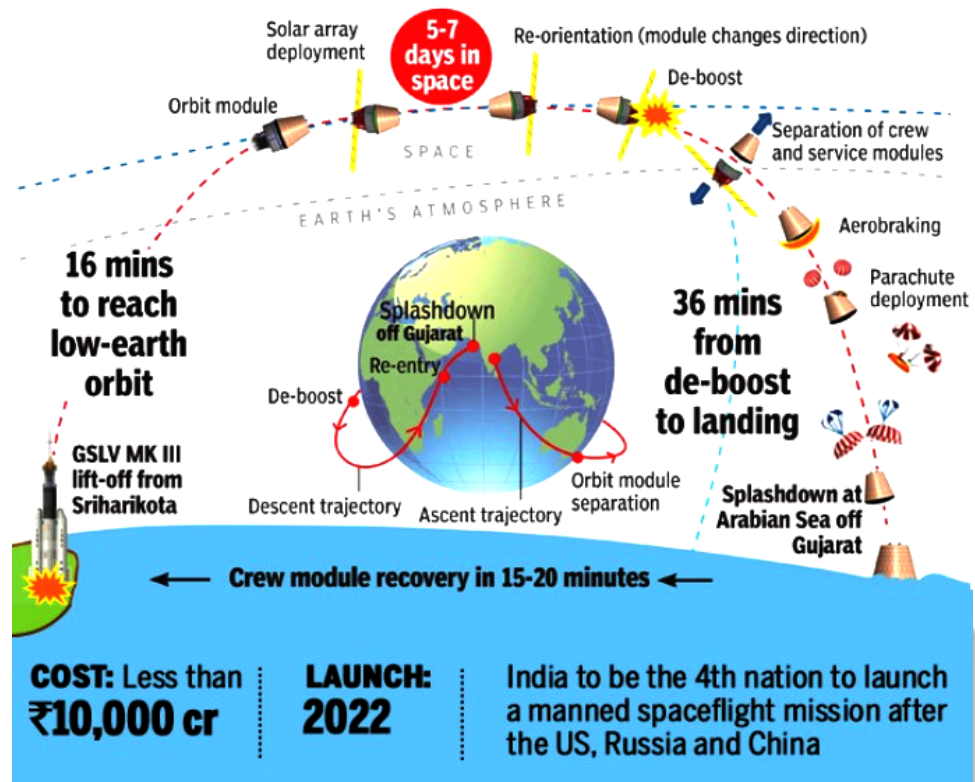
- The **country's first space station** is likely to come up by 2030.

Key Points

- **About:**

- Gaganyaan is a mission by the [Indian Space Research Organisation \(ISRO\)](#).
- Under the Gaganyaan schedule:
 - Three flights will be **sent into orbit**.
 - There will be **two unmanned flights and one human spaceflight**.
- The Gaganyaan system module, called the **Orbital Module** will have three Indian astronauts, including a woman.
- It will circle Earth at a [low-earth-orbit](#) at an altitude of 300-400 km from earth for 5-7 days.
- With that launch, India will be in the **elite club of nations (America, China and Russia)**. //

MANNED MISSION



▪ Payloads:

- The payload will consist of:
 - **Crew module** - spacecraft carrying human beings.
 - **Service module** - powered by two liquid propellant engines.
- It will be equipped with **emergency escape and emergency mission abort.**

▪ Launch:

- **GSLV Mk III**, also called the **LVM-3 (Launch Vehicle Mark-3)**, the three-stage heavy lift launch vehicle, will be used to launch Gaganyaan as it has the necessary payload capability.
 - Gaganyaan's major missions like the **test vehicle flight** for the validation of crew escape system performance and first uncrewed mission of Gaganyaan (G1) are scheduled during the beginning of the **second half of next year (2022)**.
 - This will be followed by the **second uncrewed mission at the end of 2022** carrying '**Vyommitra**', a spacefaring human robot developed by Isro, and finally the **first crewed Gaganyaan mission in 2023**.

▪ Significance:

- It will **help in enhancement of science and technology levels** in the country and help inspire youth.
 - Gaganyaan will **involve numerous agencies, laboratories, disciplines, industries and departments.**
- It will **help in the improvement of industrial growth.**
 - A new organisation, **IN-SPACE**, part of reforms to increase **private participation in the space sector** was announced last year (2021).
- It will **help in the development of technology for social benefits.**
- It will **help in improving international collaboration.**

- One [International Space Station \(ISS\)](#) put up by multiple countries may not be enough. Regional ecosystems will be needed and Gaganyaan will focus on regional needs: food, water and energy security.

▪ **Other Upcoming Mission:**

◦ **Shukrayaan Venus Mission (For 2023):**

- The **Shukrayaan orbiter** will be the **first mission to Venus** by the **ISRO** and will study the planet for four years

◦ **L-1 Aditya Solar (For 2022-23):**

- It is **India's first scientific expedition to study the Sun.**
- It will be **ISRO's second space-based astronomy mission** after [AstroSat](#), which was launched in 2015.

◦ **Chandrayaan-3 Missions (For 2022-23):**

- **The Chandrayaan-3, a follow-up of the [Chandrayaan-2 mission](#)**, involves "various processes, including finalisation of configuration, subsystems realisation, integration, spacecraft level detailed testing and a number of special tests to evaluate the system performance on earth.

[Source: TH](#)

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