

# Crew Module Atmospheric Re-entry Experiment (CARE)

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In News

The Crew Module Atmospheric Re-entry Experiment is an experimental test vehicle for the Indian Space Research Organisation's **future ISRO orbital vehicle called Gaganyaan.**

Gaganyaan is the human space flight programme under which Indian astronauts will **go into space by 2022.** This will be done by using its **own capabilities.**

## Crew Module Atmospheric Re-entry Experiment (CARE)

- It was launched successfully on **18 December 2014** from the Second Launch Pad of the Satish Dhawan Space Centre **by a GSLV Mk III** designated by ISRO as the LVM 3X CARE mission.
- A GSLV-Mk III launch vehicle will lift them to their orbit, which has the necessary payload capability to launch a three-member crew module in low earth orbit.
- **If successful, India would become the fourth nation** to conduct a human space flight programme after USSR/Russia, USA and China.
- It is an Rs.10,000-crore Indian human space flight scheduled for 2022.
- India has signed **agreements with Russia and France** for cooperation on the Gaganyaan mission.
- **DRDO signed MoUs with ISRO** to offer technologies for the mission, including space food, survival kits for crew, radiation protection equipment and parachutes.

## On flight path

ISRO has planned 25 missions for the year 2020. Ground work for Gaganyaan and Chandrayaan-3 progressed smoothly in 2019. A status check:

**1** Gaganyaan, the country's maiden manned space mission, is progressing well. Four Indian Air Force personnel have been identified for the mission and their astronaut training will start from the third week of this month in Russia


**2** Chandrayaan-3, the country's third lunar mission, has been approved. The mission, which will cost around ₹600 crore, will also try to land in the lunar south pole like Chandrayaan-2. The take-off may get postponed to next year

**3** Communication satellite GSAT-30 is 2020's first scheduled launch

**4** In the first half of 2020, SSLV or small satellite launcher will make its debut

ISRO has sought ₹14,000 crore as budget for 2020-21

### WHAT WENT WRONG WITH CHANDRAYAAN-2

 We are looking at all navigation guidance and control aspects. We learnt from telemetry data that the design could not take the large difference in velocity. We have learnt our lessons from the failure

**K. SIVAN**  
ISRO CHAIRMAN



## The rocket: GSLV Mk-III

- The spacecraft carrying human beings, called crew module, is likely to weigh in excess of 5 to 6 tonnes.
- ISRO's main launch vehicle, the PSLV (Polar Satellite Launch Vehicle), which carried the Chandrayaan and Mangalyaan missions too, can carry payloads that are barely up to 2 tonnes, and that too only to orbits at about 600 km altitude from the Earth's surface.
- That is why the development of GSLV Mk-III, a launch vehicle with capabilities to deliver much heavier payloads much deeper into space, was necessary.