

ISRO Launches PSLV C53 Mission

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Context - Polar Satellite Launch Vehicle (PSLV) launched the PSLV-C53 mission with three payloads from Singapore at Sriharikota, around 100 kilometres from Chennai on June 30, 2022.

The mission also served an additional purpose for ISRO, which decided to use the fourth stage, the PS4, as a stationary platform in orbit to conduct scientific experiments.

Key Developments

- The modified PSLV-C53 took off from the second launchpad at the Satish Dhawan Space Centre, Sriharikota Range (SHAR), at 6.02 p.m. and placed the three satellites — a 365 kg Singaporean Earth Observation Satellite, DS-EO, a 155 kg small commercial satellite with a Synthetic Aperture Radar (SAR) payload, the NeuSAR; and a 2.8 kg satellite from Nanyang Technological University (NTU) and SCOOB-1 — into orbit 19 minutes after lift-off.
- This was also the first time since December 2019 that a launch was allowed to be witnessed by the media and the general public allowed to the Visitors Gallery.

- The PSLV Orbital Experimental Module (POEM) is going to be functional after placing satellites into orbit taking over the control of the primary mission computer to another computer.
- The fourth stage will be powered, generating power on board and will be stabilized with altitude control and host some experiments by some of the young startups enabled by InSpace.
- This is the 55th mission of PSLV and the 15th mission using the PSLV-Core Alone variant. It is the 16th PSLV launch from the second launch pad.
- The mission proposes to demonstrate the utilization of the spent upper stage of the launch vehicle as a stabilized platform for scientific payloads subsequent to the separation of the satellites.

About PSLV

- Polar Satellite Launch Vehicle (PSLV) is the third generation launch vehicle of India. It is a four-staged launch vehicle with first and third stages using solid rocket motors and second and fourth stages using liquid rocket engines.
- It is the first Indian launch vehicle to be equipped with liquid stages. Initially, PSLV had a carrying capacity of 850 kg but has been enhanced to 1.9 tonnes.
- The PSLV has helped take payloads into almost all the orbits in space including Geo-Stationary Transfer Orbit (GTO), the Moon, Mars and would soon be launching a mission to the Sun.
- Between 1994 and 2019, the PSLV launched 50 Indian satellites and 222 foreign satellites for over 70 international customers from 20 countries.
- It has a history of successful launches of payloads that include Chandrayaan-1, Mars Orbiter Mission (MOM) and the space recovery mission, etc.