

PSLV-C51/Amazonia-1 Mission

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In news : Recently, India's Polar Satellite Launch Vehicle PSLV-C51 successfully launched Amazonia-1 along with 18 co-passenger satellites

About PSLV-C51 & Amazonia-1

- ISRO's PSLV-C51 has been launched from Satish Dhawan Space Centre SHAR, Sriharikota.
- PSLV-C51 is the 53rd flight of PSLV and 3rd flight of PSLV in 'DL' configuration (with 2 strap-on motors).
- Orbit: Sun Synchronous Polar Orbit
- This was the 78th launch vehicle mission from SDSC SHAR, Sriharikota.
- With the recent launch, the total number of customer satellites from foreign countries placed in orbit by PSLV is 342 satellites from 34 countries

Amazonia-1

- Amazonia-1(637kg) is the optical earth observation satellite of National Institute for Space Research (INPE).
- This satellite would further strengthen the existing structure by providing remote sensing data to users for monitoring deforestation in the Amazon region and analysis of diversified agriculture across the Brazilian territory.

Why is this recent launch significant?

PSLV-C51/Amazonia-1 is the first dedicated commercial mission of NewSpace India Limited (NSIL), a Government of India company under the Department of Space.

NSIL undertook this mission under a commercial arrangement with Spaceflight Inc. USA

18 co-passenger satellites

It included four from IN-SPACE and fourteen from NSIL. Out of 4 satellites from IN-SPACE, three were **UNITYsats** designed and built as a joint development by Jeppiaar Institute of Technology, Sriperumbudur (JITsat), G.H.Raisoni College of Engineering, Nagpur (GHRCEsat) and Sri Shakti Institute of Engineering and Technology, Coimbatore (Sri Shakthi Sat) and one was Satish Dhawan Sat (SDSAT) from Space Kidz India. The fourteen satellites from NSIL carried were the commercial satellites from India (1) and USA (13).

COMMERCIAL CO-PASSENGER SATELLITES			
Satellite Name	Number of satellites	Country	Mission Objective of the satellite
SindhuNetra	1	India	Technology Demonstration
SAI-1 NanoConnect-2	1	USA	Technology Demonstration
SpaceBEEs	12	USA	2-way satellite communications and data relay

The Polar Satellite Launch Vehicle

- PSLV is an expendable medium-lift launch vehicle designed and operated by the ISRO
- It is the third generation launch vehicle of India.
- It is the first Indian launch vehicle to be equipped with liquid stages.
- PSLV can also launch small size satellites into Geostationary Transfer Orbit (GTO).
- It is a four-stage rocket that combines solid and liquid propellants.
- The first stage at the very bottom is solid fuelled having six strap-on solid rocket boosters wrapped around it.
- The second stage is liquid-fuelled whereas the third stage has a solid fuelled rocket motor.