

# PSLV-C47 / Cartosat-3 Mission

27 November, 2019

## THE MISSION

PSLV-C47 carrying on-board the Cartosat-3 Satellite lifted-off from the Satish Dhawan Space Centre (SDSC) SHAR, Sriharikota at 09:28 PM (IST) on November 27, 2019. About 17 minutes and 38 seconds after lift-off, the PSLV-C47 placed Cartosat-3 into a Polar Sun-synchronous Orbit, of 509 km at an inclination of 97.5° to the Equator. Cartosat-3 satellite is a third generation agile advanced satellite having high resolution imaging capability and overseeing the increased user's demands for large scale urban planning, rural resource and infrastructure development, coastal land use and land cover. Along with Cartosat-3, 13 other commercial satellites were also successfully placed into their designated orbits.



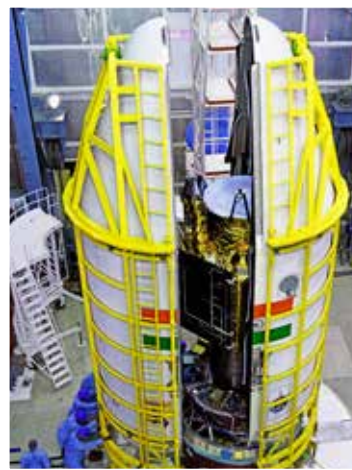
## PSLV - C 4 7

### THE LAUNCH VEHICLE

PSLV-C47 was the 74<sup>th</sup> launch vehicle mission from SDSC SHAR, Sriharikota. This flight of PSLV was in 'XL' configuration with 6 solid strap-on motors. It was the 21<sup>st</sup> flight in 'XL' configuration.

### SPECIFICATIONS

<b>Height</b>	44 m	
<b>Lift-Off Mass</b>	320 t	
<b>No of Stages</b>	4	
<b>Payloads</b>	Cartosat-3	<b>13 International Satellites</b> USA (13)
<b>Orbit Height</b>	509 km	
<b>Inclination (deg)</b>	97.5°	
<b>Launch Azimuth</b>	140°	
<b>Launch Pad</b>	Second Launch Pad (SDSC, SHAR)	

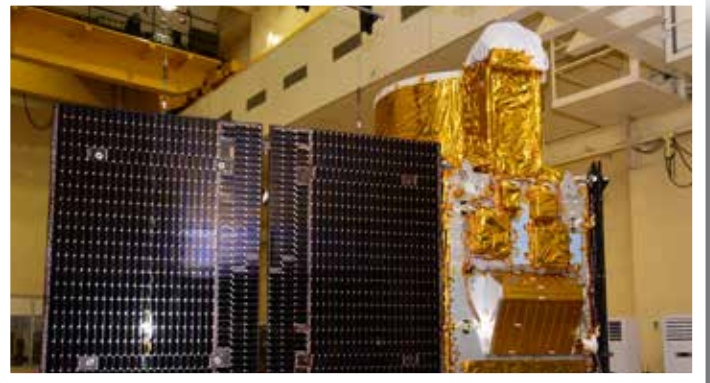


# CARTOSAT-3

## THE SATELLITE

Cartosat-3 Satellite is a third generation, agile, advanced satellite having high resolution imaging capability. The payload will be capable of collecting images of 0.25 m spatial resolutions in panchromatic band, 1.0 m spatial resolution in 4 spectral bands and 4 m spatial resolution in IR band. The spacecraft is configured around new spacecraft structure for integrating the large payload, minimized payload structure, thermal & mechanical interactions weighing about 1450 kgs with the power handling capacity of 2.2 kW. The satellite is operated in near Earth 450 km SSPO circular orbit. The Spacecraft carries many new developments like-

- ◆ High-resolution Imager for obtaining PAN, MX & IR data that includes the development of the telescope structure, optics, detectors & high speed electronics.
- ◆ New spacecraft structure.
- ◆ Advanced OBC for TM, TC and AOCE operations in different modes.
- ◆ High accuracy Star Sensors & Gyros (FOGs/ILGs) and high torque CMGs as actuators.
- ◆ Data handling and transmission system to handle very large volume of data that includes formatting, compressing, encrypting, storage and data transmission.
- ◆ A 12-channel dual frequency SPS system to obtain precise satellite location accuracy.
- ◆ Special test benches/equipment to evaluate performance of payload and subsystems both at subsystem level and system level.
- ◆ Ground systems to cater to payload data reception, data processing, product generation, data dissemination and archival.

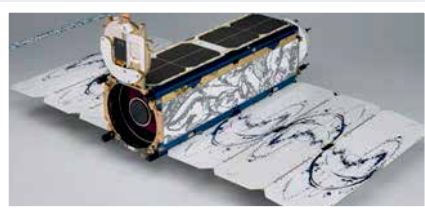


## SPECIFICATIONS

<b>Weight</b>	1625 kg
<b>Power</b>	2000 W
<b>Altitude</b>	509 km
<b>Type of Satellite</b>	Earth Observation
<b>Payloads</b>	<ul style="list-style-type: none"> <li>• IR Band</li> <li>• Panchromatic Band</li> <li>• Spectral Bands</li> </ul>
<b>Mission Life</b>	5 Years

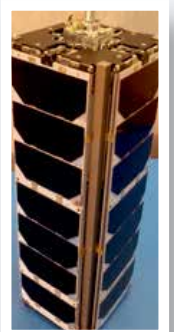
## THE INTERNATIONAL CUSTOMER SATELLITES

13 Commercial Nanosatellites from USA were launched under commercial arrangement with NewSpace India Limited, the commercial arm of ISRO. They consisted of 12 'FLOCK-4P' Earth Observation Satellites and 1 'MESHBED' Communication Testbed Satellite.



FLOCK-4P

Satellite	No. of Satellite	Country	Mission Objectives
FLOCK-4P	12	USA	Earth Observation
MESHBED	1	USA	Communication Testbed



MESHBED