

PSLV-C38 / CARTOSAT- 2 Series Mission

23 June, 2017

THE MISSION

PSLV-C38 carrying on-board the Cartosat-2 Series Satellite lifted-off from the Satish Dhawan Space Centre (SDSC) SHAR, Sriharikota at 09:29 AM (IST) on June 23, 2017. About 16 minutes after lift-off, the satellites achieved a polar Sun-synchronous Orbit of 505 km inclined at an angle of 97.44° to the Equator (very close to the intended orbit) and in the succeeding seven and a half minutes, all the 31 satellites successfully separated from the PSLV in a predetermined sequence beginning with Cartosat-2 Series Satellite, followed by NIUSAT, the Nanosatellite from India and 29 customer Nanosatellites from 14 countries. The total weight of all these satellites carried on-board PSLV-C38 is about 955 kg. Cartosat- 2 Series Satellite, the primary satellite of this mission is a Remote Sensing Satellite with the objective of providing high-resolution scene specific spot imagery.



PSLV - C 3 8 THE LAUNCH VEHICLE

PSLV-C38 in its 40th flight was in 'XL' configuration with the use of solid strap-on motors. It is also the 17th flight of PSLV in 'XL' configuration.

SPECIFICATIONS

Height	44.4 m	
Lift-Off Mass	320 t	
No of Stages	4	
Payloads	<ul style="list-style-type: none"> • CARTOSAT-2 Series • NIUSAT 	29 International Customer Satellites USA (10), UK (3), Belgium (3), Italy (3), Austria (1), Chile (1), Czech Republic (1), Finland (1), France (1), Germany (1), Japan (1), Latvia (1), Lithuania (1) and Slovakia (1)
Orbit Height	505 km	
Inclination (deg)	97.44°	
Launch Pad	First Launch Pad (SDSC, SHAR)	



CARTOSAT-2 Series

THE SATELLITE

Cartosat-2 Series Satellite is the primary satellite of this mission. The Remote Sensing Satellite, similar in configuration to earlier satellites in the series delivers services in high-resolution scene specific spot imagery using its Panchromatic and Multi-spectral Cameras.

The imagery provided by the satellite will be useful for cartographic applications, urban and rural applications, coastal land use and regulation, utility management like road network monitoring, water distribution, creation of land use maps, change detection to bring out geographical and manmade features and various other Land Information System (LIS) as well as Geographical Information System (GIS) applications.

SPECIFICATIONS

Weight	712 kg
Power	Solar Arrays generating 986 W, Two Li-Ion batteries
Type of Satellite	Earth Observation
Payloads	<ul style="list-style-type: none">• Panchromatic Camera• Multi-spectral Camera
Mission Life	5 Years



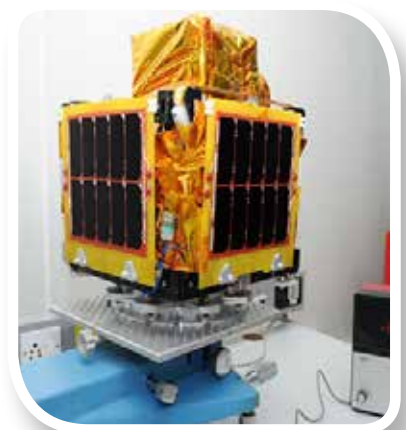
NIUSAT

INDIAN UNIVERSITY SATELLITE

NIUSAT is an Indian University / Academic Institute satellite from Noorul Islam University in Tamil Nadu. This axis stabilised satellite is built to provide multi-spectral imagery for agriculture crop monitoring and disaster management support applications. A dedicated Mission Control Centre with UHF / VHF antenna for Telemetry / Tele-command operations and S-Band antenna for payload data reception has been established at the University.

SPECIFICATIONS

Weight	15 kg
Power	40 W, 10 Ah, Li-Ion
Type of Satellite	Student Satellite
Payloads	RGB Camera



THE INTERNATIONAL CUSTOMER SATELLITES

Satellite	No. of Satellite	Country	Mission Objectives
PEGASUS \ ATO3	1	AUSTRIA	Measuring the plasma temperature and density in the thermosphere
QB50-BE06	1	BELGIUM	Atmospheric Ion / Neutral Particle Detection and Space Imaging
INFLATESAIL	1	BELGIUM	Demonstration of the effectiveness of drag deorbiting from LEO using inflatable boom and motor driven sail combination
UCLSat	1	BELGIUM	To measure ions and neutrals in the Thermosphere
SUCHAI-1	1	CHILE	To study the physics of LEO environment and it's effects on electronic and systems
VZLUSAT-1	1	CZECH REPUBLIC	Atmospheric Research
Aalto-1	1	FINLAND	Technology demonstration of miniature Fabry-Perot spectral imager, small radiation monitor and satellite deorbiting with Plasma Brake
ROBUSTA-1B	1	FRANCE	Scientific and Educative
QB50-DE04	1	GERMANY	DragSail deployment and fast de-orbiting for space debris removal demonstration
URSAMAIOR	1	ITALY	In-Orbit demonstration of reliable fail-safe computing architectures and a drag sail for deorbiting
D-SAT	1	ITALY	To demonstrate D-Orbit's Decommissioning technology on-orbit
Max Vailer	1	ITALY	Education satellite with X-Ray telescope for universe mapping and Maritime Automatic Identification System (AIS)
CE-SAT1	1	JAPAN	Demonstration of remote sensing based on Canon Group Technology
Venta-1	1	LATVIA	Education Satellite for maritime Automatic Identification System (AIS), spherical 360° imaging system for vision based attitude determination and navigation experiments
LituanicaSAT-2	1	LITHUANIA	Oxygen measurements Flux Probe Experiment (FIPEX) and Ecologic Chemical Propulsion (EPSS) Orbital Demonstration
SkCUBE	1	SLOVAKIA	Popularisation of Science and Technology, Technology verification
3 Diamonds	3	UNITED KINGDOM	To provide voice, instant messaging, M2M and IoT services as a commercial demonstration for a full equatorial constellation
CICERO-6	1	USA	Demonstration of GPS radio occultation sensor that allows the measurement of global weather patterns with high accuracy
Tyvak-52b	1	USA	Technology demonstration for Deorbiting the Nanosatellites
LEMUR-2	8	USA	Vessel tracking using Automatic Identification System (AIS) and weather measurement using GPS Radio Occultation