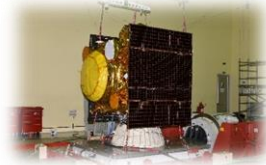


# RECENT INDIAN SPACE MISSIONS— UPDATE AS OF FEBRUARY 2019



**Mr. P Kunhikrishnan**

Director, U R Rao Satellite Centre (URSC)  
Indian Space Research Organization  
Government of India



**Presentation to  
56<sup>th</sup> Session of STSC- UNCOPUOS  
Vienna, Austria**

# Overall Accomplishments : 178 missions

- SLV
- ASLV
- PSLV
- GSLV

**70 LV  
MISSIONS**

GSLV Mk III

44 successful flights

6 successive successful flights with Indigenous Cryo Stage



## 103 Satellites

- Remote Sensing
- Communication
- Navigation
- Space Science



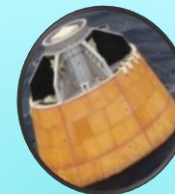
**10  
Student  
satellites**

## 5 Experimental missions

**Space Capsule  
Recovery  
Experiment**



**Crew Module  
Atmospheric  
Re-entry Experiment**



**Reusable Launch  
Vehicle  
Technology  
Demonstrator**



**Scramjet Engine  
Technology  
Demonstrator**



**Crew Escape System  
at Launchpad**



**269 Satellites of 33 countries**

**Space Technology Applications**



# Mission Accomplished in 2018

4 PSLV

C40, C41,  
C42, C43,  
C44



2 GSLV

F08, F11



1 GSLV MkIII

D2



CES  
PAT

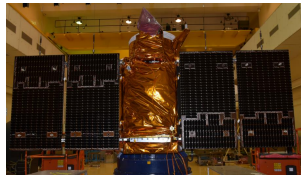


Jan, Apr,  
Sep, Nov, Jan

Mar, Dec

Nov

July



Cartosat-2



GSAT-7A

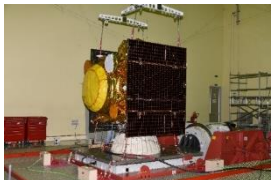


GSAT-29

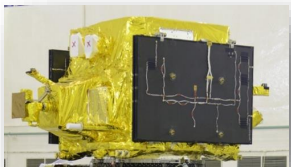
60  
Foreign  
satellites



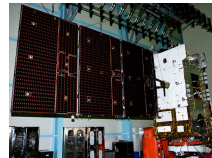
GSAT-11



IRNSS 11



HYSIS



GSAT 31



# PSLV-C40/Cartosat-2 Mission

**40<sup>th</sup> Successful Mission of PSLV**

- 31 satellites onboard
- 28 customer satellites

**PSLV-C40**



**12<sup>th</sup> Jan 2018  
09.29hrs IST**

**Cartosat -2F**



## **Earth Observation satellite**

Cartographic applications, urban & rural applications, coastal land use & regulation, utility management like road network monitoring, water distribution, creation of land use maps, Land Information System, GIS applications.

# PSLV-C41/IRNSS-1I MISSION

PSLV-C41



**12<sup>th</sup> April 2018  
04.04hrs IST**

IRNSS-1I

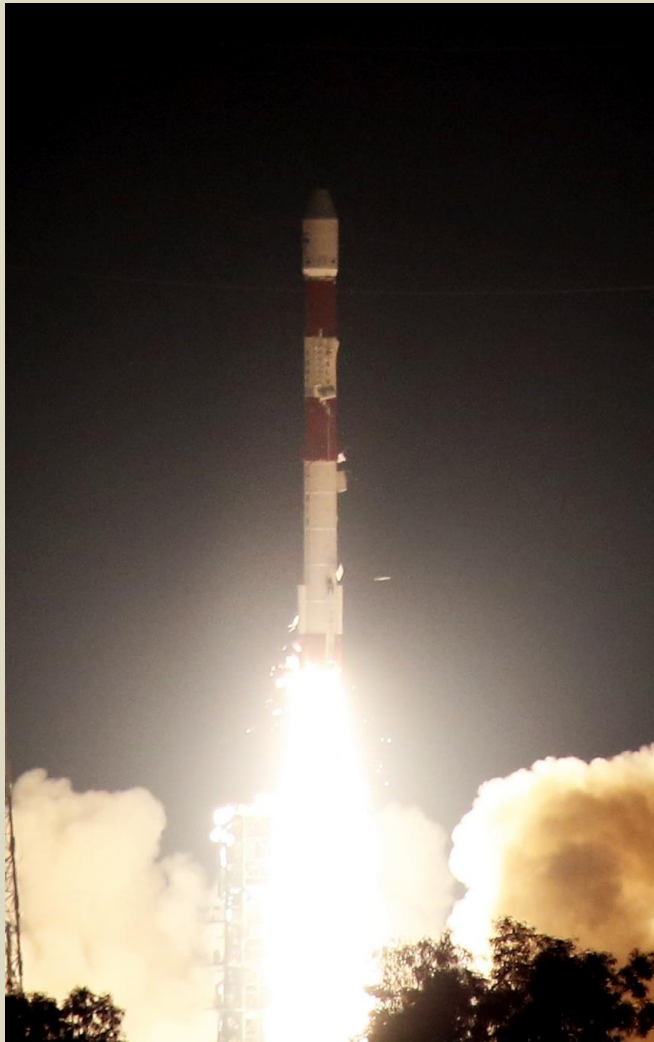


## Navigation satellite

To provide position information in the Indian region and 1500 km around the Indian mainland.

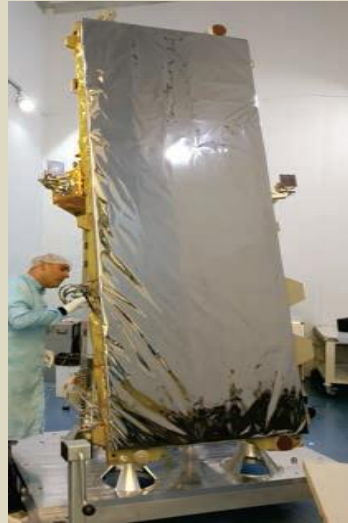
# PSLV-C42/NovaSAR & S1-4 MISSION

## PSLV-C42



**16<sup>th</sup> Sept 2018  
22.08hrs IST**

## NovaSAR and S1-4



### NovaSAR

- S-band Synthetic Aperture Radar (SAR) & Automatic Identification Receiver payloads
- Applications include forestry mapping, land use and ice cover monitoring, flood and disaster monitoring and maritime missions.

### S1-4

- A high resolution earth observation satellite.
- Surveying resources, environment monitoring, urban management and disaster monitoring.

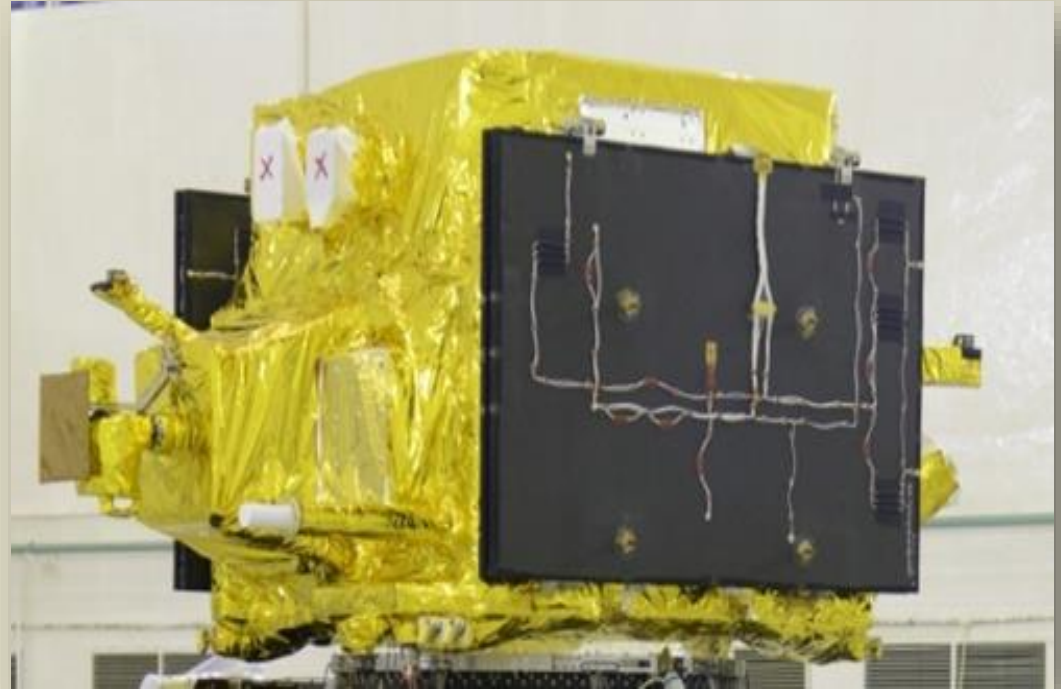


# PSLV-C43/HySIS MISSION

PSLV-C43



HYSIS



Hyperspectral Remote Sensing Mission

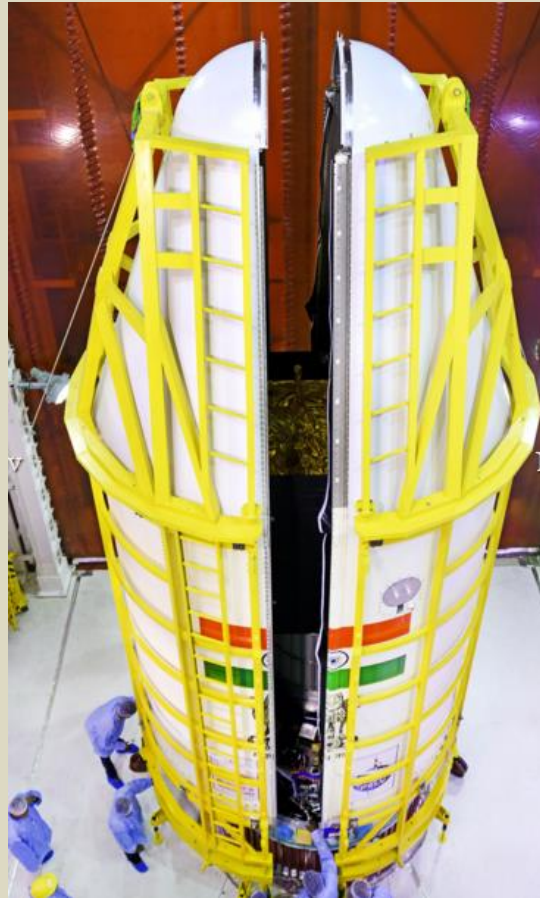
29<sup>th</sup> Nov 2018  
09:57:30 (IST)

## PSLV-DL (A new variant of PSLV)

PSLV-C44



24<sup>th</sup> Jan 2019  
23:37 (IST)



Microsat R

Kalamsat-V2

**Demonstrated Reliability of PSLV : 0.98**



# GSLV F08/GSAT -6A Mission

## 5<sup>th</sup> Successful Mission of GSLV

GSLV F08



**29<sup>th</sup> March 2018**  
**16.56 hrs (IST)**

GSAT- 6A



### Communication satellite

- To provide mobile communication services through multi beam coverage.
- S and C band transponders.

# GSLV-F11 / GSAT-7A Mission

## GSLV F11



**19<sup>th</sup> December 2018  
16.10 hrs (IST)**

## GSAT-7A

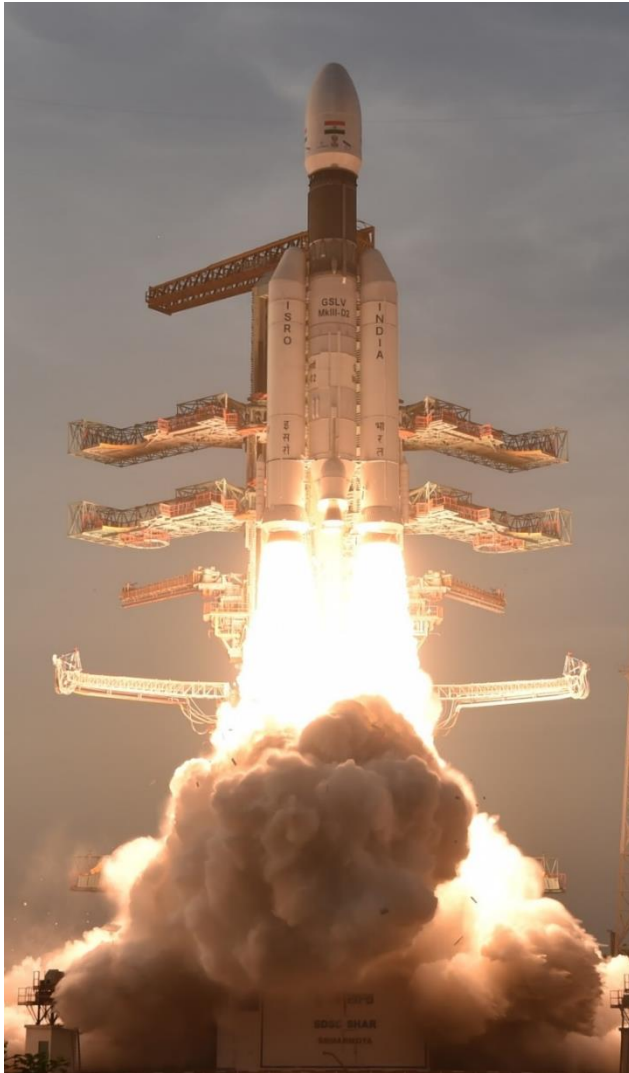


### Communication satellite

- To provide communication capability to the users
- Ku-band over the Indian region.

# GSLV MkIII-D2/ GSAT29 MISSION

GSLV MkIII D2



**14<sup>th</sup> November 2018**  
**17.08 hrs (IST)**

GSAT- 29



## Communication satellite

- Ku-band and Ka-band payloads
- To cater to the communication requirements of users including those from remote areas especially from Jammu & Kashmir and North-Eastern regions of India.
- Q/V-Band communication payload onboard to demonstrate the future high throughput satellite system technologies.
- Optical Communication Payload - to demonstrate data transmission at a very high rate through optical communication link.



# GSAT 11 Mission



December 05, 2018

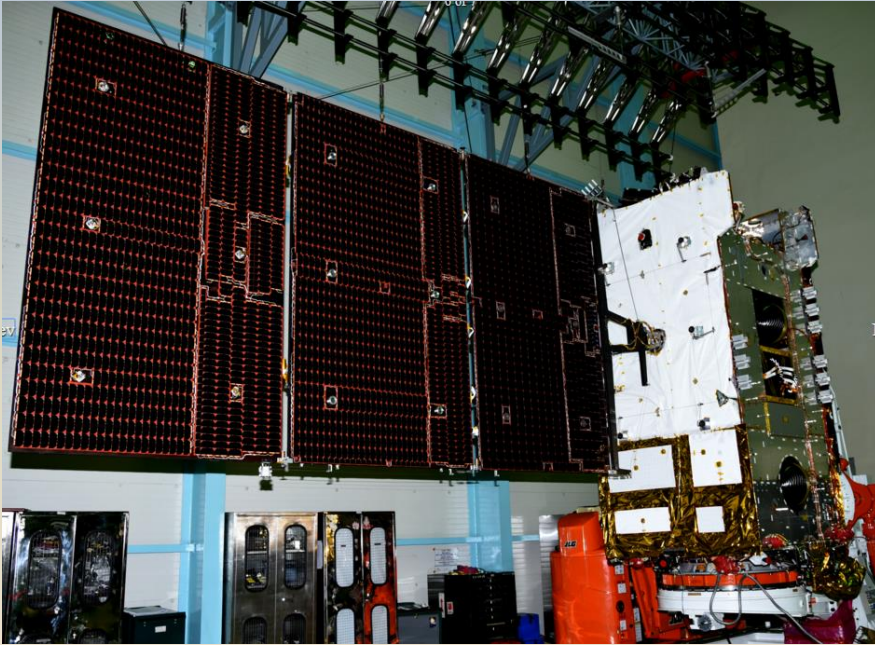
**Launched in Ariane 5 VA-246**

## Communication satellite

- Advanced communication satellite with a Gregorian Antenna and many other new technologies.
- Weighing about 5854 kg, GSAT-11 is the heaviest satellite built by India.
- Boost broadband connectivity to rural and inaccessible Gram Panchayats in the country coming under Digital India Programme.

# GSAT 31 Mission

**Launched in Ariane 5 VA-247**



**February 06, 2019**

## **Communication satellite**

- Ku-band transponder c
- To provide continuity to operational services on some of the in-orbit satellites.
- Derives its heritage from ISRO's earlier INSAT/GSAT satellite series.
- The satellite provides Indian mainland and island coverage.
- The designed in-orbit operational life is about 15 years.

# Pad Abort Test Flight of Crew Escape System

Successfully conducted on

05<sup>th</sup> July, 2018 // 07:00 Hrs. IST

## OBJECTIVE

To prove the concept of Crew Escape System, by flight testing of the integrated CES, in a simulated pad abort scenario





# ISRO expanded to one more vertical..

**Gaganyaan Programme**

**Human Space Flight Centre**

To launch 3 member crew onboard GSLV  
Mk-III and bring them back safely  
before 75<sup>th</sup> Year of Independence in 2022



# Lunar Landing Mission- Chandrayaan 2



## Forthcoming Mission

**Lunar Orbiter, Lander - Rover**

Capable of soft landing on a specified lunar site and deploy a Rover to perform mobility and science experiments.

