Cartosat-3

The Indian Space Research Organization (ISRO) is an important body in India and spearheads research in space science in India, also playing a huge role in the development of the country through educational, agricultural, communication, and defence sector projects. Hence, it is an important segment of UPSC Syllabus for the Science and Technology section.

A satellite is an artificial object which has been deliberately put into space for different purposes like remote sensing, weather forecasting, image mapping, education, and research.

This article provides information on the Cartosat series of satellites. This is an important topic for students preparing for the UPSC Exam and other Government Exams.

What is CARTOSAT?

Designed, developed and built by the Indian Space Research Organization (ISRO), the CARTOSAT satellites are a series of Earth Observation satellites. They were built with the purpose of large-scale mapping of Earth through High-Resolution cameras.

The CARTOSAT series of observation satellites will aid in detecting changes in natural geographical or man-made features. The Cartosat series is a part of the Indian Remote Sensing Program. They are used for Earth's resource management defence services and monitoring.

Since the launch of CARTOSAT-1 in 2005, **8** cartostat satellites have been launched by ISRO.

Click on the link to learn more about **Indian Space Research Organization (ISRO)**

List of CARTOSATs Launched

Launch year	**Satellite**	**Importance**
2005	CARTOSAT-1	Earth observation satellite.
2007	CARTOSAT-2	Remote sensing satellite-carrying panchromatic camera.
2008	CARTOSAT-2A	Similar to CARTOSAT-2.
2010	CARTOSAT-2B	Earth observation/remote sensing satellite.
2016	CARTOSAT-2C	Earth observation/remote sensing satellite.
2017	CARTOSAT-2D	The highest number of satellites (104 satellites) launched by a single launch vehicle.
2018	CARTOSAT-2F	The 6th satellite in the Cartosat series to be built by ISRO.
2019	Cartosat-3	Cartosat-3 is an optical satellite with the highest resolutions in the world.

Cartosat-3

Indian Space Research Organization successfully launched CARTOSAT-3 from **Sriharikota** in November 2019. The Polar Satellite Launch Vehicle (**PSLV – C47**) carried the CARTOSAT-3 along with 13 other nanosatellites for the US. New Space India Limited (NSIL), the commercial wing of ISRO signed the first commercial order for the launch of the 13 nanosatellites in March 2019.

This was the **74th** launch vehicle mission from Sriharikota.

- It is a Generation- 3 advanced Earth Observation satellite.
- Cartosat-3 was carried by the **Polar Satellite Launch Vehicle (PSLV) - C47**, which is a launch system responsible for delivering various IRS Satellites in Low Earth Orbits and is also known as the "Workhorse of ISRO".
- CARTOSAT-3 will provide high-resolution images for remote sensing with a ground resolution of 25 cm: it can pick up an object of a minimum of 25 cm size from a height of around 500 km.
    - CARTOSAT-3 became known as the 'Sharpest Eye' in civil remote sensing satellites by breaking the record of a US-based satellite WorldView-3 that provided a ground resolution of 31cm.

UPSC Questions related to CARTOSTAT-3

What is the meaning of CARTOSAT?

The CARTOSAT series of advanced earth observation satellites will aid in detecting changes in natural geographical or man-made features for remote sending launched by the Indian Space Research Organization (ISRO)

How many Indian satellites have been launched by ISRO?

India has launched 116 satellites since 1975. Indian Space Research Organization (ISRO) is responsible for India's Space Program.

Click on the link to get the List of Indian Satellites launched by ISRO.

What is meant by radiometric resolution?

- The ability to discriminate micro differences in the energy of an imaging system is known as the Radiometric Resolution of that system.
- The finer the radiometric resolution of a sensor, the more sensitive it is to detecting small differences in reflected or emitted energy.
- The pixel arrangement describes the spatial structure of an image, while the radiometric info will describe the actual details and content of the image.
- Every time an image is acquired on film or by a sensor, its sensitivity to the magnitude of the electromagnetic energy determines the radiometric resolution.