

# First-of-its-kind satellite by Indian start-up flies on SpaceX rocket

The optical images ensure clarity and intuitiveness, while radar images, through a Synthetic Aperture Radar (SAR), brings all-weather reliability. For this reason, the company is describing its innovation as Opto-SAR technology.

Written by: [Amitabh Sinha](#) 5 min read New Delhi Updated: May 4, 2026 04:07 AM IST



Drishti is the first satellite of GalaxEye, a company started by alumni of IIT Madras. (Credit: X/@GalaxEye)

Make us preferred source on Google



An Indian start-up, **GalaxEye**, rode on a SpaceX rocket this morning to launch a first of its kind satellite that is meant to fill a long-standing gap in space imaging. The satellite, aptly called **Drishti**, is equipped to take optical images, very much like a

normal camera, as well as radar-generated images of the same place at the same time, something that has not been tried before.

The optical images ensure clarity and intuitiveness, while radar images, through a Synthetic Aperture Radar (SAR), brings all-weather reliability. For this reason, the company is describing its innovation as Opto-SAR technology.

“Imaging satellites are generally equipped to take multi-spectral or hyper-spectral (optical) images, or they use SAR. Both of these kinds of satellite data are used extensively. But very often they need to be fused together to get correct information because each one of them has limitations. Multi-spectral images are clear and easy to understand, but they are not effective during cloudy weather or night time, for instance. SAR signals can penetrate clouds and take continuous images, but they are not intuitive. Like X-ray images, they need experts to glean the information. The uniqueness of Drishti is that it has both the sensors that will enable simultaneous imaging,” GalaxEye founder Suyash Singh had told The Indian Express in an earlier interview.

Drishti is the first satellite of GalaxEye, a company started by alumni of IIT Madras. It rode on a Falcon 9 rocket by SpaceX from the Vandenberg Space Force Base in California, United States, as one of the 45 payloads on the CAS500-2 mission. The launch happened at 1230 pm India time.

## STORIES YOU MAY LIKE



Days after rejig, NITI Aayog gets two new full-time members



Minister of State Kirti Vardhan Singh to attend migration forum at UN



Trump reduces US troops in Germany: Why were they there and what can Europe do?

Drishti, a built-in-India satellite, seeks to solve a familiar problem in space imaging. Users need clear and intuitive images from space that is available at all times. As of now, they often have to use data from multiple satellites, optical data for clarity, and SAR data for continuity and all-weather availability. While the super-imposition of these two datasets often does the needful, it is not without challenges. The two

satellites are not watching the same place at the same time, and the angles at which they are watching over a place on Earth can be very different.

“What we are trying to do is to make space imagery available all the time, and understandable to all kinds of users,” Suyash Singh, an alumni of IIT Madras, said.

“When the optical sensors are unable to take images because of clouds or other similar reasons, we are using artificial intelligence to regenerate optical-like images from the SAR,” he said.

## EXPLAINED

---

### Indian startups make a mark

GalaxEye is one among several Indian space start-ups that are beginning to make their presence felt. Agnikul Cosmos, another start-up from IIT Madras, has built the world's first 3-D printed rocket engine, while Skyroot has tested India's first privately built rocket. Companies like Pixxel, Dhruva Space and Bellatrix have been demonstrating impressive innovations in satellite technologies.

GalaxEye had to make important technological innovations to ensure that both the imaging sensors are put on the same satellite and operate in sync with each other to produce simultaneous imaging of the same place.

“SAR and optical sensors are designed in different ways. They look at the Earth at different angles. So, if they are placed side by side, for example, the optical sensor might be looking at [Bengaluru](#) while SAR is capturing Dubai at that instant. So we have come up with a technology stack that synchronises the functionalities of these two technologies, enabling them to look at the same location at the same time. This is our proprietary technology. This does away with the need of the users to manually align the datasets from two different satellites,” Singh said.

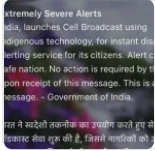
Singh said one of the reasons no one else built a satellite like Drishti was that this is primarily a problem in the tropical countries.

“Most of the satellite companies have traditionally been based in the western countries, and cater to the demands of those countries. Weather is relatively more predictable, and the skies are relatively cleaner and clearer. They don't have the

same kind of issues with clouds that we in India face. We are trying to solve for problems in our part of the world,” he said.

The data produced by the satellite will be useful for civilian as well as military purposes, he said.

CURATED FOR YOU



**What is SACHET, the alert system that India will use from now in...**



**Discovery of tiger carcass in Goa forest puts spotlight on tussle over demand for big cat reserve...**

Stay updated with the latest - [Click here to follow us on Instagram](#)