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PSLV-C54 SUCCESSFULLY PLACES EARTH OBSERVATION SATELLITE, 8 NANOSATELLITES IN ORBIT

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The PSLV-C54 rocket lifts off from the Satish Dhawan Space Centre in Sriharikota on November 26, 2022. | Photo Credit: PTI

In one of its longest missions, the Indian Space Research Organisation (ISRO) successfully placed nine satellites, including an Earth Observation Satellite (EOS-06) in multiple orbits with the help of the space agency's Polar Satellite Launch Vehicle (PSLV-C54). The vehicle took off precisely at 11.56 a.m. on Saturday from the first launch pad (FLP) at the Satish Dhawan Space Centre (SDSC), SHAR.

The eight nano satellites include ISRO Nano Satellite-2 for Bhutan (INS-2B), Anand, Astrocast (four satellites), and two Thybolt satellites. Notably, EOS-6 is the Oceansat series' third-generation satellite. This is the 56th flight of the Polar Satellite Launch Vehicle (PSLV) and the 24th flight of the PSLV-XL version with 6 PSOM-Xls.

EOS-06 is envisaged to observe ocean colour data, sea surface temperature and wind vector data to use in oceanography, climatic and meteorological applications. The satellite also supports value added products such as potential fishing zone using chlorophyll, SST and wind speed, and land based geophysical parameters.

ISRO Chairman S.Somanath said that the mission is accomplished and all the satellites have been injected into their intended orbits. "For us, the India-Bhutan satellite is a very important milestone in the history of joint collaboration of Indian scientist and Bhutanese scientists in building this satellite with two payloads."

Delivering his address through a video, External Affairs Minister S. Jaishankar, said, "Today we have achieved a historic milestone in India's bi-lateral co-operation with Bhutan. As two special friends and neighbours, in a span of two years, the collaborative effort of a dedicated team of space engineers and scientists from ISRO and Bhutanese side have culminated today in the launch of this satellite." He added that ISRO is also working with Bhutan in establishing a ground station in Thimphu, which will be commissioned shortly.

The Primary satellite (EOS-06) was separated in Orbit-1. Subsequently, orbit was changed by

using two Orbit Change Thrusters (OCTs) introduced in the Propulsion Bay Ring of the PSLV-C54 Vehicle. Later, all the seven commercial satellites from NSIL were deployed successfully. Astrocast, a 3U spacecraft with 4 Satellites from Spaceflight Inc, U.S., were separated.

Following this, the Thybolt, a 0.5U spacecraft bus that includes a communication payload to enable rapid technology demonstration and constellation development for multiple users from Dhruva Space using their own Orbital Deployer with a minimum lifetime of one year, was deployed in the intended orbit. The Anand three axis stabilised nano satellite, a technology demonstrator for miniaturised electro-optical payload and all other sub-systems like TTC, power, onboard computer and ADCS from Pixxel, India was also placed in the orbit.

Further, the India-Bhutan Sat was successfully deployed. A collaborative mission between India and Bhutan, the INS-2B satellite has two payloads namely NanoMx, a multispectral optical imaging payload developed by Space Applications Centre (SAC) and APRS-Digipeater, which is jointly developed by DITT-Bhutan and URSC.

Mr. Somanath also said that ISRO will have a slew of launches in 2023. “ISRO is also planning to have its mission to the sun with its satellite Aditya-L1, a coronagraphy spacecraft to study the solar atmosphere, with a PSLV rocket next year,” he said. The space agency will also launch a navigation satellite for the country’s NavIC constellation. “ISRO has planned to launch four NavIC satellites and the first one will go up in 2023.”

Meanwhile, the live launch was witnessed by 10,342 people from the open view gallery at SDSC SHAR, Sriharikota. Thousands of school students from Tamil Nadu, Hyderabad, Bengaluru and from other parts of India gathered at ISRO to watch this rocket take off.

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