The Hindu, Bengaluru, Wednesday, May 20, 2015, pp. 09

India's eye on universe ready for tests

Astrosat launch in October, to provide useful data for country's astronomers

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BENGALURU: A fully assembled Astrosat, India's first space observatory, is ready for intensive tests here before its launch around October.

The Indian Space Research Organisation said on Tuesday that the 1,650-kg spacecraft would orbit Earth equatorially at 650 km and study distant stars, galaxies, black holes and other cosmic objects.

Elite status

The space-based observatory was built at the ISRO Satellite Centre here to operate for five years and will provide useful data for the country's astronomy community. It will put India in an elite orbit with the U.S., Europe, Russia and Japan.

An artist's impression of Astrosat, with various instruments mounted on it.
– COURTESY: ISRO

"Last week, the spacecraft was fully assembled and switched on. All the [six] payloads and sub-systems are integrated into the satellite. Mechanical fit checks of the satellite with the PSLV [polar satellite launch vehicle] payload adaptor were performed successfully," the space agency said on its website.

One of ISRO directors said Astrosat would be the first such satellite to scan simultaneously the sky in most of the frequency spectra from ultraviolet to optical and low- and high-energy X-ray bands.

Large scale

Although previous national satellites carried small astronomy-related devices, "Nothing on this scale, with a dedicated satellite, has been done before [at ISRO]. It should be of immense benefit to our scientists, who have depended on inputs from other agencies and sources like the Hubble [US-European space telescope]," the official said.

In the coming days, Astrosat will undergo a host of environmental tests — electromagnetic interference, electromagnetic compatibility, thermal vacuum, vibration and acoustics and so on.

Later, the satellite will be shipped to the Satish Dhawan Space Centre, Sriharikota, for launch.

ISRO developed the six payloads in partnership with the Tata Institute of Fundamental Research, Mumbai; the Indian Institute of Astrophysics and the Raman Research Institute, Bengaluru; and the Inter-University Centre for Astronomy and Astrophysics, Pune.

Two payloads were developed with the Canadian Space Agency and the University of Leicester, U.K.