

A QUANTUM LEAP

SIX SATELLITES, INCLUDING FOUR FOR THE U.S., AMONG THOSE PUT IN ORBIT
With Astrosat launch, ISRO scales new heights

Dennis S. Jesudasan

A few days after it celebrated the successful completion of a year around the red planet by its first inter-planetary mission -- the Mars Orbiter, the Indian Space Research Organisation (ISRO) on Monday launched its first dedicated multi-wavelength space observatory Astrosat into space, besides six satellites for Canada, Indonesia and the United States.

Though the national space agency has launched satellites for Indonesia and Canada earlier, this is the first time ISRO is launching satellites for the United States.

Though there have been scientific missions by ISRO in the past, this is the first time a space observatory is being launched into space. Though Astrosat may be similar to the NASA's Hubble Space Telescope, the former is about 10 times smaller and cannot be compared to the Hubble, which is versatile.

Besides US' NASA, space agencies of the European Union, Japan and Russia have launched similar facilities into the space.

Within 22 minutes of its liftoff from the Satish Dhawan Space Centre here at 10 am, ISRO's PSLV C-30 rocket successfully placed in orbit ASTROSAT. A few minutes later, Canada's NLS-14 nano satellite, Indonesia's LAPAN-A2 microsatellite and four identical LEMUR nano satellites for the U.S. were also put in orbit.



TODAY IS ONE OF THE EVENTFUL DAYS FOR US. OUR PSLV HAS ONCE AGAIN PROVED TO BE A WORKHORSE



Astrosat, the country's first astronomy observatory, lifts off from the Satish Dhawan Space Centre in Sriharikota on Monday. - PHOTO: V. GANESAN

With the Monday's launch, ISRO has successfully crossed the half century-mark as for foreign satellites. ISRO has launched 51 satellites for foreign satellites so far.

"Today is one of the eventful days for us. Our PSLV has once again proved to be a workhorse," ISRO Chairman A.S. Kiran Kumar said from the Mission Control Room, soon after the rocket injected the satellites into the intended orbits.

The 1,513-kg cuboid-shaped satellite would be eventually fine-tuned into 650 km above the Earth's surface. The satellite can

perform simultaneous multi-wavelength observations of various astronomical objects. The sun and star sensors, besides the gyroscopes, would provide orientation reference to the satellite, which has a mission life of five years.

Unravelling mysteries of the universe

Astrosat aims at understanding the high energy processes in binary star systems containing neutron stars and black holes, to estimate magnetic fields of neutron stars, to study star birth regions and high energy processes in star systems lying beyond the Milky Way galaxy.

The mission also intends to detect new briefly bright X-ray sources in the sky, to perform a limited deep field survey of the universe in the ultraviolet region.

While Canada's NLS-14 is a maritime monitoring nano satellite using the Automatic Identification System, Indonesia's LAPAN-A2 is aimed at benefiting Indonesian radio amateur communities for disaster mitigation and carrying out Earth surveillance. All the four identical LEMUR satellites for the United States -- non-visual remote sensing satellites aims to focus on global maritime intelligence through vessel tracking.

The other institutions that participated in the gigantic task of Astrosat launch are Tata Institute of Fundamental Research, Indian Institute of Astrophysics, Inter-University Centre for Astronomy and Astrophysics and Raman Research Institute.

23 foreign satellites lined up

Dennis S. Jesudasan

SRIHARIKOTA (A.P.): A total of 23 satellites from nine countries are to be launched by ISRO in the next few years. ISRO's commercial arm Antrix Corporation Limited has already signed agreements with nine countries, including the European Union, Japan, Singapore and the U.S.

"The next immediate launch would be that of six satellites for Singapore. A PSLV rocket would carry one 410 kg-Earth observation satellite along with five co-passengers," Antrix Corporation Chairman and Managing Director V.S. Hegde said.

There are five satellites to be launched for the U.S. In the list, including SkySat-Gen2-1 micro satellite of Skybox Imaging Inc.

"Except for Oceania (Australia and New Zealand), we have launched satellites for all countries in all continents," he added.

MOM data

Data collected by ISRO's Mars Orbiter Mission (MOM) would be open to the scientific fraternity and they can express interest to use them, ISRO Chairman Kiran Kumar said. MOM takes two-and-a-half days to go around the Red planet and it takes four pictures during an orbit. "MOM has taken substantial number of pictures and we have prepared a Mars Atlas."

ISRO was looking for partnership for building and assembling launch vehicles in three to four years, its Chairman Kiran Kumar said