

## **ISRO scores a century**

By Dinesh C Sharma

New Delhi, February 15: The Indian Space Research Organisation (ISRO) has begun the year 2017 with a century. On Wednesday, the space agency successfully launched 104 satellites using its workhorse rocket, Polar Satellite Launch Vehicle (PSLV). This is the largest number of satellites to be launched by any space agency in one go. The previous record was launch of 37 satellites by a Russian rocket in June 2014. India's previous high was 20 satellites launched by PSLV in June last year.

Today's was also the largest commercial satellite launch from India. As many as 88 nano-satellites belonging to one company – Planet Inc (USA) – and 8 from another American firm, Spire, were launched on the flight. In addition, there were five other commercial satellites – one each from Israel, Kazakhstan, the Netherlands, Switzerland and the UAE. There were two Indian nanosatellites as well. The total weight of all the 104 satellites carried on-board PSLV-C37 was 1378 kg.

After a flight of 16 minutes 48 seconds, the satellites achieved a polar Sun Synchronous Orbit of 506 km inclined at an angle of 97.46 degree to the equator (very close to the intended orbit) and in the succeeding 12 minutes, all the 104 satellites successfully separated from the PSLV fourth stage in a predetermined sequence beginning with Cartosat-2. The extended life of stage 4 was one of the new additions for this mission, to ensure continuous deployment of satellites.

The primary cargo of the mission was Cartosat-2 series satellite which is similar to earlier four satellites in this series. After its injection into a polar Sun Synchronous Orbit, the solar arrays of the satellite were deployed automatically and ISRO's Telemetry, Tracking and Command Network (ISTRAC) at Bangalore took over the control of the satellite. In the coming days, the satellite will be brought to its final operational configuration following which it will begin to provide remote sensing services using its panchromatic (black and white) and multispectral (colour) cameras, the space agency said.

The imageries from this satellite will be useful for cartographic applications, urban and rural imaging, coastal land use and regulation, road network monitoring, water distribution, creation of land use maps, detection of geographical and manmade changes and other Land Information System (LIS) and Geographical Information System (GIS) applications.

With the launch of two Indian nano satellites, ISRO has begun a new series of satellites – ISRO Nano Satellites (INS). The INS-1A and INS-1B launched today have been developed by the space agency. Satellites in this series will deploy modular satellite bus system that will be useful for science and experimental payloads. The main objectives of INS system is to design and develop a low cost modular nano satellite in the weight range of 10 kg capable of carrying payloads up to a weight of 5 kg. This platform will help deploy technology demonstration payloads and also provide a standard bus for launch of on-demand services. The system can also be used to carry innovative payloads from universities and research laboratories.

With today's successful launch, the total number of customer satellites from abroad launched by PSLV has reached 180. The total number of Indian satellites launched by PSLV now stands at 46. [Indian Science News and Feature Service]