



Year End Review: Department of Space

Posted On: 26 DEC 2017 12:23PM by PIB Delhi

Following are the highlights of the activities of the Department of Space during the year 2017:

Ø In this calendar year i.e. 2017, Indian Space Research Organisation (ISRO) has launched 104 satellites, in a single launch, onboard PSLV-C37 on February 15, 2017 and 31 satellites, in a single launch, on-board PSLV-C38 on June 23, 2017. These satellites include - Two Indian Cartosat-2 series satellites, two Indian Nano-Satellites, one Nano satellite from Indian University and 130 foreign satellites from 19 countries, viz. Austria, Belgium, Chile, Czech Republic, France, Finland, Germany, Italy, Israel, Japan, Kazakhstan, Latvia, Lithuania, Slovakia, Switzerland, The Netherlands, UAE, UK and USA. The Cartosat-2 series satellites are placed in a sun synchronous orbit with a designed mission life of 5 years. The main objective of these satellites is to provide high resolution images of earth's surface at sub-meter resolution (Black & White image) and at 2 meter resolution (4-band coloured image). The images obtained from these satellites are useful in variety of applications requiring high resolution images, which include cartography, infrastructure planning, urban & rural development, utility management, natural resources inventory & management, disaster management.

Ø India's Geosynchronous Satellite Launch Vehicle Mark-II (GSLV-F09) successfully launched the 2230 kg South Asia Satellite (GSAT-9) into its planned Geosynchronous Transfer Orbit (GTO) on May 05, 2017. The launch of GSLV was its eleventh and took place from the Second Launch Pad at the Satish Dhawan Space Centre SHAR (SDSC SHAR), Sriharikota, the spaceport of India. This was the fourth consecutive success achieved by GSLV carrying indigenously developed Cryogenic Upper Stage.

Ø The first developmental flight (GSLV MkIII-D1) of India's heavy lift launch vehicle GSLV Mk-III was successfully conducted on June 05, 2017 from Satish Dhawan Space Centre SHAR, Sriharikota with the launch of GSAT-19 satellite. This was the first orbital mission of GSLV MkIII which was mainly intended to evaluate the vehicle performance including that of its fully indigenous cryogenic upper stage during the flight. Weighing 3136 kg at lift-off, GSAT-19 became the heaviest satellite launched from the Indian soil.

Ø On June 29, 2017, GSAT-17 became India's third communication satellite to successfully reach orbit in two months. GSAT-17 was launched by the European Ariane 5 Launch Vehicle from Kourou, French Guiana.

Ø A two-day International Seminar on Indian Space Programme: 'Trends and Opportunities for Industry' was organized in New Delhi on November 20-21, 2017. The seminar was organised by Indian Space Research Organisation (ISRO), Antrix Corporation Limited (the commercial arm of ISRO), in coordination with Federation of Indian Chambers of Commerce and Industry (FICCI). The Two-day conference deliberated on the best practices, pursuit of the ongoing discussion process to support further work of India's Space Sector and facilitate to arrive at a coherent framework, where in India's Space Sector can start expanding the domestic and global opportunities through enhanced partnerships and collaborations. The seminar aimed to highlight the achievements and major milestones of Indian Space Sector in recent past, and the future programs and plans. During the seminar, the stakeholders from industry, policy makers, thought leaders and academia, brainstormed on the enabling and encouraging policies of Government of India to exploit the commercial space segment by Indian Industry targeting both domestic and international market.

Ø AstroSat, India's multi-wavelength space telescope completed two years in orbit during the year and has successfully accomplished the difficult task of measuring X-ray polarisation. In a paper published in 'Nature Astronomy', the team documented the results of their eighteen-month study of the Crab pulsar in the Taurus Constellation and measured the variations of polarisation as this highly magnetised object spins around 30 times every second. This landmark measurement puts up a strong challenge to prevailing theories of high energy X-ray emission from pulsars.

Ø An exhibition highlighting the achievements of Indian Space Research Organization (ISRO) was inaugurated by the MoS Dr Jitendra Singh, in Surat, Gujarat on September 29, 2017. The exhibition was held under the aegis of Municipal School Board with participation by a large number of school children.

Ø A Memorandum of Understanding (MoU) was signed between the ISRO Telemetry Tracking and Command Network (ISTRAC), Indian Space Research Organisation (ISRO), Department of Space and the Council of Scientific and Industrial Research (CSIR)-National Physical Laboratory (NPL), Ministry of Science and Technology, in New Delhi on August 4, 2017. The MoU provides for time and frequency traceability services to ISRO by CSIR-NPL.

Ø Mars Orbiter Mission successfully completed three years in its orbit on September 24, 2017, surviving well beyond its designed mission life of six months. All Scientific payloads continue to provide valuable data of Mars surface and its atmosphere. Mars Colour Camera on-board MOM has acquired more than 700 images of Martian surface. MOM atlas is published and updates on MOM images are regularly provided on ISRO website. The observations drawn by scientists have been published in 20 scientific papers in peer reviewed journals. The archived scientific data has been released to public for free download and scientific research. About 1380 registered users have downloaded more than 370 GB of data.

Ø ISRO and Jet Propulsion Laboratory (JPL)/NASA are jointly working on the development of Dual Frequency (L&S band) Synthetic Aperture Radar Imaging Satellite named as NASA-ISRO Synthetic Aperture Radar (NISAR). The L-band SAR is being developed by JPL/NASA, while ISRO is developing S-band SAR. The L & S band microwave data obtained from this satellite will be useful for variety of applications, which include natural resources mapping and monitoring; estimating agricultural biomass over full duration of crop cycle; assessing soil moisture; monitoring of floods and oil slicks; coastal erosion, coastline changes and variation of winds in coastal waters; assessment of mangroves; surface deformation studies, ice sheet collapses and dynamics.

