

GOVERNMENT OF INDIA
DEPARTMENT OF SPACE

RAJYA SABHA
UNSTARRED QUESTION NO. 1085

TO BE ANSWERED ON THURSDAY, MARCH 09, 2017

ACHIEVEMENTS IN RESEARCH AND LAUNCHING

1085. DR. SATYANARAYAN JATIYA:

Will the PRIME MINISTER be pleased to state:

- (a) the achievements made so far in space research and launch of satellites during the last three years, year-wise; and
- (b) the details of targets and action plan fixed for the next five years, space research centre-wise?

ANSWER

MINISTER OF STATE IN THE MINISTRY OF PERSONNEL, PG &
PENSIONS AND IN THE PRIME MINISTER'S OFFICE

(DR. JITENDRA SINGH):

- (a) Major achievements of Department of Space during last three years, year-wise, are given below:

2014-15:

During 2014-15, a total of 10 missions were accomplished, which include 5 launch vehicles, 4 satellites and 1 technology demonstrator mission.

- Insertion of India's "Mars Orbiter Mission" in to Mars orbit. ISRO became the fourth space agency to successfully send a spacecraft to Mars and India became the first country in the world to do so in its first attempt.
- First experimental flight of GSLV-Mk III (with passive cryogenic stage) towards building indigenous capability to launch four Ton class of satellites. The unmanned Crew Module Atmospheric Re-entry Experiment (CARE) was also accomplished successfully, during this flight.
- Launch of three navigation Satellites viz. IRNSS-1B, 1C and 1D.
- Launch of GSAT-16 communication satellite, to augment INSAT/GSAT system capacity for telecommunication, DTH and societal benefits.
- Launch of five foreign satellites from four countries viz. France, Germany, Canada and Singapore.

2015-16:

During 2015-16, a total of 11 missions were accomplished, which include 6 launch vehicles and 5 satellite missions.

- GSAT-6, the Communication satellite was successfully launched onboard GSLV-D6, with indigenous Cryogenic Upper Stage.
- There were 2 important accomplishments from this mission, (a) India took a major stride in building indigenous capability for launching 2 Ton class satellites with this GSLV flight. (b) GSAT-6 deployed an indigenously built 6m S-Band Unfurlable Antenna in space.
- Placed first observatory in space “ASTROSAT” enabling simultaneous multi-wavelength (UV to X-Ray) observations of stars and galaxies. ISRO Enabled the development and realization of scientific instruments by academic institutions, namely, Indian Institute of Astrophysics (IIA), Bangalore, Inter University Centre for Astronomy & Astrophysics (IUCAA), Pune and Tata Institute of Fundamental Research (TIFR), Mumbai, in the country. Announcement of Opportunity was done in June 2016 for Indian researchers to explore the universe using ASTROSAT.
- Launch of communication satellite “GSAT-15”, carrying Ku-band transponders and also the GAGAN payload. DGCA Certification of GAGAN for space based safety-of-life applications in civil aviation sector.
- Launch of two navigation satellites viz. IRNSS-1E and 1F.
- Launch of 17 foreign satellites from five countries viz. Canada, Indonesia, Singapore, United Kingdom and USA.
- As a major initiative towards greater emphasis on space applications, a national meet was organized in Delhi during September 2015 wherein 58 central ministries and all State Governments participated with an objective of “Enhanced use of Space technology for national development”

2016-17:

During 2016-17, a total of 15 missions were accomplished, which include 6 launch vehicles, 7 satellites and 2 technology demonstrator missions.

- Realized space segment of the Indian Navigation Satellite System, NavIC (Navigation-Indian Constellation) to provide Position, Navigation and Timing services in Indian mainland and surrounding region up to 1500 Km.

- India's GSLV-F05 with indigenous CUS, launched weather satellite INSAT-3DR. Along with INSAT-3D (launched in 2013), INSAT-3DR provides meteorological data every 15 minutes.
 - Augmented Indian Earth Observation capability with four remote sensing satellites viz. Resourcesat-2A, Scatsat-1 and two Cartosat-2 series.
 - Successful conduct of two technology demonstrator missions viz. India's first winged body aerospace vehicle, Reusable Launch Vehicle-Technology Demonstrator (RLV-TD) and Scramjet Engine, an Air Breathing Propulsion System.
 - ASTROSAT is opened to Indian researchers as an observatory by allocating time for such activities, wherein 35% of observing time is allotted to Indian researchers. As an outcome, about 140 proposals from Indian researchers are under execution. Currently, 43 research papers are published, based on scientific instruments development and initial results.
 - Successful testing of Indigenously developed Cryogenic Upper Stage "C25" for GSLV MkIII for a full flight duration of 640 seconds.
 - Successfully launched 104 satellites in a single go, onboard PSLV C37, of which 101 belonged to foreign countries (Israel (1), Kazakhstan (1), Netherlands (1), Switzerland (1), UAE (1) and USA (96)), while 3 satellites were from ISRO
 - Launch of 123 foreign satellites from ten countries viz. Algeria, Canada, Germany, Indonesia, Israel, Kazakhstan, Netherlands, Switzerland, UAE and USA.
- (b) A per the Department's plan for next five years, the targets include realization of high-throughput satellites and dedicated broadcasting satellites to increase the available transponder capacity, leased capacity from foreign satellites to be moved to indigenous satellite system, Geo-Imaging Capability, Advanced cartography satellite, continuity of services with regard to Satellite Navigation & GAGAN systems, Resourcesat, Oceansat, RISAT and weather/meteorological services, Building Constellation of High Resolution Satellites, development of Advance Launch Vehicle systems for low cost access to Space, realization of semi-cryogenic engine, Undertaking Space Science Missions for study of Sun, Moon and other planets and strengthening information support system for Disaster Management, weather forecasting, Environment/ Climate Change Studies, space based support for natural resource monitoring and citizen centric services.
