

**GOVERNMENT OF INDIA
DEPARTMENT OF SPACE**

**LOK SABHA
UNSTARRED QUESTION NO.1381**

TO BE ANSWERED ON WEDNESDAY, DECEMBER 27, 2017

DEVELOPMENT OF SPACE SCIENCE

1381. SHRI TEJ PRATAP SINGH YADAV:

Will the PRIME MINISTER be pleased to state:

- (a) whether ISRO has developed any new innovative technology, products and services for the development of space science, research and technology;**
- (b) if so, the details of the innovative projects undertaken in the last three years, year-wise;**
- (c) whether the Government has drawn-up a long-term plan 'Space Vision 2025' for Space Research Programmes and if so, the details thereof;**
- (d) whether there is need for bilateral cooperation with foreign countries/institutes in the field of space science and research and if so, the details thereof; and**
- (e) the steps taken by the Government to improve research and development in space technology?**

ANSWER

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

(DR. JITENDRA SINGH):

(a) Yes Madam.

(b) Year wise details of innovative projects undertaken in the last three years are as below:

2014-15 Mars Orbiter Mission (MOM): Launched on September 24, 2014, has made ISRO, the fourth Space agency in the world to reach Mars orbit. Initially designed for six months is still continuing and sending important data for scientific studies.

2015-16 AstroSat: Launched on September 28, 2015, is a unique satellite providing common platform for simultaneous multi-wavelength observations of celestial sources. It has completed more than two years and performing.

2016-17 RLV-TD: It was successfully flight tested on May 23, 2016. It is the most technologically challenging endeavors of ISRO towards developing essential technologies for a fully reusable launch vehicle to enable low cost access to space.

2016-17 ScramJet: The first experimental mission of ISRO's Scramjet engine towards the realisation of an Air Breathing Propulsion System was successfully conducted on August 28, 2016. Future Reusable launch vehicle together with Air Breathing propulsion system will bring down the cost of access to space far low.

(c) Yes Madam, ISRO has worked out a 3 year action plan, 7 year strategy and 15 year long term vision for Space Programme, under four vertical, namely, (i) Space transportation system,

(ii) Space infrastructure, (iii) Space applications, (iv) Capacity building.

(d) Yes Madam, International cooperation is a part of India's space programme since its inception. In the past, ISRO has developed Meghatropiques and SARAL satellites in cooperation with French space agency CNES. Currently ISRO and NASA are working jointly on NISAR (NASA ISRO Synthetic Aperture Radar) project. Bilateral cooperation with foreign countries/institutions in the field of space science and research helps in analysis of data, identification of key areas for future missions and utilisation of space and ground based resources.

(e) Indian Space Research Organisation (ISRO) has taken several measures to promote scientific research by the Indian scientists especially the youth, which include:

a. ISRO Space Science Promotion Scheme (ISRO-SSPS) intended towards supporting and strengthening of research in space science in universities.

b. ISRO's Sponsored Research (RESPOND) Programme involves academic institutions for joint research to meet specific requirements in area of space technology, space science and space applications.

c. Indian Institute of Space Science and Technology (IIST), Physical Research Laboratory (PRL) and National Atmospheric Research laboratory (NARL) established

under Department of Space encourages young researchers to undertake research in space science and technology.

- d. Space Technology Cell was set up by ISRO at premiere institutions like IIT Bombay, IIT Kanpur, IIT Kharagpur, IIT Madras, IISc Bangalore and University of Pune to carry out research activities in the areas of space technology and applications.**
