

**GOVERNMENT OF INDIA
DEPARTMENT OF SPACE**

LOK SABHA

UNSTARRED QUESTION NO. 583

TO BE ANSWERED ON WEDNESDAY, FEBRUARY 05, 2020

ISRO DEVELOPING TECHNOLOGY

583 MS. RAMYA HARIDAS:

SHRIMATI POONAM MAHAJAN:

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 during the last three years;**
- (b) if so, the details thereof;**
- (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 a 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)& (b)

Yes Sir, new technology development is a continuous activity of all ISRO centres, for designing different missions of ISRO.

A list of few major innovative technologies are given below,

- 1. Space Grade Li-ion cells**
- 2. NavIC Messaging Receiver**
- 3. Mini Synthetic Aperture Radar**
- 4. Thermal Sensors**
- 5. Two Channel Digital Monopulse Tracking Receiver**
- 6. Optical Imaging System**
- 7. Pedcoat Liner**
- 8. Two way MSS Terminal**

(c) Yes. ISRO has drawn up a long term plan for space science and research activities. The major Space science programs envisaged under this long term plan are as follow:

- Chandrayaan-3**
- X-ray Polarimeter Satellite (XPOSAT)**
- Aditya-L1**
- Gaganyaan:**
- Venus orbiter**
- DISHA aeronomy missions**
- Lunar Polar Exploration**

In addition, 17 projects under Chandrayaan-1 data utilisation and 28 projects under MOM data utilisation are identified. Under utilisation for Astrosat data, 12 more projects are selected with funding support.

(d) Yes Sir.

Space science and research to observe earth and to explore universe are technologically complex and cost intensive. No single country can carry out independently all such activities. Hence, countries pursue cooperation in space science and research to share cost, time and risk. India and Indian Space Research Organisation (ISRO) have signed bilateral cooperation arrangements with 55 countries and 5 multilateral bodies.

(e) The following programmes are in place for encouraging R&D in space science, Technology and Applications

- 1. Research Sponsored programme (RESPOND) which encourages any institution/Academia against list of focused areas.**
- 2. Space Technology Cell at Premier institutions like IITs, IISC & SPPU, Pune for encouraging research by Students.**
- 3. Regional Academic Centres for Space (RACs) at prominent Universities one in each region of East, South, West, North, Central and North East to encourage the R&D at universities.**

- 4. Space Technology Incubation Centres at NITs one in each region of East, South, West, North, Central and North East to encourage the R&D and Innovative technologies by startups and industries in the region.**
- 5. Proposal for identifying Space national Academic partners is in pipeline for encouraging R&D in areas of excellence through the partner.**
- 6. ISRO centres take several R&D projects in collaboration with Academia and Research institutions for the ongoing and future ISRO programmes continuously every year.**
