

**GOVERNMENT OF INDIA
DEPARTMENT OF SPACE**

LOK SABHA

UNSTARRED QUESTION NO. 1427

TO BE ANSWERED ON WEDNESDAY, JULY 31, 2024

SPACE TECHNOLOGY AND SPACE COOPERATION

1427. SHRI RAJU BISTA:

Will the PRIME MINISTER be pleased to state:

- (a) whether the International Space Organisations have requested India for the transfer of technology and future space cooperation after successful Chandrayaan Mission;**
- (b) the details of the steps taken by the Ministry for improving the scope of business prospect in satellite manufacturer and launching in Indian perspective;**
- (c) the details about the significant achievements of ISRO from 2014 till date; and**
- (d) the details about some of the notable satellites that ISRO has successfully launched into space?**

ANSWER

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

(DR. JITENDRA SINGH):

- (a) While International Space Organisations have congratulated India for Chandrayaan-3 success, no specific request was made for the transfer of technology and future space cooperation.**
- (b) The Government of India has announced reforms in the space sector in June, 2020 towards enabling the private players to provide end-to-end services towards enhancing the Indian space economy to a significant level. Indian Space Policy-2023 was released in April 2023 as an overarching, composite and dynamic framework to implement the space reform vision. It helps to promote greater participation of Non-Governmental Entities (NGEs) in the value chain of space economy in order to develop robust, innovative and competitive space ecosystem aiming for a larger share of India in global space economy. It also enables the NGEs to make use of infrastructure created through public funds. Further, amendment was made to the Foreign Direct Investment policy for space sector, enabling higher threshold of foreign investments in various space domains.**

Indian National Space Promotion and Authorisation centre (IN-SPACe), a single-window agency, was formed under Department of Space, to promote, regulate and authorize space activities of Non-Governmental Entities (NGEs). Further, in order to carry out space activities, the facilities across various ISRO centres will also be permitted for use by private sector through IN-SPACe. New Space India Limited (NSIL), a CPSE under the Department of Space will transfer the matured technologies developed by ISRO to Indian industries. ISRO will also nurture Indian space

industries by sharing its experiences on quality and reliability protocols, documentation, testing procedures etc. Announcement of Opportunities and initiatives like 'Atmanirbharta in development of space technologies/ products/ systems through Indian industry' are also being undertaken offering challenges in new domains of space technology.

(c) 54 spacecraft missions (15 Communication, 26 Earth Observation, 8 Navigation and 5 Space Science), 53 launch vehicle missions (35 PSLV, 9 GSLV, 7 LVM3 and 2 SSLV) and 8 technology demonstrators, have been successfully realized, since 2014 till date. Significant achievements are given below:

- In January 2014, the first successful flight with indigenous Cryogenic Upper Stage, GSLV-D5 launch vehicle carrying GSAT-14.**
- In September 2014, India's Mars Orbiter Spacecraft successfully entered into an orbit around planet Mars, putting India into a league of select nations which had sent a spacecraft to the Red Planet. The spacecraft completed about 8 years of operation against the designed life of 6 months and serving nation with a lot of interesting science data.**
- In December 2014, the country witnessed the experimental flight of the next generation launch vehicle – the GSLV MKIII. The LVM3-X/CARE Mission, the first experimental suborbital flight of the vehicle, launched the Crew Module Atmospheric Re-entry experiment (CARE).**

- **AstroSat launched by PSLV in September, 2015, is the first dedicated Indian astronomy mission aimed at studying celestial sources in X-ray, optical and UV spectral bands simultaneously.**
- **ISRO has established and operationalised Navigation with Indian Constellation (NavIC) which provides highly accurate Position, Navigation and Time information to users in India and its surroundings.**
- **Successful flight testing of Reusable Launch Vehicle-Technology Demonstrator (RLV-TD) was done on May 23, 2016 from Satish Dhawan Space Centre (SDSC) SHAR, Sriharikota.**
- **In 2017, PSLV C-37 created a world record by successfully placing 104 satellites in orbit during a single launch.**
- **ISRO has launched the 2.2 Ton communication satellite (South Asia Satellite) in 2017 to support neighbouring countries.**
- **The first developmental mission of GSLV Mk-III D1 was successfully accomplished in June-2017 and boosted GSAT-19 satellite into geosynchronous transfer orbit.**
- **ISRO demonstrated a crucial technology element of Human spaceflight in July 2018- The Pad Abort Test (PAT) to qualify the Crew Escape System (CES). The Pad Abort Test flight was a demonstration of the capability of CES to evacuate the Crew in case of a contingency at launch Pad.**

- **GSAT-29 high throughput communication satellite was successfully launched on November 14, 2018, on-board GSLV Mk III-D2.**
- **In 2018, ISRO's next generation high throughput communication satellite, GSAT-11 was successfully launched on December 05, 2018 from Kourou.**
- **India's second mission to Moon, Chandrayaan-2 was successfully launched on July 22, 2019 on-board GSLV Mk III-M1, first operational flight of this new launch vehicle. Chandrayaan-2 Orbiter is providing valuable science data for the research community.**
- **PSLV-C52 successfully launched EOS-04 satellite (RISAT-1A) in Feb-2022 along with two small satellites a student satellite (INSPIRESat-1) from Indian Institute of Space Science & Technology (IIST) and a technology demonstrator satellite (INS-2TD) from ISRO, which is a precursor to India-Bhutan Joint Satellite (INS-2B).**
- **'ISRO System for Safe & Sustainable Operations Management (IS4OM) was dedicated to the nation in July, 2022.**
- **LVM3 M2/OneWeb India-1 & LVM3 M3/OneWeb India-2 Missions were successfully accomplished in October 2022 & March 2023 respectively, exemplifying Atmanirbharata and enhances India's competitive edge in the global commercial launch service market.**

- **PSLV-C54 successfully launched EOS-06 satellite (Oceansat-3) in November, 2022 along with Eight Nano-satellites including INDIA-BHUTAN SAT (INS-2B).**
- **First successful mission of SSLV-D2 was accomplished in February, 2023 by injecting three satellites into precious orbit.**
- **Reusable Launch Vehicle Autonomous Landing Experiments (RLV-LEX) were successfully conducted thrice at the Aeronautical Test Range (ATR), Chitradurga, Karnataka during 2023-24.**
- **GSLV-F12/NVS-01 mission was successfully accomplished in May, 2023. GSLV deployed the NVS-01 navigation satellite, the first of the second-generation navigation satellites.**
- **Chandrayaan-3: LVM3-M4 successfully launched the Chandrayaan-3 Spacecraft on 14th July, 2023. Successfully accomplished safe & soft-landing of Vikram Lander at 'Shiv Shakti' point (Statio Shiv Shakti) & deployment of Pragyaan Rover on the lunar surface on August 23, 2023**
- **Aditya-L1 was successfully launched in September, 2023 using PSLV-C57. Spacecraft placing at Sun-Earth Lagrangian point (L1) i.e. Halo-Orbit Insertion (HOI) was successfully accomplished on January 6, 2024.**
- **PSLV-C58/XPOSAT mission was successfully accomplished in January, 2024.**

- **GSLV F14/ INSAT-3DS mission (fully funded by Ministry of Earth Sciences) was successfully accomplished in February, 2024.**
 - **Successfully carried out the second experimental flight ATV-D03/DFS for the demonstration of Air Breathing Propulsion Technology in July, 2024.**
- (d) The notable satellites that ISRO has launched into space includes space science missions such as Aryabhata, Astrosat, Mangalyaan, Chandryaan series XPOSAT, ADITYA-L1. ISRO has also successfully deployed an indigenous satellite based Navigation system namely the IRNSS/NavIC series of satellites. Further various Earth Observation Satellites such as Resourcesat series & Carto series were also launched. In the communication satellite segment the notable launches include the INSAT and GSAT series such as INSAT- 4C, GSAT-7A, GSAT-11, GSAT-29, GSAT-9 etc.**
