GOVERNMENT OF INDIA

DEPARTMENT OF SPACE

LOK SABHA

UNSTARRED QUESTION NO. 4702

TO BE ANSWERED ON WEDNESDAY, MARCH 29, 2023

SPACE PROGRAMMES AND MISSIONS

4702. SHRI LALLU SINGH:

Will the PRIME MINISTER be pleased to state:

(a) the details of India's space programmes and missions to be launched in the year 2023;

(b) whether the Indian Space Agency will also send a mission to study the Sun;

(c) if so, the details regarding the mission;

(d) whether the Indian Space sector is opening its door to private companies and space startups in the country; and

(e) if so, the details thereof?

ANSWER

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

(DR. JITENDRA SINGH):

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(a) Major space programmes and missions launched / to be launched in 2023 include:

- **The 2nd development flight of Small Satellite Launch Vehicle (SSLV) – the SSLV D2- successfully launched on February 10, 2023 carrying three satellites: EOS-07, Janus-1 and AzaadiSAT-2 into their intended orbits.**
- **The commercial launch of the next batch of 36 satellites for OneWeb- India aboard the LVM3 through NSIL – the LVM3-M3/OneWeb India -2 mission is scheduled for March 26,2023**
- **NSIL sponsored commercial launches of TeLEOS-2 aboard the PSLV C55, DS-SAR aboard the PSLV C-57 and ANWESHA aboard the PSLV C58 are also scheduled in 2023.**
- **The configuration and design of various systems related to Gaganyaan is completed and the programme has entered the realization and testing phase. The first test vehicle mission, TV-D1, is planned in mid-2023.**
- **The launch of GSLV F12 carrying the Navigation satellite – NVS-01 is scheduled in 2023. This is the first of the series of NaVIC satellites with L1 band and greater security.**
- **The Reusable Launch Vehicle Landing Experiment [RLV-LEX] is also scheduled during early 2023.**
- **Further, there are major space science expeditions planned to be held in 2023:**
- **Aaditya-L1 - the first Indian Space mission to study the Sun, aboard the PSLV C56;**
- **XPoSAT- The X-Ray Polarimeter Satellite, India's first dedicated polarimetry mission to study the dynamics of bright astronomical X-ray sources in extreme conditions, aboard the SSLV-D3; and**

- **Chandrayaan-3 - the follow-up mission to Chandrayaan-2, intended to demonstrate soft landing on the lunar surface, aboard the LVM3-M4. The spacecraft is being readied incorporating the learnings from Chandrayaan-2 mission, with additional tests being conducted towards ensuring a higher degree of ruggedness in the lander.**
- **The launch of Radar Imaging Satellite- RISAT 1 B aboard the PSLV C60 is planned in 2nd half of 2023.**
- **Besides, a host of private sector activities, including launch vehicles and satellite launches, are also expected to happen in 2023.**

(b) & (c)

Yes, Sir. The Indian Space Research Organization will send a mission called Aditya-L1 to study the Sun. The Aditya-L1 spacecraft will conduct solar observation from a halo orbit around the first Sun-Earth Lagrangian point. The scientific instruments for this mission are developed by the Indian Institute of Astrophysics (IIA), Bangalore, Inter University Centre for Astronomy and Astrophysics (IUCAA), Pune, Physical Research Laboratory (PRL), Ahmedabad, U R Rao Satellite Centre (URSC/ISRO), Bangalore, Laboratory for Electro Optics Systems (LEOS/ISRO), Bangalore and Space Physics Laboratory (SPL/ISRO), Trivandrum.

The scientific objectives of Aditya-L1 mission include understanding the coronal heating and solar wind acceleration, understanding the initiation of Coronal Mars Ejection (CME), to understand coupling and dynamics of the solar atmosphere, as well as the solar wind distribution at the first Sun- Earth Lagrangian point. This mission is unique with its capability of imagining the solar disk in the near - UV band; study of the CME

dynamics close to the solar disk (~ from 1 ·05 solar radius) and thereby providing information in the acceleration regime of the CME which is not observed consistently; as well as its capability to study the directional and energy anisotropy of solar wind using multi-direction observations.

(d) & (e)

Yes, Sir. Government envisages enhanced participation of private sector in conducting of end-to-end activities in the space sector. Participation of private sector including academic institutions, start-ups and industries in end-to-end space activities is expected to expand the national space economy; generate more employment opportunities; create a thriving space ecosystem and result in increased Indian share in the global space economy in long term.

In order to increase India's share in global space economy, Government of India under visionary leadership has carried out space sector reforms to allow participation on Indian private sector in space activities. An autonomous nodal agency the Indian National Space Promotion and Authorization Centre (IN-SPACe) has been formed on June 24, 2020. The IN-SPACe will promote, enable, authorize and supervise private enterprises and start-ups to undertake space activities. This will enhance the diffusion of space technology and boost space economy within the country, for a resurgent, Atmanirbhar Bharat. These far-reaching space reforms initiatives by the Government of India in June 2020 will give a major fillip to private sector space industry, including the start-ups.

The major initiatives that IN-SPACe has taken up include enabling start-ups to use ISRO facilities and providing Mentorship support.

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