

GOVERNMENT OF INDIA
DEPARTMENT OF SPACE
RAJYA SABHA

UNSTARRED QUESTION NO. 138

TO BE ANSWERED ON THURSDAY, FEBRUARY 02, 2023

SPACE DEBRIS ORBITING THE EARTH

138. SMT. VANDANA CHAVAN:

Will the PRIME MINISTER be pleased to state:

- (a) the number of Indian space debris orbiting the Earth;
- (b) whether this will have an impact on the sustainability of future missions;
- (c) whether Government has conducted a study on the environment dangers of such space debris; and
- (d) 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):

- (a) There are a total of 111 payloads and 105 Space Debris identified as Indian Objects orbiting the Earth, as tracked and catalogued by USSPACECOM and published in spacetrack website, as on 20 Jan. 2023.
- (b) Yes, Sir. All orbiting debris will have impact on the sustainability of outer space and future missions.
- (c) Yes, Sir. ISRO has been carrying out many studies on impacts of growing space debris on space environment.
- (d) Research and studies on the potential and emerging threats from space debris are carried out by ISRO and academia since the early 1990s. In 2022, ISRO System for Safe and Sustainable Operations Management (IS⁴OM) has been established towards more focused efforts to continually monitor the objects posing collision threat, improve prediction of evolution of

space debris environment and concerted activities to mitigate the risk posed by space debris. ISRO has carried out 21 collision avoidance maneuvers of Indian Operational Space assets in 2022 to avoid collision threats from other space objects. To deal with the threat of very small debris objects which are too small to be tracked, spacecraft needs to be shielded against the impact risk. Spacecraft shielding related studies and development are under progress in ISRO to improve the protection for the upcoming missions.
