

GOVERNMENT OF INDIA
DEPARTMENT OF SPACE

RAJYA SABHA

UNSTARRED QUESTION NO. 1731

TO BE ANSWERED ON THURSDAY, AUGUST 03, 2023

STATUS OF CHANDRAYAAN-3 MISSION

1731. DR. DHARMASTHALA VEERENDRA HEGGADE:

Will the PRIME MINISTER be pleased to state:

- (a) whether the Phase I of Chandrayaan-3 Mission by the Indian Space Research Organisation (ISRO) successfully lifted off from the Satish Dhawan Space Centre in Sriharikota recently;
- (b) if so, the details of components, weight, mission life, the landing site and objectives of Chandrayaan-3;
- (c) the approved cost of Chandrayaan-3;
- (d) the number of days it will take for Chandrayaan-3 to reach the Moon;
- (e) the benefits of Chandrayaan-3 and reasons why Chandrayaan-3 is important for India;
- (f) the reasons for failure of Chandrayaan-2 and changes made in Chandrayaan-3; and
- (g) the comparisons between Chandrayaan-3 and Chandrayaan-2?

ANSWER

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

(DR. JITENDRA SINGH):

- (a) Chandrayaan-3 spacecraft was successfully launched onboard LVM-3 on 14th July, 2023 at 14:35 hrs from the Satish Dhawan Space Centre, SHAR. The spacecraft is currently undergoing a series of orbit maneuvers with the objective of reaching the moon's orbit and has two phases namely Earth Bound Phase and Lunar Bound Phase. The spacecraft is currently in the Earth Bound Phase.
- (b) Chandrayaan-3 components include various electronic and mechanical subsystems intended to ensure safe and soft landing such as Navigation sensors, propulsion systems,

guidance & control among others. Additionally, there are mechanism for release of Rover, two way communication related antennas and other onboard electronics.

Chandrayaan-3 Lift off mass is nearly 3896 kg and the mission life of Lander and Rover is approximately one Lunar Day which is equivalent to 14 earth days. The planned landing site for lander is ~ 69⁰S, South Pole.

The objectives of Chandrayaan-3 are:

- I. Safe and Soft Landing
 - II. Rover Roving on Moon Surface
 - III. In-situ Scientific Experiments.
- (c) The approved cost of Chandrayaan-3 is Rs. 250 Crores (Excluding Launch Vehicle Cost)
- (d) Chandrayaan-3 will take nearly 33 days from the launch date of 14th July, 2023 to reach the orbit of moon.
- (e) The successful soft landing on the surface of the Moon would make India the fourth country in the world to achieve such a significant technological capability. The successful soft landing is envisaged to serve as fore-runners for future landing missions and other technological progress in planetary exploration.
- (f) The soft landing of Chandrayaan-2 was planned to be carried out in multiple phases. Certain unexpected variations in performances of the Lander Module eventually resulted in higher velocities at touchdown, which was beyond the designed capability of the Lander's legs, resulting in a hard landing.

Chandrayaan-3 has been made more robust by improvements in Lander to handle more dispersion, improvements in sensors, software and propulsion systems, full level redundancies in addition to exhaustive simulations and additional tests being conducted towards ensuring a higher degree of ruggedness in the lander.

- (g) Chandrayaan-3 in comparison to Chandrayaan-2 has been designed with the capabilities to autonomously handle wide range of dispersion in order to achieve soft and safe landing.
