GOVERNMENT OF INDIA
DEPARTMENT OF SPACE

LOK SABHA
UNSTARRED QUESTION NO.2155

TO BE ANSWERED ON WEDNESDAY, MARCH 15, 2017

ACHIEVEMENTS OF MARS ORBITER MISSION

2155. SHRI FEROZE VARUN GANDHI:

Will the PRIME MINISTER be pleased to state:

(a) the details of achievements of Mars Orbiter Mission (MOM) till date along with details of its proposed life span;

(b) whether the Indian Space Research Organisation (ISRO) is considering to expand its programme; and

(c) if so, the details thereof along with the potential benefits that shall accrue due to such proposed extension and the associated costs involved?

ANSWER

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

(DR. JITENDRA SINGH):

(a) Mars Orbiter Mission (MOM) is India's first interplanetary mission. The main purpose of MOM, as a technology demonstration mission, is to demonstrate India's capability to insert MOM in Martian orbit and operating Mars Orbiter spacecraft for 6 months. The significant achievements of MOM include:

- **Mars orbiter spacecraft has been successfully inserted into elliptical orbit around Mars on September 24, 2014. It has completed 29 months in its orbit around Mars and is presently functioning satisfactorily. Considering the availability of propellant and health parameters, MOM is expected to function for more years.**
- **Scientific payloads onboard MOM continues to provide valuable data of Mars surface and its atmosphere. Mars Color Camera has captured more than 630 images of the Martian surface.**
- **It has provided excellent opportunities in planetary research for the scientific community of the country. Archived data was released on September 24, 2016 for free download for scientific research. It has witnessed more than 210 GB of data download from 1175 registered users. So far, seventeen (17) scientific papers have been published in national and international journals.**
- **It is first Indian spacecraft to incorporate full scale on-board autonomy to overcome the long distances and the communication gaps due to non-visibility periods. It is also the first Mars mission in the world to succeed in the Mars Orbit Insertion at its very first attempt.**

(b) & (c)

As per the orbit of MOM, a long eclipse of about 400 minutes was expected during January 2017. To avoid the eclipse, a maneuver of MOM was conducted. This activity ensures no

eclipses till 2020. MOM has been in orbit for more than one Martian year and is expected to survive for many more Martian years. This extended life of MOM will facilitate increased observation of Mars by the five scientific payloads on-board MOM and facilitate extensive planetary science data analysis, which can help the scientific community to understand Mars better. It would also enable coverage of Mars in different seasons. A cost of about ₹ 5.0 crores is expected to be incurred annually, towards ground operations support.

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