

**GOVERNMENT OF INDIA  
SPACE  
LOK SABHA**

UNSTARRED QUESTION NO:4028

ANSWERED ON:17.12.2014

MANNED SPACE MISSION

Patil Shri Sanjay(Kaka) Ramchandra;Raut Shri Vinayak Bhaurao;Sathyabama Smt. V.

**Will the Minister of SPACE be pleased to state:**

- (a) whether the Government is gearing up for the manned space/moon mission;
- (b) if so, the details thereof including the human crew model developed for the same;
- (c) the details of the commercially successful space missions and the amount spent on them in the last three years, yearwise;
- (d) whether the Government proposes to set up space labs;
- (e) if so, the details thereof and the preparation/ planning done in this regard so far;
- (f) whether ISRO has expertise to protect earth from approaching asteroids/celestial bodies; and (g) if so, the details thereof and if not, the reasons therefor including the steps being taken in this direction?

**Answer**

MINISTER OF STATE IN THE MINISTRY OF PERSONNEL, PG & PENSIONS AND IN THE PRIME MINISTER'S OFFICE (DR. JITENDRA SINGH):

(a) No, Madam. Presently, the Government has approved development of a few critical technologies relevant for manned space mission, which also includes development of a Crew Module.

(b) ISRO has developed a Crew Module which is similar to the Crew Module of manned flight in terms of its Aerodynamic shape, Mass, Thermal protection system, Parachute system and certain aspects of the structure. The crew module will be tested for its re-entry performance during the experimental flight of GSLV-MkIII.

(c) The details of the commercially successful space missions, in the last three years, year-wise are given below:

2012:

# Launch of an earth observation satellite SPOT-6 (France) and a micro-satellite PROITERES (Japan) onboard PSLV-C21 on September 09, 2012. This was a dedicated commercial mission and the amount spent on this mission was ` 80 Crores.

2013:

# Launch of 6 micro-satellites namely, STRAND-1 (UK), NLS-8.1 (Austria), NLS-8.2 (Austria), NLS-8.3 (Denmark), SAPPHIRE (Canada) and NEOSSAT (Canada) on board PSLV-C20 utilizing the spare capacity of PSLV-C20 on February 25, 2013. No additional amount was spent on this mission as these satellites have been launched as co-passengers.

2014:

# Launch of an earth observation satellite SPOT-7 (France) along with 4 micro-satellites namely, AISAT (Germany), NLS-7.1 (Canada), NLS-7.2 (Canada) and VELOX-1 (Singapore) on board PSLV-C23 on June 30, 2014. This was a dedicated commercial mission and the amount spent on this mission was ` 80 Crores.

(d) No, Madam.

(e) Does not arise.

(f)&(g) The protection of planet earth from approaching asteroids/ celestial bodies is a global issue. ISRO has taken up studies in this area and is participating in various international forums like Inter Agency Space Debris Coordination Committee, Planetary Defense Conference etc., to address the issues and work out the mitigation plan. Various technical options considered and evaluated by international community to keep away asteroids from the Earth are Kinetic impact, Gravity Tractor, Solar concentrator and Laser deflection.

