

(d) if so, the details thereof?

THE MINISTER OF STATE IN THE DEPARTMENT OF SPACE (DR. JITENDRA SINGH): (a) In the recent years ISRO has achieved major milestones as below:—

- In April 2016, Seven satellite constellation for Navigation system NavIC was established.
- In August 2016, first experimental mission of Scramjet engine towards realisation of Air Breathing system was successfully tested.
- In February 2017, 104 satellites were placed in a single launch.
- In May 2017, South Asia satellite was launched, which was a gift to neighbouring countries.
- In June 2017, GSLV Mk-III was launched successfully carrying GSAT 19 communication satellite.
- In June 2017, Cartosat satellite was launched successfully by PSLV C-38

(b) Indian Space Program has placed Astrosat, a multi wavelength observatory in August 2015. It observes universe in optical, Ultraviolet, low and high energy X-ray region of the electromagnetic spectrum, whereas most other scientific satellites are capable of observing a narrow range of wavelength band.

(c) and (d) Mars Orbiter Mission (MOM) is designed to orbit Mars. It is functioning well since it's positioning in Mars orbit in September 24, 2014. The designed mission life of MOM was six months but has successfully completed more than three years and is expected to function further. All Scientific payloads continue to perform well.

Recommendation by space agency forum

2050. SHRI N. GOKULAKRISHNAN: Will the PRIME MINISTER be pleased to state:

(a) whether the Asia Pacific Regional Space Agency Forum has recommended that the established space agencies in the region should promote space applications, including rice crop monitoring, global rainfall monitoring, fire hotspot, haze monitoring and disaster management;

(b) if so, the details thereof;

(c) what are the areas now the ISRO has been concentrating as far as the above said areas mentioned by Asia Pacific Regional Space Agency concerning the country are concerned;

(d) whether it is also a fact that ISRO shares the information it gathers with other neighbouring countries; and

(e) if so, the details thereof?

THE MINISTER OF STATE IN THE DEPARTMENT OF SPACE (DR. JITENDRA SINGH): (a) and (b) Space Applications Working Group, one of the four Working Groups of Asia Pacific Regional Space Agency Forum (APRSAF), has recommended to further promote space applications, including rice crop monitoring, global rainfall monitoring, fire hotspot, haze monitoring and disaster management, at the 24th session of APRSAF held at Bengaluru in November 2017.

(c) Indian Space Research Organisation (ISRO) is carrying out studies in the above said areas.

(d) and (e) ISRO shares the information with other neighbouring countries, in the event of disasters, through many programmes including Sentinel Asia (APRSAF's initiative for disaster management support), International Charter 'Space and Major Disasters', United Nations Economic and Social Commission for Asia and the Pacific (UN-ESCAP), United Nations Platform for Space based Information for Disaster management and Emergency Response (UNSPIDER), COSPAS-SARSAT system for search and rescue operations, "Severe Thunderstorms: Observations and Regional Modeling (STORM)" programme of SAARC.

Private sector in space programme

2051. SHRI N. GOKULAKRISHNAN: Will the PRIME MINISTER be pleased to state:

(a) whether it is a fact that the India Space Research Organisation (ISRO) is considering to open its doors to private sector;

(b) whether it has also issued a tender to the private industry for assembly, integration and testing of 30-35 satellites;

(c) whether it is also a fact that under this programme, 4-5 companies would be selected after evaluation and award parallel contracts; and

(d) if so, the details thereof?

THE MINISTER OF STATE IN THE DEPARTMENT OF SPACE (DR. JITENDRA SINGH): (a) ISRO has been working with the Indian Industries for a long time in realising its satellites and launch vehicles.