Recent Indian Space Missions

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Indian Space Research Organisation
Department of Space
Government of India

54th session of STSC
Vienna
ISRO missions in last one year

- Jan 20: PSLV C31/IRNSS 1E
- Mar 11: PSLV C32/IRNSS 1F
- Apr 28: PSLV C33/IRNSS 1G
- Jun 22: PSLV C34/ Cartosat 2Series +..
- Sep 08: GSLV F05/INSAT 3DR
- Sep 26: PSLV C35/ SCATSat-1 +..
- Oct 06: GSAT-18
- Dec 07: PSLV C36/ Resourcesat 2A

Additionally …

- 4 Student satellites
- 22 Satellites of 5 Nations
Technology Demonstration Experiments

May 23: RLV – TD

Aug 28: SCRAMJET
20 Satellites  2 orbits  One mission

- LAPAN-A3 Indonesia
  (Earth Observation)
- BIROS Germany
  (RS of High Temperature events)
- M3MSAT Canada
  (Study AIS signals from LEO)
- SKYSAT-Gen2-1 USA
  (Sub-meter resolution EO)
- GHGSAT-D Canada
  (Atm. GHG measurement)
- DOVE (12 Sats.) USA
  (Earth Observation)
- SATYABAMASAT
  Satyabama Uni.
  (GHG data collection)
- SWAYAM
  College of Engineering, Pune
  (point to point messaging for HAM)

Cartosat-2 Series
Sub-metre Pan & 2m MX
June 22, 2016
Support to Manage Disasters in India - 2016

- **Floods** – 12 States
  - Andhra Pradesh – Jul, Sep
  - Arunachal Pradesh – Jul
  - Assam – Apr, Jun, Jul
  - Bihar – Aug-Sep
  - Madhya Pradesh – Jul, Aug
  - Maharashtra – Aug
  - Manipur – Apr
  - Odisha – Sep
  - Rajasthan – Aug
  - Uttar Pradesh – Jul-Aug-Sep
  - West Bengal – Aug

- **Landslide**
  - Sikkim – Aug

- **Missing Aircraft**
  - Bay of Bengal - Jul

- **Flood Hazard Atlas**
  - Assam State
Support to International Charter in 2016

Activations 24
Requests to ISRO 22
ISRO Contribution 22

- Earthquake
- Volcano
- Fire
- Flood
- Ocean Storm
- Land Slide

- CANADA: May
- USA: Jan, Mar, May, Aug
- PANAMA: Apr
- ECUADOR: Apr, Apr
- IRAN: Apr
- JAPAN: Apr
- AUSTRALIA: Sep
- INDIA: May, Sep
- SUDAN: Aug
- CHINA: Jun, Jun
- SRI LANKA: May
- INDONESIA: May, Sep
- AUSTRALIA: Sep
- FIJI: Feb
- TAIWAN: Feb
- PANAMA: Apr
- ECUADOR: Apr, Apr
- IRAN: Apr
- JAPAN: Apr
- CANADA: May
- USA: Jan, Mar, May, Aug
- PANAMA: Apr
International Space Events in India
UPCOMING MISSIONS

GSAT-17
Communication satellite with 39 Transponders

GSAT-19
Payload for GSLV-MKIII D1 Flight (5Gbps)

GSAT-11
High Throughput Satellite - 10 Gbps capacity

Cartosat -2 Series Mission
PAN with 0.63m & MX with 2.0m

Nanosatellites (10 Kg)
2 Nos as Co passengers for Cartosat 2 Series

GSAT-9
Ku band Communication services
UPCOMING MISSIONS

Chandrayaan-2 Mission
Indigenous Lunar Lander & Rover

Orbiter Payloads: CLASS, SAR, IIRS, Chace-2 & TMC

Lander Payloads: Rover with LIBS & APXS
Radio Anatomy of Moon bound Hypersensitive Ionosphere & atmosphere
Lunar Electrostatic & Dust Levitation Experiment
Chandra’s surface thermal experiment
MEMS based Seismometer

ADITYA L1 Mission
The Road Ahead......

- Reducing the cost of access to space
- Shorter turnaround times
- Building capabilities for exploration
- Development of new technologies
- Sustaining the application program to touch everybody’s, everyday life
- Increased industrial participation

In transition

4 → 7 launches per annum → 12-18 launches per annum

Component supply from industries → Integrated systems supply from industries

Casings, hardware, sub-systems → Stages, engines, thrusters

Activities at work centres → Assembly and testing close to launch site
Thanks...