List of ISRO missions

The Indian Space Research Organisation has carried out 97 spacecraft missions, 69 launch missions[1] and planned many missions including[2] the Aditya (spacecraft).

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Missions

These are all of the completed missions.

Lunar

Mission Name		Start date	End date	Details
Chandrayaan programme	Chandrayaan-1	22 October 2008	28 August 2009	Chandrayaan-1 was India's first lunar probe. It was launched by the Indian Space Research Organisations in October 2008, and operated until August 2009. The mission included a lunar orbiter and an impactor. The mission was a major boost to India's space program, as India researched and developed its own technology in order to explore the Moon. The vehicle was successfully inserted into lunar orbit on 8 November 2008.[3][4]
	Chandrayaan-2	22 July 2019	Ongoing (Communication with lander lost)	Chandrayaan-2 was launched from the second launch pad at Satish Dhawan Space Centre on 22 July 2019 at 2.43 PM IST (09:13 UTC) to the Moon by a Geosynchronous Satellite Launch Vehicle Mark III (GSLV Mk III). The planned orbit has a perigee of 169.7 km and an apogee of 45475 km. It consists of a lunar orbiter, lander and rover, all developed in India. The main scientific objective is to map the location and abundance of lunar water.

Interplanetary

Mission Name	Start date	End date	Details
Mars Orbiter Mission	5 November 2013	Ongoing	Mars Orbiter Mission (MOM), also called Mangalyaan, is a spacecraft orbiting Mars since 24 September 2014. It was launched on 5 November 2013 by the Indian Space Research Organisation (ISRO). It is India's first interplanetary mission and ISRO has become the fourth space agency to reach Mars, after the Soviet space program, NASA, and the European Space Agency. India is the first Asian nation to reach Mars orbit, and the first nation in the world to do so in its first attempt.[5][6]

Astronomy

Mission Name	Start date	End date	Details
ASTROSAT	September 28, 2015	Ongoing	ASTROSAT is the first dedicated Indian Astronomy satellite mission launched by ISRO on 28 September 2015, which will be helpful in enabling multi-wavelength observations of the celestial bodies and cosmic sources in X-ray and UV spectral bands simultaneously. The scientific payloads cover the Visible (3500–6000 Å...), UV (1300–op Å...), soft and hard X-ray regimes (0.5–8 keV; 3–80 keV). The uniqueness of ASTROSAT lie in its wide spectral coverage extending over visible, UV, soft and hard X-ray regions.[7]

Planned missions

Mission name	Details
Gaganyaan	**Gaganyaan** ("Orbital Vehicle") is an Indian crewed orbital spacecraft (jointly made by ISRO and HAL) intended to be the basis of the Indian Human Spaceflight Programme. The spacecraft is being designed to carry three people, and a planned upgraded version will be equipped with rendezvous and docking capability. This HAL-manufactured crew module had its first un-crewed experimental flight on 18 December 2014. The crewed vehicle is planned to be launched on ISRO's GSLV Mk III in December 2021. Prior to this, it will be launched un-crewed for test flights in December 2020 and July 2021. The three crew members will remain in space for seven days.
Chandrayaan-3	The Chandrayaan-3 will be deployed in 2024 for future moon exploration. Exploration of moon will help ISRO to setup habitat on lunar surface.
Aditya-L1	The probe is named as Aditya-1 and will weigh about 400 kg. It is the First Indian-based Solar Coronagraph to study solar Corona in visible and near IR bands. The launch of the Aditya mission was planned during the high solar activity period in 2012 but was postponed to 2015–2016 due to the extensive work involved in the fabrication and other technical aspects. The main objective is to study the Coronal Mass Ejection (CME) and consequently the crucial physical parameters for space weather such as the coronal magnetic field structures, the evolution of the coronal magnetic field, etc. This will provide completely new information on the velocity fields and their variability in the inner corona having an important bearing on the unsolved problem of heating of the corona would be obtained.[8][9]
RISAT-1A	RISAT-1A is a radar-imaging satellite. Its configuration is similar to RISAT-1. It is a land-based mission with primary application in terrain mapping and analysis of land, ocean and water surface for soil moisture.
NISAR	Nasa-Isro Synthetic Aperture Radar (Nisar) is a joint project between NASA and ISRO to co-develop and launch a dual-frequency synthetic aperture radar satellite to be used for remote sensing. It is notable for being the first dual-band radar imaging satellite.[10]
Mangalyaan 2	**Mars Orbiter Mission 2** (**MOM 2**) also called ***Mangalyaan 2*** is India's second interplanetary mission planned for launch to Mars by the Indian Space Research Organisation (ISRO) in the 2021–2022 time frame. It will consist of an orbiter, and may include a lander and a rover.
Shukrayaan-1	The **Indian Venusian orbiter mission** is a planned orbiter to Venus by the Indian Space Research Organisation (ISRO) to study the atmosphere of Venus. It will be launched some time after 2020.

See also

- List of Indian satellites
- List of foreign satellites launched by India

References

1. "list of missions" (http://www.isro.gov.in/missions).
2. "India has recently launched Chandrayaan 2 in 2019" (http://m.hindustantimes.com/science/india-to-launch-chandrayaan-ii-by-2016-17/article1-1171493.aspx). Hindustan Times. Retrieved 16 April 2015.
3. "Chandrayaan-1" (http://www.isro.gov.in/pslv-c11-chandrayaan-i).
4. "Chandrayaan-1" (https://solarsystem.nasa.gov/missions/profile.cfm?MCode=Chandrayaan).
5. "Mars Orbiter Mission Spacecraft" (http://www.isro.gov.in/Spacecraft/mars-orbiter-mission-spacecraft).

6. "Mars Orbiter Mission" (http://www.space.com/topics/india-mars-orbiter-mission/).
7. "PSLV Successfully Launches India's Multi Wavelength Space Observatory ASTROSAT" (https://web.archive.org/web/20150930173927/http://www.isro.gov.in/update/28-sep-2015/pslv-successfully-launches-india%E2%80%99s-multi-wavelength-space-observatory-astrosat). Archived from the original (http://www.isro.gov.in/update/28-sep-2015/pslv-successfully-launches-india%E2%80%99s-multi-wavelength-space-observatory-astrosat) on 30 September 2015.
8. "After the moon, ISRO eyes the sun" (http://www.ndtv.com/video/player/news/after-the-moon-isro-eyes-the-sun/201990). *ndtv.com*.
9. "ISRO's mission will probe sun before 2020" (http://m.timesofindia.com/home/science/Isros-mission-to-probe-Sun-before-2020/articleshow/31184685.cms).
10. "NISAR" (http://www.jpl.nasa.gov/missions/nasa-isro-synthetic-aperture-radar-nisar/). nasa.com.

External links

- ISRO official website (http://www.isro.gov.in/)