



QUICK REVISION!

ISRO'S SATELLITES 2020 & MISSIONS

Target: All upcoming exams!



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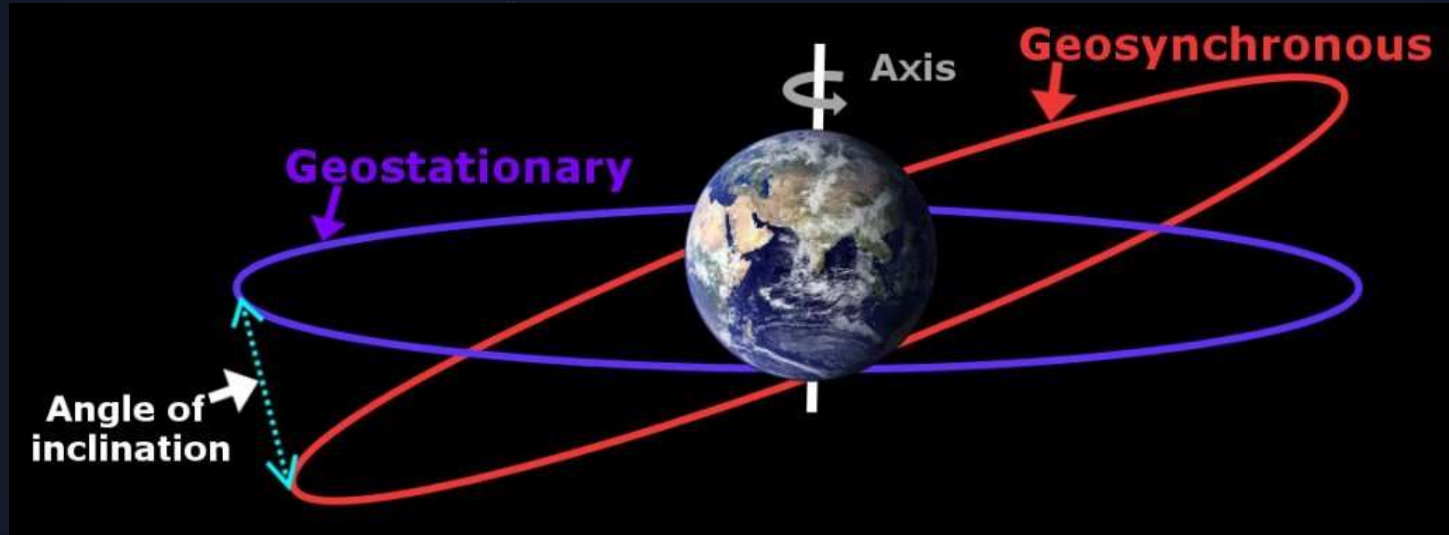
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Types of Orbits



Source: Science ABC



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GSAT-30

- In January 2020, **GSAT-30** was successfully launched into a **Geosynchronous Transfer Orbit (GTO)** from Kourou launch base, French Guiana by Ariane-5 VA-251 launch vehicle.
- GSLV III to be used for first human space flight Gaganyaan of 2022.
- The 3,357-kg satellite has a life span of 15 years will replace INSAT-4A which was launched in 2005.
- Its main use will be in DTH (direct to home) television services and connectivity to VSATs (that support working of banks') ATMs, stock exchange, etc.
- The satellite provides coverage in Indian mainland and islands, Gulf countries, a large number of Asian countries and Australia.

EOS-01

- In November 2020, EOS-01 was successfully launched into a **Low Earth Orbit (LEO)** from **Satish Dhawan Space Centre (SDSC)**, Sriharikota by **PSLV** launch vehicle
- It is an earth observation satellite and is intended for applications in agriculture, forestry and disaster management support.
- For the PSLV, this was the 51st flight. Only two of its launches have not been successful.
- PSLV also launched nine customer satellite from Sriharikota along with EOS-01.

CMS-01

- On December 2020, **CMS-01** was successfully launched into a **Geosynchronous Transfer Orbit (GTO)** from **Satish Dhawan Space Centre (SDSC)**, Sriharikota by PSLV launch vehicle.
- The CMS-01 communication satellite is envisaged to provide services in the extended **C-Band frequency**. This band is mostly used for satellite communications and full-time satellite TV networks, and is also used for weather radars, wi-fi devices and radio LAN.
- The coverage will include the Indian mainland, Andaman-Nicobar and Lakshadweep Islands.
- Life span: 7 years



IMPORTANT FUTURE MISSIONS



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CHANDRYAAN-3

- The Indian Space Research Organization is planning to launch its third lunar mission: Chandrayaan-3.
- It will consist of only a lander and rover, as the previous mission's orbiter is still functioning and providing data.
- According to ISRO, the total cost of the Chandrayaan-3 mission will be more than 600 crores.



GAGANYAAN

- The human spaceflight module of Gaganyaan will be launched after the second unmanned mission planned in 2022-23.
- First unmanned mission is planned in December 2021, Second unmanned flight is planned in 2022-23, followed by human spaceflight.
- The Gaganyaan orbital vehicle will carry three Indian astronauts to the low earth orbit — an orbit of 2,000km or less — for a period of five to seven days.



LUPEX

- ISRO's Lunar Polar Exploration Mission in collaboration with JAXA (Japan Aerospace Exploration Agency) will be launched in the year 2024.

- The mission aims at:

1. obtaining the actual data related to the quantity and forms of water present on the surface of the Moon.

2. Determine the feasibility of utilizing such resources for sustainable space exploration activities in the future.



Aditya – L1

- First Indian mission to study the Sun.
- It was expected to launch in the year 2020 but due to the COVID-19 pandemic, the launch has been delayed and is now expected in the year 2022.
- Aditya L1 will study the Sun's corona (Visible and Near infrared rays), Sun's photosphere (soft and hard X-ray), chromosphere (Ultra Violet), solar emissions, solar winds and flares.



Mangalyaan - 2

- Mars Orbiter Mission 2 (MOM 2) also called Mangalyaan 2 is expected to launch in the year 2024.
- The Mars Orbiter Mission 1, also called Mangalyaan was launched on 5 November 2013 by ISRO and is still orbiting Mars.
- Mangalyaan 2 will consist of an orbiter and may include a lander and a rover.



Shukrayaan - 1

- ISRO has proposed a mission to Venus dubbed 'Shukrayaan-1', which will orbit the planet and focus on the chemistry of its atmosphere.
- The inter-planetary mission is expected to launch in the year 2025 by ISRO in collaboration with CNES (National Centre for Space Studies; French Space Agency).
- Scientists said the atmosphere of Venus contains a gas that on Earth can be attributed to living organisms.



Assignment!

1. RISAT – IA
2. NISAR



Thanks a lot for watching!



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