

HERITAGE PROJECT

Name :- Aishwarya. M. Hiremath

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SAFETY

Impossible is just
An opinion, But if you
change your opinion
Every thing is Possible....



First India's Launched Satellite :-



Aryabhata - was India's first satellite, named after the famous Indian astronomer. It was launched on 19th April 1975 from Kapustin Yar, a soviet rocket launch and development site in Astrakhan Oblast using a Kosmos-3M launch vehicle.

The first national network of television satellites, called Orbita, was created by the soviet Union in Oct 1967 and was based on the principle of using the highly elliptical Molniya satellite for rebroadcasting and delivering of television signals to ground down link stations and its inveted satellite.

Satellites Are In Space :-

According to the Union of concerned scientists, there are presently over 3,300 functioning artificial satellites in orbit around earth.

Two Main Types of Satellites :-

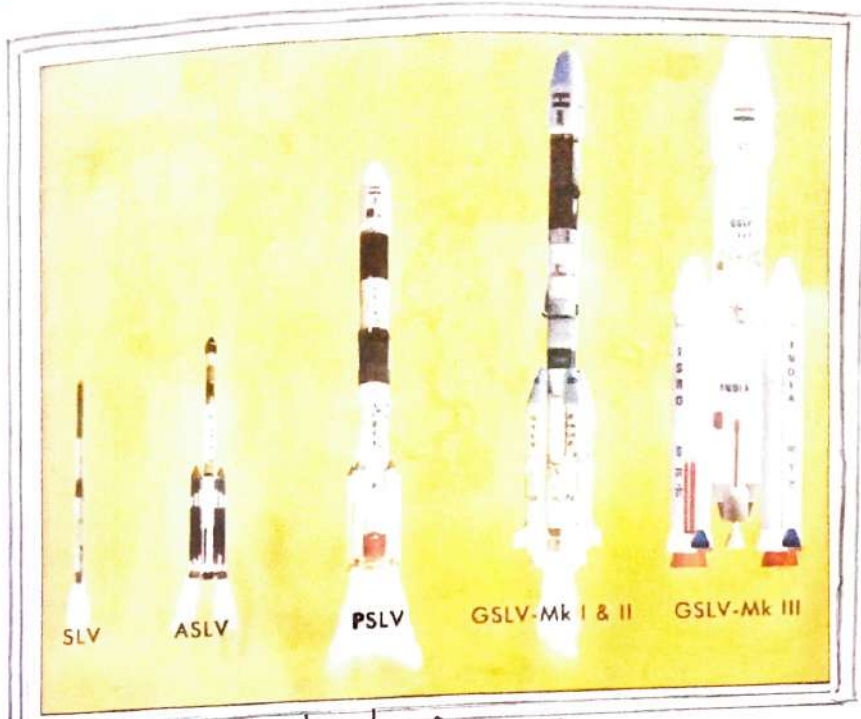
There are two different types of satellites natural and man-made. Examples of natural satellites are the Earth and Moon. The Earth rotates around the Earth. A man-made satellite is a machine that is launched into space and orbits around a body in space.

Second satellite of India :-

Indian space Research Organization [ISRO] a statutory space agency of India is responsible for designing, building, launching and operating.

Arfa Javaid :-

<u>Launch year</u>	<u>Satellite</u>	<u>Importance</u>
2019	Orbiter of Chandrayaan 2	India's second lunar exploration mission.



Satellite Launch Vehicle :

The satellite launch vehicle @ SLV was a small - lift launch vehicle project started in early 1970s by the Indian space Research organisation to develop the technology needed to launch satellites. SLV was intended to reach a height of 400 kilometres and carry a payload of 40 kg. The first experimental flight of SLV-3 in August 1979, was a failure. The second successful launch took place on 18 July, 1980. Height 22 metre (72ft) launch site Sriharikota.

How many SLV are in ISRO ?

All four SLV launches occurred from the SLV launch pad at the Sriharikota High Altitude Range. The first two launches were experimental (E) and next 2 were designated as developmental (D) as this was the first launch vehicle being developed by India not intended for a long service life.

Who Launched SLV-3 :-

Vanguard Satellite Launch Vehicle-3 (SLV-3) was launched on 26 Sep 1958.

What is meant by SLV-3 :-

Satellite Launch Vehicle-3 (SLV-3) was India's first experimental satellite launch vehicle, which was an all solid, four stage vehicle weighing 17 tonnes with a height of 22m and capable of placing 40 kg class payloads in Low Earth Orbit (LEO).



SLV-1 :-

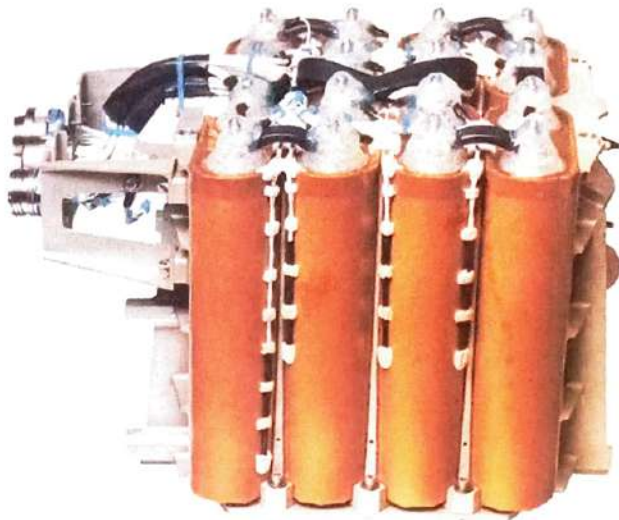
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Failure - 1 Success - 2 First Flight - 30 Aug 1979

Height - 22m (72ft) Launch site - Sriharikota

Altitude - 400 km (250 m)

Satellite Battery :-



SAR-10207 - Aerospace Battery

Batteries are used on space craft as a means of power storage. Artificial satellites, such as communication satellites, require battery systems that can withstand thousands of charge and discharge cycles over the satellite's intended life.

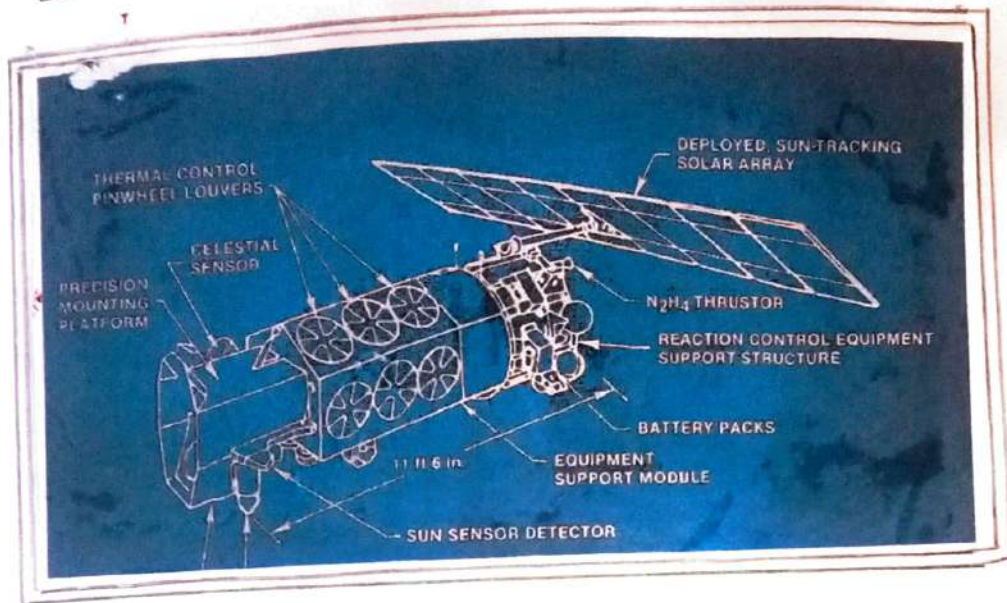
How long do satellite batteries last :-

In this position, satellites take 24 hours to rotate the earth and for eclipse seasons (two 45-day periods a year), they use batteries for 0 to 72 mins per day. Batteries for such GEO satellites - used primarily for telecommunications, military and meteorological systems - must last 15 to 18 years.

Does a satellite phone need batteries?

Typically, yes. The solar panel charges the battery in the daytime and the battery supplies power to your

Labell the Satellite Diagram



Satellite Inside

The main components of a satellite consist of the communication system, which includes the antennas and transponders that receive and retransmit signals, the solar panels that provide power and the propulsion system, which includes the rockets that propel the satellite.

First Launched In Indian Rocket

The rocket for India's first ever rocket launch was carried in parts on a bicycle to the launch site, a church in Thiruvananthapuram in 1963.

The launch set NASA-made Nike-Apache rocket to space and led to the foundation of Indian space Research Organisation (ISRO) by Vikram Sarabhai on August 15 - 1969.

NO Oxygen In Satellite :-



You breathe it every min, but there's hardly any molecular oxygen - otherwise known as O_2 - in space. Now, a ground-based experiment has revealed why this life-giving molecule is so rare in the cosmos: because oxygen atoms cling tightly to stardust, preventing them from joining together to form oxygen molecules.

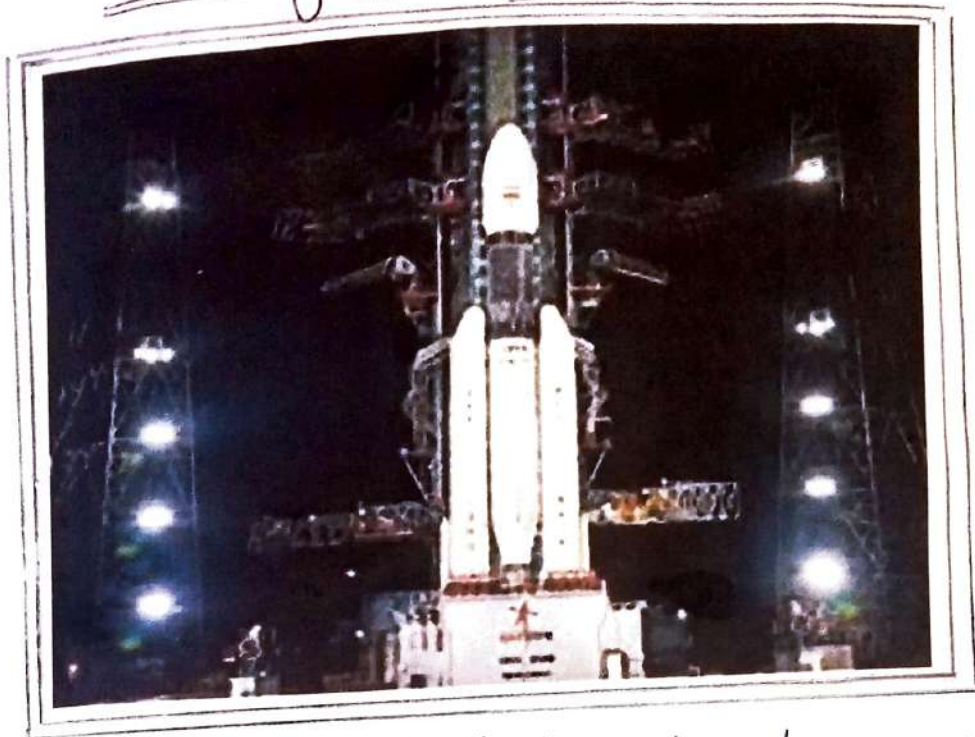
Cost of Satellite :-

Launching a single satellite into space can cost anywhere between \$10 million and \$400 million, depending on the vehicle used. A small launch vehicle such as the Pegasus XL rocket can lift 976 pounds (443 kg) into low-Earth orbit for about \$13.5 million.

Types of satellite and Applications :-

- Remote sensing satellite.
- Communications satellite.

Chandrayaan - 1 & 2 :-



Chandrayaan-1 was the first Indian lunar probe under the Chandrayaan program. It was launched by Indian Space Research Organisation in Oct 2008, and operated until Aug 2009. The mission included a lunar orbiter and an impactor. Launch mass - 1,380 kg Orbit - 3,400 at EOM Apselone altitude - 200 km.

Chandrayaan-2 is the second lunar exploration mission developed by the Indian Space Research Organisation, after Chandrayaan-1. It consists of a lunar orbiter, and also included the Vikram lander, and the Pragyan lunar rover, all of which were developed in India.

Launch site - Satish Dhawan Space Centre.

Rocket - GSLV Mark III

Power - Orbiter - 1000 watts

Apocynthion altitude - 100 km

What did Chandrayaan-2 discover? —

In a significant discovery, the Indian Space Research Organisation (ISRO) Chandrayaan-2 validated the presence of water on the moon's surface. According to scientific experts, this will open gates of immense opportunities for future lunar exploration.

Where is the Chandrayaan-2 Now? —

Chandrayaan-2 Orbiter continues to orbit the Moon in an orbit of $96 \text{ km} \times 125 \text{ km}$ and both the orbiter and Lander are healthy. The first de-orbiting maneuver for Chandrayaan-2 spacecraft was performed successfully today (Sep-3-2019) beginning at 0850 hrs IST as propo planned, using the onboard propulsion system.

Comparison between Chandrayaan-1 and 2? —

Chandrayaan-1 made more than 3400 orbits around the moon and was operational for 312 days till 29 Aug-2009. Whereas the mission life of a Chandrayaan-2 orbiter is one year and Lander and Rover was one Lunar Day that is 14 earth days.

Artificial Satellite :-



In the context of space flight, a satellite is an object that has been intentionally placed into orbit. These objects are called artificial satellites to distinguish them from natural satellites such as Earth's Moon. On 4 Oct - 1957 the Soviet Union launched the world's first artificial satellite.

Two types of Artificial satellites :-

Based on their purposes

- * Geostationary satellites
- * Polar satellites.

What do artificial satellites do :-

Artificial satellites are used to study the Earth, other planets helps us communicate and even to observe the distant Universe. satellites can even have people in them, like the International space station & the space shuttle.

Satellites are launched into different orbits and depending on their mission.

Satellite Same As WiFi :-

Satellite internet is available essentially anywhere, as it connects to a satellite orbiting Earth. But to access fixed wireless internet, you'll need to be within the line of sight of lower than broadcasts these services.

Can you get WiFi through satellite dish :-

WiFi through satellite Internet with your Dish Network Package. The two satellite Internet providers in the United States are available to Dish Network subscribers for their WiFi needs. You can get access to either Hughes Net or Viasat's satellite Internet networks and bundle them with your Dish

Fast can satellites Travel :- TV package.

Low-orbit satellites are used for satellite phone communication, military operations & for observation. They complete an orbit in about 90 min because they are close to earth and gravity causes them to move very quickly at a around 17,000 miles per hour.

How many dead satellites are in space :-

3000 dead satellites

There are more than 3,000 dead satellites and rocket stages currently floating in space & up to 900,000 pieces of space junk ranging from 1 to 10 centimetres size - all large enough to be a collision hazard & a potential cause for disruption to a live mission.

Who invented small satellite ?

Ritath Sharook, an 18-year old student from Chennai, Tamil Nadu, developed the world's smallest and lightest satellite, weighing only 64g.

The uses of ground satellite :-

Specialized satellite Earth stations are used to communicate with satellites - chiefly communication satellites. Other ground stations communicate with crewed space stations or uncrewed space probes.

Can you get satellite TV for free ?

Free to Air satellite television channels are unencrypted and legally available to the public for no charge. The consumer buys and installs receiving equipment to watch an unlimited number of channels, of different genres from around the world.

What do satellites do in space :-

Satellites looking towards Earth provide information about clouds, oceans, land and ice. They also measure gases in the atmosphere, such as ozone and carbon dioxide and amount of energy that Earth absorbs and emits and satellites monitor wildfires, volcanoes and their smoke.

What is a satellite in your own words?

A satellite is a moon, planet or machine that orbits a planet or star. For eg - Earth is a satellite because it orbits the sun. Likewise, the moon is a satellite because it orbits Earth. Usually the word "satellite" refers to a machine that is launched into space and moves around Earth or another body in space.

What is satellite and how it works?

A satellite is basically a self-contained communications system with the ability to receive signals from Earth & to retransmit those signals back with the use of a transponder as an integrated receiver and transmitter of radio signals.

Can I have my own satellite?

You can send your own satellite into space with the help of NASA's Cubesat Launch Initiative. This CSLI program makes space research more accessible than ever before in history!

A cubesat is miniaturized satellite for space research & commercial use. It's about four inches long & weighs about three pounds.

Information Collect to Google

Thank you..