



**KAMARAJ IAS ACADEMY**  
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# PSLV - Polar Satellite Launch Vehicle

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**Why is in news?** "Sunshine moment for India," says Dr Jitendra Singh as PSLV-XL launches India's first Solar Mission

Polar Satellite Launch Vehicle (PSLV) is the **third generation launch vehicle** of India.

After its first successful launch in October 1994, PSLV emerged as a **reliable and versatile workhorse launch vehicle** of India.

The vehicle has launched numerous Indian and foreign customer satellites. During 1994-2017 period, the vehicle has launched 48 Indian satellites and 209 satellites for customers from abroad.

It is the **first Indian launch vehicle** to be **equipped with liquid stages**.

It is a **four stage** launch vehicle.

A large solid rocket motor forming the first stage,

An earth storable liquid stage as the second stage,

A high performance solid rocket motor as third stage, and

A liquid stage with engines as fourth stage.

Besides, the vehicle successfully launched two spacecraft "**Chandrayaan-1 in 2008 and Mars Orbiter Spacecraft (MOM) in 2013**" that later travelled to Moon and Mars respectively.

Chandrayaan-1 and MOM were feathers in the hat of PSLV. The launch of **PSLV-C48** marks the 50th Launch of PSLV.

Recently, PSLV C57- India's first Solar Mission, - Aditya L1 was launched from Sriharikota.

PSLV earned its title '**the workhorse of ISRO**' through consistently delivering various satellites into low earth orbits, particularly the IRS Series of satellites

Due to its unmatched reliability, PSLV has also been used to launch various satellites into Geosynchronous and Geostationary orbits, like satellites from the IRNSS Constellation

The PSLV is **capable of placing multiple payloads into orbit**, thus multi-payload adaptors are used in the payload fairing.

The payload performance of the vehicle and mission flexibility is evident from the challenging missions where multi-orbit and multi-satellite missions are accomplished.



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The long string of consecutive successes and multi-satellite launch capability has reinforced the status of PSLV as a **reliable, versatile and affordable launcher in the global market.**

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SLV-3	ASLV	PSLV-XL	GSLV Mk II	GSLV Mk III
Height : 22.7m Lift-off weight : 17 t Propulsion : All Solid Payload mass : 40 kg Orbit : Low Earth Orbit	Height : 23.5m Lift-off weight : 39 t Propulsion : All Solid Payload mass : 150 kg Orbit : Low Earth Orbit	Height : 44m Lift-off weight : 320 t Propulsion : Solid & Liquid Payload mass : 1860 kg Orbit : 475 km Sun Synchronous Polar Orbit (1300 kg in Geosynchronous Transfer Orbit)	Height : 49m Lift-off weight : 414 t Propulsion : Solid, Liquid & Cryogenic Payload mass : 2200 kg Orbit : Geosynchronous Transfer Orbit	Height : 43.43 m Lift-off weight : 640 t Propulsion : Solid, Liquid & Cryogenic Payload mass : 4000 kg Orbit : Geosynchronous Transfer Orbit

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