

India's first solar observatory mission to be launched today

Aditya-L1 mission payloads help to understand the problem of coronal heating, coronal mass ejection, flare activities, the dynamics of space weather, and the propagation of particles and fields

Hemanth C.S.

CHENNAI

India's first solar observatory mission, named Aditya-L1, will be launched onboard the Polar Satellite Launch Vehicle (PSLV) from the Satish Dhawan Space Centre in Sriharikota at 11.50 a.m. on Saturday.

On Friday, the Indian Space Research Organisation (ISRO) commenced the 23-hour 40-minute countdown for the launch of the Aditya-L1 mission.

Approximately sixty-three minutes after lift-off, the satellite separation is expected to take place as the PSLV will launch the Aditya-L1 spacecraft into a highly eccentric earth-bound orbit at around 12.53 p.m.



Historic event: Preparations around Aditya-L1 onboard the PSLV-C57, ahead of its launch on Saturday. PTI

This PSLV-C57/Aditya-L1 mission can be counted as one of the longest missions involving ISRO's workhorse launch vehicle. However, the longest of the PSLV missions is still the 2016 PSLV-C35 mission which was completed two hours, 15 minutes and 33 seconds after lift-off.

Following the launch, Aditya-L1 will stay in earth-bound orbits for 16 days, during which it will undergo five manoeuvres to gain the necessary velocity for its journey.

Long journey

"Subsequently, Aditya-L1 undergoes a Trans-Lagran-

gian insertion manoeuvre, marking the beginning of its 110-day trajectory to the destination," ISRO said.

Aditya-L1 will stay approximately 1.5 million km away from the earth, directed towards the sun; this is about 1% of the distance between the earth and the sun.

The Aditya L1 payloads are expected to provide crucial information to understand the problem of coronal heating, coronal mass ejection, pre-flare and flare activities and their characteristics, dynamics of space weather, propagation of particles and fields etc.

The satellite placed in the halo orbit can continuously view the sun without any occultation or eclipse.