

PSLV-C8 Mission

Commercial Satellite Launch

23 April, 2007

THE MISSION

PSLV-C8 carrying on-board the AGILE Italian Astronomical Satellite lifted-off from Satish Dhawan Space Centre (SDSC) SHAR, Sriharikota at 3:30 PM (IST) on April 23, 2007. PSLV-C8 mission was unique in many respects.



In this mission, PSLV was flown, for the first time, without the six strap-on motors of the first stage. Also, for the first time, PSLV launched a satellite into an Equatorial Circular Orbit of 550 km. PSLV-C8 was the first major commercial launch contract which was won against stiff international competition.

Along with the Italian satellite, AGILE, an Advanced Avionics Module (AAM), weighing 185 kg, to test advanced launch vehicle avionics systems like mission computers, navigation and telemetry systems, was also flown on PSLV-C8.



PSLV - C 8

THE LAUNCH VEHICLE

PSLV-C8 was the 1st Commercial Launch. In its standard configuration, the 44 m tall PSLV has a lift-off mass of 295 tonne. It is a four stage launch vehicle with the first and the third stages as well as the six strap-ons surrounding the first stage using HTPB based solid propellant. PSLV's first stage is one of the largest solid propellant boosters in the world. Its second and fourth stages use liquid propellants.

PSLV's bulbous payload fairing has a diameter of 3.2 m. The vehicle has S-band telemetry and C-band transponder systems for monitoring its health and flight status respectively. It also has sophisticated auxiliary systems like stage and payload fairing separation systems.

SPECIFICATIONS

Height	44 m	
Lift-Off Mass	228.27 t	
No of Stages	4	
Payloads	Advanced Avionics Module (AAM)	International Customer Satellite Italy (1)
Orbit Height	550 km	
Inclination (deg)	2.5°	
Launch Azimuth	99°	
Launch Pad	Second Launch Pad (SDSC, SHAR)	



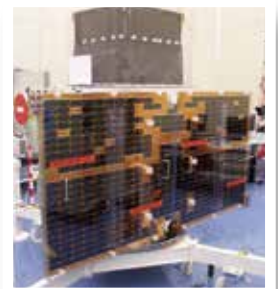
ADVANCED AVIONICS MODULE (AAM)

The AAM weighing 185 kg is a module consisting of the next generation avionics packages viz, Advanced Mission Computers (AMC) based NGC System, Advanced Inertial Navigation & Telemetry Systems (AINS & ATS).

The major highlight of AAM is the use of a ASIC based computer with a 16 bit CPU called Vikram 1601, designed by VSSC with operating frequency of 30 MHz. The AAM includes an improved version of the existing guidance package and advanced inertial system with state-of-the-art gyros.

THE INTERNATIONAL CUSTOMER SATELLITE

AGILE (Astro-rivelatore Gamma Immagini Leggero) is an X-ray and Gamma Ray Astronomical Satellite of the Italian Space Agency (ASI), Rome. The design, development and fabrication activities of the satellite were led by Carlo Gavazzi Space, Milan, Italy. The launch was arranged by Cosmos International through Antrix Corporation. The satellite carries scientific instruments capable of studying distant celestial objects in X-ray and Gamma Ray regions of the electromagnetic spectrum.



SPECIFICATIONS

Weight	352 kg
Type of Satellite	Astronomical Satellite
Payloads	<ul style="list-style-type: none">• Silicon Tracker Gamma Ray Detector (ST)• Mini-calorimeter Detector (MCAL)• X-ray Detector named Super-AGILE (SA)• Anti-Coincidence Subsystem (AC)

