



GSAT-6A

GSLV-F08 / GSAT-6A

THE MISSION

12th flight of Geosynchronous Satellite Launch Vehicle (GSLV)

Sixth flight with Indigenous Cryogenic Upper Stage

Launch from the Second Launch Pad (SLP) at Satish Dhawan Space Centre SHAR, Sriharikota

**Targeted
Geosynchronous Transfer Orbit
(GTO) of GSLV-F08**

Perigee : 170 km
Apogee : 35,975 km
Inclination : 20.63 deg
Azimuth : 106 deg



**Three
Orbit Raising Manoeuvres
using the satellite's
onboard propulsion system
 ΔV : 1656 metre/sec**



**Targeted
Orbit of GSAT-6A**

Type : Geostationary Orbit
Height : 36,000 km
Inclination : Zero deg
Longitude : 83 deg East

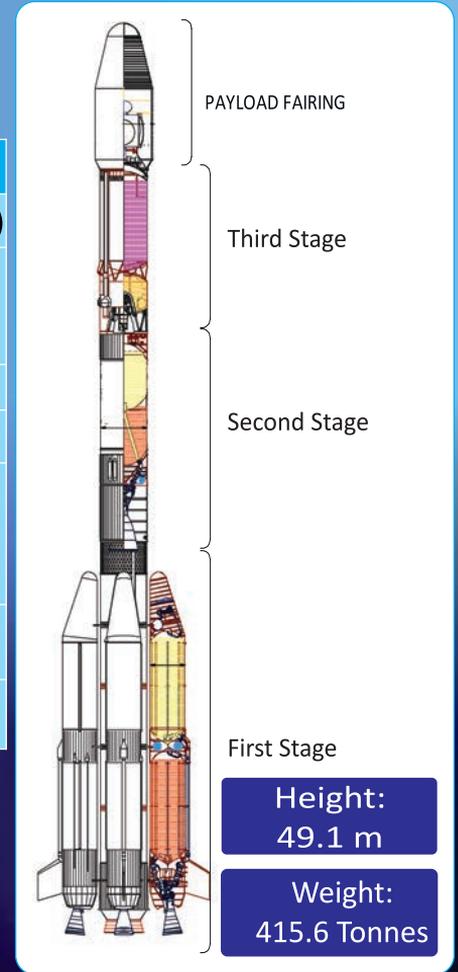
THE VEHICLE

GSLV-F08 at a Glance

Parameters	Stages			
	First Stage (GS1)		Second Stage (GS2)	Third Stage (GS3)
	Strap-Ons	Core Stage		
	(4 L40 H)	(S139)		
Length (m)	19.74	21.25	11.57	8.47
Diameter (m)	2.1	2.8	2.8	2.8
Propellants	Earth Storable Liquid Propellants	Composite Solid Propellant	Earth Storable Liquid Propellants	Cryogenic Propellants
Propellant mass (T)	4 x 42.7	138.11	39.48	12.84
Max. Vacuum Thrust (kN)	4 x 759.4	4846.9	846.8	73.55

Improvements in GSLV-F08

- ▶ Induction of High Thrust Vikas Engine (HTVE) in GS2
- ▶ Induction of electromechanical actuation (EMA) system in place of electro-hydraulic actuation (EHA) system in GS2



THE SATELLITE



GSAT-6A

Salient Features

- ▶ Provides mobile communication for India through multi beam coverage facility
 - ▶ S-band in five spot beams
 - ▶ C-band in one beam
- ▶ 6m diameter Unfurlable Antenna for user communication link
- ▶ 0.8 m Fixed Antenna for hub communication link
- ▶ Overall size : 1.53m x 1.65m x 2.4m
- ▶ I-2K Spacecraft Bus
- ▶ Power : 3119 W

GSLV-F08 Flight Profile



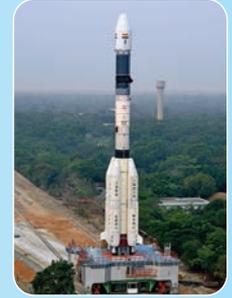
Events	Time	Altitude (km)	Velocity (metre/sec)
GSAT-6A Separation	17min 46.50 sec	254.53	9743.2
Cryogenic Upper Stage burn out	17min 35.50 sec	243.29	9753.6
Cryogenic Upper Stage shut off	17min 31.50 sec	239.39	9753.2
Cryogenic Upper Stage ignition	4min 46.42 sec	133.47	4934.0
Second stage separation	4min 45.42 sec	133.27	4934.4
Second stage shut off	4min 41.92 sec	132.54	4914.8
Payload fairing Separation	3min 45.34 sec	115.33	3438.1
First Stage Separation	2min 31.14 sec	72.97	2393.2
Second Stage Ignition	2min 29.54 sec	71.75	2394.8
Strap-Ons shut off	2min 28.94 sec	71.29	2393.9
Core Stage Ignition	0.0 sec	0.03	0
Strap-Ons Ignition	-4.8 sec	0.03	0



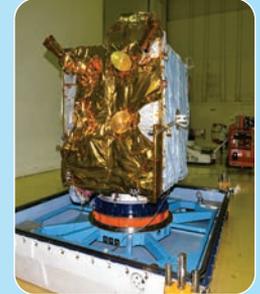
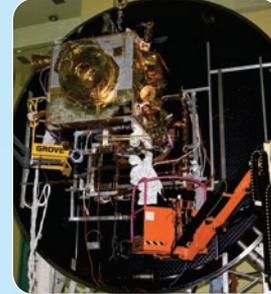
Ground Trace of GSLV-F08 Trajectory

Glimpses of Launch Vehicle and Satellite Integration

GSLV-F08



GSAT-6A



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