Geo Synchronous Satellite Launch Vehicle

FIRST OPERATIONAL FLIGHT OF GSLV

GSLV-F01

EDUSAT MISSION

इसरो ISRO

Indian Space Research Organisation

DEVELOPMENTAL FLIGHTS

GSLV D1/G-SAT 1 Mission

Spacecraft mass : 1540 kg

April 18, 2001

GSLV D2/G-SAT 2 Mission

Spacecraft mass : 1823 kg

May 8, 2003

MISSION OBJECTIVE

Launch of GSAT-3 (EDUSAT) into Geosynchronous Transfer Orbit

MISSION SPECIFICATIONS

Orbit	-	GTO
Perigee	-	180 ± 5 km
Apogee	-	35975 ± 675 km
Inclination	-	19.3 ± 0.1 deg.
Launch Azimuth	-	104 deg

VEHICLE CONFIGURATION

Vehicle height	:	49.1m
Lift-off mass	:	414t
No. of Stages	:	3
First Stage (GS1)	:	S139+4L40H
Second Stage (GS2)	:	L37.5H
Third Stage (GS3)	:	C12

Solid Motor (S139)

Liquid Strapon (L40H)

GS2 Stage (L37.5H)

Cryo Stage (C12)

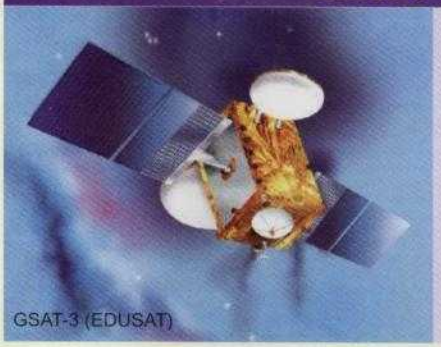
FLIGHT SEQUENCE

The overall flight sequence is given highlighting the nominal time, altitude and inertial velocity at critical events. Actual time of occurrence can vary since they are decided onboard.

GSLV-F01 Flight Profile

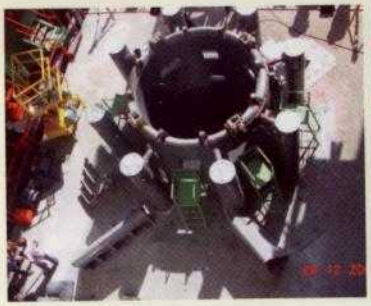
EVENT	TIME (s)	ALTITUDE (km)	VELOCITY (km/s)
L40 IGNITION	-4.8	0.0	0.45
LIFT OFF (S139 IGNITION)	0.0	0.0	0.45
GS1 SHUT OFF	146.9	69.0	2.81
GS2 IGNITION	147.5	69.4	2.81
GS1 SEPARATION	149.1	70.6	2.81
IS 1/2 M SEPARATION	154.9	75.0	2.87
PAYLOAD FAIRING SEPARATION	226.5	115.0	3.88
GS2 SEPARATION	289.1	130.7	5.40
GS3 SHUTT OFF	998.0	200.0	10.23
SATELLITE SEPARATION	1013.0	208.6	10.23

GSAT-3 (EDUSAT) SALIENT FEATURES


GSAT-3 (EDUSAT)

Orbital Location	72deg E
Payload	• 6 Ku-band transponders • 6 FSS extended C band transponders • 1 Ku-band Beacon transmitter
Lift-off Mass	1950kg

LAUNCH CAMPAIGN ACTIVITIES



Launch pedestal ready

Positioning of NES+CBS module on pedestal

S139 segment joining

1/2V assembly

L40H on the way to MST

L40 tilting to vertical

All 4 L40Hs & S139 assembled

GS2 assembly

Cryo stage assembly

Equipment bay assembled to vehicle

Encapsulated assembly

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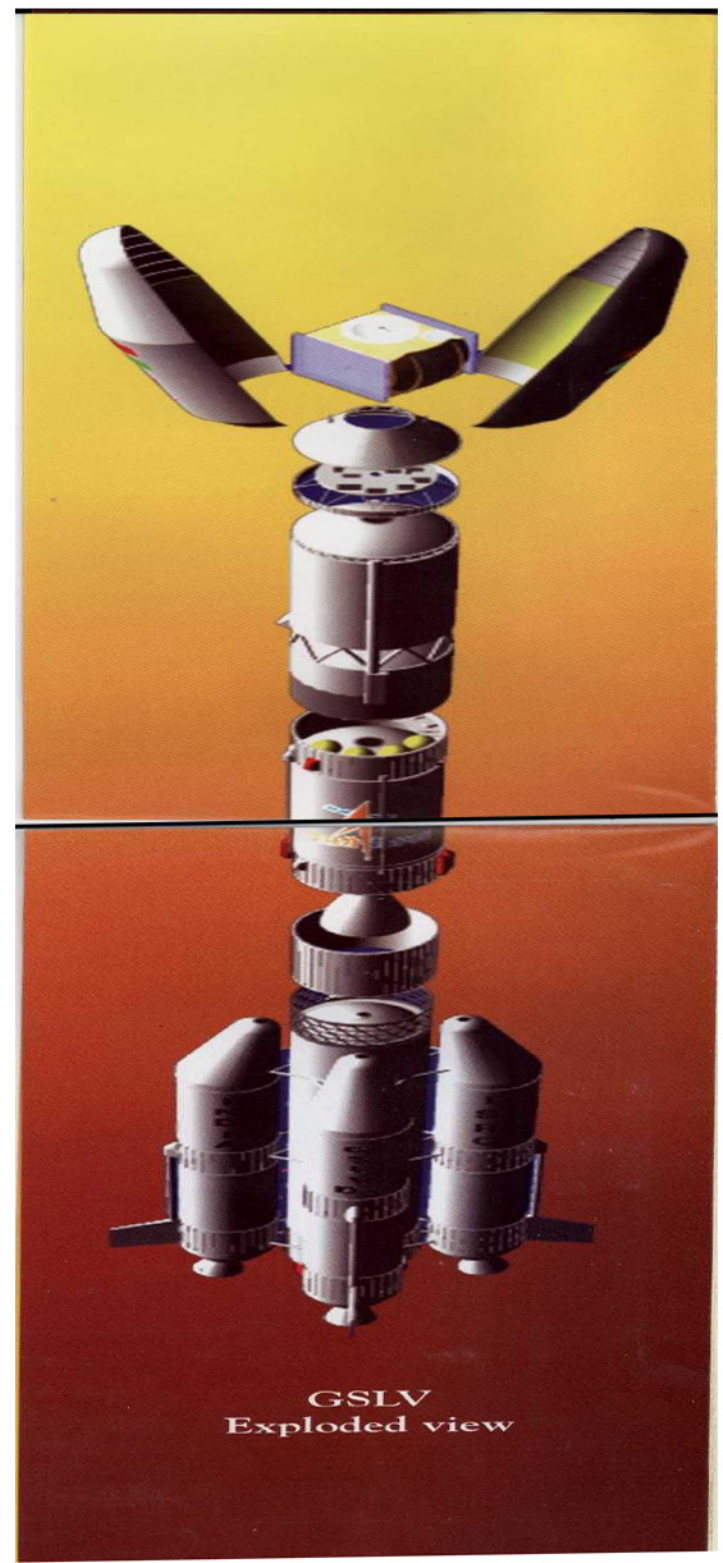

GSLV
Exploded view