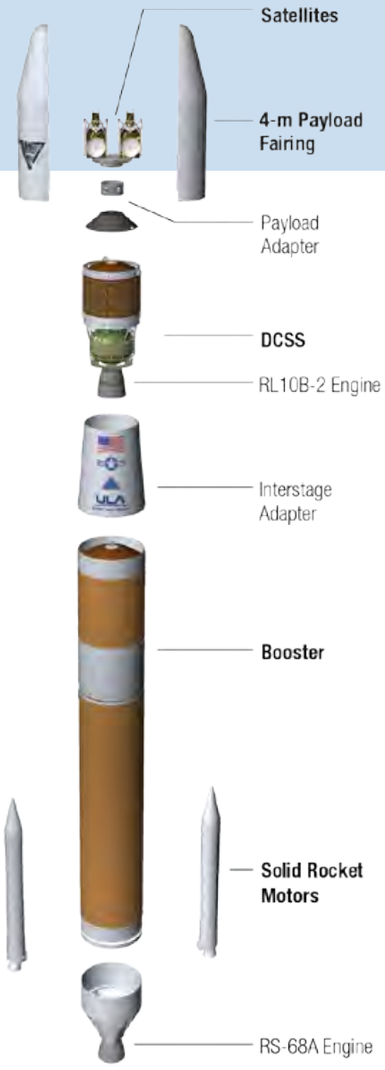
DELTA IV AFSPC-6 MISSION

A United Launch Alliance (ULA) Delta IV Medium+ (4,2) will deliver two Geosynchronous Space Situational Awareness Program (GSSAP) satellites to near-geo-synchronous orbit. Liftoff will occur from Space Launch Complex-37 at Cape Canaveral Air Force Station (CCAFS), FL.

The twin GSSAP spacecraft, built by Orbital ATK, will be a space-based capability operating in the near-geosynchronous orbit regime supporting U.S. Strategic Command space surveillance operations, as a dedicated Space Surveillance Network (SSN) sensor, GSSAP satellites will support Joint Functional Component Command for Space (JFCC SPACE) tasking to collect space situational awareness data allowing for more accurate tracking and characterization of man-made orbiting objects. From a near-geosynchronous orbit, they will have a clear, unobstructed and distinct vantage point for viewing Resident Space Objects (RSOs) without the interruption of weather or the atmospheric distortion that can limit ground-based systems. GSSAP satellites will operate near the geosynchronous belt and will have the capability to perform Rendezvous and Proximity Operations (RPO). RPO allows for the space vehicle to maneuver near a resident space object of interest, enabling characterization for anomaly resolution and enhanced awareness, while maintaining flight safety. Data from GSSAP will uniquely contribute to timely and accurate orbital predictions, enhancing our knowledge of the geosynchronous orbit environment, and further enabling space flight safety to include satellite collision avoidance.

GSSAP satellites will communicate information through the world wide Air Force Satellite Control Network (AFSCN) ground stations, then to Schriever Air Force Base, CO where 50th Space Wing satellite operators of the 1st Space Operations Squadron (1 SOPS) will oversee day-to-day operations.

Two GSSAP satellites were previously launched aboard a ULA Delta IV M+ (4,2) rocket from CCAFS on July 28, 2014.



Payload Fairing (PLF)

The PLF is a composite bisector (two-piece shell), 4-meter diameter fairing. The PLF encapsulates the spacecraft to protect it from the launch environment on ascent. The vehicle's height, with the 38.5-ft tall PLF, is approximately 206 ft.

Delta Cryogenic Second Stage (DCSS)

The DCSS stage propellant tanks are structurally rigid and constructed of isogrid aluminum ring forgings and spun-formed aluminum domes. It is a cryogenic liquid hydrogen/liquid oxygen-fueled vehicle, and uses a single RL10B-2 engine that produces 24,750 lb of thrust. The DCSS cryogenic tanks are insulated with a combination of spray-on and bond-on insu-lation, and helium-purged insulation blankets. An equipment shelf attached to the aft dome of the DCSS liquid oxygen tank provides the structural mountings for vehicle electronics.

Booster

The common booster core (CBC) consists of the RS-68A engine, the engine section and thermal shield, the liquid hydrogen (LH2) tank, the centerbody, and the liquid oxygen (LO2) tank. The Delta IV booster tanks are structurally rigid and constructed of isogrid aluminum barrels, spun-formed aluminum domes and machined aluminum tank skirts. Delta IV booster propulsion is provided by the throttleable RS-68A engine system, designed and manufactured by Pratt & Whitney Rocketdyne, is the largest existing hydrogen-burning engine and delivers 702,000 lb of thrust at sea level.

Solid Rocket Motors (SRM)

Two solid rocket motors, combined, produce an additional 517,085 lbs of thrust at liftoff. The SRMs are 5 ft in diameter and 53 ft long and constructed of a graphite-epoxy composite. The SRMs are connected to the booster by two ball-and-socket joints and structural thrusters. AFSPC-6 will be the first Delta IV M+(4,2) flight supporting one fixed SRM and one vectorable SRM.

DELTA IV MEDIUM+ (4,2)

The Delta IV family of launch vehicles combines design simplicity, manufacturing efficiency and streamlined mission and vehicle integration to meet customer launch requirements. The Delta IV Medium+ (4,2) configuration was used for the inaugural Delta IV flight and has become the most versatile rocket in the Delta IV fleet, launching national security, civil and commercial missions.

First Launch: Nov. 20, 2002
Launches to date: 13

Performance to GTO: 6,160 kg (13,580 lb)
Performance to LEO-Reference: 12,900 kg (28,440 lb)

DELTA

ULA™

America's Ride to Space

With more than a century of combined heritage, United Launch Alliance is the nation's most experienced and reliable launch service provider. ULA has successfully delivered more than 100 satellites to orbit that provide critical capabilities for troops in the field, aid meteorologists in tracking severe weather, enable personal device-based GPS navigation and unlock the mysteries of our solar system.

Join the conversation:

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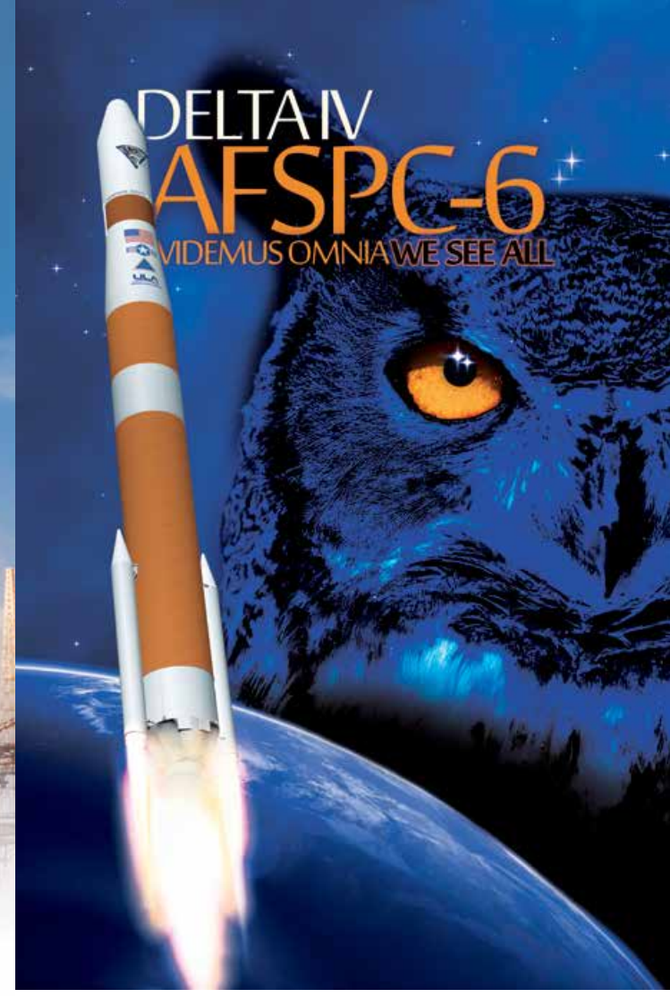

MISSION OVERVIEW

– 33rd Delta IV Launch
– 110th ULA Launch

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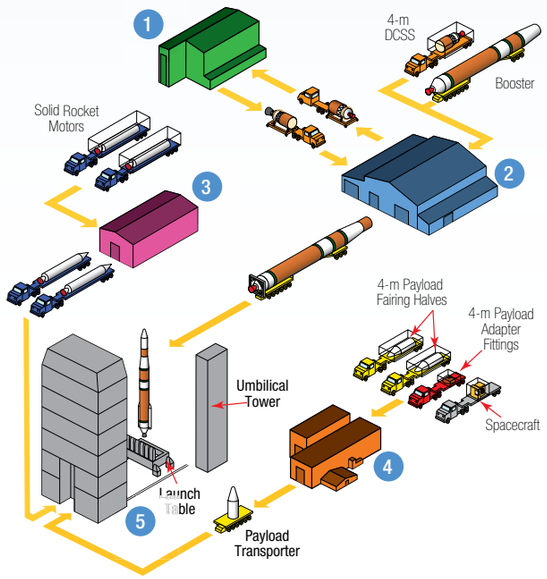
America's Ride to Space

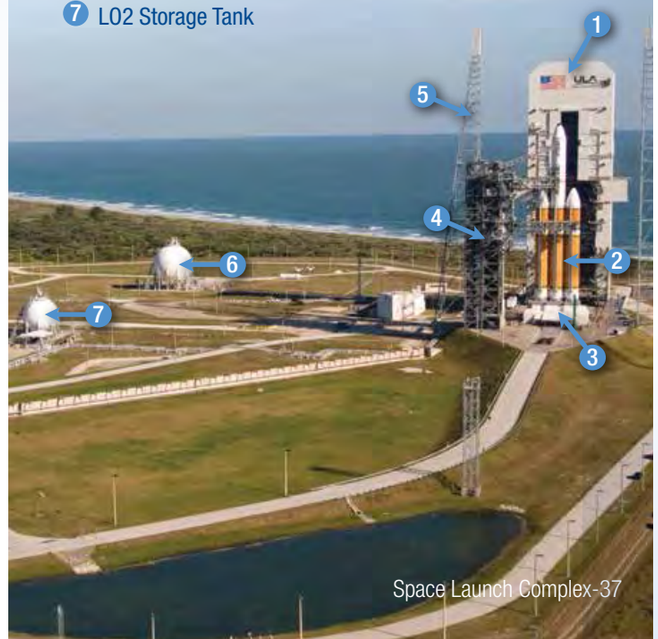
DELTA IV PRODUCTION AND LAUNCH

1. **De Soto, CA**
   - RS-68A Engine Fabrication at Aerojet Rocketdyne
2. **Brigham City, UT**
   - Solid Rocket Motor Fabrication at Alliant Technologies
3. **Denver, CO**
   - ULA Headquarters & Design Center Engineering
4. **Decatur, AL**
   - Booster, Payload Fairing and Second Stage Fabrication
5. **West Palm Beach, FL**
   - RL10 Engine Fabrication at Aerojet Rocketdyne

1. **Delta Operations Center (DOC)** | Launch Control Center and Mission Director's Center
2. **Horizontal Integration Facility** | Receiving, inspection and integration
3. **Receipt Inspection Shop** | Receiving, inspection and processing
4. **Spacecraft Processing Facility** | Spacecraft processing, testing and encapsulation
5. **Mobile Service Tower** | Launch vehicle integration and testing, spacecraft mate and integrated operations

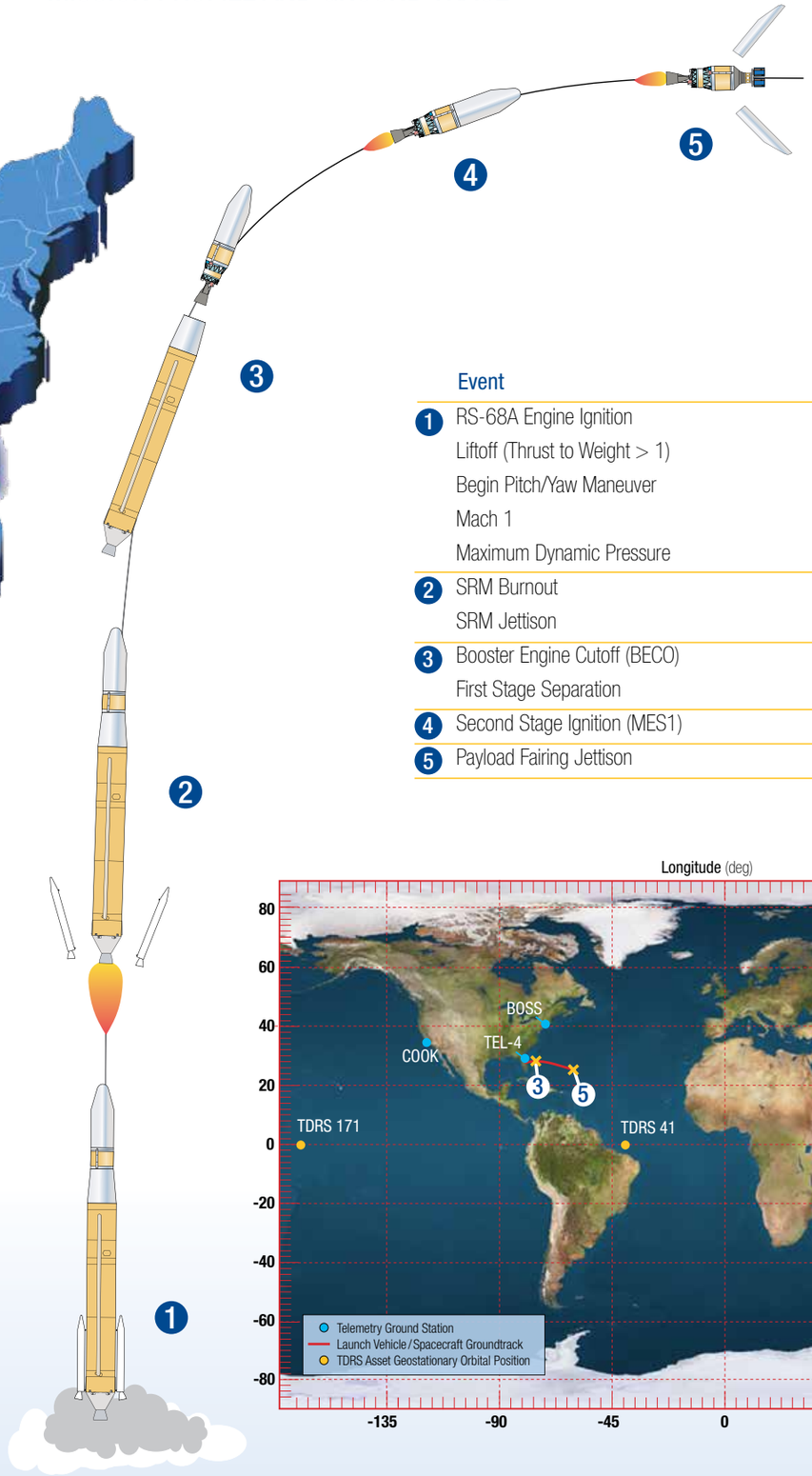


1. **Mobile Service Tower** (MST)
2. **Launch Vehicle**
3. **Launch Table**
4. **Fixed Umbilical Tower** (FUT)
5. **Lightning Protection Towers**
6. **LH2 Storage Tank**
7. **LO2 Storage Tank**



Space Launch Complex-37

MISSION PROFILE AND GROUND TRACE



	Event	Time (seconds)	Time (hr:min:sec)
1	RS-68A Engine Ignition	-5.0	-00:00:05.0
	Liftoff (Thrust to Weight > 1)	0.0	00:00:00.0
	Begin Pitch/Yaw Maneuver	8.0	00:00:08.0
	Mach 1	43.8	00:00:43.8
	Maximum Dynamic Pressure	56.6	00:00:56.6
2	SRM Burnout	93.8	00:01:33.8
	SRM Jettison	100.1	00:01:40.1
3	Booster Engine Cutoff (BECO)	237.7	00:03:57.7
	First Stage Separation	245.1	00:04:05.1
4	Second Stage Ignition (MES1)	259.6	00:04:19.6
5	Payload Fairing Jettison	270.1	00:04:30.1

All Values Approximate