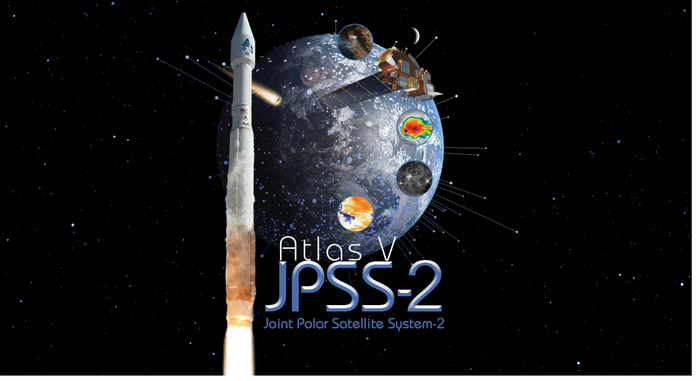


ATLAS V SUCCESSFULLY LAUNCHES JPSS-2 AND LOFTID!

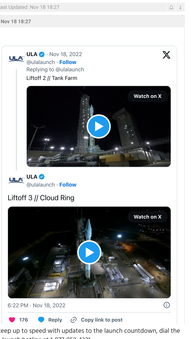
A United Launch Alliance (ULA) Atlas V rocket launched the Joint Polar Satellite System (JPSS)-2 mission for the National Oceanic and Atmospheric Administration (NOAA) and National Aeronautics and Space Administration (NASA) and NASA's Low-Earth Orbit Flight Test of an Inflatable Decelerator (LOFTID) from Space Launch Complex-3 at Vandenberg Space Force Base.

Launch Date and Time: Nov. 10 at 1:49 a.m. PST

Go Atlas! Go Centaur! Go JPSS-2! Go LOFTID!

LAUNCH WEBCAST

LIVE UPDATES



To keep up to speed with updates to the launch countdown, dial the ULA launch hotline at 1-877-852-4321.

Join the conversation at Twitter, Facebook, Instagram and LinkedIn

#AtlasV #JPSS2 #LOFTID

MISSION OVERVIEW

A United Launch Alliance (ULA) Atlas V 401 rocket, in partnership with NASA, will launch the Joint Polar Satellite System (JPSS)-2 polar-orbiting weather satellite for the National Oceanic and Atmospheric Administration (NOAA). The Atlas V will deliver JPSS-2 to a sun-synchronous low-Earth orbit. Following JPSS-2 separation, the Atlas V rocket will separate NASA's Bernard Kutter Low-Earth Orbit Flight Test of an Inflatable Decelerator (LOFTID) on a re-entry trajectory. Liftoff will occur from Space Launch Complex-3 at Vandenberg Space Force Base, California.

The advanced JPSS system improves the accuracy and timeliness of numerical weather prediction models to enhance weather forecasting. Surveying the planet twice daily, JPSS-2 will obtain global observations that serve as the backbone of both short- and long-term weather forecasting and climate record-keeping and monitoring. Data includes imagery, atmospheric temperature and humidity profiles, land and ocean surface temperature measurements, and readings on ozone levels and solar radiation from the planet. Improving the accuracy of weather forecasts enables decision-makers, emergency managers and the public to prepare and pre-position resources that are necessary steps to save lives and property.

LOFTID is a cross-cutting aeroshell approximately 6 meters or 20 feet in diameter. After JPSS-2 reaches orbit, LOFTID will be put on a reentry trajectory from low-Earth orbit to demonstrate the inflatable aeroshell or heat shield's ability to slow down and survive re-entry. Demonstrating this technology in these conditions is relevant to many potential applications, including landing large payloads on Mars and engine reuse on ULA's new Vulcan rocket.

LOFTID is dedicated to ULA's Bernard Kutter. As an advocate for lower cost access to space and the technologies that could make it a reality, Bernard took a keen interest in NASA's inflatable heat shield technology. He was instrumental in advancing ULA re-use technology and developing the plan to test the system on an Atlas V rocket.

LAUNCH VEHICLE

Payload Fairing

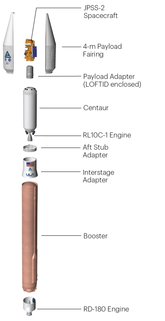
The spacecraft is encapsulated in the 14-ft (4-m) diameter extended payload fairing (EPF). The EPF is a bisector (two-piece shell) fairing consisting of aluminum skin/stringer construction with vertical split-line longerons. The vehicle's height with the PLF is approximately 191 ft (58.2 m).

Centaur

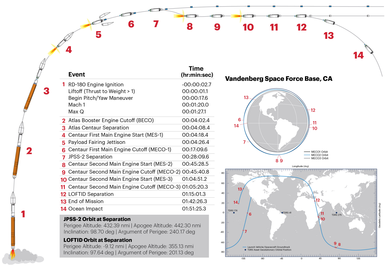
The Centaur second stage is 10 ft (3 m) in diameter and 41.5 ft (12.6 m) in length. Its propellant tanks are pressure-stabilized and constructed of corrosion-resistant stainless steel. Centaur is a cryogenic vehicle, fueled with liquid hydrogen and liquid oxygen, powered by an RL10C-1 engine producing 22,900 lbs (101.8 kilo-Newtons) of thrust. The cryogenic tanks are insulated with a combination of helium-purged blankets, radiation shields and spray-on foam insulation (SOFI). The Centaur forward adapter (CFA) provides structural mountings for the fault-tolerant avionics system and structural and electrical interfaces with the spacecraft.

Booster

The booster is 12.5 ft (3.8 m) in diameter and 106.5 ft (32.5 m) in length. The booster's tanks are structurally rigid and constructed of isogrid aluminum barrels, spun-formed aluminum domes and intertank skirts. Booster propulsion is provided by the RD-180 engine system (a single engine with two thrust chambers). The RD-180 burns RP-1 (Rocket Propellant-1 or highly purified kerosene) and liquid oxygen and delivers 860,200 lbs (3,83 mega-Newtons) of thrust at sea level. The Centaur avionics system, provides guidance, flight control and vehicle sequencing functions during the booster and Centaur phases of flight.



FLIGHT PROFILE



	Event	Time (hr:min:sec)
1	RD-180 Engine Ignition	-00:00:02.7
	Liftoff (Thrust to Weight > 1)	00:00:00.1
	Begin Pitch/Yaw Maneuver	00:00:17.6
	Mach 1	00:01:20.0
	Max Q	00:01:27.1
2	Atlas Booster Engine Cutoff (BECO)	00:04:02.4
3	Atlas Centaur Separation	00:04:08.4
4	Centaur First Main Engine Start (MES-1)	00:04:18.4
5	Payload Fairing Jettison	00:04:26.4
6	Centaur First Main Engine Cutoff (MECO-1)	00:17:09.6
7	JPSS-2 Separation	00:28:09.6
8	Centaur Second Main Engine Start (MES-2)	00:45:28.5
9	Centaur Second Main Engine Cutoff (MECO-2)	00:45:40.8
10	Centaur Second Main Engine Start (MES-3)	01:04:51.2
11	Centaur Second Main Engine Cutoff (MECO-3)	01:05:20.3
12	LOFTID Separation	01:15:01.3
13	End of Mission	01:42:26.3
14	Ocean Impact	01:51:25.3

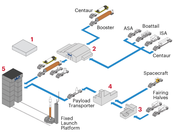
JPSS-2 Orbit at Separation
Perigee Altitude: 431.39 nmi | Apogee Altitude: 442.30 nmi
Inclination: 98.70 deg | Argument of Perigee: 240.17 deg

LOFTID Orbit at Separation
Perigee Altitude: -9.12 nmi | Apogee Altitude: 355.13 nmi
Inclination: 97.64 deg | Argument of Perigee: 201.13 deg

Vandenberg Space Force Base, CA

SPACE LAUNCH COMPLEX-3 // PROCESSING

Space Launch Complex-3 (SLC-3) is ULA's West Coast launch pad for the Atlas V rocket. In contrast to Atlas V operations at Cape Canaveral, at SLC-3 launch vehicle integration and testing, spacecraft mate and integrated operations happen in the Mobile Service Tower (MST). A few hours before launch, we roll the MST to its park position approximately 250 feet southeast of the rocket.



1. **Remote Launch Control Center (RLCC)**
   Launch Control Center & Mission Director's Center
2. **Operations Center**
   Receiving & Inspection
3. **Building B327**
   PLF/Adapter Receiving & Inspection
4. **Spacecraft Processing Facility**
   Spacecraft Processing, Testing & Encapsulation
5. **Mobile Service Tower**
   Launch Vehicle Integration & Testing, Spacecraft Mate & Integrated Operations

PRODUCTION

1. **Denver, CO**
   ULA Headquarters & Design Center Engineering
2. **Harlingen, TX**
   Payload Fairing, Payload Fairing Adapter, Booster Adapter & Centaur Adapter Fabrication
3. **Decatur, AL**
   Booster Fabrication & Final Assembly, Centaur Tank Fabrication & Centaur Final Assembly
4. **West Palm Beach, FL**
   RL10C-1 Engine Fabrication at Aerojet Rocketdyne
5. **Khimki, Russia**
   RD-180 Engine Fabrication at NPO Energomash

MEDIA // DOWNLOADS

FLICKR ALBUM

ACTIVITY SHEET