

Antares commercial rocket cleared for July 11 blastoff following engine re-inspection

July 8 2014, by Ken Kremer



Orbital Sciences Antares rocket and Cygnus cargo spacecraft are set to blast off on July 11, 2014 on the Orb-2 mission from NASA's Wallops Flight Facility in Virginia, bound for the International Space Station (ISS). The rocket undergoes processing at the Horizontal Integration Facility at NASA Wallops during visit by Universe Today/Ken Kremer. Credit: Ken Kremer

The long delayed liftoff of an Orbital Sciences Corp. commercial Antares rocket on a cargo mission bound for the International Space Station (ISS) has been cleared for blastoff this Friday, July 11, from the

Eastern shore of Virginia, following a thorough re-inspection of the two Russian built and US modified AJ26 engines that power the rocket's first stage after the test failure of a different engine in May.

The critically important Aerojet Rocketdyne AJ26 engine re-inspection was mandated following the significant failure of another AJ26 engine during acceptance testing on May 22 at NASA's Stennis Space Center in Mississippi to investigate any concerns and insure against an in flight failure.

NASA and Orbital Sciences are now targeting the Antares launch carrying the privately developed Cygnus resupply freighter on the Orb-2 mission from Pad 0A at the Mid-Atlantic Regional Spaceport (MARS) at NASA's Wallops Flight Facility, Virginia, on July 11 at 1:40 p.m. (EDT).

Universe Today was granted a visit to the Orbital Sciences Antares rocket integration facility at NASA Wallops recently as the engine re-inspection work was winding down. See my Antares/Cygnus Orb-2 rocket photos herein.



Up-close side view of payload fairing protecting Cygnus cargo module during launch for Orb-2 mission to ISS. Vehicle undergoes prelaunch processing at NASA Wallops during visit by Universe Today/Ken Kremer. Credit: Ken Kremer

Aerojet engineers re-inspected the engines while they were still mated to the bottom of the Antares rocket and found them to be satisfactory for flight. No swap out was required.

The Cygnus cargo logistics spacecraft was then mated to the rocket on July 3 and will be rolled out to the Wallops launch pad on Wednesday morning at 8:30 a.m., July 9.

Late stow items including time sensitive science experiments will be packed aboard on Tuesday, July 8.



Antares soars to space on Jan. 9, 2014 from NASA Wallops on Virginia coast on the Orb-1 mission to the ISS. Photo taken by remote camera at launch pad.
Credit: Ken Kremer

The launch window on July 11 opens at 1:40 p.m. for a duration of 5 minutes.

NASA will broadcast the Antares launch live on NASA TV – www.nasa.gov/nasatv

In the event of a delay for any reason the next available launch opportunity is July 12 at 1:14 p.m.

Until the first stage engine failure, this Antares rocket had been slated to blastoff on June 10 with the Cygnus cargo freighter on the Orb-2 mission which is the second of eight cargo resupply missions to the ISS under Orbital's Commercial Resupply Services (CRS) contract with

NASA.

The AJ26 rocket engine that failed in May was extensively damaged about halfway through the planned test aimed at qualifying the engine for an Antares flight scheduled for early next year.

"There was a test failure at Stennis on May 22," Orbital Sciences spokesman Barry Beneski told Universe Today at that time. "Engineers are examining data to determine the cause of the failure."

The failure occurred approximately 30 seconds into the planned 54-second test.

"It terminated prematurely, resulting in extensive damage to the engine," Orbital said in a statement in May.

The pressurized Cygnus spacecraft will deliver 1,657 kg of cargo to the ISS including science experiments and instruments, crew supplies, food, water, computer equipment, spacewalk tools and student research experiments.

Cygnus will remain berthed at the station for 40 days.



1st and 2nd stage of Orbital Sciences Antares rocket set for blast off on July 11, 2014 on the Orb-2 mission from NASA's Wallops Flight Facility in Virginia, bound for the ISS. The rocket undergoes processing at the Horizontal Integration Facility at NASA Wallops during visit by Universe Today/Ken Kremer. Credit: Ken Kremer

For the return to Earth it will be loaded with approximately 1,346 kg of material for disposal upon atmospheric reentry.

The two stage Antares rocket stands 133 feet tall.

It takes about 10 minutes from launch until separation of Cygnus from the Antares vehicle.

Flight time to the ISS is approximately 3 days. An on time launch will result in Cygnus arrival at the ISS on July 15.

Station commander Steven Swanson of NASA and Flight Engineer Alexander Gerst of the European Space Agency (ESA) will grapple and berth Cygnus using the station's 57 foot-long robotic arm onto the Earth-facing port of the station's Harmony module.

The Antares first stage is powered by a pair of liquid oxygen and kerosene fueled AJ26-62 engines that deliver a combined 734,000 pounds (3265 kilonewtons) of sea level thrust.

To date the AJ26 engines have performed flawlessly through a total of three Antares launches from NASA's Wallops Flight Facility in Virginia starting in April 2013.

They measure 3.3 meters (10.9 feet) in height and weigh 1590 kg (3,500 lb.).

The AJ26 engines were originally known as the NK-33 and built during the 1960s and 1970s in the Soviet Union for their manned moon landing program.

Aerojet extensively modified, checked and tested the NK-33 engines now designated as the AJ26-62 to qualify them for use in the first stage Antares core, which is manufactured in Dnipropetrovsk, Ukraine by the Yuznoye Design Bureau and based on the Zenit launch vehicle.

Orbital Sciences was awarded a \$1.9 Billion supply contract by NASA to deliver 20,000 kilograms of research experiments, crew provisions, spare parts and hardware for 8 flight to the ISS through 2016 under the Commercial Resupply Services (CRS) initiative.

The July mission marks the second operational Antares/Cygnus flight.

SpaceX has a similar resupply contract using their Falcon 9 rocket and

Dragon cargo carrier and just completed their 3rd operational mission to the ISS in May.

Source: [Universe Today](#)

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