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The Mission



Rocket: Atlas 5 (AV-020)
Payload: LRO/LCROSS
Date: June 18, 2009
Times: 5:12, 5:22 and 5:32 p.m. EDT
Site: Complex 41, Cape Canaveral, Florida

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Mission Status Center

BY JUSTIN RAY

Follow the countdown and launch of the Atlas 5 rocket carrying NASA's Lunar Reconnaissance Orbiter and the LCROSS impactor experiment. Reload this page for the latest on the launch.

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WEDNESDAY, JUNE 17, 2009
1441 GMT (10:41 a.m. EDT)

On the pad! The Atlas 5 rocket has arrived at the Complex 41 pad for launch of NASA's robotic expedition to the Moon using two satellites to map and probe the lunar surface in unprecedented detail.

The two mobile trailers connected to the launching platform, which were part of the convoy during this morning's rollout, soon will be hooked up to power and communications systems at the pad. These trailers provide conditioned air to the payload and communications with the rocket during the rollout and the countdown. They are protected from the blast of launch by a concrete structure on the north-side of the platform.

Within the next hour, the auto couplers between the pad and platform will be engaged to route umbilical connections from the ground to the rocket for tomorrow's fueling of the booster with cryogenic propellants.

Later this afternoon, the undercarriages used to move the mobile platform will be disconnected and the "trackmobiles" pulled free.

Ground crews will secure the rocket for a peaceful evening, which should be the vehicle's final night on the planet. The launch countdown commences at 10:02 a.m. EDT tomorrow, leading toward a liftoff at 5:12 p.m. EDT.

A reminder that if you will be away from your computer but would like to receive countdown updates, sign up for our

COLBERT Patch

The special patch celebrating the space station's new COLBERT treadmill named for the comedian is available for purchase.

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Current Shuttle Mission Patch

The official embroidered patch for shuttle Endeavour's flight to finish building Japanese section of the space station.

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Hubble Patch

The official embroidered patch for mission STS-125, the space shuttle's last planned service call to the Hubble Space Telescope, is available for purchase.

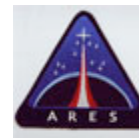
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Ares Patch

The Ares Project will develop two new rockets to launch astronauts back to the Moon under NASA's Vision for Exploration. The Ares 1 will employ a single space shuttle solid rocket booster to loft the Orion crew capsule. The gigantic Ares 5 will haul the equipment and cargo needed for such lunar voyages. This is the Ares emblem.

- [U.S. STORE](#)



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1420 GMT (10:20 a.m. EDT)

Air Force meteorologists are predicting a 60 percent chance of acceptable conditions at Thursday's 5:12 p.m. EDT launch time. Clouds and lightning are the main concerns for violating the launch weather rules.

The outlook calls for scattered clouds at 3,000 and 10,000 feet, a broken deck at 25,000 feet, isolated showers, 7 miles of visibility, northeasterly winds from 060 degrees at 14-18 knots and a temperature of 84-85 degrees F.

"High pressure remains suppressed to the south with a weak surface trough extending from the Carolinas into Louisiana. Ample moisture and upper level impulses coming across the upper level ridge in the Gulf of Mexico will aid in afternoon and evening thunderstorm development through the week. Thunderstorms are expected to persist late into the evening," forecasters reported today.

"For MLP roll, light southwesterly winds become easterly by late morning. The seabreeze will act to focus developing showers and thunderstorms by late morning to early afternoon, but not expected to impact MLP roll.

"On launch day, westerly surface winds become easterly by early afternoon with the seabreeze development. An upper level disturbance transits the area increasing the thunderstorm threat. Steering level winds begin transitioning to favor slow migration of thunderstorms to the west. The primary concerns for launch day are anvil clouds, cumulus clouds and lightning.

"In the event of a 24 hour delay, the seabreeze will act to focus initial thunderstorm development by late morning to early afternoon with a slow migration to the West. Steering level winds and anvil level wind flow become more favorable for transporting thunderstorms and anvil to the West away from East coast. The primary concerns for a 24 hour delay are lightning, cumulus clouds, and anvil clouds."

The odds of acceptable weather on Friday, if the launch slips 24 hours for some reason, is 70 percent.

1402 GMT (10:02 a.m. EDT)

Rollout begins! The United Launch Alliance Atlas 5 rocket that will send NASA's Lunar Reconnaissance Orbiter and the



Project Orion

The Orion crew exploration vehicle is NASA's first new human spacecraft developed since the space shuttle a quarter-century earlier. The capsule is one of the key elements of returning astronauts to the Moon.

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Fallen Heroes Patch Collection

The official patches from Apollo 1, the shuttle Challenger and Columbia crews are available in the store.

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LCROSS spacecraft to the Moon just began a slow half-hour drive from the 30-story Vertical Integration Facility to Cape Canaveral's Complex 41 pad for Thursday afternoon's liftoff.

A pair of specially-made "trackmobiles" are carrying the Atlas 5 rocket's 1.4-million pound mobile launching platform along rail tracks for this 1,800-foot trip.

The two-stage rocket was put together inside the Vertical Integration Facility back in April. The two payloads were mounted atop the vehicle at the end of May. The Atlas 5 is designed to spend minimal time at the launch pad, which does not include a service gantry like other rockets.

1115 GMT (7:15 a.m. EDT)

The sun is up and the doors on the Vertical Integration Facility are sliding open for this morning's rollout of the Atlas 5 rocket to Cape Canaveral's Complex 41 launch pad.

1020 GMT (6:20 a.m. EDT)

Following space shuttle Endeavour's launch postponement this morning, preparations began immediately to reconfigure the Eastern Range to support the Atlas 5 rocket and its Moon-bound mission.

United Launch Alliance workers plan to roll the Atlas from its assembly building to the Complex 41 launch pad at 10 a.m. EDT this morning.

Liftoff is scheduled to occur Thursday at 5:12 p.m. EDT.

Watch this page for live play-by-play reports throughout Thursday's countdown and ascent. Meanwhile, here's our three-part preview of the launch and the LRO and LCROSS spacecraft:

A robotic scout to reconnoiter the Moon like never before and a sleuth that will dig into a tantalizing mystery at the lunar south pole are awaiting blastoff Thursday aboard an Atlas 5 rocket from Cape Canaveral. Read our [launch summary](#).

When the next generation of lunar astronauts step foot on the Moon in the years ahead, the definitive travel guide compiled by an instrument-laden spacecraft launching this week will detail the best and worst places to go and the risks the crews could face. Read our [LRO preview](#).

Are polar craters on the Moon, eternally dark places where sunlight hasn't been seen for billions of years, harboring natural reservoirs of water ice that could be farmed by future

colonists? That's a question that NASA's audacious lunar impactor experiment plans to answer. Read our [LCROSS preview](#).

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Space mission patches

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