



MARSHALL STAR

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July 9, 2009

LRO spacecraft sends first lunar images to Earth

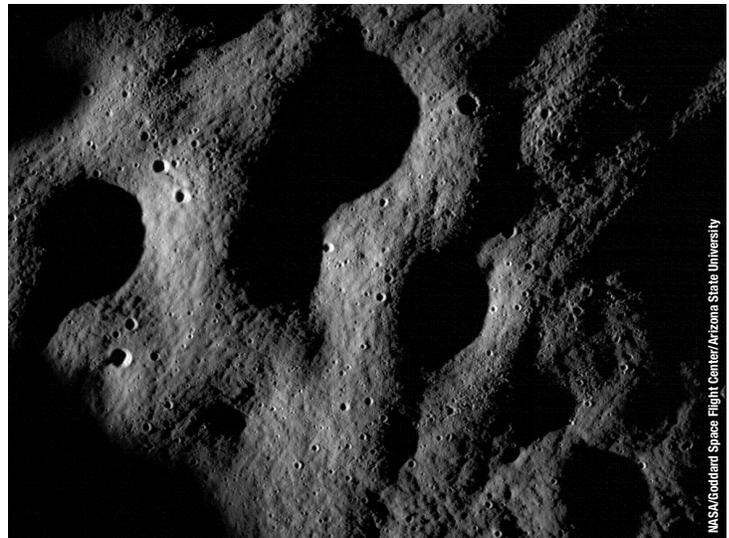
From a NASA Headquarters news release

NASA's Lunar Reconnaissance Orbiter, or LRO, has transmitted its first images since reaching lunar orbit June 23.

The spacecraft has two cameras – a low resolution Wide Angle Camera and a high resolution Narrow Angle Camera. Collectively known as the Lunar Reconnaissance Orbiter Camera, or LROC, they were activated June 30. The cameras are working well and have returned images of a region a few kilometers east of Hell E crater in the lunar highlands south of Mare Nubium.

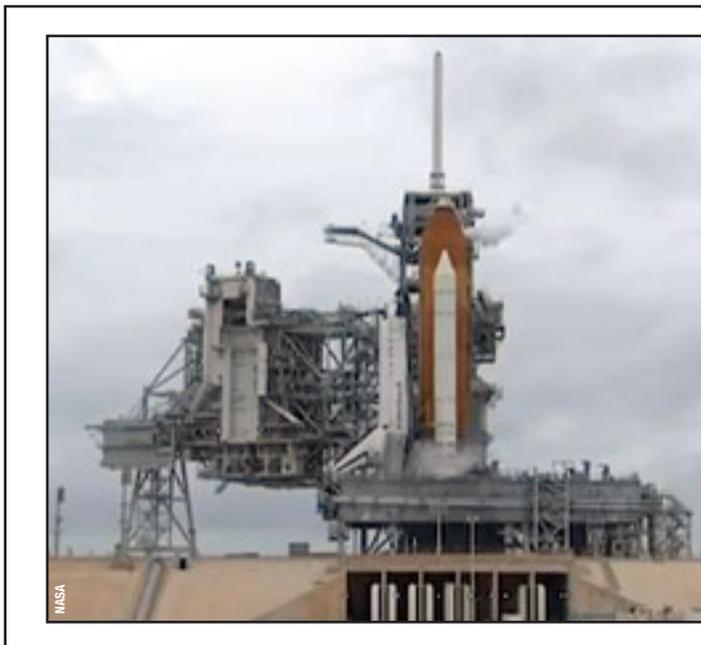
“This is a great first step for the LRO mission,” said Lunar Precursor Robotic Program Office Manager Todd May of the Marshall Space Flight Center. “I look forward to future data LRO will provide because it will show us where the safe landing sites are located by giving us more accurate maps and models of the lighting and

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MARSHALL SPACE FLIGHT CENTER/ARIZONA STATE UNIVERSITY

This image shows cratered regions near the moon's Mare Nubium region, as photographed by the Lunar Reconnaissance Orbiter's LROC instrument.



Space shuttle Endeavour ready for launch July 11

Space shuttle Endeavour, on the launch pad at the Kennedy Space Center, Fla., awaits final preparations for its July 11 launch to the International Space Station. The 16-day STS-127 mission will feature five spacewalks and complete construction of the Japan Aerospace Exploration Agency's Kibo laboratory. Astronauts will attach a platform to the outside of the Japanese module that will allow experiments to be exposed to space. The Kibo module was delivered and installed on the space station during the STS-124 mission in May 2008. Launch time is 6:39 p.m. CDT.

temperature on the moon.”

The Lunar Precursor Robotic Program Office at Marshall manages the two robotic missions to the moon including LRO and the Lunar CRater Observation & Sensing Satellite, or LCROSS. Marshall provides mission oversight, technology planning and flight assurance.

LRO will help NASA identify safe landing sites for future explorers, locate potential resources, describe the moon's radiation environment and demonstrate new technologies. LCROSS will seek a definitive answer about the presence of water ice at the lunar poles.

As the moon rotates beneath LRO, LROC gradually will build up photographic maps of the lunar surface. To view these first calibration images, visit <http://www.nasa.gov/lro>.

"Our first images were taken along the moon's terminator – the dividing line between day and night – making us initially unsure of how they would turn out," said LROC Principal Investigator Mark Robinson of Arizona State University in Tempe. "Because of the deep shadowing, subtle topography is exaggerated, suggesting a craggy and inhospitable surface. In reality, the area is similar to the region where the Apollo 16 astronauts safely explored in 1972. While these are magnificent in their own right, the main message is that LROC is nearly ready to begin its mission."

The satellite also has started to activate its six other instruments. The Lunar Exploration Neutron Detector will look for regions with enriched hydrogen that potentially could have water ice deposits. The Cosmic Ray Telescope for the Effects

of Radiation is designed to measure the moon's radiation environment. Both were activated on June 19 and are functioning normally.

Instruments activated and calibrated this week are the Lunar Orbiter Laser Altimeter, designed to build 3-D topographic maps of the moon's landscape; the Diviner Lunar Radiometer Experiment, which will make temperature maps of the lunar surface; and the Miniature Radio Frequency, or Mini-RF, an experimental radar and radio transmitter that will search for subsurface ice and create detailed images of permanently shaded craters.

The final instrument, the Lyman Alpha Mapping Project, will be activated after the other instruments have completed their calibrations, allowing more time for residual contaminants from the manufacture and launch of LRO to escape into the vacuum of space. This instrument is an ultraviolet-light imager that will use starlight to search for surface ice. It will take pictures of the permanently shaded areas in deep craters at the lunar poles.

"Accomplishing these significant milestones moves us closer to our goals of preparing for safe human return to the moon, mapping the moon in unprecedented detail and searching for resources," said LRO Project Scientist Richard Vondrak of NASA's Goddard Space Flight Center in Greenbelt, Md.

While its instruments are being activated and tested, the spacecraft is in a special elliptical commissioning orbit around the moon. The orbit takes less fuel



A crater rim peeking out of the shadows, captured as LRO passed over the lunar terminator.

to maintain than the mission's primary orbit. The commissioning orbit's closest point to the lunar surface is about 19 miles over the moon's south pole, and its farthest point is approximately 124 miles over the lunar north pole.

After the spacecraft and instruments have completed their initial calibrations, the spacecraft will be directed into its primary mission orbit in August, a nearly circular orbit about 31 miles above the lunar surface.

Goddard built and manages LRO, a NASA mission with international participation from the Institute for Space Research in Moscow. Russia provides the neutron detector aboard the spacecraft.

For more information about LRO's cameras and to view the first images, visit <http://lroc.sese.asu.edu>.

For more information about the LRO mission, visit <http://www.nasa.gov/lro>.

The LRO mission is providing regular updates via Twitter. To follow the spacecraft, visit http://www.twitter.com/LRO_NASA.

Designated NASA employees subject to random drug testing

NASA civil service employees working in Testing Designated Positions are subject to random drug testing. The designated positions are defined in NPR 3792.1B.

The goal of this random testing is to deter illegal drug use, preventing injuries and accidents.

The NASA Shared Services Center at Stennis Space Center near Bay St. Louis, Miss., uses an unbiased, computerized method to

randomly select employees. Repeated selections are possible, and employees will never know when they may be selected.

For more information, please visit http://inside.msfc.nasa.gov/announcements/nasa_drug_testing.pdf.

For a list of Testing Designated Positions or for additional information, please contact the services center at 1-877-677-2123 or at nssc-contactcenter@nasa.gov.

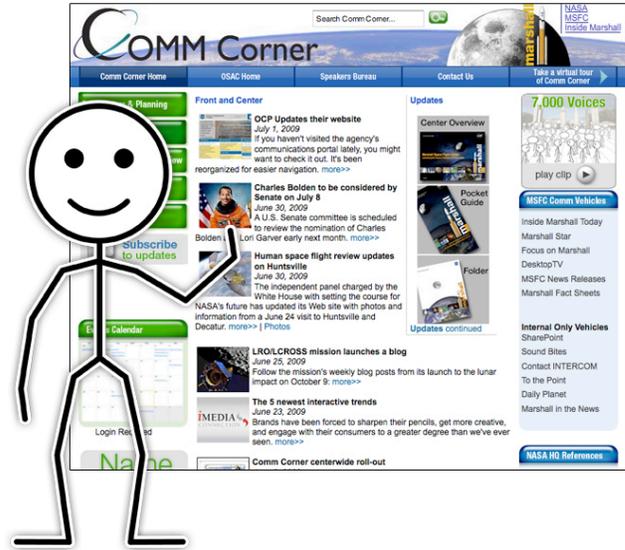
You are the voice of NASA

Each person at the Marshall Space Flight Center encounters daily opportunities to talk about the work done here for our nation's space program. That's more than 7,000 voices reaching out every day, helping friends and family understand the great things that NASA accomplishes and engaging the local community in science and exploration.

Now, the Office of Strategic Analysis & Communications has created Communicator's Corner, an internal Web site to help Marshall team members learn how each voice can make a difference.

Comm Corner is easy to find – it is linked from the front page of Inside Marshall. The site offers information about the Speakers Bureau, links to communications materials and details on strategic messaging. Comm Corner also links to all Marshall communications products (such as To the Point and The Marshall Star) and communications-related news, and the site is a portal to image galleries, fact sheets, PowerPoint presentations and videos.

Every voice counts in helping the people around us to understand the work we do. Visit Comm Corner for a



virtual tour and learn more about the tools you need to communicate on behalf of Marshall and NASA.

There will be a series of road shows in the next few weeks. If you would like to learn more, contact Ann Yelle at 544-8765 or ann.h.yelle@nasa.gov.

You can also visit <http://commcorner.msfc.nasa.gov>.

Classified Ads

To submit a classified ad to the Marshall Star, go to Inside Marshall, to "Employee Resources," and click on "Employee Ads — Submit Ad." Ads are limited to 15 words, including contact numbers. No sales pitches. Deadline for the next issue, July 16, is 4:30 p.m. Thursday, July 9.

Miscellaneous

Craftsman 18-inch cut path reel mechanical mower, hand push, will take best offer. 325-7256

3-SW Ping Eye 2 irons, greendot, \$160; Myrtlewood collector putter, case, \$150. 683-3397

Ladies golf bag, no clubs, lime green and black, \$25. 883-5230

Starck spinet piano, bench, \$250. 464-3135

SIG P229 .40-caliber pistol, two-tone finish, two 10-round clips, hard case, \$500. 971-0571

Fresh herbs, lemon thyme/basil, mint, garlic, chives, Greek/regular oregano, 25 cents to \$1 per bag. 651-3802

Lateral file wood cabinet, lockable, two drawers, ball bearings, Tuscan brown, Westmount, Costco #354136, \$125. 233-0705

Bunk bed, twin, pine, \$60. 837-8967

Jack Russell Terrier, 10 weeks old, received first shots, toys, leash, food, \$100 obo. 426-4769

.75-carat round solitaire, SI1-GH, 14-karat mounting, \$3,000. 455-5183

Executive solid wood credenza/cabinet, four XL filing drawers, extended desk top, \$125. 895-2959

AK47 assault rifle case, \$30; magazines, \$15; bayonet, \$15; Chinese ammo, 20 rounds, \$5. 975-0256

Vehicles

2007 Sidney Outback 28-foot fifth wheel camper, \$19,500. 679-2410

2006 CBR1000RR, blue/yellow, exhaust, 5,600 miles, \$7,800. 270-227-6900

2006 Toyota Tundra SR5 double cab, four door, gray, less than 34k miles, \$19,500. 361-5866

2005 Honda Element EX, five speed, gray, 74k miles, \$11,000. 278-1974

2004 Audi A4 Quattro Ultrasport, loaded, six-speed manual, 71k miles, 30 MPG, \$13,000. 783-6242

2001 Toyota Camry, four cylinder, automatic, 147k miles, \$5,800. 348-1931 or 829-1218

2000 Yamaha Breeze, 125 cc, automatic, full running boards, \$750 obo. 505-9263

1996 Corvette, black on black, 25 MPG, 300HP LT1, 82,300 miles, \$10,000. 723-8877

1995 Buick Regal, 110k miles, \$2,300. 417-1957

Wanted

Ladies full-faced motorcycle helmet, small. 682-9018

Used Verizon Wireless phone, preferably a Blackberry or LG enV, good condition. 830-8934

Tile work, floor and backsplash, 20 years experience, free quote. 843-513-7939

Someone to repair 30-year-old Panasonic tape deck, model RS-631, Pioneer amplifier. 883-2948

Free

Kittens, 12 weeks old, shots current. 714-0102

Blue heeler/Australian shepherd mix, 8 years old, fixed; black Lab, 9 years old, fixed. 520-7808

Young male Schnauzer to good home, Trinity, Ala. 431-0582

Computer, HP Pavilion kit, Windows 98, Microsoft Office, color printer. 859-8489

Marshall organizers anticipate record team turnout for Apollo 11 celebration July 20

By Rick Smith

Event organizers at the Marshall Space Flight Center anticipate record turnout by team members and their families July 20 at the U.S. Space & Rocket Center in Huntsville for the 40th anniversary celebration of the Apollo 11 moon landing.

The celebration, to be held from 1-5 p.m., focuses on the Marshall Center's contributions to the Apollo moon program and NASA's continuing exploration mission. All Marshall civil service employees and badged contractors, their families and center retirees will receive free admission to the Space & Rocket Center for the event.

Civil service employees may be granted up to four hours administrative leave for the purpose of participating in the planned activities. Employees should seek approval from their supervisors prior to attending. Time spent attending the event should be charged to the "Excused Leave" time code in WebTADS.

NASA-badged contractors are invited to attend, subject to applicable contract provisions and company personnel policies. Contractor employees should consult their

management about attending the event. Any questions concerning applicable contract provisions should be directed to the responsible Marshall Center Contracting Officer by their contract management.

All team members must show their NASA badges at the Marshall "Meet and Greet" tables near the entrance of the Davidson Center for Space Exploration, the newest exhibit hall at the museum. Their families must accompany them to gain free admission.

"We're thrilled to partner with the Space & Rocket Center for this festive occasion, and grateful to all our volunteers for helping to make this event possible for thousands of Marshall team members and their families,"

said celebration organizer Linda Gomez, external relations program support specialist in Marshall's Office of Strategic Analysis & Communications.

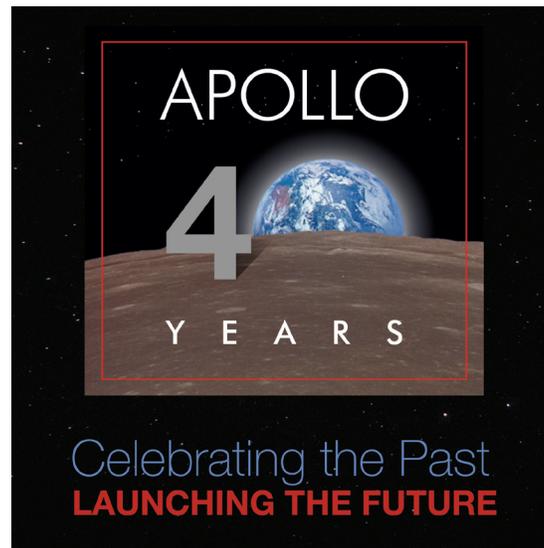
Gomez said the Davidson Center "will be overflowing with exhibits" celebrating the work of the Marshall team – from the days of Apollo to a future near at hand: leading NASA's development of the rockets that will return explorers to the moon and one day carry them beyond.

Visitor parking will be available at the former Chrysler Building at 103 Wynn Drive across I-565 from the Space & Rocket Center.

Shuttles will take visitors back and forth every 15 minutes during the event.

For event updates, click on the 40th anniversary logo on the Inside Marshall homepage, or visit "NASA Marshall" on Facebook.

Smith, an AI Signal Research Inc. employee, supports the Office of Strategic Analysis & Communications.



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