The Marshall Star

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LADEE Launch Lights Up East Coast

By Shannon Ridinger

NASA's Lunar Atmosphere and Dust Environment Explorer (LADEE) spacecraft lit up the Eastern seaboard when it was successfully launched onboard a Minotaur V rocket, developed by Orbital Sciences, Inc. The launch became a sensation across the United States, inspiring enthusiasts from all over the East coast to take pictures of the vehicle on its way to the moon. Crowds gathered in Times Square in New York and on the steps of the Lincoln Memorial in Washington to watch.

LADEE takes flight from the Wallops Flight Facility. (NASA/Headquarters)

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The Cutting Edge: Marshall to Host Innovation & Technology Day Sept. 12

By Bill Hubscher

It's not the unveiling of the latest smartphone. It's better.

On Sept. 12, NASA's Marshall Space Flight Center will showcase the latest developments and breakthroughs benefiting the nation's space program at the annual Innovation & Technology Day. Open to badged employees of Marshall and Redstone

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LADEE Launch *Continued from page 1*

The spacecraft was launched at 10:27 p.m. CST Friday, Sept. 6, from Pad 0B at the Mid-Atlantic Regional Spaceport, at NASA's Wallops Flight Facility. LADEE is on its way to arrive at the moon in 30 days, then enter lunar orbit.

LADEE is a robotic mission that will gather detailed information about the lunar atmosphere, conditions near the surface and environmental influences on lunar dust. A thorough understanding of these characteristics will address long-standing unknowns, and help scientists understand other planetary bodies as well. The spacecraft was designed, developed and built at NASA's Ames Research Center and is managed out of the Lunar Quest Program at NASA's Marshall Space Flight Center.

Excitement about the mission was evident all week as NASA used many different ways to share it with the public. The Wallops Flight Facility's Visitor Center hosted exhibits designed to inform the public about LADEE, and offered the public a chance to chat with NASA employees about the mission, the moon and other scientific subjects. A NASA Social was also a part of the activities and was hosted on launch day and the day before to allow everyday citizens the opportunity to become journalists and share their experiences about the launch on their personal social media accounts.

The NASA Social participants at the Wallops Flight Facility the day before the launch. (NASA/Ames Research Center/Jessica Culler)

"We're able to go behind the scenes and really share unique experiences with attendees," said Jason Townsend, NASA's deputy social media manager. "It's not everyday that most people get to see a rocket launch a mission to the moon or visit training facilities for astronauts going to the International Space Station or see where we do 3D printing. These are all things that social participants have been able to do at various NASA Socials, and I'm really proud that the LADEE launch was our successful 71st event."

Coverage of the launch was everywhere. It turned the hashtag #NASA into the top trending topic on Twitter in the U.S. late Friday. Coverage on NASA TV went out in 66,000 webcast streams. For the first time that the NASA.gov team is aware of, the majority of peak traffic to the site for a live event came from mobile devices instead of desktop computers.

Mission operators at Ames Research Center continue to monitor the mission as the vehicle makes its way to the moon's orbit. During technical checkouts of the spacecraft after it was launched, LADEE commanded itself to shut down the reaction wheels used to position and stabilize it. The reaction wheels were quickly brought back on-line by the mission operations team and the spacecraft acquired its safe-mode attitude profile as planned.

For more information on LADEE and to keep up with this exciting mission as it continues its journey to the moon, visit www.nasa.gov/ladee.

Ridinger is a public affairs officer in the Office of Strategic Analysis & Communications.

NASA Docks in the Port City for Mobile Business Forum

Robert Champion, deputy director of NASA's Michoud Assembly Facility, details various aspects of working with the nation's space agency as he addresses participants of the NASA Mobile Business-to-Business Forum in Mobile, Ala., Sept. 4. The event was co-hosted by NASA's Marshall Space Flight Center and the Mobile Area Chamber of Commerce. NASA managers from Marshall, Michoud, and the Stennis Space Center, as well as representatives of 25 prime contractors, presented a behind-the-scenes look at working with NASA and how Mobile Bay-area businesses can get involved. (NASA/MAF/Samuel Senter)

Innovation & Technology Day *Continued from page 1*

Arsenal, the daylong expo will be held from 10 a.m. to 3 p.m. in the Activities Building 4316.

The event's theme this year is "Innovation Through Collaboration," and many Marshall Center departments will have live demonstrations and exhibits displaying their latest advances. Those who attend will have the opportunity to learn about other groups' work and find new ways to advance common goals.

The expo is hosted by Marshall's Office of the Chief Information Officer, Office of Strategic Analysis & Communications, and Office of the Chief Technologist.

Among exhibiting departments are the Marshall Television studio, which will broadcast and stream live coverage of the expo in high definition on DesktopTV. The Michoud Assembly Facility, managed by Marshall, will have exhibit booths to tell its role in NASA's mission and the advances in manufacturing technology it's developing.

Lunch vendors will be on-site and buses to selected buildings will provide local transportation to and from the expo.

For the latest information, including bus schedules, visit ExplorNet or view the 2013 Innovation & Technology Mobile App by scanning the QR code below with a smartphone.

The code and the application to which it leads were created by the Office of the Chief Information Officer as a sample of what the office can offer and the kinds of innovations attendees will discover at the expo.

Hubscher, an Analytical Services Inc. employee, supports the Office of Strategic Analysis & Communications.

SLS Program Manager Todd May Talks 'NASA's Next Great Ship' on USS Alabama in Mobile and at Alma Mater

Todd May, at a podium on the USS Alabama in Mobile, who heads the Space Launch System (SLS) Program at NASA's Marshall Space Flight Center, talks to the public about the SLS, NASA's "Next Great Ship," Sept. 4. NASA astronaut Tony Antonelli also was on deck to sign autographs. SLS will be the most powerful rocket in the world with the greatest capacity of any launch system ever built to support any destination, any payload and any mission. (NASA/MAF/Sam Senter)

While in the Mobile area, May -- who grew up in nearby Fairhope -- spoke about the SLS Program to students at his alma mater, Fairhope High School, on Sept. 5. "We intend to build the 'ship' that will take us to places in the universe we've never been before," May told the students. "And like the fleets that set out to sea, we look forward to the journey that awaits us." The first flight test of the SLS is scheduled for 2017. The Marshall Center manages the SLS Program for the agency. (NASA/MSFC/Kirk Pierce)

NASA's Chandra Observatory Catches Giant Black Hole Rejecting Material

From NASA news release

Astronomers using NASA's Chandra X-ray Observatory have taken a major step in explaining why material around the giant black hole at the center of the Milky Way Galaxy is extraordinarily faint in X-rays. This discovery holds important implications for understanding black holes.

New Chandra images of Sagittarius A* (Sgr A*), which is located about 26,000 light-years from Earth, indicate that less than 1 percent of the gas initially within Sgr A*'s gravitational grasp ever reaches the point of no return, also called the event horizon. Instead, much of the gas is ejected before it gets near the event horizon and has a chance to brighten, leading to feeble X-ray emissions.

NASA's Marshall Space Flight Center manages the Chandra program for NASA's Science Mission Directorate in Washington. The Smithsonian Astrophysical Observatory controls Chandra's science and flight operations from Cambridge, Mass.

These new findings are the result of one of the

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longest observation campaigns ever performed with Chandra. The spacecraft collected five weeks' worth of data on Sgr A* in 2012. The researchers used this observation period to capture unusually detailed and sensitive X-ray images and energy signatures of super-heated gas swirling around Sgr A*, whose mass is about 4 million times that of the sun.

"We think most large galaxies have a supermassive black hole at their center, but they are too far away for us to study how matter flows near it," said Q. Daniel Wang of the University of Massachusetts in Amherst, who led a study published on Aug. 29 in the journal Science. "Sgr A* is one of very few black holes close enough for us to actually witness this process."

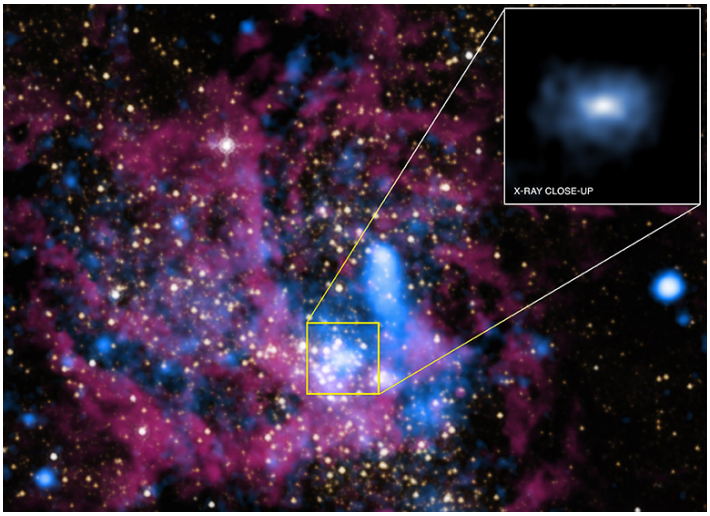
The researchers found that the Chandra data from Sgr A* did not support theoretical models in which the X-rays are emitted from a concentration of smaller stars around the black hole. Instead, the X-ray data show the gas near the black hole likely originates from winds produced by a disk-shaped distribution of young massive stars.

"This new Chandra image is one of the coolest I've ever seen," said co-author Sera Markoff of the University of Amsterdam in the Netherlands. "We're watching Sgr A* capture hot gas ejected by nearby stars, and funnel it in toward its event horizon."

To plunge over the event horizon, material captured by a black hole must lose heat and momentum. The ejection of matter allows this to occur.

"Most of the gas must be thrown out so that a small amount can reach the black hole," said co-author Feng Yuan of Shanghai Astronomical Observatory in China. "Contrary to what some people think, black holes do not actually devour everything that's pulled toward them. Sgr A* is apparently finding much of its food hard to swallow."

The gas available to Sgr A* is very diffuse and super-hot, so it is hard for the black hole to capture and swallow it. The gluttonous black holes that power quasars and produce huge amounts of radiation have gas reservoirs much cooler and denser than that of Sgr A*.



New Chandra results help explain why gas near the Milky Way's supermassive black hole is so faint in X-rays. To obtain these results, Chandra performed one of its longest observing campaigns ever -- equivalent to over five weeks of observing time. (X-ray: NASA/UMass/D.Wang et al., IR: NASA/STScI)

The event horizon of Sgr A* casts a shadow against the glowing matter surrounding the black hole. This research could aid efforts using radio telescopes to observe and understand the shadow. It also will be useful for understanding the effect orbiting stars and gas clouds may have on matter flowing toward and away from the black hole.

The paper is available online at: http://arxiv.org/abs/1307.5845.

Marshall Center Updates Emergency Evacuation Plans for Mobility Impaired Persons

Some events over the last few weeks have revealed issues in Marshall Space Flight Center's evacuation plans for Mobility Impaired Persons. Changes are being made to center policies, training and physical layout to ensure that a safe working environment is provided for all Marshall employees.

The intent of MWI 8715.11, Chapter 9, is to provide a safe alternative to evacuation for persons with mobility impairments in the event of an emergency. Fire rescue spots have been developed and installed within multi-story buildings in accordance with NFPA 101, the Life Safety Code. These spots serve two purposes.

1. They provide a safe location for persons with mobility impairments to shelter during an emergency and communicate with first responders. The area chosen is based on the type of building construction, the installed fire protection systems and the building layout. We take into consideration factors such as the passage of fire and smoke, and the accessibility of the area to available egress points.

2. They provide a consistent location for fire department personnel to locate persons with mobility impairments during an emergency. In some instances, based on the nature and/or circumstances of the emergency, the incident commander may decide that it is safer to shelter individuals in-place rather than evacuate.

If you have a mobility impairment and there is a fire alarm in your building, either egress the building, or, if no accessible path exists to the outside, go to the nearest fire safety spot and call 911. The locations of the rescue spots are being reviewed, as well as the location of alarms and phones.

If you have questions in the interim, you may contact either Jason Scott (256-544-5792) with the Office of Safety & Mission Assurance or Phyllis Olinger (256-544-0022) with the Office of Diversity & Equal Opportunity.

Alabama Fans Show Their Pride in the Tide

Marshall Center Director Patrick Scheuermann, center, sporting the "9" jersey, joins 40 proud Alabama fans at the 2013 Team Pride Social and Dip Challenge on Aug. 29. Fans of the Tide outnumbered every other team represented at the social hosted by the Marshall Exchange. (NASA/MSFC)

Obituaries

Howard B. Hovis, 90, of Decatur, died Sept. 8. He retired from the Marshall Center in 1979 as an aerospace engineer.