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Inside This Issue:

NASA's Space Launch System Boosters Office Completes Critical Design Review *page 3*

Area Schools Receive Donations of Excess Furniture from Marshall Center *page 5*

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Marshall to Recognize Outstanding Team Members at Annual Honor Awards Ceremonies Aug. 19

By Jena Rowe

NASA's Marshall Space Flight Center will recognize more than 300 employees and contractors during its Annual Honor Awards ceremonies in Morris Auditorium on Aug. 19. All Marshall team members are invited to attend.

Awards presentations will be made during two ceremonies -- agency-level honor awards at 10 a.m. and

*See **Annual Honor Awards** on page 2*

NASA's Space Launch System Boosters Office Completes Critical Design Review

By Kim Henry and Megan Davidson

As progress continues on NASA's new rocket, the Space Launch System (SLS), the solid rocket boosters team successfully completed its critical design review Aug. 6. This milestone verifies the boosters are ready to move forward with qualification testing.

Artist concept of the SLS solid rocket boosters firing their separation rockets and pushing away from the core stage, which continues toward space with the Orion spacecraft. (NASA)

The two five-segment solid rocket boosters will provide the majority

*See **Boosters CDR** on page 2*

Annual Honor Awards *Continued from page 1*

center-level honor awards at 2 p.m. The morning ceremony will recognize those who have made significant achievements to NASA's mission at an agency level. The afternoon ceremony will recognize those who have made outstanding mission contributions to the center.

NASA Associate Administrator Robert M. Lightfoot will be the keynote speaker at both ceremonies. He and Marshall Center Director Patrick E. Scheuermann will present the awards to the honorees.

Announcing the agency-level awards will be Teresa B. Vanhooser, Marshall Center deputy director; Dale Thomas, Marshall associate director, technical; and Steven D. Pearson, deputy director of Marshall's Safety and Mission Assurance Directorate.

The center-level awards will be announced by Robin N. Henderson, Marshall associate director; Roy W. Malone, Michoud Assembly Facility director; and Dan Schumacher, director of Marshall's Science and Technology Office.

Bill Hicks, Marshall's chief financial officer, will emcee.

For a list of the NASA Honor Awards, click here.

For a list of the Marshall Honor Awards, click here.

Rowe, an ASRC Federal/Analytical Services employee and the Marshall Star editor, supports the Office of Strategic Analysis & Communications.

*See **Annual Honor Awards Photos** on page 8*

Boosters CDR *Continued from page 1*

of the liftoff thrust for the SLS vehicle. As the SLS evolves, it will be used for deep space missions to destinations such as an asteroid and ultimately to Mars.

"We continue to make great progress as demonstrated by this successful review and are proceeding towards the qualification testing of the booster," said Todd May, manager of the SLS Program at NASA's Marshall Space Flight Center. "Our program continues to move forward because of the people who are working aggressively to build this rocket."

More than 330 experts from various NASA centers and ATK of Brigham City, Utah -- prime contractor for the boosters -- were a part of the process that reviewed approximately 1,200 documents at the Marshall Center. Marshall manages the SLS Program for the agency.

"This was an excellent and thorough review that confirmed our understanding of the design and will allow us to begin the process of confirming those attributes through verification and qualification testing," said Alex Priskos, manager of the SLS Boosters Office.

The first flight test of the SLS in 2017 will be configured for a 70-metric-ton (77-ton) lift capacity and carry an uncrewed Orion spacecraft beyond low-Earth orbit to test the performance of the integrated system. As the SLS evolves, it will be the most powerful rocket ever built and provide an unprecedented lift capability of 130 metric tons (143 tons) to enable missions even farther into our solar system.

For more information on SLS, visit here.

Henry is a NASA public affairs officer and Davidson is an ASRC Federal/Analytical Services employee, both in the Office of Strategic Analysis & Communications.

No Geysers Allowed: NASA Engineers Begin Testing for SLS Liquid Oxygen Feed System

By Megan Davidson

Let's be honest -- geysers are really cool. You've got an eruption of water and vapor that can burst to heights of 185 feet. What's not to like about that?

When building propellant tanks for the world's most powerful rocket, NASA engineers want to make sure Old Faithful stays in Yellowstone. So beginning Aug. 5, anti-geyser testing is underway at NASA's Marshall Space Flight Center for the agency's Space Launch System (SLS) -- the rocket that will make deep space missions possible, including to an asteroid and ultimately to Mars.

A full-scale replica of the SLS liquid oxygen tank feed system -- which will be housed in the rocket's core stage -- is set up on one of Marshall's test stands to show that proven procedures will keep the tank's thousands of gallons of oxidizer from geysering. Oxidizer is a type of chemical that fuels require to burn.

"Geysering occurs when heat enters the system and forms gas bubbles," said Chad Bryant, propulsion manager in the Stages Office at Marshall, where the SLS Program is managed for the agency. "Those bubbles displace the liquid and allow it to come crashing down, which can cause hardware damage. In order to prevent geysering the first time the actual vehicle is loaded, we are going through different scenarios using the test article. We want to manage the quality of the liquid oxygen that's in the system to prevent heat buildup, which would cause these gas bubbles to form."

As propellant is poured into the system from the bottom, helium is injected into different points along two feed lines that deliver the propellant all the way up to the tank. "The helium really acts as a spoon -- it induces circulation almost like stirring and keeps the propellant uniform and at the right temperature," said Jacob Parton, anti-geyser test conductor. "This is the largest testing effort I've been a part of at Marshall. It took about 12 trailers carrying approximately 5,000 gallons of propellant each to fill the test article tank.

A full-scale replica of the SLS liquid oxygen tank feed system is set up on one of the Marshall Center's test stands for anti-geyser testing. (NASA/MSFC/David Olive)

"The majority of the test hardware is geometrically comparable to actual flight hardware for the SLS and was built here at the center, except for the tank itself," Parton added.

The tank, about 40 feet tall, was provided by The Boeing Co., prime contractor for the SLS core stage and its avionics. Testing is scheduled to be completed in November.

Watch a video about the anti-geyser testing here.

For more information on SLS, visit here.

Davidson, an ASRC Federal/Analytical Services employee, supports the Office of Strategic Analysis & Communications.

Marshall Interns Shine During Poster Expo as Their Summer Internships Come to a Close

By Chris Blair

"The future of NASA's workforce is in great hands." That was the theme of the comments heard throughout the day Aug. 5 as 147 Marshall Space Flight Center interns ended their summer by participating in the annual Poster Expo.

Having completed their 10-week summer internships, students from universities and colleges around the country shared their work during this interactive event.

Activities included a poster competition, in which judges critiqued designs for scientific accuracy and merit, as well as an open forum allowing media and Marshall team members to meet the interns and learn about their work. The event ended with an awards ceremony to celebrate their summer accomplishments and announce the winning poster designs.

The Internship Program places students in offices that relate to their career interests and assigns them a Marshall mentor. During their internship, they gain valuable insight working alongside Marshall employees.

"Students come well prepared technically, but once here, they learn how to apply what they've learned in the classroom into a real-world situation," said Mona Miller, the Internship Program lead. "We make a point to match interns with projects that fit their educational background."

Marshall interns sign their group photo at the annual Poster Expo, an event held at end of their summer internships. (NASA/MSFC/ Emmett Given)

E. Alexander Thompson, right, discusses his summer internship project during the annual Marshall Poster Expo. (NASA/MSFC/ Fred Deaton)

"My coursework was on-point with everything I had to do using Linux, C++ and Vim text editor during my internship," said David Keck, a recent computer science graduate from Northeastern State University in Tahlequah, Oklahoma.

Both the Marshall Center and the students benefit from the success of the Internship Program. Maurice Evans, a junior mechanical engineering major at Tuskegee University in Tuskegee, Alabama, has been supporting the Space Launch System (SLS) -- NASA's new heavy-lift rocket.

"In my work this summer, I've updated documents with images, figures and schematics to ensure new hardware fits," said Evans. "When that document is sent to other disciplines, such as engines, propulsion and structures, they will know how to orient their new hardware to fit inside the SLS rocket."

The internship experience is so rewarding that many students pursue multiple internships. Finishing up her third internship with NASA is Paige Green, a senior mechanical engineering major at Alabama A&M

*See **Intern Poster Expo** on page 5*

Area Schools Receive Donations of Excess Furniture from Marshall Center

By Chris Blair

Desks, chairs and marker boards… Typical items on a principal's back-to-school shopping list. Not so typical is having those items donated by NASA's Marshall Space Flight Center, as schools in Alabama and Tennessee learned.

Marshall is demolishing an outdated office building – Building 4202, and according to federal management regulations, excess property can be donated to public entities. That's when area schools and communities can benefit.

"It's inspiring and encouraging to have a government agency being good stewards of the taxpayers' money and not allowing something useful to go to the landfill," said Philisha Stephens, property disposal officer at Marshall. "Our goal is to reuse as much as possible and help our community."

In keeping Marshall's support of the community strong, area schools in Alabama and Tennessee have received much-needed donations. Geraldine High School, in DeKalb County, Alabama; Skyline High School, in Jackson County, Alabama; Paint Rock High School, in Jackson County, Alabama; and Flintville Elementary, Ninth Grade Academy and South Lincoln Elementary School, all of Lincoln County, Tennessee, will make use of thousands of dollars of excess furniture and equipment.

Hundreds of items were repurposed throughout Marshall to update offices and conference rooms. Much-needed equipment was then donated to the

Excess furniture donated by the Marshall Center is collected for transport to the Lincoln County Ninth Grade Academy, in Fayetteville, Tennessee. (NASA/MSFC/Emmett Given)

schools, the U.S. Department of Labor, two state agencies and the city of Huntsville.

However, the impact of Marshall's donations is not only measured in dollars, but in the appreciation of community educators.

"It's changed our building," said David Golden, principal at Flintville Elementary School. "This makes teachers happy. It's a positive thing and this furniture will go immediately into classrooms."

Some schools have experienced diminishing budgets in recent years and are long overdue for furniture upgrades. "We are very excited about the donations of this furniture and equipment," said Spring

*See **Furniture Donations** on page 6*

Intern Poster Expo *Continued from page 4*

University in Huntsville.

"My mentors wanted us to figure things out for ourselves, how things work outside of the classroom and in the real-world," said Green. "We may work on a project for a week and it doesn't turn out how we thought; we troubleshoot and come up with other solutions. I really appreciate them for that."

Students interested in pursing internships with NASA can apply through the NASA OSSI website.

Blair, an ASRC Federal/Analytical Services employee, supports the Office of Strategic Analysis & Communications.

Leadership Development Series Available to Marshall Civil Service Employees

If you are a civil service employee at NASA's Marshall Space Flight Center interested in developing skills that are vital for managing NASA's missions, the Program, Planning and Control Leadership Development Series is going to help you.

The PP&C Leadership Development Series has been established to advance Marshall's capabilities in the program, planning and control competencies by developing leaders with skills needed to support and manage complex programs, projects and mission support functions.

Offering two levels of courses, the program includes an on-the-job, 60-to-90 day rotation internal to Marshall.

Individuals interested in participating should contact Len Bell, Office of Strategic Analysis & Communications; Joe Schaaf, Office of the Chief Financial Officer; or Renea Scoble, Office of Human Capital.

Furniture Donations *Continued from page 5*

Brindley, principal of Lincoln County Ninth Grade Academy. "Our teachers' desks haven't been updated in 50 years."

In April 2013, a tornado severely damaged South Lincoln Elementary, causing students to finish the school year at nearby Flintville Elementary. "South Lincoln is our sister school," said Golden, Flintville's principal. "Supplies we pick up today from the Marshall Center, we will give to South Lincoln's teachers."

It's a new school year and equipment once used to support the nation's space program will now be used to teach future scientists and engineers. In recognizing Marshall's historical achievements to the nation's space exploration programs, Brindley, the Lincoln County Ninth Grade Academy principal, mentioned her school's engineering class, called "Project Lead The Way," and how they can tie in student achievement to Marshall's proud past and exciting future.

"The people who used these desks were pioneers in space exploration," said Brindley. "We even took one of the signs left in the Marshall building that said, 'Powering the Future of Exploration.'"

For more information about Marshall property excess, please contact Philisha Stephens.

Staff from the Flintville Elementary School, in Lincoln County, Tennessee, receive donated, excess furniture, just in time for the start of the new school year. (NASA/MSFC/Emmett Given)

Blair, an ASRC Federal/Analytical Services employee, supports the Office of Strategic Analysis & Communications.

SPoRT Captures Image of Hurricane Iselle

Marshall's Short-term Prediction Research and Transition Center team provided data to NOAA's National Hurricane Center in the form of a red, green and blue color composite image from Aug. 5 at 10:15 a.m. of several channels from the Global Precipitation Mission using the Microwave Imager for Hurricane Iselle in the Eastern Pacific Ocean.

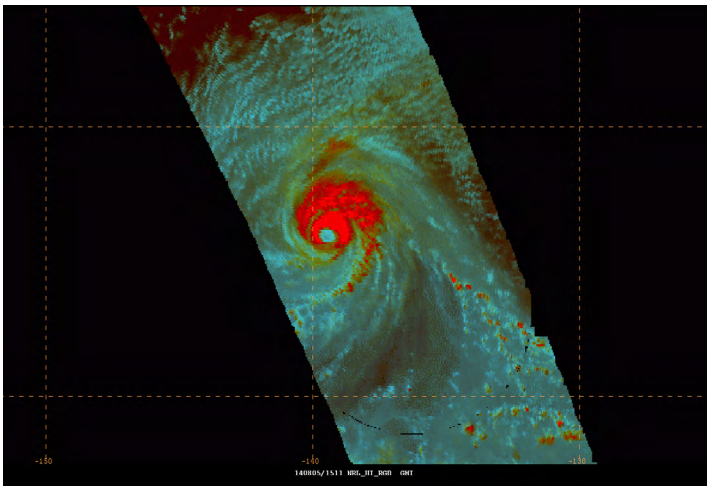
The image was taken from the National Centers for Environmental Prediction Advanced Weather Information Processing System -- the current decision support system used by NOAA's National Hurricane Center. The data, along with the Advanced Temperature Microwave Sounder imagery from the Suomi-NPP satellite, is provided to the National Hurricane Center in near real-time by SPoRT for use with other products to monitor the development of tropical storms. SPoRT is a NASA project to transition unique observations and research capabilities to the operational weather community to improve short-term forecasts on a regional scale.

The Global Precipitation Measurement mission is a joint mission between NASA and the Japan Aerospace Exploration Agency. The Core Observatory was launched Feb. 27 from Japan and began its prime mission on May 29, just in time for the hurricane season.

The data is also being made available to the Central Pacific Hurricane Center in Honolulu to monitor storms in its area of responsibility.

At the time the image was taken, the center of Hurricane Iselle was located near 16.0 north latitude and 139.5 west longitude. The National Hurricane Center reported that Iselle's maximum sustained winds were near 125 mph (205 kph), making Iselle a Category 3 hurricane on the Saffir-Simpson Hurricane Wind Scale.

NASA's SPoRT Center allows for faster integration of NASA's Earth science observations, data assimilation and modeling research into the regional and local National Weather Service forecasting and decision-making process.



RGB color model of Hurricane Iselle provided by NASA's SPoRT. (NASA)

SPoRT works closely with the National Weather Service forecasters at 24 local and regional weather forecast offices and five National Centers for Environmental Prediction across the country to develop solutions to challenging forecast problems using timely, high-resolution NASA observations and unique research capabilities.

For more information about Hurricane Iselle visit the NASA Hurricane page.

For more information about GPM, visit here.

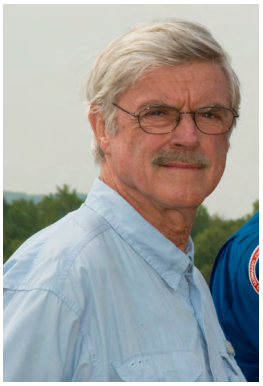
2014 NASA/Marshall Center Annual Honor Awards

NASA Distinguished Service Medal

Major General (Ret) Lynn Collyar
Army Missile Command

Steven D. Pearson
Safety and Mission Assurance Directorate

NASA Distinguished Public Service Medal



John C. Gregory
The University of Alabama Huntsville Office of Human Capital

Thomas Hancock
AIAA Mississippi Section Office of Human Capital

Matthew N. Ramsey
ESSSA Engineering Directorate

NASA Outstanding Leadership Medal

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Paul A. Gilbert
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NASA Outstanding Leadership Medal

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Engineering Directorate

Patrick R. Rogers
Engineering Directorate

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Engineering Directorate

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Malcolm W. Wood
Michoud Assembly Facility

Anita G. Webster
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Not Pictured:
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Ying H. Fernandez
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Engineering Directorate

Todd M. Freestone
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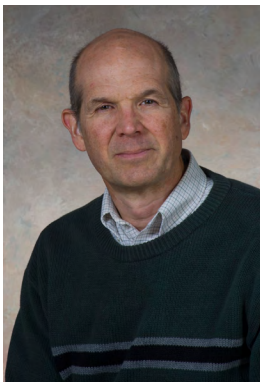
Jerry L. Seemann
Office of the Chief Counsel

Pamela S. Smith
Engineering Directorate

Amy L. Walden
Flight Programs and Partnerships Office

Connie S. Wells
Office of Center Operations



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