



Marshall Star, May 15, 2013 Edition

MARSHALL STAR

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'NASA Day in Baton Rouge' Honors Agency's Partnership With Louisiana

By Rick Smith

Marshall Space Flight Center Director Patrick Scheuermann met May 8 with Louisiana Gov. Bobby Jindal and key members of the state Legislature. His visit was part of "NASA Day in Baton Rouge," designed to honor NASA's partnership with the people and industry of Louisiana, boosting the state's economy and furthering the nation's work in space.

Image right: Marshall Center Director Patrick Scheuermann, right, meets with Louisiana Gov. Bobby Jindal, left, and La. state Rep. Greg Cromer during "NASA Day in Baton Rouge" May 8. (NASA/Eric Bordelon)



Scheuermann met with Louisiana legislators including La. state Sen. Jack Donahue, chairman of the State Finance Committee, and La. state Rep. Charles Kleckley, speaker of the state House. Other members of the NASA workforce were on hand to talk with officials and members of the public about the science, engineering and exploration exhibits on display in the state Capitol -- all demonstrating the space agency's work in Louisiana and around the country.



NASA's longtime history in the state is anchored by the [Michoud Assembly Facility](#) in New Orleans, where a highly skilled workforce has built and assembled large, complex space systems and structures for vital NASA programs and projects -- from Apollo-era rockets to the 136 external fuel tanks which lifted the space shuttle to orbit during its 30-year history.

Image left: Students visiting the Louisiana Capitol for "NASA Day in Baton Rouge" line up to pose for a virtual photo of themselves in a space suit on a NASA mission. Marshall Director Patrick Scheuermann, second from right, looks on as the students are assisted

by Shannon Raleigh, left, an Analytical Services Inc. employee supporting the Office of Strategic Analysis & Communications as an outreach coordinator with the Space Launch System -- managed at the Marshall Center. (NASA/Eric Bordelon)

Now workers at the Michoud facility are manufacturing and assembling hardware for the [Space Launch System](#) heavy-lift launch vehicle and the [Orion Multi-Purpose Crew Vehicle](#). The Michoud facility also is managed for NASA by the Marshall Center.

"NASA's investment in Louisiana -- as evidenced by our hard work at Michoud in New Orleans and our continuing, joint industry and academic endeavors -- plays a vital part in supporting the agency's mission of discovery and exploration," Scheuermann said.

"In turn, NASA and Marshall help sustain a vibrant New Orleans economy, and NASA strives to create new employment opportunities and strong partnerships of benefit all across the state of Louisiana," he added.

Image right: The Louisiana Legislature decreed May 8 "NASA Day," issuing a proclamation which extolled "the excellence of accomplishments of NASA and the Michoud Assembly Facility" and hailed their "remarkable technical and scientific contributions" to the state and the nation. (NASA/Eric Bordelon)



The Michoud Assembly Facility alone employs an estimated 2,700 people, and NASA helps to generate thousands of additional jobs across the state. The space agency's economic impact includes more than \$109 million in obligated funds within the state, according to 2011 findings -- including nearly \$107 million in business with large and small Louisiana companies and \$1.2 million for educational institutions including Louisiana State University in Baton Rouge and the University of New Orleans and Tulane University in New Orleans.

"We are poised to enter a truly exciting new era in the nation's space program," Scheuermann said. "Louisiana is helping NASA make that happen."

New Capability Expands Science Communication on Space Station

By Jessica Eagan



Communications from space are not as easy as just picking up a cell phone to reach out and touch someone. An Earth-to-ground chat comes at a premium. So it's no surprise that two simultaneous chats would be something to celebrate. Payload developers and NASA's Payload Operations Integration Center team at the [Marshall Space Flight Center](#) are celebrating this advance, thanks to a communications hardware upgrade.

Image left: NASA astronaut Chris Cassidy conducts a session of the Burning and Suppression of Solids (BASS) investigation aboard the International Space Station. (NASA)

April 12 marked the first time in the history of the [International Space Station](#) that two researchers talked to two crew members for two different science investigations -- the result of a new capability that allows for additional space-to-ground (S/G) voice channels. The new voice channels, called S/G3 and S/G4, use Ku-band for both two-way voice and data transmission, as well as video and high-speed data to Earth.

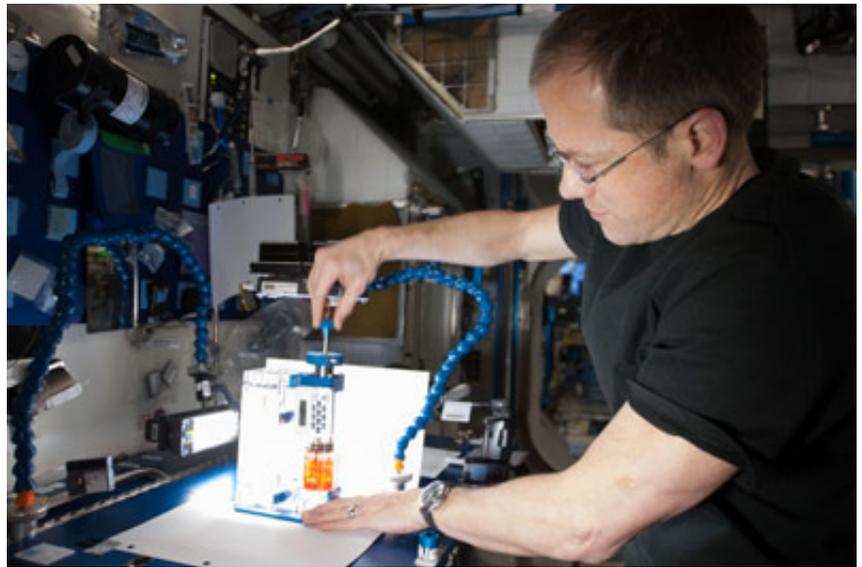
"Enabling scientists to interact directly with the crew allows for real-time modifications in science experiments," said NASA's International Space Station Program Scientist, Dr. Julie Robinson. "[The new S/G voice channels] provide the principal investigator with the ability to observe his or her science real-time as the astronaut works, make observations as the science occurs, and then direct changes based on those observations.

NASA also has the S/G1 and S/G2 channels, which use S-band. S-band transmits two-way voice, commands and data between ground stations and the space station.

"Having four space-to-ground [channels] has enabled multiple researchers to interface directly with multiple crew members at the same time, thus improving the efficiencies of science," said Tim Horvath, lead payload operations director at Marshall.

The two science investigations performed in orbit for this milestone were the Burning and Suppression of Solids ([BASS](#)) study and the Capillary Flow Experiment ([CFE](#)).

Image right: NASA astronaut Tom Marshburn uses a Capillary Flow Experiment (CFE)-2 vessel to perform several interior corner flow tests. CFE is a suite of fluid physics experiments that investigate capillary flows and flows of fluids in containers with complex geometries. (NASA)



BASS examines the [burning and extinction characteristics](#) of a wide variety of fuel samples in microgravity. The investigation will guide strategies for extinguishing accidental fires in space. Results of the study also contribute to the combustion computational models used in the design of fire detection and suppression systems in microgravity and on Earth.

CFE is a suite of fluid physics experiments that investigate [capillary flows](#) and flows of fluids in containers with complex geometries. Results will improve current computer models used by designers of low-gravity fluid systems and may improve fluid transfer systems on future spacecraft. Knowledge gained from capillary flow experiments also is being applied to lab-on-a-chip technology used to analyze blood samples specifically to detect HIV, hepatitis and other infectious diseases.

With about 200 investigations to be conducted across the international partnership during Expedition 35 and 36, this new communications upgrade paves the way for the ability of the crew and scientists to perform more hours of research every day.

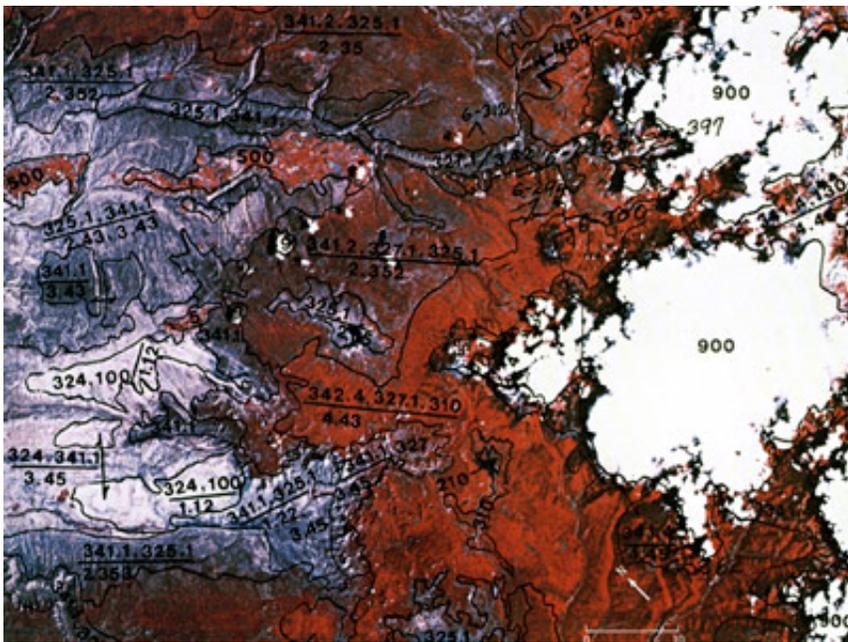
Watch the [Space Station Live: Station Communications Upgrade](#) to learn more.

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

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Skylab Launch Marks 40th Anniversary This Week

By Mike Wright



Forty years ago on May 14, 1973, NASA launched the Skylab orbiting workshop into space.

Image left: Skylab captured images of Earth from space. (NASA/MSFC)

The first of three, three-man crews that NASA selected to live and work in space began their journey to the Skylab space station on May 25, 1973, and returned to Earth on June 22, 1973, after completing major scientific accomplishments.

Unfortunately, their journey began 10 days later than originally planned. Problems on the already orbiting Skylab workshop caused the

delay. Sixty-three seconds after a Marshall-provided Saturn V vehicle lifted off the pad in Florida on May 14, 1973, a micrometeoroid shield ripped off and a solar array failed to deploy as planned.

The long delay in launching the first Skylab crew was completely devoted to finding ways that the astronauts could work in space and fix serious overheating and power-related problems on the workshop. A major part of the fix involved immediately deploying a solar parasol to bring temperatures down inside the workshop. On June 7, working outside the workshop, astronauts cut a strap that had prevented deployment of the solar array.

NASA launched two additional Skylab crews into orbit. On July 28, 1973, astronauts Alan Bean, Owen Garriott and Jack Lousma launched onboard a Marshall-provided Saturn IB vehicle. That mission ended Sept. 25, 1973, after 59 days in space. A third Skylab crew lifted off on Nov. 16, 1973. That crew included astronauts Gerald P. Carr, Edward G. Gibson and William R. Pogue. Their mission ended Feb. 8, 1974, setting a new endurance record.

All three missions yielded outstanding scientific results. Astronauts conducted solar observations using the Skylab Apollo Telescope. Skylab also offered the first opportunity for sustained investigation of the human body in space. A set of materials processing experiments in space produced intriguing results on crystal growth, solidification of alloys and fluid behavior in microgravity. Earth resources observations produced detailed new information from the unique vantage point of space by a variety of remote sensing techniques and astronomical observations.

Image right: A spider spins its web as part of an experiment on Skylab. (NASA/MSFC)



The astronauts also conducted a soft series of scientific experiments on the workshop. They gathered data from dozens of

student investigations during the three missions. The experiments were selected from hundreds of proposals submitted by school children. One in particular addressed the question of whether space spiders could spin webs in microgravity. Another experiment involved observing a fish swimming in water.

When the third crew returned home Feb. 8, 1974, Skylab's scientific mission ended. In the years that followed, the empty Skylab continued to circle Earth. However, solar activity caused its orbit to decay sooner than expected. In the spring of 1979, NASA steered Skylab to its reentry in the Indian Ocean. Small chunks of the space station also plunged into remote areas of Australia, but the reentry resulted in no major human injuries or structural damage.

Skylab reflected human ability to live and work in space for extended periods of time.

Wright is the Marshall Center historian.

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Marshall Center Engaged in Seeking Ideas for Technologies Needed to Bring Home an Asteroid

By Janet Anderson

NASA has been tasked by the Obama administration with developing the first-ever mission to identify, capture and relocate an asteroid. This mission represents an unprecedented technological feat, which raises the bar for human exploration and discovery while helping to protect our home planet and bringing us closer to a human mission to one of these mysterious objects.

In light of the developing mission, the Science and Technology Office at NASA's Marshall Space Flight Center is looking for your ideas on transportation to an asteroid, capturing an asteroid, transporting an asteroid or mining an asteroid -- or just anything related to an asteroid!

Make plans to attend a think tank on asteroid retrieval technologies on May 23 from noon to 4 p.m. in Building 4201, Conference Room 201.

Bonus: Pizza and soft drinks will be served.

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

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Tighter Budget Triggers New NASA, Marshall Center Travel Rules

The NASA sequestration guidance has levied specific controls on agency travel. Following is the Marshall Space Flight Center implementation of the agency guidance regarding travel.

ALL travel must meet the following four criteria:

- The travel is essential and/or necessary (as compared to discretionary or preferable)
- The travel contributes to the agency's core mission
- The employee travelling is substantively involved with the purpose of the trip
- There are no alternative methods of participating (e.g., phone, video conference, or pre-recorded video message).

Hence, ALL travel authorizations must include a description of how the trip meets these criteria in order to be processed by the chief financial officer. Typically this is included in the comments section of a travel authorization request, but may also be accomplished via a separate attachment. Travel preparers have received briefing/instruction for this requirement.

The manner in which the travel is processed depends on the type of travel. In general, only foreign travel, speaking engagements and conference approvals require Marshall Center Director's Office approval. For routine domestic trips, the travel authorizations are processed as before; the only change is the requirement for submittal of documentation of the four criteria. Specifically:

- All travel for conference participation is contingent on approval of agency participation at the conference itself. Selected conferences have already been approved, typically with limits in agency participation. Participation beyond the agency attendance limitation (50) requires a conference waiver, which must be concurred on by the Marshall Center Director's Office and approved by NASA Headquarters Office of the Chief Financial Officer. A waiver will also be required for participation at a conference where agency participation was previously disapproved.
- Along with agency approval, the Marshall Center Director's Office will approve participation at all foreign conferences as well as concurrence on foreign travel requests.
- The Marshall Center Director's Office will approve all domestic conferences sponsored by Marshall where submission of a Form 1784 is required. Travel authorizations for participation at these conferences will be approved through normal processes, and centers may disapprove attendance at agency approved conferences at their discretion.
- Travel for communications and public outreach events is contingent on approval of the communication and public outreach event itself. Virtually all communication and outreach events that require travel will also require a communications and outreach waiver approval by NASA Headquarters, which must be concurred in by Marshall Center/Office of Strategic Analysis & Communications. Upon waiver approval, the associated travel authorization is worked through normal channels if domestic, and must be approved by the Marshall Center Director's Office if foreign or if a speaking engagement.
- Travel for education events is contingent on approval of the education event itself. All education events that require travel will also require an education waiver by NASA Headquarters, which must be concurred in by Marshall Center/Human Capital (Tammy Rowan). Upon waiver approval, the associated travel authorization is worked through normal channels if domestic, and must be approved by the Marshall Center Director's Office if foreign or if a speaking engagement.

Anyone planning to attend a conference (civil servants as well as contractors) should ensure their planned participation is registered into the NASA Conference Tracking System (NCTS) at <http://ncts.nasa.gov>. Data entered into the NCTS is accessible by all Centers Conference POC and used for determination of final participation at upcoming conferences. Entries need to be specific as to the participant's role and justifications clearly stated. NCTS registration is requested at least 60 days before the date of the conference for consideration to participate. Currently Presenters and Session Chairs are given the highest priority. If you need assistance with NCTS registration please contact the Marshall Travel Office/Louise Catalfamo.

Contractor attendance at conferences will be worked through their program or project office.

The Consolidated Sequestration Guidance as well the waiver request forms can be found on the Marshall CFO travel website: <http://cfo.msfc.nasa.gov/travel.html>.

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Marshall Meteoroid Environments Office Shares Images of the Eta Aquarid Meteor Shower

By Janet Anderson



Each spring as Earth passes through the debris trail from Halley's Comet, the cosmic bits burn up in our atmosphere and result in the annual Eta Aquarid meteor shower.

Image left: A composite image of 13 Eta Aquarid meteors from the NASA All Sky Fireball Network station in Mayhill, N.M., the morning of May 6. Clouds seriously hampered the view of the ETA Aquarids this year. Observations reported to the International Meteor Organization indicate an outburst in the early hours of May 6. (NASA/All Sky Fireball Network)

This year the peak occurred on the night of May 5 about 9 p.m. with meteor rates of about 30-40 meteors per hour near peak. Eta

Aquarids zoom around the solar system at speeds near 148,000 mph. Unfortunately, for meteor-shower-observing enthusiasts, clouds seriously hampered viewing of the Eta Aquarids this year.

The Eta Aquarids are pieces of debris from Halley's Comet, the well-known comet that is viewable from Earth approximately every 76 years. Also known as 1P/Halley, this comet was last viewable from Earth in 1986 and won't be visible again until the middle of 2061.

The annual Eta Aquarid meteor shower gets its name because the radiant -- or direction of origin -- of the meteors appears to come from the constellation Aquarius.

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

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The Employee Performance Communication System Gets an Automated Upgrade

On May 6, all NASA GS employees and their supervisors began using a new automated tool known as the Standard Performance Appraisal Communication Environment, or SPACE, to conduct the performance management process. This new tool is part of ongoing efforts to enhance meaningful and effective performance management activities.

Developed by NASA, SPACE automates the Employee Performance Communication System and processes associated with major milestones of the performance appraisal lifecycle such as creating performance plans, conducting midpoint progress reviews and documenting performance ratings.

SPACE is designed to:

- Automate administrative aspects of performance management, providing greater convenience and efficiency for employees and supervisors.
- Improve transparency and promote accountability throughout the performance appraisal lifecycle.
- Facilitate supervisor-employee communication during the performance lifecycle, not replace the importance of interactive discussions between employees and their supervisors.

In addition, SPACE reduces the manual labor associated with performance appraisal activities. It eliminates the need to maintain and monitor paper performance appraisal forms. SPACE also improves accuracy and compliance with the

Employee Performance Communication System processes and timelines by providing real-time data to show where supervisors and employees are in the performance appraisal lifecycle. For example, supervisors have a dashboard view that enables them to quickly assess the status of performance plans, midpoint reviews and ratings for each employee. Human Resources staff and high-level supervisors will have access to reports that show this same information as well.

SPACE improves the quality of performance plans by allowing NASA centers to supply model standards and indicators for elements. Because NASA employees will be able to access their electronic performance plan at any point, they can assess their own performance against the established expectations. SPACE also enables employees to record feedback and track progress on their performance plans.

Piloted at multiple centers to improve the tool for agency-wide implementation for the 2013-2014 performance appraisal cycle, the system is now available for use and can be accessed through the HR Portal under the Systems Launcher.

SPACE training is mandatory for all supervisors and courses will be offered through the end of May. Registration is available through [SATERN](#). Employee demonstrations will be held in Morris Auditorium on June 6 at 9 a.m. and 1 p.m. and will be available via [Desktop TV](#).

For additional questions and guidance contact your Human Resources Representative or Marshall SPACE representative [Wendy Sullivan](#) at 256-544-4945.

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2013 Hispanic Engineering National Achievement Awards Corporation Deadline is May 20

This year marks the 25th anniversary of the Hispanic Engineering National Achievement Awards Corporation, or HENAAC, powered by Great Minds in Science, Technology, Engineering and Math, or STEM. The annual awards conference will be held Oct. 3-5 in New Orleans.

NASA is sponsoring this event and the Stennis Space Center has taken the lead for coordinating the agency's support and participation. This is an opportunity to nominate outstanding professionals, Hispanic and non-Hispanic, agency-wide and from NASA's Marshall Space Flight Center.

For all necessary information regarding the nomination process, visit [here](#). For additional information and questions regarding this process and the event itself, contact [Alberto Duarte](#) or 544-2944.

The deadline for submitting nominations to the sponsor is May 20. However, for agency tracking purposes, please also send an email to [Laura Groce](#) with your nominee's name and award category. Do not send the nomination itself.

For more information about HENAAC and related events, visit:
<https://greatmindsinstem.worldsecuresystems.com/index.htm>.

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Obituaries

Robert (Bob) E. Lindstrom Sr., 84, of Huntsville died May 4. He retired from the Marshall Center in 1985 as an aerospace engineer.

Raymond Gurley, 88, of Huntsville died May 8. He retired from the Marshall Center in 1975 as an aerospace engineer.

James Edward Yates, 89, of Huntsville died May 8. He retired from the Marshall Center in 1981 as a quality control specialist.

Find this article at:

<http://www.nasa.gov/centers/marshall/about/star/index.html>