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## NASA's Space Launch System Completes Preliminary Design Review

By Megan Davidson

NASA has achieved a major milestone in its effort to build the nation's next heavy-lift launch vehicle by successfully completing the Space Launch System (SLS) preliminary design review.

Senior experts and engineers from across the agency concluded July 31 that the design, associated production and ground support plans for the SLS heavy-lift rocket are technically and programmatically capable of fulfilling the launch vehicle's mission objectives.

See [Preliminary Design Review](#) on [page 2](#)



From left, Anthony Antonelli, a NASA astronaut and SLS Program PDR board crew office representative, talks with Tony Lavoie, manager of the Stages Office, and Todd May, manager of the SLS Program, after signing the preliminary design review completion certificate. Some 20 NASA representatives signed the certificate, which validates the SLS Program has demonstrated readiness to proceed to the next major milestone review. (NASA/MSFC/Fred Deaton)

## Marshall Team Invited to Hear Mission Highlights from Expedition 34 Station Commander Kevin Ford

On Aug. 8, Marshall Space Flight Center team members are invited to learn about Expedition 33/34 from a person who experienced it for 144 days -- from Oct. 23, 2012, through March 15, 2013 -- aboard the [International Space Station](#).

Expedition 34 Commander [Kevin Ford](#) will provide mission highlights at 10 a.m. in Morris Auditorium in Building 4200. Have a question? Ask [See Kevin Ford](#) on [page 2](#)



On Oct. 26, 2012, NASA astronaut Kevin Ford smiles for a photo while holding a still camera in the Destiny laboratory of the International Space Station. (NASA)

## Preliminary Design Review *Continued from page 1*

NASA is developing the SLS and Orion spacecraft to provide an entirely new capability for human exploration beyond low-Earth orbit, with the flexibility to launch spacecraft for crew and cargo missions, including to an asteroid and Mars.

“The review had to be incredibly detailed, so our plans for vehicle integration, flight software, test, verification and operations will result in a safe, affordable and sustainable vehicle design,” said Todd May, manager of the SLS Program at NASA’s Marshall Space Flight Center.

This review concludes the initial design and technology development phase. The next milestone in the continuing verification process is Key Decision Point-C, in which NASA will grant the program authority to move from formulation to implementation.

“The agency not only reviews the program internally, but also seeks help from many external sources,” said LeRoy Cain, head of the independent standing review board for SLS. “There are several external NASA stakeholders and organizations -- including Congress, the Office of Management and Budget, and the public -- who require a thorough, truly independent look at these programs as they transition through their lifecycle.”

People from across the country, including experts on 11 different review teams, participated in the design review process, which included analysis of approximately 200 documents and 15 terabytes of data. NASA’s industry partners -- The Boeing Company of Chicago, ATK of Brigham City, Utah, and Aerojet Rocketdyne of Sacramento, Calif. -- also contributed to this successful checkpoint, and will continue to work to meet all program milestones.

## Kevin Ford *Continued from page 1*

him following his presentation, and then join him at the front of the auditorium to get his autograph.

During his stay on the station, Ford supported cargo operations of two [SpaceX](#) Dragon commercial vehicles and three Russian [Progress](#) resupply



*Artist concept of the SLS wireframe design. (NASA/MSFC)*

In July 2012, the SLS Program completed a combined system requirements review and system definition review, which set requirements of the overall launch vehicle system. That successful completion confirmed the SLS was ready to move from concept to design. All element-level preliminary design reviews for the SLS core stage, boosters, engines and spacecraft and payload integration have been completed successfully.

“In two short years from the first announcement of the Space Launch System, we are at a milestone that validates the detailed design and integration of the system,” said Dan Dumbacher, deputy associate administrator for the Human Exploration and Operations Mission Directorate. “You can feel the momentum of the workforce as we produce test hardware today. We are creating a national capability, and we will get this country, and the world, exploring deep space.”

For more information on the SLS preliminary design review -- including a video -- click [here](#).

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

vehicles. Ford also participated in numerous scientific research investigations and performed regular maintenance and operational tasks aboard the orbiting complex.

Read Ford’s preflight interview [here](#).

# Marshall International Space Station Team Receives Achievement Award for Improved Efficiency

By Jena Rowe

Astronauts Mike Fossum and Jack Fischer presented the Marshall Center International Space Station team with the Johnson Space Center Director's Innovation Group Achievement Award on July 30. The team received the award for improving crew efficiency aboard the International Space Station.

“The collaborative relationships that have been developed on the space station have enabled several efficiencies,” said Jay Onken, manager of the Mission Operations Laboratory that operates Marshall’s Payload Operations Integration Center that controls station experiments. “We are honored and excited to play a major and continually increasing role in the effort to maximize space station science.”

During a typical space station expedition lasting about six months, more than 200 experiments are conducted, and as many as 50 new investigations get started. In some cases, to perform an activity crew members had to open a procedure, stowage notes, test plans and other reference materials. This was deemed an inefficiency that needed to be addressed. Several meetings between Johnson and Marshall personnel were initiated along with presentations to key space station planning panels.

“This award spotlights the work by a joint Johnson and Marshall team to better define crew scheduling criteria and standards on the space station,” said Tim Horvath, assistant chief for mission development in Marshall’s Mission Operations Laboratory. “We looked at causes of inefficiency, focused on those that would return the most on the investment, and the result was a clear set of guidelines for crew scheduling. Helping the crew to be more efficient means smoother operations on the space station.”

The team identified the top five activities that could be improved. This included organizing a lengthy sequence of repetitive, short-duration activities into a single, more efficiently executed block of crew time. Making these improvements required updating



*Astronauts Mike Fossum, far left, and Jack Fischer, far right, presented the Marshall Center International Space Station team with the Johnson Space Center Director's Innovation Group Achievement Award on July 30 for improving crew efficiency aboard the International Space Station. (NASA/MSFC/Fred Deaton)*

numerous planning models and all associated procedures. These improvements presently are being implemented in all new payload activities.

“The team is to be commended for the efforts put forward to find and implement efficiencies that will enable the on-orbit crew in accomplishing more science,” said Carmen Price, leader of the payload operations integration function at Marshall. “Collaborative efforts like this with Johnson’s Missions Operations Directorate and our International Partners has become increasingly important for fostering increased utilization.”

*Rowe, an Analytical Services Inc. employee and the Marshall Star editor, supports the Office of Strategic Analysis & Communications.*

# SLS Program's Bruce Askins Takes a Bite Out of the Big Apple

By Megan Davidson

When Bruce Askins entered a contest in December to win free tickets to holiday events at the Opryland Hotel in Nashville, he had no idea he would get picked for an even bigger prize -- a trip to the Big Apple.

Askins, infrastructure management lead for the Space Launch System (SLS) Program at NASA's Marshall Space Flight Center, was the lucky winner of a VIP experience July 21-25 in New York City, with all expenses paid by Disney/ABC. Askins entered the contest through WAAY-TV, the ABC affiliate station in Huntsville.

"I put my name in the contest for tickets to go to Opryland hotel, and that qualified me for the higher-level drawing for the trip," Askins said. "My wife, daughter and I had never been to New York before, so we were so excited to get the word from my daughter's teacher to call WAAY-31, because she saw my name on their newscast as the winner of the contest."

Along with touring famous city sites, including Times Square and the Statue of Liberty, Askins was a special guest on the talk show, "Live with Kelly and Michael."

A paper model of the SLS -- similar to the popular "Flat Stanley" -- even managed to stow away in Askins' luggage and went everywhere from the talk show to shopping down Fifth Avenue.

"This trip was a once-in-a-lifetime experience for me and my family," Askins said. "It meant so much to us to get to see places like the Statue of Liberty and the 9/11 Memorial. This will be a trip we will never forget, and I feel so blessed to have won such a great prize!"

For more information on SLS, click [here](#).

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



Bruce Askins, infrastructure management lead for the SLS Program at the Marshall Center, holds a paper model of the SLS in New York City's Times Square. (Special to the Star/Bruce Askins)



The SLS visits Lady Liberty in New York City. (Special to the Star/Bruce Askins)



From left, Bruce Askins' daughter, Lauren, and wife, Lisa, in New York City. (Special to the Star/Bruce Askins)

# 'Women@NASA' Features Three Marshall Team Members

By Jena Rowe

NASA Marshall Space Flight Center team members Pamela Bourque, Stephanie Lacy-Conerly and Victoria Garcia are featured on [Women@NASA](#) - a website created to showcase and celebrate women across the agency who contribute to NASA's mission in many ways.

The [Women@NASA](#) website was created in response to an [Executive Order](#), signed March 11, 2009, establishing the [White House Council on Women and Girls](#). With a membership including the head

of every federal agency and major White House office, the council aims to provide a coordinated federal response to issues that have a distinct impact on women and girls. For more information on [Women@NASA](#), visit [here](#). For stories of other women at NASA, visit [here](#).

*Rowe, an Analytical Services Inc. employee and the Marshall Star editor, supports the Office of Strategic Analysis & Communications.*



*Pamela Bourque, assistant chief counsel for general law, grew up in a small Cajun town in Louisiana and never dreamed that she would one day be an attorney at NASA. She credits the influence of her parents, who encouraged her to do well in school so she would have opportunities that they never had. Today, Bourque handles cases regarding labor and employment law, ethics, fiscal law and litigation. Highlighting reasons why she enjoys working at the center, Bourque felt that Marshall has been "a very empowering and wonderful place to grow as an attorney." To watch the [Women@NASA](#) video of Pamela Bourque, visit [here](#). (NASA/MSFC)*



*Stephanie Lacy-Conerly, administrative officer in the Space Launch Program at Marshall, thought she wanted to be a teacher until watching a launch during high school sparked her interest in working for NASA. Lacy-Conerly's biggest influence was her mother, who owned her own business and taught her how to be determined -- especially while her mother battled colon cancer. Lacy-Conerly would like younger generations of women to know their dreams are not too big and that a good education creates a foundation that can never be taken away. To watch the [Women@NASA](#) video of Stephanie Lacy-Conerly, visit [here](#). (NASA/MSFC)*



*Victoria Garcia, systems engineer in Marshall's Engineering Directorate, is an operator of the Virtual Environments Laboratory and creates models for performance and analysis. Garcia currently is working on the next-generation version of the space station's life support system. Born deaf, she reflects on the influence of her mother, who always told her "even though you're deaf, you can be anything you want to be." Garcia stresses the importance of working hard and having goals in life. She would like to tell the next generation not to let any barriers stop them from achieving their goals. To watch the [Women@NASA](#) video of Victoria Garcia, visit [here](#). (NASA/MSFC)*

# Join NASA's Perseid Meteor Shower Chat on Aug. 10

By Janet Anderson

The Perseid meteor shower peaks on the night of Aug. 11 through the morning of Aug. 12 and, thanks to the Internet, everyone can enjoy a summer evening of sky watching regardless of the weather. Perseid rates can get as high as 100 per hour, with many bright meteors and fireballs visible in the night sky. Early on, a waxing crescent moon will interfere slightly with this year's show, but it will have set by the time of the best viewing, which is just before dawn.

On the night of Saturday, Aug. 10, astronomer Bill Cooke from the Meteoroid Environment Office at NASA's Marshall Space Flight Center will answer questions about the 2013 Perseid meteor shower via a live Web chat. To join the chat, return to [this page](#) and simply log in. Cooke will be available to answer questions from 10 p.m. CDT Aug. 10 until 2 a.m. CDT on Aug. 11.

A live broadcast of the Perseid meteor shower will be available via Ustream beginning Aug. 10 at 7 p.m. CDT and then again on Aug. 11. The live feed is an alternative for stargazers caught with bad weather or light-polluted night skies.

"The best opportunity to see the Perseid meteor shower is during the dark, pre-dawn hours of Aug. 12," said Cooke, lead of NASA's Meteoroid Environment Office at Marshall. "For optimal viewing, find an open sky, because Perseid meteors can appear anywhere in it. Lie on the ground -- maybe on a sleeping bag, or lawn chair -- and look

straight up. It is important to be far away from artificial lights and allow your eyes time to adjust to the darkness, which can take up to 30 minutes."

The Perseids have been observed for at least 2,000 years and are associated with the comet Swift-Tuttle, which orbits the sun once every 133 years. Each year in August, Earth passes through a cloud of the comet's debris. These bits of ice and dust -- most over 1,000 years old -- burn up in Earth's atmosphere to create one of the best meteor showers of the year. The Perseids can be seen over most of the world, but the best viewing opportunities will be in the northern hemisphere. Those keeping track of the meteors will see that they radiate from the direction of the constellation Perseus.

If you capture some stellar images of the Perseid meteor shower, please consider adding them to the [Perseid Meteors group in Flickr](#). Who knows? Your images may attract interest from the media and receive international exposure.

To join the web chat, please follow this link: [http://www.nasa.gov/connect/chat/perseids\\_2013a.html](http://www.nasa.gov/connect/chat/perseids_2013a.html)

*Anderson is a public affairs officer in the Marshall Space Flight Center Office of Strategic Analysis and Communications.*

## Major Review of Space Launch System on NASA-TV

The successful completion of the preliminary design review of the [Space Launch System](#), managed at NASA's Marshall Space Flight Center, is featured on "[This Week @NASA](#)," a weekly video segment broadcast on NASA-TV and posted online.

Senior experts and engineers from across the agency confirmed the SLS design, production process and ground support plans are capable of achieving mission objectives. More than 700 people

from across the agency -- including 197 document developers and more than 250 experts on 11 different review teams -- spent thousands of hours preparing for the review.

For a look at the latest artist's renditions of the new rocket system, and to see what is next in the development of SLS, watch the latest edition of [This Week @NASA](#) at the [NASA-TV YouTube channel](#).

## Obituaries

**Elbert Rudder**, 95, of Madison, died July 21. He retired from the Marshall Center in 1973 as an aerospace engineer.

**Jim Cranford**, 83, of Fayetteville, died Aug. 2. He retired from the Marshall Center in 1977 as an aerospace engineer. He is survived by his wife, Becky Cranford.

**Michael Susko**, 92, of Monessen, Pa., died Aug. 2. He retired from the Marshall Center in 1994 as an aerospace engineer.

**Tully L. Logan**, 91, of Huntsville, died Aug. 1. He retired from the Marshall Center in 1984 as a model maker. He is survived by his wife, Annie Lee Perdue Logan.

**William Kenneth "Ken" Fikes**, 82, of Brent, died Aug. 2. He retired from the Marshall Center in 1994 as an aerospace engineer. He is survived by his wife, Judy Harlow Fikes.

**Walter Paul Gibson Jr.**, 86, of Cleveland, Tenn., died Aug. 4. He retired from the Marshall Center in 1982 as a data analyst.