

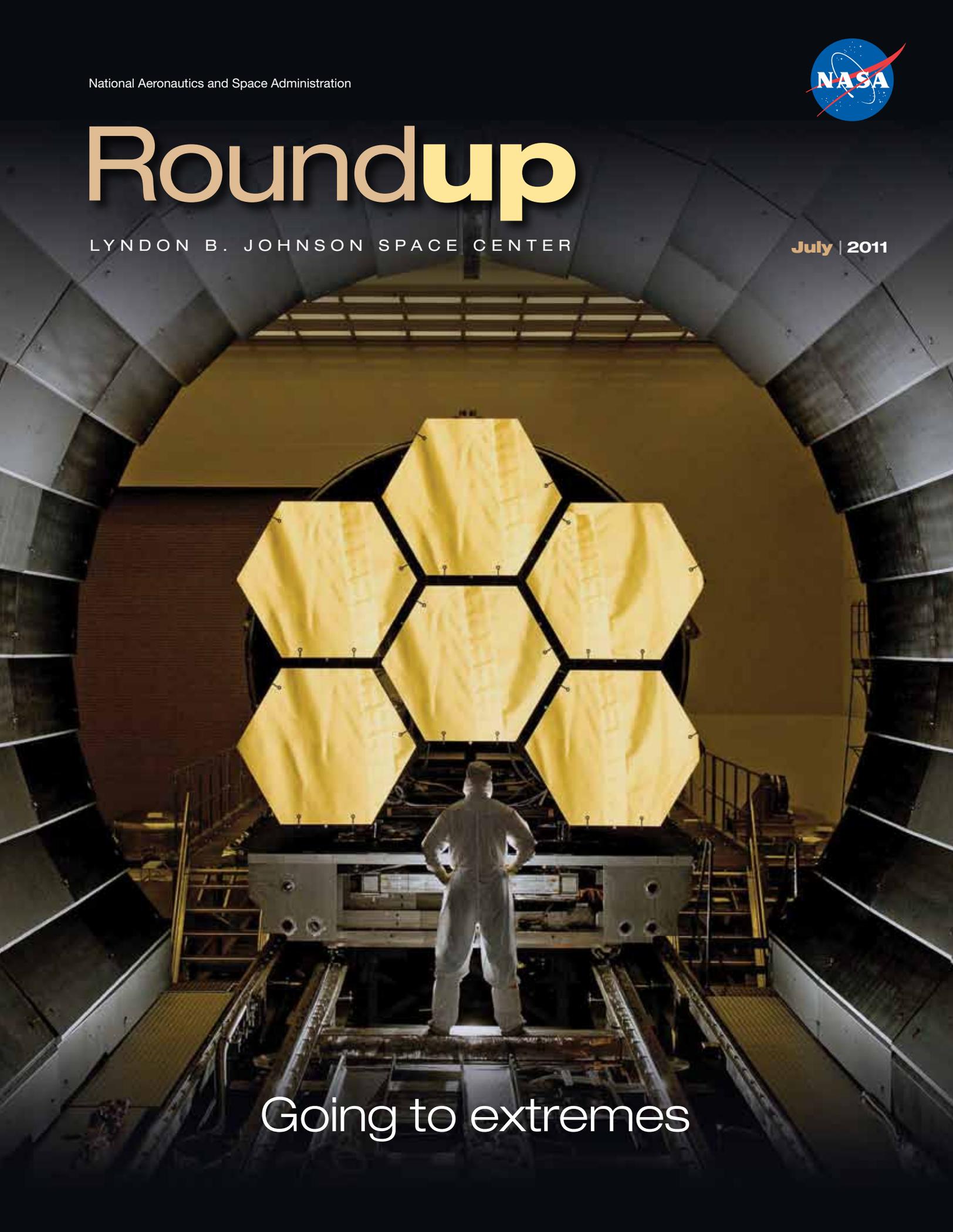
National Aeronautics and Space Administration



Roundup

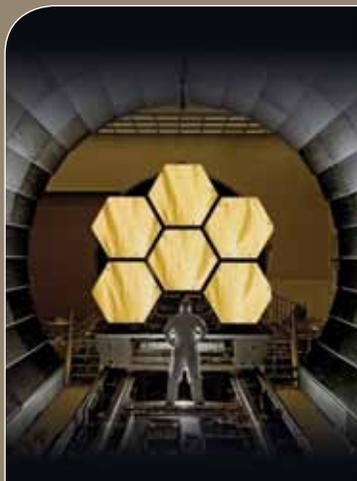
LYNDON B. JOHNSON SPACE CENTER

July | 2011



Going to extremes

JSC Director



On the cover:

NASA engineer Ernie Wright looks on as the first six flight-ready James Webb Space Telescope primary mirror segments are prepped to begin final cryogenic testing at Marshall Space Flight Center. This represents the first six of 18 segments that will form the telescope's primary mirror for space observations. Engineers began final round-the-clock cryogenic testing to confirm that the mirrors will respond as expected to the extreme temperatures of space prior to integration into the telescope's permanent housing structure.



NASA/PHOTO JSC2011E062035

Photo of the month:

STS-135 crew members pose for a photo during a cake-cutting ceremony in the Jake Garn Simulation and Training Facility at Johnson Space Center. Pictured are NASA astronauts Chris Ferguson (center left), commander; Doug Hurley (center right), pilot; and Rex Walheim and Sandy Magnus, both mission specialists.



NASA PHOTO

Although hurricane season officially started last month, this is the time most of us start keeping a wary eye on the Gulf of Mexico and the Atlantic for developing tropical storms. August and September are the months with the most severe hurricane threats to our Gulf Coast. For those of you who are new to this area, and as a reminder for all of us, I offer a few personal lessons learned after many years of living in hurricane country.

- Get prepared now. There are numerous hurricane preparedness checklists available, including our 2011 Johnson Space Center Hurricane Prep Kit at <http://jscsos.com>. If you wait until a hurricane threatens, you will be competing with several thousand of your closest friends for rapidly disappearing supplies.
- If you have children, think very seriously before deciding to ride out a hurricane. It can be frightening for children to hear 100+ mph winds battering the only homes they know and watching the concern on their parents' faces. My wife and I rode out Hurricane Alicia in 1983 with a 9-year-old and a 4-year-old, and it's a memory I wish they could forget.
- If you decide to evacuate, do so promptly. Hurricane Rita taught us the nightmare of evacuating millions of people from Houston and Galveston in the suffocating heat and humidity of our summers. While evacuation procedures have been improved, the sooner you go, the better. Plan on sitting on the highways for many, many hours.
- We will close the center as soon as we reasonably can when a hurricane threatens. The safety of our employees and our families is always paramount. I would recommend that you consider setting aside a couple days of vacation for "early evacuation" if you have small children. Know exactly where you want to go and how you're going to get there.

I don't want to be an alarmist, but human nature makes us think that since we got hit hard by Hurricane Ike just three years ago, the odds are that we won't get hit again soon. Mother Nature doesn't play by the odds, and we could easily get hit again at any time. Ike was technically only a Category 2 hurricane. Imagine what a Category 3, 4 or 5 would be like. Don't just imagine—be prepared.

Mike

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Education is hip to partnerships



By Rachel Kraft

What do “Sesame Street,” the Department of Energy, LEGO and the state of Washington have in common? They have each partnered with Johnson Space Center’s Education Office to expose students to science, technology, engineering and math (STEM) and share space-related content in unique and creative ways with future scientists and explorers.

“Partnering with others allows JSC Education to reach farther in sharing NASA’s mission with students and teachers,” said Linda Smith, program manager for NASA High School Aerospace Scholars. “Limited resources are a reality for us, but by partnering, our resources can be leveraged and allow parties to have a greater impact in meeting our shared but respective goals.”

The Texas High School Aerospace Scholars Program, an interactive, online learning experience for students that culminates in a six-day visit to JSC to design a human mission to Mars, has been a hallmark of Education’s initiatives for years. Aerospace Scholars Programs in Washington, Virginia and Idaho also center on NASA content and involve a Mars mission to push student imagination and creativity and to provide hands-on robotics learning.



NASA/PHOTO JSC2011E034009

Participants in the Reduced Gravity Flight Education Program test their experiment on an April flight. In July, a partnership with the Department of Energy will bring teams to fly energy-related experiments in the reduced gravity environment.

“NASA JSC partners with other states to share a proven model that encourages high school juniors to pursue STEM degrees and, ultimately, careers to support the high-tech needs of each state,” Smith said.

Partnerships have been established with universities, space grant consortiums and industry to offer sessions to students from each state. The state of Washington recently selected more than 250 high school juniors to participate in the distance learning program with NASA-designed curriculum.

In 2010, Teaching From Space worked closely with the producers of “Sesame Street” to increase inspiration toward science and math among the 120 million children who view the TV show annually.

During his stay aboard the International Space Station as part of Expedition 23, Soichi Noguchi filmed four educational videos that were aired on the program. During one episode, Noguchi held up the letter “F” to represent the word “float” while floating around the space station. In a later episode, he used items on station to explain to a “Sesame Street” character what the word “float” means. Several additional videos were filmed.

Teaching From Space, NASA Headquarters and International Space Station National Lab Education are currently working with LEGO to collaborate on a Space City series. Several LEGO kits flew to station aboard STS-134, and station crew members will film several educational videos using the kits to demonstrate how simple science concepts work differently in microgravity.

“Both NASA and LEGO are committed to the goal of inspiring students using creative teaching strategies combined with tactile models to stimulate independent thought, engagement in classroom activities beyond teacher-led lessons, and encourage interest in STEM

(continued on page 12)



NASA/HARNETT JSC2010E114705

Students participating in the High School Aerospace Scholars Program work on their Mars rover projects at JSC.

Endeavour leaves behind a legacy with STS-134



By Jonathan Laxmi

Centuries ago, humans were hoping to observe and understand Venus' infrequent orbit between the Earth and the sun to determine the distance between them. To accomplish this, a few courageous explorers braved the waters of the South Pacific in search of answers about the universe. We've come a long way since then. Named after the first ship that 18th century explorer, navigator and astronomer James Cook commanded, Space Shuttle *Endeavour* made its 25th and final flight to space for STS-134.

environs of space and worked together to install and connect an antenna for the External Wireless Communication System. Feustel and Fincke continued outfitting the space station complex during the second spacewalk, and before the third excursion, tested a new preparation procedure involving light exercise designed to increase metabolic rate and purge nitrogen from the bloodstream. Chamitoff and Fincke performed the final spacewalk, continuing maintenance and transferring *Endeavour's* orbiter boom sensor system to the station. That historic trek also marked the 1,000th hour of spacewalking for assembly and maintenance of the space station.

Midway through the mission, Expedition 27 Commander Dmitry Kondratyev and Flight Engineers Cady Coleman and Paolo Nespoli departed for Earth. This was the first Soyuz departure in history that took place while a space shuttle was docked to the station.

After more than 11 days of joint docked operations, *Endeavour* undocked from station and simulated re-docking within about 950 feet using the Sensor Test for Orion Relative-navigation Risk Mitigation, or STORRM, that NASA will use to develop the next crewed space vehicle.

STS-134 returned home for a smooth, early morning landing at Kennedy Space Center on June 1. Though *Endeavour* will not again use her exploring namesake, she leaves behind a spaceflight legacy that will continue to enrich the future.



NASA/PHOTO

Attired in training versions of their shuttle launch-and-entry suits, these six astronauts take a break from training to pose for the STS-134 crew portrait. Pictured clockwise are NASA astronaut Mark Kelly (bottom center), commander; Gregory H. Johnson, pilot; Michael Fincke, Greg Chamitoff, Andrew Feustel and European Space Agency's Roberto Vittori, all mission specialists.

Endeavour set sail for the skies on May 16. Her crew of Commander Mark Kelly, Pilot Gregory Johnson and Mission Specialists Michael Fincke, Andrew Feustel, Gregory Chamitoff and the European Space Agency's Roberto Vittori, perfectly executed a 16-day mission.

One highlight included the veteran crew successfully delivering the Alpha Magnetic Spectrometer-2, a particle physics detector designed to operate from the station and search for various types of unusual matter such as dark matter and antimatter, to the orbiting laboratory. Also aboard were station spare parts on the ExPRESS Logistics Carrier 3, including robotics components and communications hardware.

As the last shuttle assembly flight in support of the station, the crew made four spacewalks that focused on station maintenance and experiment swap out—the final four that will be conducted by shuttle crew members.

During the first spacewalk, Feustel and Chamitoff retrieved and installed experiments involving materials exposed to the harsh



NASA/PHOTO

Photographed from a shuttle training aircraft, Space Shuttle *Endeavour* and its six-member STS-134 crew head toward Earth orbit and rendezvous with the International Space Station on May 16.

Sun seemingly starved for attention



By Texas Twister

Apparently all this talk about exploring really far-out destinations, like Mars or asteroids, has the sun feeling a bit left out. So it should come as no surprise that the sun finally did what your child has probably already done—“acted out.” Except, instead of calling it a hissy fit, we are referring to it as a “coronal mass ejection.”

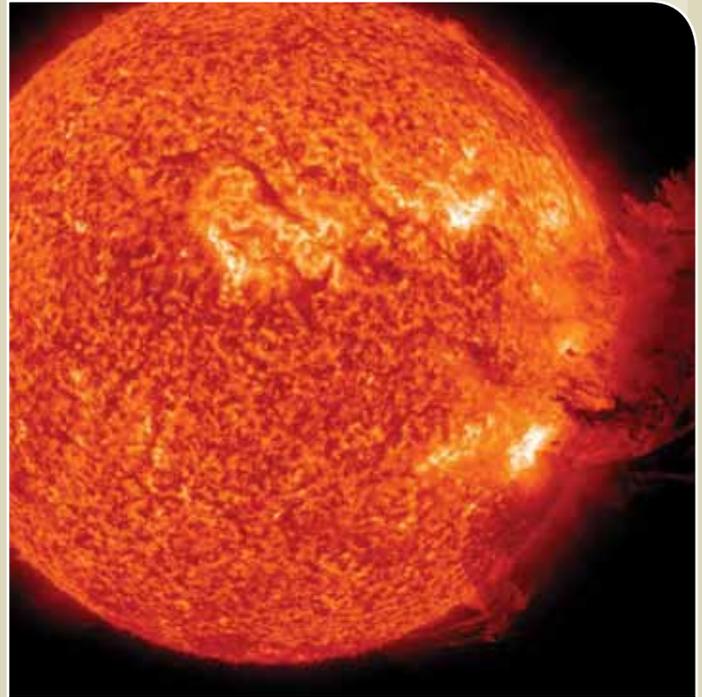
This amazing event happened early June, and we’ve got the videos to prove it. But until you get there, here’s the scientific version of what went down.

The sun unleashed an M-2 (medium-sized) solar flare, an S1-class (minor) radiation storm and a spectacular coronal mass ejection on June 7 from sunspot complex 1226-1227. The large cloud of particles mushroomed up and fell back down, looking as if it covered an area of almost half the solar surface.

Dear sun: Count us impressed. No need to do anything wild, like sign up for your own Twitter account.



Coronal mass ejection as viewed by the Solar Dynamics Observatory on June 7.



NASA/SDO PHOTO



By Catherine Ragin Williams

Johnson Space Center’s rock yard hosts university teams during robotic competition



NASA/STAFFORD_JSC2011E048769

University teams put their mini rovers to the test in JSC’s rock yard.

From May 23 to 26, seven university teams brought their sweat and tears to Johnson Space Center in the form of rover prototypes for the Revolutionary Aerospace Systems Concepts Academic Linkage Exploration Robo-Ops engineering competition.

The teams, which included the Universities of Arizona, Buffalo, Maryland, Pennsylvania, Texas at Arlington, Utah and Worcester Polytechnic Institute, were challenged to design and build planetary rovers. However, these rovers were not able to skirt by with looks alone—they also had to perform a series of tasks in an environment that shared characteristics with the moon and Mars.

Cameras transmitted video from the rovers during the event back to the teams’ home universities and the general public. Relying on the video feeds, the teams controlled the robotic rovers remotely from universities around the country.

The first-place team will get a prize befitting of their efforts—financial support to attend NASA’s Desert Research and Technology Studies tests scheduled in the fall. The winning students will be further inspired watching NASA researchers conduct technology development studies and analog testing in a remote Arizona desert on a much grander scale.

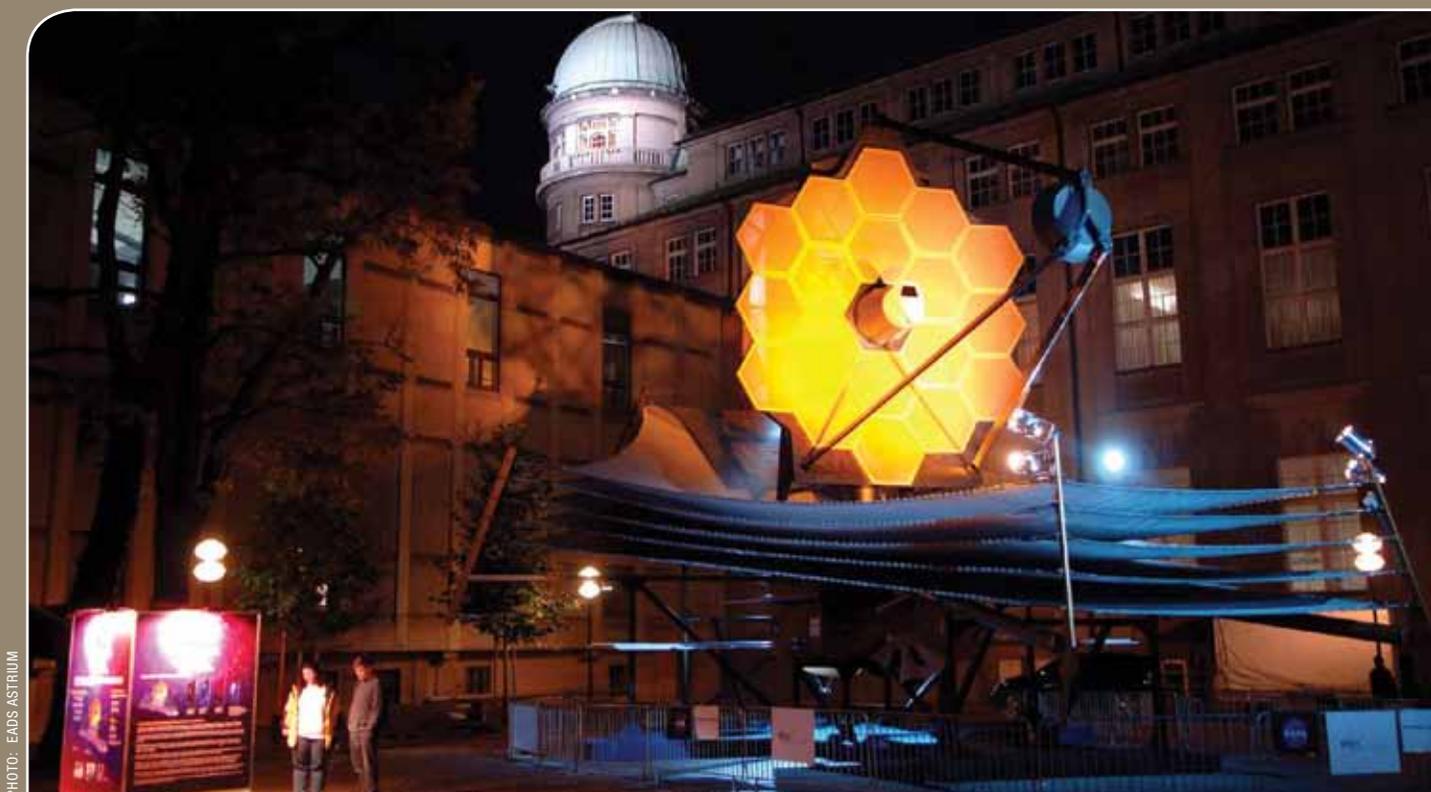
Building 32 vacuum chamber gets an extreme makeover for the **James Webb Space Telescope**

When Johnson Space Center's Thermal Vacuum Chamber A is completely modified to welcome the James Webb Space Telescope (JWST) for testing, it will be cold enough for carolers to start singing a new tune: "Baby, it's cold *inside*."

How cold? Twenty Kelvin (K) cold ... or colder than many of us can even fathom.

As Cerimele noted, observers would be able to lean against the chamber, and it would feel a cozy 65 degrees Fahrenheit.

Early chamber testing of pathfinder hardware will begin in 2014. The JWST flight article will come to Johnson Space Center toward the tail end of its processing, around 2015/2016, where it will spend at least 90 days being tested inside the chamber. Though the



A full-scale model of the JWST, on display in Munich, shows just how large the optical telescope will be upon completion.

"A lot of this construction work being done right now is to help make Chamber A more capable than it was before," said Mary Cerimele, deputy project manager for the JWST Chamber Test Project. "Before, it could get to cold temperatures of 90 K, but once we complete the work, we'll be able to get down to 20 K."

In simpler terms, water freezes at 273.15 K. Chamber A will be *much* colder than that.

Chamber A's mind-boggling ability to reach that harsh of a temperature will serve a good purpose. It will provide an equivalent hostile environment for the JWST to experience before it is released into an unforgivable cosmos.

"They're going to run (the JWST) through all its paces once it's in there," Cerimele said. "An interesting side note to that is once we have the chamber (ready) and it's cold, it'll take about 30 days for the telescope itself to drift down to temperatures cold enough to start testing, because it has to slowly give up all its heat. But even after we get there, the outside of the chamber will be room temperature."

mission will not begin until 2018 at the earliest, JSC has been working to ready Chamber A for the telescope's arrival.

"We spent about three years in a design mode for the modifications and the upgrades," Cerimele said. "Since 2009, we've been in either a deconstruction or reconstruction mode for virtually all of the systems in chamber A—to bring them up to state-of-the-art, essentially."

Part of those upgrades include changing out equipment to ensure a perfect cleanroom environment for the JWST. Though, considering the size of



A fully functional, 1/6th scale model of the JWST mirror in optics testbed.



By Catherine Ragin Williams

And let us not forget Thermal Vacuum Chamber B

Chamber B is not quite as enormous in size, and test articles enter from above. (Just envision a huge kettle with a lid, except in this one we are cooking up the future of space exploration.)

“It takes these two cranes, 50 tons each, to lift the head, and then things go in over the top,” Halligan said.

And while chamber A does have the “wow factor” of its 40-ton, 40-foot-in-diameter door, where objects enter from the side, chamber B is still human rated and capable of testing with suited subjects. For missions, chamber B has been an invaluable resource to the space program.

Fun Fact:

The pair of chambers are designated National Historic Landmarks.



NASA/PHOTO_JSC2007E038356



NASA/PHOTO_JSC2007E038357

Building 32’s Thermal Vacuum Chamber A will be center stage for hosting the JWST test article. Once the 40-ton door seals in the telescope, it will undergo testing in a simulated space environment that was previously unattainable within a chamber of its size.

the chamber and surrounding high bay in Building 32, jokes have been made regarding the semantics of “room.”

“(The cleanroom) is going to go as high as it can, not interfering with the movement of the cranes,” said Mary Halligan, Building 32 facility manager. “It’s actually going to attach to the structure of the chamber. They called it a ‘clean tent’ at first—now it’s a ‘clean structure.’”

“The chamber itself is also going to be able to filter air in there. You can’t have dust and dirt and volatiles that will interfere with the ability

diffusion pumps on here before, oil-based pumps. Well, oil doesn’t work real well with the mirrors, so we had to remove the giant pumps and replace them with more modern technology that doesn’t require oil.”

When modifications are complete, Chamber A will be the most behemoth and temperature-extreme vacuum chamber in the world.

“The idea after James Webb is that we’ve enhanced the capability of this facility so much, we’ll be able to do things that we weren’t able to do before,” Halligan said.



NASA/PHOTO_JSC2007E14355

Thermal Vacuum Chamber B is still human rated and allows for testing of smaller articles and suited subjects.

of the telescope. The mirrors are the most critical part of that.”

“Since James Webb is an optical telescope, cleanliness is very important,” Cerimele said. “A lot of the things we had to do for the chamber upgrades reduce the probability of that. We had 18

The James Webb Space Telescope

The JWST is a large, infrared-optimized space telescope working toward a 2018 launch date. Webb will find:

- The first galaxies that formed in the early universe, connecting the Big Bang to our own Milky Way Galaxy
- Peer through dusty clouds to see stars forming planetary systems, which will help us learn about our own solar system

Other fun facts:

- The JWST’s instruments are designed to work primarily in the infrared range of the electromagnetic spectrum, with some capability in the visible range
- Webb will have a large mirror 6.5 meters (21.3 feet) in diameter and a sunshield the size of a tennis court
- The telescope will reside in an orbit about 1 million miles from Earth
- The JWST was named after a former NASA administrator

Super Guppy still provides a ‘big’ service for government



By Neesha Hosein

The Super Guppy Turbine (SGT) is an aircraft that has a proud history of service to the space program and is the last generation of Guppy aircraft ever produced. It has transported everything from Saturn rockets to International Space Station modules and continues to support NASA today.

“With its unique capabilities, it has attracted the attention of other government entities as well,” said David Elliott, Super Guppy project manager. “In recent years, the Guppy has been working with the Department of Defense and government contractors to move aircraft and large components around the continent.”

Recent activity

In March of this year, the Guppy completed the delivery of the last of 15 T-38 Talons for the United States Air Force. These jets were moved from the Aircraft Maintenance and Regeneration Group in Tucson, Ariz.,



NASA/GESEMAN JSC2010E068832

The Super Guppy Turbine is the last generation of Guppy aircraft ever produced (and only four were ever made).

to a rework facility at Holloman Air Force Base in New Mexico, where they will be restored to service as air-to-air training targets.

In May, the SGT was committed to move more than 18 Marine Corp V-22 Osprey fuselages from the Boeing factory in Philadelphia to the Bell Helicopter facility in Amarillo, Texas, for final assembly.

When was the Super Guppy born?

NASA has employed three different versions of the SGT. The first one flew for NASA back in 1962. The Guppy that is in operation today was assembled in France by Airbus Industries in 1983 and flown by them until 1997. However, the original airframe from which this aircraft was converted was a Boeing C-97 built in 1953.

What is it made of?

The C-97 airframe was itself derived from the B-29, so parts of the wings and fuselage can be attributed to the B-29. The pressurized portion of the front fuselage, including the flight station, the main landing gear and the aft fuselage below the horizontal stabilizer, are all C-97 parts. The nose gear is a Boeing 707 gear turned 180 degrees around. The engines are off a P-3 and the props are off a C-130. The rest was built specifically for the aircraft.

“Everyone involved with the Guppy considers themselves extremely lucky to be flying this piece of history, and we work hard to take care of her,” Elliott said.

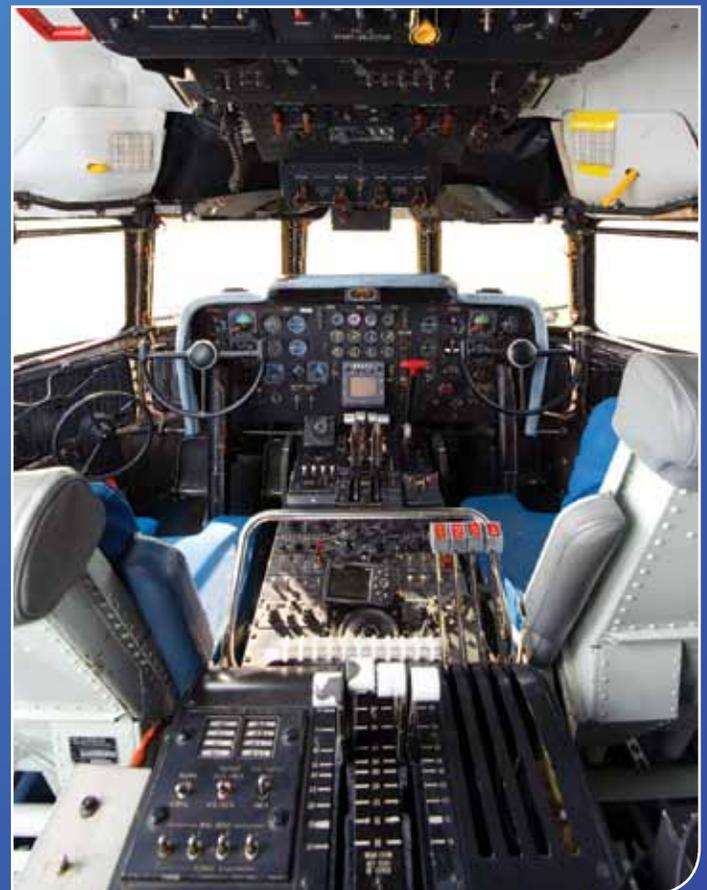
Is the Guppy one of a kind?

Five different variations of Guppy aircraft have existed, each with its own unique résumé. Four like the SGT were built, but this is the last one flying. The other three were retired to museums in Germany, France and England.

Guppy is the only one of its kind that is still operational. An interesting tidbit is that “when they built our aircraft, they actually had to cannibalize a piece (the aft lower fuselage) off the original pregnant Guppy, which in turn had been taken off one of the first Boeing 377s,” Elliott said. “The Boeing 377 Stratocruiser was the civilian version of the C-97, and that piece I am referring to came off the third one ever built back in 1948.”

Elliott explained that the transportation of oversized cargo has always been a tremendous problem for logistics planners in government and private industry. The physical limitations of railroad tunnels, narrow roads, low bridges and power lines make overland shipment of such cargo virtually impossible.

“The Super Guppy continues to be one of the only practical options for oversized cargo, and continues to support America’s space program today,” Elliott said.



NASA/GESEMAN JSC2010E068841

A cockpit view of the Super Guppy Turbine.

Make time for parking lot safety



By Neesha Hosein



NASA/BLAIR - JSC2011E054441

The onus is on vehicles and pedestrians to be aware of their surroundings at all times to minimize close calls and accidents.

Just like roadways, crosswalks and intersections, the parking lots are another area with accident potential and the need for a safety reminder. With the amount of emphasis placed on vehicle and pedestrian safety, it should be duly noted that certain roadway rules and etiquette apply in a parking lot as well.

“Watch out for slip and trip hazards,” said Dan Clem, Johnson Space Center safety engineer. “This is the most commonly reported parking lot issue in the Close Call system. Make sure you avoid any hazards you see. Report them to Work Control for repairs, and submit a Close Call report for extra accountability.”

Pedestrians

Pedestrians should use the pedestrian lanes when provided. These are the walkways seen in between parking lanes in many parking lots here at JSC. Making use of these lanes will help avoid walking into traffic lanes and reduce the chance of getting hit.

“Be extra vigilant when walking or driving in a parking lot,” Clem said. “It is hard to see around SUVs with tinted windows. There may be other obstructions to a driver’s vision. Watch for backing vehicles. Look both ways when emerging from between vehicles to cross a traffic lane, as drivers may not see you behind a parked vehicle.”

Another distraction is the use of cell phones while walking. Texting while driving is an obvious no-no, but texting while walking also reduces pedestrians’ level of awareness of their surroundings. It is impossible to have one’s eyes on a handheld device and the walking path at the same time. A good practice for pedestrians is to prioritize reaching a safe zone, out of the way of traffic, before reaching for the cell phone.

Drivers

When operating a vehicle in a parking lot, the driver should back out slowly from parking spaces, especially if unable to see around the adjacent vehicle.

“Observe the 15 mph speed limit and directional arrows,” Clem said. “Speeding and going the wrong way in parking lots have been reported in Close Calls.”

When backing out of parking spaces, know that the cars passing in the lanes have the right of way, but both parties should use diligence in judging the scenario.

Clem also advises when leaving a parking lot to “watch for cars and pedestrians on the road. Be aware of pedestrian zones and times, as you may not be able to see the flashing lights. Times are usually: first thing in the morning, lunchtime and quitting time.”

Driving while using a cell phone is prohibited on site, but it is especially important to avoid distractions in a parking lot, even if you are a pedestrian.

Points to remember

- The parking lot speed limit is 15 mph
- It is illegal to back into parking spaces, per JSC policy
- Generally, the vehicle backing out of a parking space does not have the right of way and should yield to vehicles driving, but use common sense
- Make use of the pedestrian walking lanes to avoid maneuvering among traffic whenever possible
- Avoid the use of cell phones while walking to maximize awareness of surroundings

Resources

The following links offer more helpful information:

Safety and Health Handbook for driving, walking and bicycling:

<http://jschandbook.jsc.nasa.gov/docs/JPR1700-1ch5-3.pdf>

JSC Vehicle Code:

<http://www6.jsc.nasa.gov/ja/js/js4/external/docs/vehcode.doc>



Spotlight Peggy Carruthers

Lead, International Space Station Education and Outreach, NASA External Integration Office

Q: Coolest part of your job?

A: Going out to the schools and talking about the International Space Station Program. The students are so interested in your presentation, and when it is over and all their hands go up to ask questions, it is rejuvenating. It reminds you of why you love where you work.

Q: Favorite hobbies or interesting things you do away from the office?

A: I really enjoy participating in both of my sons' school activities, such as president of the Victory Lakes Intermediate Athletics Booster Club and the Band Booster Club. I also spend my TV time watching sports.

Q: What was your first job (not necessarily at NASA, but ever)?

A: I started working for NASA in 1983 as a personnel clerk at Glenn Research Center in Cleveland.

Q: If you could trade places with any other person for a week, famous or obscure, living or dead, real or fictional, who would it be?

A: I would have to choose Oprah Winfrey. Her ability to communicate effectively with some of the most intriguing individuals, famous and non-famous, astounds me. The knowledge gained from the interaction with all these individuals is immeasurable. It would also be wonderful to have achieved so much financial success that you could actually use those dollars to change people's lives forever.

Q: What would people be surprised to know about you?

A: I have worked for NASA for 28 years and was a journeyman aerospace mechanic at Glenn Research Center for 17 of them.

Q: What is your favorite quote or motto?

A: "Yesterday's the past, tomorrow's the future, but today is a gift. That's why it's called the present."

Q: What would I find in your refrigerator right now?

A: Lots of stuff to make a salad.

Q: What is your favorite sport?

A: Basketball, basketball, basketball ... love it!

Q: Last good book or article you read?

A: "The Alchemist" series. I have a tendency to read the same books my sons do, so we can enjoy the books together and have some really interesting conversations about the characters.

Q: Favorite travel destination (or place you'd love to go if given the opportunity)?

A: As a family, we went on a 14-day cruise to Europe. The people, their lifestyles and architecture were amazing. Definitely Europe!

Q: Favorite TV show and why?

A: Currently, I am intrigued by two shows: "Camelot" and "Game of Thrones." I have always loved the stories of King Arthur and medieval times.

Q: What was your proudest moment?

A: My proudest moments have turned into years, watching two beautiful gifts from heaven continue to grow up and turn into two amazing young men.



NASA/HARNETT JSC2009E286915

Peggy Carruthers engages in her passion for education outreach with children at the annual Toys for Kids event at the George R. Brown Convention Center.

Q: When did you first become interested in space, and why?

A: When I initially decided to work for NASA, it was just a job to me. I really had no interest in the space program specifically. I did not grow up where the community was so involved in space (even though we had a NASA center within 30 miles of my home). I looked at my job as somewhere to start my life as an independent individual. After working for NASA for a year, I began to take more interest in the space program, but it wasn't until I moved to Houston 10 years ago when I began to have a profound interest in all aspects of space due to the community involvement and dedication here at Johnson Space Center.

Q: Describe yourself in three words.

A: Organized, appreciative and blessed.

Q: What do you hope is NASA's next giant leap?

A: My hope for NASA's future is to continue to use the amazing skill and dedication level of the all the individuals who support the space program (civil servants and contractors) in pursuing space exploration as an opportunity to increase our knowledge of the universe we live in.

WANTED!

Do you know a JSC colleague or team that does something extraordinary on or off the job? Whether it's a unique skill, interesting work, special professional accomplishment, remarkable second career, hobby or volunteerism, your nominee(s) may deserve the spotlight!

The Roundup shines the light on one special person or team each month, chosen from a cross section of the JSC workforce. To suggest "Spotlight" candidates, send your nomination to the JSC Roundup Office mailbox at jsc-roundup@mail.nasa.gov. Please include contact information and a brief description of why your nominee(s) should be considered.

Bring Our Children to Work Day

On June 13, approximately 250 of our future explorers, scientists and engineers were on site for Bring Our Children to Work Day. Parents brought their kids to the Teague Auditorium to see a presentation by Johnson Space Center Education's Digital Learning Network and another on spacesuits. Children also learned how to build their own rockets and saw a film showing from PBS' "Nova Science Now." They also had an opportunity to see space-themed artwork from children and teens from all over the world. If kids brought back a completed passport confirming that they attended all the activities, they

Cosmo, JSC's mascot, cozies up to his tiny fans.

were awarded with an autographed photo of astronaut Mike Massimino.



NASA/BLAIR JSC2011E053977



NASA/BLAIR JSC2011E053964

Kids and parents alike enjoy space-themed artwork on display.

Lasts

Throughout June, the STS-135 crew participated in many "lasts" for the Space Shuttle Program. Among those was a training run at the Neutral Buoyancy Laboratory (NBL). While there are no spacewalks slated for STS-135 crew members, they still had to prepare for contingency scenarios.



NASA/MARKOWITZ JSC2011E054079

(Above) STS-135 Mission Specialist Sandy Magnus gives a wave as she participates in the final space shuttle crew training session in the NBL.

(Right) NASA astronaut Doug Hurley (foreground), STS-135 pilot, joins in the final NBL run in the simulation control area at the Sonny Carter Training Facility.



NASA/PHOTO JSC2011E054080

Voyage Back to School

Summer's still around for a while, but mark your calendars for Voyage Back to School at Space Center Houston: Aug. 18 from 5 to 7 p.m. JSC and Space Center Houston will co-host this free science, technology, engineering and math focused event, which will feature exhibits, activities and games designed to give students a sneak peek into the life of a scientist, engineer or mathematician. The station program's new "Destination: Station" traveling exhibit will also be on display.



NASA/STAFFORD JSC2010E119077

Astronaut Clayton Anderson inspires the next generation of explorers at last year's Voyage Back to School event.

Roundup

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careers and curricula,” said Teresa Sindelar, lead for NASA/LEGO education efforts.

Education has long partnered with the U.S. Department of Education to share NASA’s educational resources, including in-flight downlinks and amateur radio contacts between the station and classrooms around the country.

Education also joined with many organizations, including the U.S. DoE, U.S. Department of Agriculture, Park Seed Company and the International Technology and Engineering Educators Association to develop a plant growth chamber engineering design challenge, in which more than 2 million students participated.

The Reduced Gravity Flight Education Program (RGEFP) recently teamed up with the Department of Energy to provide the microgravity research environment to K to 12 educators.

“We were working with one of our undergraduate student teams from The College of New Jersey, which was studying the effects of microgravity on dusty plasmas,” said Sara Malloy, RGEFP’s project coordinator. “Their research was partially funded and mentored by the Princeton Plasma Physics Laboratory (PPPL). PPPL is one of Department of Energy’s Office of Science single-program national laboratories. Over the next two years, we developed a strong relationship with PPPL and began discussing partnering STEM education programs of Department of Energy with the RGEFP.”

Education’s partnerships help JSC expand its scope and engage a diverse group of elementary and secondary school students, higher education institutions and other informal education stakeholders.

“I think that it allows us to see best practices of other groups, which strengthens our programs,” Malloy said.



NASA/PHOTO ISS023E041838

Japan Aerospace Exploration Agency astronaut Soichi Noguchi is pictured with fresh tomatoes floating freely in the Unity node. Noguchi filmed several space-related segments during Expedition 23 that aired on the TV show “Sesame Street.”



NASA/PHOTO

NASA and The LEGO Group signed a Space Act Agreement to spark children’s interest in science, technology, engineering and

math. LEGO sets flew to space on STS-134, and station crew members will use them for educational videos.