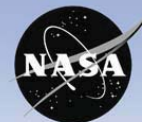




National Aeronautics and Space Administration



# LAGNIAPPE

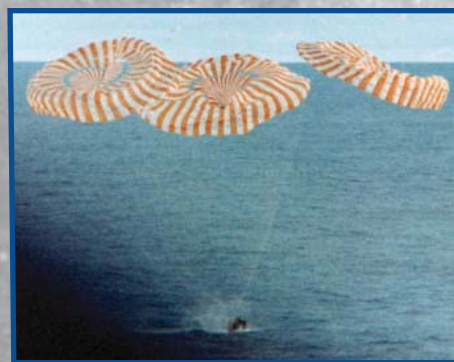
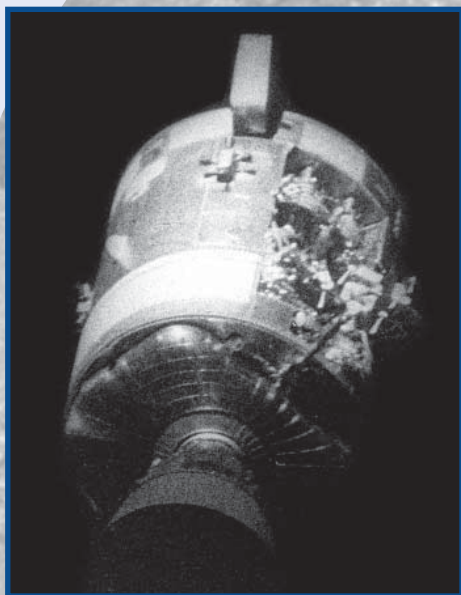
John C. Stennis Space Center

Volume 5 Issue 4

[www.nasa.gov/centers/stennis](http://www.nasa.gov/centers/stennis)

April 2010

## *'Houston, we have a problem'*



*Forty years later –  
the saga of Apollo 13 still inspires*

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*See special coverage inside*

From the desk of

## Randy Galloway

Director, Stennis Engineering  
& Test Directorate



In the past few days, I had the privilege to be a part of the L-2 day review and launch for STS -131 at the Kennedy Space Center.

Having been a part of the last few days leading to a shuttle launch many times, much of the experience was familiar. However, this one was different. I realized that we only have three more launches after this one.

Our administrator, Charlie Bolden, was asked if he wanted to make any comments during L-2. He began by observing that he knew a lot of us were thinking about the end of the Space Shuttle Program and were grieving for its upcoming loss in a few months. He asked us to move beyond the grieving and to celebrate the accomplishments of the shuttle program over its history and what it will accomplish later this year before its retirement.

Looking back, its accomplishments include the first atmospheric reentry of a winged space vehicle; the deployment of missions to study Jupiter, the sun, and

Venus; the deployment and on-orbit repair of several satellites, most notably the Hubble Space Telescope; the development and perfection of extravehicular activity tools and techniques for on-orbit construction; and, finally, the assembly and operation of the International Space Station.

The remaining missions will assure the ISS is ready to carry on without resupply from the space shuttle, and will deploy a scientific instrument on ISS that will hunt for anti-matter.

Of course, Stennis' contribution to enable these accomplishments has always been the Stennis-tested, reliable, space shuttle main engines that help power the vehicle to orbit. On April 5, I was lucky enough to stand outside the Launch Control Center and watch as the ISS flew over the launch pad about 20 minutes prior to launch, followed by the most beautiful shuttle launch I have ever seen. (See page 4 photo)

It began with a fully dark night-time liftoff, followed by a rapid ascent into the early morning light at over 100,000 feet. Our space shuttle main engines left the most beautiful plume, creating a noctilucent cloud over 100 miles long behind the rapidly moving vehicle.

It was truly a moment to celebrate!

*Randy Galloway*

# INFINITY construction set to begin

Key state and community leaders celebrated April 6 with the signing of a construction contract for the state-of-the-art INFINITY Science Center planned near John C. Stennis Space Center in south Mississippi. Gulfport Mayor George Schloegel (l to r), chair of non-profit INFINITY Science Center Inc., was joined for the signing ceremony at the Hancock Bank in Gulfport by Virginia Wagner, sister of late Hancock Bank President Leo Seal Jr.; and Roy Anderson III, president and CEO of Roy Anderson Corp. Seal was the first chair of INFINITY Science Center Inc., which has led in development of the project. Ground was broken for the center late last year, and Roy Anderson Corp. plans to begin construction on the 72,000-square-foot, \$28 million science and education center in May. The Mississippi Department of Transportation (MDOT) also is set to begin construction of a \$2 million access road to the new center. The April 6 ceremony was attended by numerous officials, including former Stennis Space Center Directors Jerry Hlass and Roy Estess; Mississippi Senate President Pro Tempore Billy Hewes, R-Gulfport; Mississippi Rep. Diane Peranich, D-Pass Christian; and MDOT Southern District Commissioner Wayne Brown.



**FULFILLING NASA'S EXPLORATION MISSION**

# E-1 Test Stand preparation under way

Work continues at Stennis Space Center to prepare the E-1 Test Stand for testing the AJ26 rocket engine that Orbital Sciences Corporation will use to power commercial transport flights to the International Space Station. On March 30, 6,500 gallons of RP-1 (rocket propellant) fuel was delivered to the test complex. The fuel will be used for testing the AJ26 engines beginning this summer. In the right photo, Dustan Ladner (left) assists tanker driver David Velasco in transferring fuel from the truck to the 20,000-gallon underground tank. In the photo below, a pair of work crews continue modifications to the E-1 Test Stand. The AJ26 testing is a prime example of the president's new direction to rely on commercial companies for space transport. NASA has partnered with Orbital to provide ISS servicing flights through the agency's Commercial Orbital Transportation Services initiative.



**2010 launch schedule**

**STS-132**  
Shuttle Atlantis  
Target: May 14, 2010

**STS-133**  
Shuttle Discovery  
Target: Sept. 16, 2010

**STS-134**  
Shuttle Endeavour  
Target: July 29, 2010

**Orbital Sciences**  
Taurus rocket  
Target: Nov. 22, 2010  
Site: Vandenberg AFB



## TMS for A-3 stand delivered

The thrust measurement system for the A-3 Test Stand under construction at Stennis Space Center was delivered March 17. Once complete, the A-3 stand (seen in background) will allow simulated high-altitude testing on the next generation of rocket engines for America's space program. Work on the stand began in 2007, with activation scheduled for 2012. The stand is the first major test structure to be built at Stennis since the 1960s.

## Shuttle Discovery lights up early April sky

Time-lapse photography at Kennedy Space Center in Florida captures space shuttle Discovery's path to orbit early on the morning of April 5. On their mission to the International Space Station, Discovery's seven-member crew is delivering the multi purpose logistics module Leonardo, filled with supplies, a new crew sleeping quarters and science racks. The 13-day mission features three spacewalks and is scheduled to return to Earth on April 18.



## Scheuermann holds 1st all hands session as director

Patrick Scheuermann talks to Stennis Space Center employees during his first all hands session as director. NASA named Scheuermann to lead the rocket engine testing facility March 1. During the March 10 all hands session, Scheuermann focused on future work at Stennis, emphasizing the need to be proactive and innovative. "I'm very confident that our test stands, which are our core, have a great future," Scheuermann said. "The test stands we have are really unique." Prior to becoming director of Stennis, Scheuermann served as deputy director. He also served as chief operating officer of NASA's Michoud Assembly Facility in New Orleans. Scheuermann joined NASA in 1988.



## STS-130 crew visits

Four members of the STS-130 Endeavour space shuttle crew visited NASA's John C. Stennis Space Center on March 25 to thank facility personnel for their role in enabling the successful February mission to the International Space Station. Commander George Zamka (l to r), Pilot Terry Virts, and Mission Specialists Kathryn Hire and Robert Behnken presented a video recap of their mission and answered questions about their work. Hire especially thanked Stennis employees for providing the three main engines that powered the crew on their 14-day mission. "We had great engines," she said. "They performed flawlessly." Since the 1960s, Stennis has tested every engine used in all manned Apollo and space shuttle missions, with no mission failing as a result of engine malfunction.



# NASA's "finest hour"

– Flight Director Gene Kranz

Apollo 13 mission – April 11-17, 1970

# Apollo 13 – NASA's



(Top left photo)  
Astronauts James Lovell waves as he leads Jack Swigert and Fred Haise to the transfer van in preparation for launch of Apollo 13.

(Bottom left photo)  
Apollo 13 Flight Director Gene Kranz watches a television transmission from the spacecraft just moments before an explosion crippled the ship. Astronaut Fred Haise, a Biloxi native, is seen on the mission control center screen.

(Center right photo)  
Apollo 13 yaws away from the Kennedy Space Center tower as it launches on April 11, 1970. At this point, the spacecraft has risen to about half its height.

(Center bottom photo)  
Apollo 13 astronauts Fred Haise, Jim Lovell and Jack Swigert pose on April 10, 1970, the day prior to launch of Apollo 13. Swigert had just joined the team, replacing Ken Mattingly as command module pilot. The change was made after Mattingly was exposed to rubella (German measles). Mattingly never contracted the measles and later served as command module pilot on Apollo 16.



By now, there are few who have not heard the story of the dramatic Apollo 13 mission, thanks to remembrances of those involved, popular books and a major motion picture. However, on Monday, April 13, 1970, when the drama began, more than a few people went to bed completely unconcerned with the fate of three American astronauts on a perilous voyage through space.

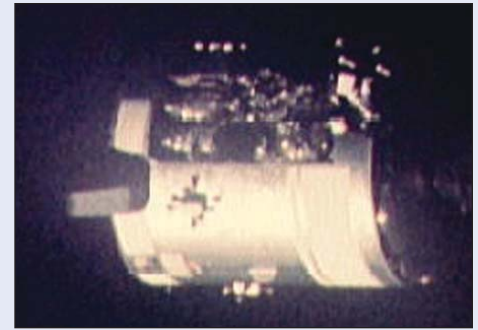
Indeed, many probably even were unaware three astronauts were in space. Just two missions after the historic Apollo 11 moon landing, travel to the lunar surface was deemed so commonplace that an April 13 television transmission from Apollo 13 was not even carried on American stations. Unbeknownst to the Apollo 13 astronauts, America was not watching.

That all changed when an oxygen tank exploded shortly after the broadcast at 9 p.m. CST. The explosion crippled the spacecraft. By the time America woke up April 14, astronauts Jim Lovell, Fred Haise and Jack Swigert were in a nail-biting race to return home.

It is hard to recount all of the decisions made and heroics performed during the next 86 hours



# 'successful failure'



(Left photo) Two Apollo 13 astronauts work on some of the temporary – and makeshift – hose connections and apparatus needed during their perilous flight home aboard the lunar module.

(Top photo) Following spacecraft separation on the way home, the astronauts were able to view the service module damage caused by the oxygen tank explosion.

(Bottom photo) Flight Director Gene Kranz enjoys a cigar as mission control employees celebrate the safe return of Apollo 13.



– both by the astronauts and by mission control personnel on the ground. Hour-by-hour, the drama grew as millions – men, women, children – watched sober-faced newscasters consider the fate of the mission and the men.

The story of those days has become the stuff of legends – from the astronauts cool professionalism in the face of possible tragedy to Flight Director's Gene Kranz's insistence that the mission could go down as NASA's "finest hour."

In the end, it did. Shortly after noon CST on Friday, April 17, the Apollo 13 capsule splashed down within a few miles of its target. It took less than an hour for recovery teams to reach the astronauts and lift them onto the USS Iwo Jima.

The mission quickly became known as a "successful failure" – a failure because the planned moon landing never materialized but a success because all three astronauts were returned home safely. In recognition of that fact, the crew and members of the Apollo 13 Mission Operations Team all were awarded the Presidential Medal of Freedom for their actions during the mission.

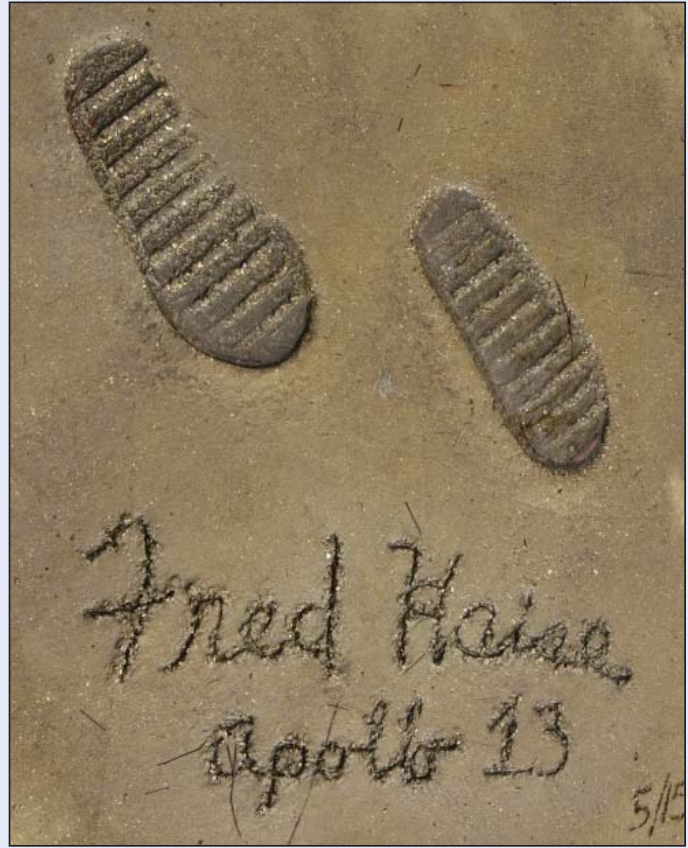
# Fred Haise – American hero

Fred Haise never got to stand on the surface of the moon, but the story of his ill-fated Apollo lunar mission ranks as one of NASA's most dramatic episodes.

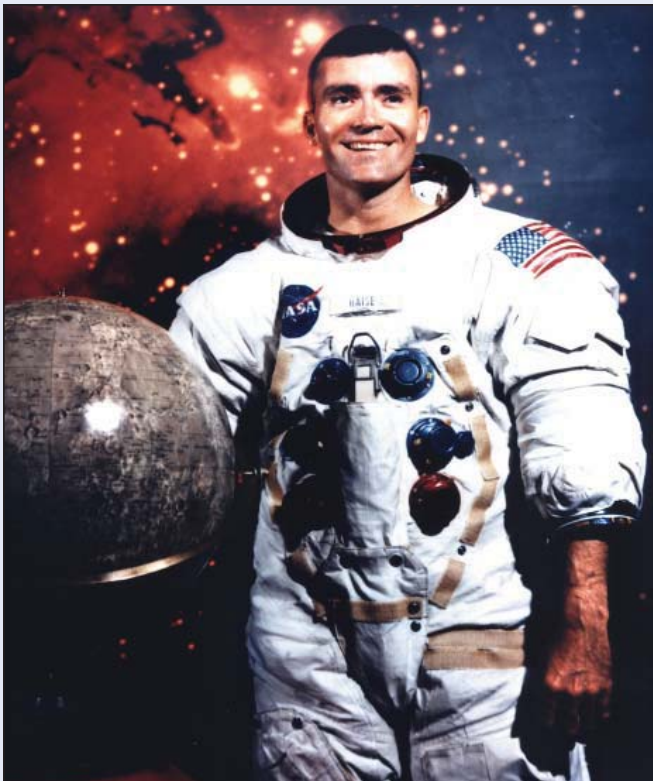
A native of Biloxi, Haise made his first spaceflight aboard Apollo 13 as lunar module pilot. As planned, he would become the sixth person to step foot on the moon. However, a mid-mission oxygen tank explosion crippled the Apollo spacecraft, necessitating a tension-filled return for Haise and his fellow astronauts. As one account of the mission notes, the crew survived thanks to “considerable ingenuity under extreme pressure.”

Even so, Haise said in a 2000 interview on [www.space.com](http://www.space.com) that he never thought he would fail to get home. Instead, he was confident in the entire Apollo team, which he characterized as “some of the best minds in this country.”

Haise and his fellow Apollo 13 crew members were awarded the Presidential Medal of Freedom for their actions during the mission. Apollo 13 proved to be Haise's only flight to space. He was scheduled to command the Apollo 19 mission to the moon, but that flight was cancelled. Later, he commanded approach and landing test flights aboard space shuttle Enterprise. He then went on to serve as an aerospace executive and remains a steadfast supporter of Stennis Space Center and the American space program.



Visitors to Stennis Space Center can view Biloxi native Fred Haise's footprints at the lunar lander exhibit at the Interstate 10, Exit 2 “Launch Pad” boarding site for facility tours.



Fred Haise is shown in his Apollo 13 spacesuit prior to the 1970 mission.



Fred Haise receives NASA's Ambassador of Exploration Award in late 2009.





# Earth Day

40th Anniversary - April 22, 2010

B-1100 Atrium 10 a.m. to 2 p.m.

## Stennis responder receives WMD training

**E**noch C. Raine, an emergency responder at Stennis Space Center, recently completed homeland security training at the Center for Domestic Preparedness (CDP), the only federally chartered weapons of mass destruction (WMD) training facility in the nation.

“The WMD/hazmat (hazardous materials) technician training at the CDP is a significant opportunity for Stennis Space Center emergency responders to gain real world response skills and better preparedness for protection of our workforce and visitors,” Stennis Fire Chief Clark Smith said. “This type of advanced training

provides Stennis firefighters with the specialized knowledge and capabilities to respond as necessary to potential hazmat or WMD incidents.”

Raine is the first Stennis firefighter to attend the training. However, Smith said he and other Stennis Space Center firefighters, will attend additional specialized emergency response courses in the future.

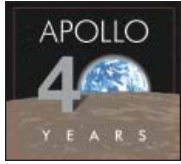
The CDP facility in Anniston, Ala.,



provides federally-funded, interdisciplinary training for emergency responders from across the United States and U.S. territories for 10 responder disciplines. The advanced hands-on training enables responders effectively to prevent, respond to, and recover from real-world incidents involving acts of terrorism and other hazardous materials.

Responders attending CDP training are selected from the nation’s 11 million emergency responders. Training ensures responders gain critical skills and confidence to be better prepared to respond effectively to local incidents or potential WMD incidents.

# Corps acquires land for Stennis Space Center



*Editor's Note: John C. Stennis Space Center has played a pivotal role in the success of the nation's space program. This month, Lagniappe looks back on an important moment in the center's history.*

When NASA announced plans to build a test site in Hancock County, Miss., the U.S. Army Corps of Engineers was selected to serve as the agent for land acquisition and construction. Forty-eight years ago, on April 18, 1962, the corps opened a real estate project office to begin negotiations that involved the towns of Gainesville, Logtown, Santa Rosa, Napoleon and Westonia.

“These communities were virtually untouched when we first came in,” said William R. Matkin, the Corps of Engineers land acquisition agent who had arrived two months earlier. “A lot of people just didn’t want to leave. Some of these people were born and raised right here in this area, maybe in the same house.”

After arriving on site, Matkin developed a friendship with the area landowners. He said it was a traumatic experience for the people to face negotiating agents from the corps. In one instance, Cora Blue Davis refused to leave her home and actually remained on the front porch in a

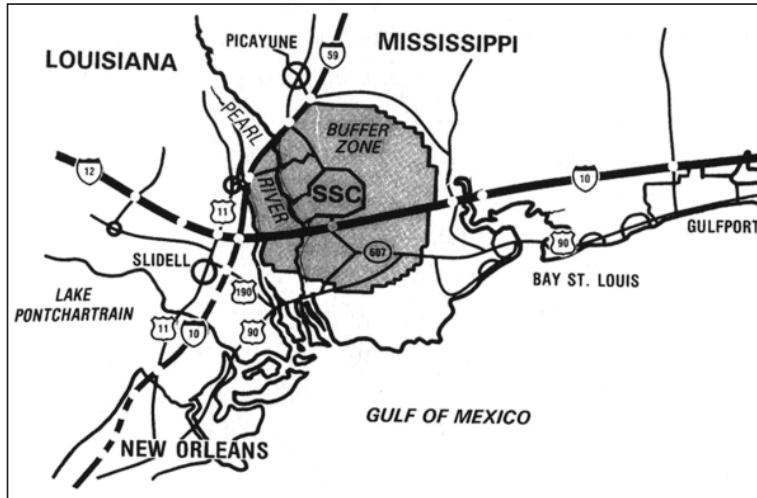
rocking chair as the movers towed her house to its new destination.

In building the NASA infrastructure to support the American space program, the corps had to acquire more than 200 square miles of land in Mississippi and Louisiana and, then, construct a unique static-testing facility. Land value was estimated at \$200 an acre in the 13,500-acre construction area, where necessary facilities would be built. The value was set at \$75 an acre for the surrounding acoustic-buffer zone easement needed to perform

rocket engine testing. The corps listed the cost of needed improvements at \$4 million. The total cost of acquiring real estate interests was estimated to be \$16,338,000. This estimate exceeded all but one of the other test site locations considered because the Hancock County site was located on land, whereas, the other sites included acoustic-buffer zones over water. Matkin

negotiated the purchase of land in both the construction area and in the acoustic buffer zone.

By the end of the summer of 1962, negotiations for all but a few tracts of land in the construction area had been completed. The final day for evacuation was Oct. 1, 1962, although a few residents lingered in the Gainesville area until the new year arrived and construction began.



## @ Stennis

### What comes to mind when you think of the Apollo 13 moon mission?

*Editor's Note: @ Stennis highlights the views and opinions of Stennis Space Center employees.*



“I think of American ingenuity. You see a problem – you find a solution. It sounds overly-patriotic, but it’s what America is based on.”

**Tim Brown, Radiance Technologies**

“I think of the astronauts. They were extremely brave people. They were true adventurers.”

**Elaine Costolo  
Jacobs FOSC Group**



“I think of the teamwork that occurred between everybody – both the ground control group and the astronauts.”

**Pamela Holloway  
NASA Shared Services Center**

“I think of overcoming adversity and the ability of people to make quick decisions. That was the key to it.”

**Chris Williamson  
Jacobs FOSC Group**



**Office of Diversity and Equal Opportunity**

# Keep workplace free of harassment

**W**orkplace harassment causes tension and emotional distress, undermines productivity, lowers morale, increases employee turnover rates, increases employee absenteeism, inhibits growth and creativity, undermines professionalism, undermines inclusion, and insults the dignity of employees.

Harassing conduct is any unwelcome conduct – verbal or physical – based on individual’s race, color, gender, national origin, religion, age, disability, genetic information, sexual orientation, status as a parent, gender identity, or retaliation when:

- 1) The behavior can reasonably be considered to adversely affect the work environment; or
- 2) An employment decision affecting the employee is based upon the employee’s acceptance or rejection of such conduct.

Examples of harassment that may adversely affect the work environment include but are not limited to making jokes or remarks or displaying images, pictures, other materials that may unreasonably interfere with work performance and/or create an intimidating, hostile, or offensive work environment. Examples of harassment based upon an employee’s acceptance or rejection of harassing conduct include, but are not limited to, a supervisor coercing an employee into an unwelcome sexual relationship and then rewarding the employee with a promotion, or a supervisor taking disciplinary action or denying a promotion to an employee because he or she rejected sexual advances from the supervisor.

Retaliation against an employee for alleging harassment or participating in a harassment fact-finding is also impermissible.



## Stennis celebrates women’s history

Stennis Space Center employees observed Women’s History Month on March 17 with a panel discussion that included accomplished women of the facility. The gathering featured (l to r): Pam Covington of NASA, Mary Jones of the Navy Meteorology & Oceanography Command and Lauren Underwood of CSC Inc. In addition to the panel discussion, the Stennis Diversity Council and Patriot Technologies also hosted a pair of “lunch-and-learn” sessions focused on women’s issues and history.

NASA employees who believe they have been subjected to harassing conduct in violation of NASA policy must not wait – tell the person that his or her behavior is a problem and report the matter to his or her immediate supervisor, the center’s anti-harassment coordinator, or other official as designated by the center director.

For additional information on NASA’s anti-harassment procedures, please contact: Stennis Office of Diversity & Equal Opportunity, Jo Ann Larson, the Stennis anti-harassment coordinator in Building 1100, Room 11147, or by phone: 228-688-2079.



*Congratulations to Jacobs Facility Operating Services Group on VPP audit*

The Jacobs Facility Operating Services Contract group recently completed its OSHA Voluntary Protection Programs audit with no 90-day findings. FOSC corrected all findings identified by the OSHA team during the audit. The next VPP audit will be Jacobs NASA Test Operations Group.

## Hail & Farewell

**NASA bids farewell to the following:**

Batrina Street	Accountant Office of Chief Financial Officer
Robert Heitzmann	Operations and Maintenance Chief Center Operations Directorate

# LAGNIAPPE

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## Stennis hosts NASA night in Oxford



Stennis Space Center employees recently visited the Oxford area to host a pair of community events. (Right photo) A young visitor enjoys a balloon rocket transportation activity during a NASA Night in Your Neighborhood event at the Powerhouse Community Arts and Cultural Center in Oxford on March 29. Hundreds of people visited the event, which featured space-related displays and various activities for children. (Left photo) Alexis Harry, assistant director of Astro Camp at Stennis, speaks to students at nearby Lake Cormorant Elementary School during a March 30 "Living and Working in Space" presentation.



## Stennis hosts Area III Special Olympics

On March 27, the John C. Stennis Space Center family hosted participants and guests for the 2010 Area III Special Olympics. (Left photo) B.J. Matherne, 27, of Gulfport, scores a soccer goal during one Olympic games. (Right photo) Sarah Johnson, 28, of Gulfport, carries the Olympic flame during the opening ceremony. Stennis is an annual sponsor of the Area III games, which are supported by numerous facility volunteers.