



LAGNIAPPE

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New SSC facility contract awarded

NASA announced July 12 the award of a contract to Jacobs Technology Inc. of Tullahoma, Tenn., to provide facility operation services at the Stennis Space Center in Mississippi. The contract has an estimated potential value of \$561 million, and will start Aug. 28.

The 10-year, cost-plus-incentive-fee contract has a three-year base period with seven potential one-year award terms.

Jacobs Technology Inc. will provide a broad range of facility engineering, maintenance and operations, institutional and logistics services in support of NASA's missions at Stennis. Jacobs Technology Inc. also will support programs of other resident federal and state agencies located at Stennis that share and use the center's facilities and services.

Other members of the Jacobs Technology Inc. team include Erica Lane Enterprises, Huntsville, Ala., and Comprehensive Occupational Resources of Baton Rouge, La., and Smith Research Corporation, Baton Rouge, La.



STS-118 prepares to launch

The dawn sky over the Atlantic Ocean reveals Space Shuttle Endeavour sitting on Kennedy Space Center's Launch Pad 39A. First motion out of the Vehicle Assembly Building was at 8:10 p.m. July 10, and the shuttle was hard down on the pad at 3:02 a.m. July 11. The orbiter access arm is already extended to the orbiter from the fixed service structure. Peering just above the solid rocket booster on the left is the 290-foot-tall water tank. It provides the deluge over the mobile launcher platform for sound suppression during liftoff.

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From the desk of
Gene Goldman
 Deputy Director,
 Stennis Space Center



I hope everyone had an outstanding Fourth of July, and celebrated our independence with family and friends. It is the mid-summer break as we move into the second half of a busy year for NASA and Stennis Space Center. It's time to reassert ourselves!

Over the last few months we've had a number of incidents across the center's Propulsion and institutional activities that have impacted test schedules, with potential to affect shuttle flight schedules. As with many accidents, there is no single, specific cause, but a series of events which collectively conspire. These are indicative of an adverse trend which we all have to be concerned with, and which we must proactively address.

As Space Shuttle Main Engine Project manager, I counted on the team at Stennis to identify and resolve issues as they occurred, and this center always responded.

We've had a lot of distractions:

- We continue to recover from Hurricane Katrina.
- We're preparing for the new Ares test programs and the eventual phase-out of SSME testing.

- We are realigning the science program; institutional budgets continue to dwindle.

We must assure we stay focused on our mission and attention to detail. We must always remember our task affects safe flight and agency objectives. It's crucial we manage that trust.

"Automatic accountability" is a concept from the lunar program. At its core is the philosophy that "when anyone identifies a problem, they own it until coordinating with the responsible organization, and obtaining assurance it's received."

We must ensure we interface across boundaries of responsibility. We have to assure individual awareness of counterpart's responsibilities. We have to be a seamless team, regardless of badge or organization. It's the only way we can succeed. Most of our problems are those of interface, coordination and integration. They can cause failures as devastating as technical issues.

Every member of this center has equal responsibility to support our objectives. Be wary of distractions. Be cognizant of consequences. Be proactive. Think beyond individual tasks. Understand our interfaces. Support each other. We have freedom, a unique mission in space exploration and outstanding potential. Let's assure we succeed, as a team, united!

Cochran staffers meet SSC reps at NASA Day on the Hill

Members of Sen. Thad Cochran's (R-Miss.) staff were among nearly 600 members of Congress, staffers, industry and general public who visited a NASA exhibition, 'NASA leading today for a better tomorrow,' June 20 in Washington, D.C. Shown are (from left) Earl Rilington, Department of Defense Legislative Fellow, Office of Sen. Thad Cochran; Myron Webb, NASA-SSC Legislative Affairs Officer; Stewart Holmes, Intelligence and National Security Advisor, Senate Appropriations Committee; Chase Thompson, intern, Office of Sen. Thad Cochran; and Eric Perritt, NASA Legislative Fellow, Office of Sen. Thad Cochran. The interactive, all day event was held in the House of Representatives' Rayburn Office Building and highlighted NASA's robust Earth and space science portfolio, cutting-edge aeronautics research and continued leadership in human spaceflight and exploration.



FULFILLING THE VISION FOR SPACE EXPLORATION

FIRST TREE CUTTING – Tree clearing for the site of the new A-3 Test Stand at Stennis Space center began June 13. NASA's first new large rocket engine test stand to be built since the site's inception, A-3 construction begins a historic era for America's largest rocket engine test complex. The 300-foot-tall structure is scheduled for completion in August 2010. A-3 will perform altitude tests on the Constellation's J-2X engine that will power the upper stage of the Ares I crew launch vehicle and earth departure stage of the Ares V cargo launch vehicle. The Constellation Program, NASA's plan for carrying out the nation's Vision for Space Exploration, will return humans to the moon and eventually carry them to Mars and beyond.



CLEARED SITE – Work to clear the site for the A-3 Test Stand progresses quickly, as seen in this photo taken June 18 from atop the A-1 Test Stand. The next step in construction at 19-acre site will be the arrival of fill dirt in mid-July, followed by pilings and piling caps.

A-3 Test Stand site prep moving forward

Work on the site of the future A-3 Test Stand is about a month ahead of schedule, according to NASA's A-3 project manager, Lonnie Dutreix.

Clearing and grubbing has prepped the 19-acre site in Stennis Space Center's A Complex for the mid-July arrival of fill dirt, and the contractor will start to drive pilings in early August for the A-3 structure.

"The contractor for the clearing had 60 days to complete the job," Dutreix said, "and they did it in a month. Everything's just moving along faster. There's no down time."

A-3, the first new large test stand built at SSC since the 1960s, will conduct altitude testing on NASA's developing J-2X engine. The J-2X will power the upper stage of NASA's new crew launch vehicle, Ares I, and the Earth

departure stage of the new cargo launch vehicle, Ares V.

Helping speed the process is parallel work in the E Complex to validate the design of the J-2X diffuser and chemical steam generator. The tests will "anchor the models," Dutreix said. SSC engineers are collecting data and determining the diffuser's operating parameters using scaled models. The data will allow engineers to predict how the real thing will perform on the test stand.

After the pilings are driven, NASA's procurement office will get ready to accept bids on A-3's structural steel work.

"Like any long-term project," Dutreix said, "we're trying to work ahead of schedule, because we might need that time later. The good thing is, enthusiasm seems to be building along with the momentum."

Employees urged to review PR policy

NASA Administrator Michael Griffin recently issued a reminder to agency employees about its policy on releasing items to the news and information media.

In an effort to conduct well-coordinated and open scientific and technical communication, Griffin released the agency-wide policy in March 2006. It governs the release of public information and the role of public affairs in obtaining the widest practicable and appropriate dissemination of information about NASA activities. The policy dictates:

- Any dispute arising from a decision to proceed or not proceed with the issuance of a news release or other type of public information will be addressed and resolved by the assistant administrator for public affairs with the appropriate mission directorate associate administrator, mission support office head, center director, and others, such as center public affairs directors, as necessary.
- However, the appropriate mission directorate associate administrator shall be the arbiter of disputes about the accuracy or characterization of programmatic, technical or scientific information.



Michael Griffin

- Additional appeals may be made to the chief of strategic communications and the office of the administrator.
- When requested by a center public affairs director, an explanation of the resolution will be provided in writing to all interested agency parties.

Consistent with NASA's policy, employees may speak to the press and the public about their work. NASA employees who receive a request from a media representative should coordinate with Stennis Space Center's Public Affairs Office at 688-3333.

"I appreciate the efforts by NASA employees during the past year," Griffin said, "to help improve our processes and procedures for distributing information to the media, and for promoting a culture that values the free exchange of ideas. Although much progress has been made, our ability to meet agency goals and statutory requirements for the dissemination of public information requires a workforce that possesses a clear understanding of NASA's policy on the release of information to the media."

Any questions concerning the policy should be directed to SSC's Public Affairs Office or NASA's Assistant Administrator for Public Affairs David Mould at 202-358-1898 or david.r.mould@nasa.gov. NASA employees are encouraged to review the policy at http://www.nasa.gov/communication_policy.

Space Shuttle Atlantis, crew safely home

Mounted on a modified Boeing 747 shuttle carrier aircraft, Space Shuttle Atlantis was flown back to Kennedy Space Center on July 3, officially ending its STS-117 mission. The orbiter and its crew landed at Edwards Air Force Base, Calif., on June 22 after completing a 14-day journey of more than 5.8 million miles in space.

Atlantis' STS-117 mission successfully increased the power capability of the International Space Station. While in space, the crew – Commander Rick Sturckow, Pilot Lee Archambault and mission specialists Jim Reilly, Patrick Forrester, Steven Swanson, John "Danny" Olivas and Sunita Williams – crew attached the



Space Shuttle Atlantis' main landing gear touches down on runway 22 at NASA's Dryden Flight Research Center at Edwards Air Force Base, Calif., concluding a successful assembly mission to the International Space Station. Atlantis landed after 13 days in space. STS-117 was the 118th space shuttle flight.

station's new S3/S4 solar array truss segment, deployed a new set of solar arrays and retracted the Port 6 starboard solar array back into its box. Reilly, Olivas, Swanson and Forrester,

with the help of crewmates, made four spacewalks to complete the construction tasks. During the third spacewalk, the crew repaired a 4-by-6 inch raised corner of a thermal blanket on the port side Orbital Maneuvering System pod.

While the crew worked in space, ground teams were troubleshooting a problem with Russian computers that help control the station's attitude.

NASA astronaut and station Flight Engineer Clayton Anderson, who launched with the crew aboard Atlantis, remained on the station. He is scheduled to return home aboard Space Shuttle Discovery on a mission targeted for launch in October.

STS-118 engines carry upgraded system

Main engine monitors tested at SSC

Space Shuttle Endeavour is in place at Kennedy Space Center's Launch Pad 39A after an overnight journey from the Vehicle Assembly Building. Moving at less than 1 mph atop the crawler-transporter, the shuttle assembly began the 3.4-mile trip at 8:10 p.m. EDT June 10 and arrived at the pad at 2:30 a.m. July 11. Endeavour was "hard down" – secured in place – on the pad at 3:02 a.m.

During the launch of NASA's STS-118 mission, the Advanced Health Management System controllers, tested at Stennis Space Center, will operate in active mode on all three of Space Shuttle Endeavour's main engines.

The AHMS main engine computer upgrade provides new monitoring and performance insight into the two most critical components of the space shuttle main engine: the high-pressure fuel turbopump and the high-pressure oxidizer turbopump. AHMS active mode means it can shut down an engine if an anomaly is detected.

SSC certified the system in summer



The orbiter Endeavour stops under the overhead crane in the transfer aisle of the Vehicle Assembly Building at Kennedy Space Center, Fla., on July 2. All space shuttle main engines, including the three installed on Endeavour (visible in the photo above), are tested at Stennis Space Center.

2006, and performed "green runs" or validation tests on it in fall 2006. The STS-117 mission also carried AHMS controllers on all three of Space Shuttle Atlantis' main engines – one in active mode, and the other two in monitor-only mode.

Endeavour will carry into orbit the S5 truss, SPACEHAB module and external stowage platform 3. The payload was delivered July 8 to the launch pad's payload changeout room.

NASA is quickly gearing up for the shuttle's next visit to the International Space Station, targeted for launch Aug. 7. The mission will mark the first flight of Mission Specialist Barbara Morgan, the teacher-turned-astronaut whose association with NASA began more than 20 years ago.

STS-118 will be the first flight for Endeavour since 2002.

Space Shuttle Endeavour's STS-118 mission is the 22nd shuttle flight to the International Space Station. It will continue space station construction by delivering a third starboard truss segment.

U.S. Navy Commander Scott J. Kelly will command the seven-person crew of STS-118. U.S. Marine Corps Lt. Col Charles O. Hobaugh will be Endeavour's pilot. Veteran astronauts Richard A. Mastracchio and Dr. Dafydd (Dave) Williams of the Canadian Space Agency will be returning to space for their second missions. Barbara R. Morgan, Tracy E. Caldwell, Ph. D., and Benjamin Alvin Drew round out the crew as mission specialists.

Daniel Ironside works on a software project for SSC's Rocket Propulsion Test Program Office, along with his NASA mentor Michele Beisler (right). Also creating software for RPT is Gonzalo Barcia (left) who is mentored by Mark Moody (second from left).



Interns create RPT software

Daniel Ironside and Gonzalo Barcia will soon complete an intense summer internship to help NASA track and manage its rocket engine test projects. Their 10-week NASA Undergraduate Student Research Program at Stennis Space Center will end Aug. 10, when they present research about the software they created for NASA's Rocket Propulsion Test Program Office to SSC representatives.

"Part of what I'm working on for RPT is a risk management plan," said Ironside, a junior aerospace engineering major at Parks College of St. Louis University in St. Louis, Mo. Besides the software project, Ironside and Barcia will write independent papers for NASA USRP.

University of Florida junior mechanical engineering major Barcia hopes the RPT office will maintain the software he is implementing, a relational database for tracking various RPT projects.

As technical support to the RPT office, both interns are mentored by NASA SSC engineering program management team members. Barcia works closely with Lead Aerospace Technologist Mark Moody, while Ironside works under Aerospace Technologist Michele Beisler's direction.

NASA family celebration



NASA employees and their families enjoyed a shrimp boil with a Hawaiian luau theme under the pavilion at the Cypress House on June 29. Along with the traditional ingredients of a shrimp feast, activities for children were provided, including an inflatable water slide. 'Next Generation' provided music.

War touched all parts of area life

Editor's Note: *Dr. Marco Giardino of SSC's Engineering and Science Directorate provides this column dedicated to the history of Stennis Space Center and the surrounding area.*

Despite Christian Koch's best efforts to keep his sons out of the Confederate army, his eldest, Elers, was conscripted sometime before April 3, 1863.

Elers wrote to his parents in early April from Camp Johnson located in Lawrence County, Mississippi, that "there was not much to eat, amounting to perhaps ½ lb. of bacon and some flour per day." The townspeople helped the soldiers by donating potatoes and molasses which was all that Elers had eaten since late March.

Elers again wrote to his parents from camp on April 20, 1863: "There is no such thing as fur-
lough anymore. They are pretty strict here. They make a fellow
tow the mark. They
drill us from 2 to 6 hours a day on horseback. We have not got any tents, only 4 tents in the company... We get enough rations just to make out by buying some things [but things] are pretty scarce to buy though. We have enough for our horses to eat barely. When you write to me leave some blank paper for me to write back again. I have no need for anything yet. I have spent only \$15, 10 of them on a bridle."

Stennis Space Center HISTORY

Conditions were not better back home in Logtown. Annette wrote on April 21 to Christian, who was still embargoed at Fort Pike, and informed him that they had not had meat and coffee since he had left except for one sheep. She added that she had been trying to help "Old Jacks" [whose full identity is not known] by offering him some work.

Annette, like many other citizens of Hancock County at that time, did all she could to assist those less fortunate. She writes: "As long as he [Old Jacks] is here, I will try to feed him and his family. They are poor, poor. Mary [his wife] looks like an old woman."

Agency's diversity benefits everyone

Editor's Note: *Marleen J. Phillips of SSC's Office of Chief Counsel provides this LAGNIAPPE column on topics promoting diversity in the work place.*

The concept of diversity encompasses acceptance and respect. An understanding of diversity is to know that individuals are unique and recognize that they are different – in race, ethnicity, gender, sexual orientation, socio-economic status, age, physical abilities, religious beliefs, political beliefs and other ideologies. Diversity is the exploration of these differences in a safe, positive and nurturing environment. Diversity involves understanding each other and moving beyond simple tolerance to embracing and celebrating the rich dimensions of diversity contained within an individual.

From the Office of Diversity and Equal Opportunity

The U.S. Office of Personnel Management has recognized that employees' understanding and appreciation of differences results in improved professional and personal performance. As a result, OPM issued guidance to help agencies provide diversity training

to employees. The training assists in achieving the agency's mission and performance goals through improvement of employee performance within the agency. Diversity training should help employees understand that diversity is the similarities as well as the differences among individuals at all levels of the agency. Diversity contributes to a richness in the agency's ability to facilitate a variety of views, approaches and actions in strategic planning, tactical planning, problem-solving and decision-making.

When an agency achieves a diverse, high-quality workforce through training and successful attraction and hiring of a desired employee mix, the agency must strive to maintain, retain and build that workforce. The agency's objective must now be to ensure that its valuable employees stay with the agency. The agency must design and implement a diversity program that includes a broad model of rewards to sustain employee commitment. The rewards can include support for a flexible and supportive work environment, quality supervision and leadership, and an emphasis on learning and development. An agency that commits to cultivating these broader rewards will be better positioned to retain a diverse workforce.

AROUND NASA

■ Satellite snags first view of 'night-shining' clouds:

The first observations of mysterious iridescent polar clouds by the Aeronomy of Ice in the Mesosphere (AIM) satellite occurred above 70 degrees north on May 25. Observers on the ground began seeing the clouds June 6 over northern Europe. AIM is the first satellite mission dedicated to studying these unusual clouds that form 50 miles above Earth's surface. Called Polar Mesospheric Clouds when viewed from space, they are referred to as "night-shining" clouds, or noctilucent clouds, when viewed from Earth. They form during the Northern Hemisphere's summer. Very little is known about how they form over the poles, why they are being seen more frequently and at lower latitudes, or why they have been growing brighter. AIM will document for the first time two complete polar mesospheric cloud seasons over both poles.

■ Spacecraft get new assignments:

Two NASA spacecraft now have new assignments after successfully completing their missions. The duo will make new observations of comets and characterize extrasolar planets. Stardust and Deep Impact will use their flight-proven hardware to perform new, previously unplanned, investigations. The EPOXI mission melds two compelling science investigations – the Deep Impact Extended Investigation (DIXI) and the Extrasolar Planet Observation and Characterization (EPOCh). Both investigations will be performed using the Deep Impact spacecraft, which finished its prime mission in 2005. The other newly selected Discovery mission of opportunity is called New Exploration of comet Tempel 1 (NEXT), which will reuse NASA's Stardust spacecraft.

■ Agency sets up office for cosmic phenomena:

NASA has created a new office to study in more detail some of the universe's most exotic phenomena: dark energy, black holes and cosmic microwave background radiation. The new Einstein Probes Office will facilitate NASA's future medium-class science missions to investigate profound cosmic mysteries. The office will be housed in the Beyond Einstein Program Office at NASA's Goddard Space Flight Center, Greenbelt, Md. A National Research Council committee will assess which of the Beyond Einstein missions should be developed and launched first, and will release its recommendations in September.

Hail & Farewell

NASA welcomes the following to SSC:

- Kevin St. Aubin** – engineering student trainee
Engineering and Science Directorate
- Suzanne French** – summer intern
Office of the Chief Counsel

And bids farewell to the following:

- Douglas McLaughlin** – assistant to the director
Office of the Director
- Larrie Kelly** – realty specialist
Center Operations Directorate

DEVELOP students helping area forests

A group of Louisiana and Mississippi students are spending their summer break giving back to their communities. Using NASA satellite data, they hope to come up with a better way to detect and map the hurricane-induced vulnerabilities of Mississippi's forests.

The team of five DEVELOP Program participants at NASA Stennis Space Center have written a proposal to use data gathered by satellites to find better ways to measure forest disturbances after hurricanes. They also hope to predict fire hazards and invasive species threats in Mississippi and Louisiana timberlands.

Deirdra Boley, a civil engineering major at Southern University in Baton Rouge, La.; Team Leader Lauren Childs, a geography graduate student at the University of New Orleans; Assistant Team Leader Jason Jones, geography major at University of Southern Mississippi, Hattiesburg; and Craig Matthews and Denise Spindel, geography majors at UNO, began their project this spring, brainstorming ways to meet DEVELOP's goal of extending NASA's Earth science research to the communities in their region.

The student-led, student-run DEVELOP program was first conducted at SSC in 2002. Most recently, Southern University has joined the list of schools partnering with SSC to enlist students and conduct the program.

"Our idea and hope is to incorporate Louisiana forests into the proposal," said SU Assistant Professor of Urban Forestry Andra Johnson. "Potential sites in Washington Parish and Kisatchie National Forest would be very relevant to this study."



DEVELOP team members at Stennis Space Center for the summer 2007 term are (from left): front row, students Deirdra Boley, Jason Jones, Lauren Childs, Craig Matthews and Denise Spindel; back row, advisers Cheri Miller of NASA, Kenton Ross of Science Systems and Applications Inc., Andra Johnson of Southern University and Roxzana Moore, SSAI.

During the next calendar year, the students propose conducting their project in three phases: first, find a better way to locate and quantify the hurricane-related damage in coastal Mississippi forests; second, to improve current methods and models of damage detection; and third, to map areas vulnerable to invasive species intrusion.

"Since Katrina, Mississippi has had an astonishingly high number of burns due to excess fuel from downed trees," Team Leader Childs said. "This project could be extremely important to this area."

The team will compare satellite imagery before and after Hurricane Katrina, reading changes in canopy heights and leaf color to see if they can build a model to accurately predict fire hazards. The team has identified potential partners in the U.S. Forestry Service, its Forestry Inventory Analysis program and DeSoto National Forest.

Because the proposal aligns with several of NASA's Earth science Applications of National Priority, team members hope they can parlay the project into a broader understanding of how and where hurricanes create the most forest fire fuel; how that fuel plays into the natural fire cycle and how those fires affect the nations carbon management activities.

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