



# LAGNIAPPE

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## Goldman named director

### Succeeds Cabana at Stennis Space Center

NASA has named Arthur E. (Gene) Goldman as director of the John C. Stennis Space Center.

The promotion of Goldman, the center's deputy director since October 2006, is effective immediately. He replaces Bob Cabana, who left in October to become the director of NASA's Kennedy Space Center in Florida.

"Gene is a terrific manager and a highly respected engineer, with broad experience in rocket propulsion system development and engine testing," NASA Administrator Michael Griffin said. "I'm very pleased that he is available to head the team at Stennis, and I am confident he will continue to provide outstanding leadership there."

Stennis is NASA's primary testing



ground for rocket engines and propulsion systems. Goldman brings a wealth of experience in that area to his new job.

He served as manager of the space shuttle main engine project at NASA's Marshall Space Flight Center in Huntsville, Ala., from March 2004

until he departed for Stennis in 2006. He was the project's deputy manager for six years as well.

"I'm honored to be selected to lead the great NASA team at the Stennis Space Center," said Goldman, a native of Russell, Miss. "We have a lot of exciting and challenging work ahead of us at a pivotal time in NASA's history. I'm eager to continue this work in my new role."

Prior to joining NASA, Goldman worked for the Tennessee Valley Authority and Gulf States Utilities. In 1990, he joined Marshall as a project engineer for the space shuttle systems integration office and served as supervisor of that organization from 1992 to 1994.

Goldman moved to the space shuttle main engine project in 1994.



**Stennis' 2008 Combined Federal Campaign Goal**

**\$190,000**

**Stennis' Total Contributions as of Dec. 8**

**\$172,817.28**

**Percentage of Goal – 91%**



### STS-126 returns from successful mission

Space shuttle Endeavour touches down at Edwards Air Force Base in California on Nov. 30, concluding the STS-126 mission. The return marked the conclusion of a successful two-week delivery and servicing mission to the International Space Station.

From the desk of  
**Gene Goldman**  
 Director  
 Stennis Space Center



We are into the holiday season, an annual opportunity for reflection and recommitment. It's a time of thanksgiving, sharing with family, friends and loved ones; of hope and rejuvenation. We can pause to ponder the past, as well as the future.

Forty years ago this month, humans first traveled to another celestial body. Born in response to a perceived military threat and 23 months following a tragic fire, the Apollo Program brought countless dreams through the eons near the surface of the moon.

On the second launch, and first crewed flight of the massive Saturn V, astronauts Frank Borman, James Lovell and William Anders of the United States left the gravitational tug of Earth and saw the dark side of the moon from lunar orbit. Once there, their thoughts were on the fragility of a tiny blue planet and the common bonds of its inhabitants. Their words that Christmas Eve spoke to the human spirit, wishing peace for all of us, "all ... on the good Earth." They were inspiring to this 15-year-old, and they are more relevant now.

We work in a unique endeavor; we implement a dream. Our efforts in assuring space shuttle main engines are safe for flight, our use of space-based remote sensing to better understand our environment and our preparation to test the next generation of rocket engines are all instrumental in expanding our nation's presence in space. We are a major participant in exploring this exciting, challenging, unforgiving frontier. Consider how very few have such a unique opportunity. We have only taken a few steps into this realm. What benefits to humanity will accrue during the next 40 years?

Gene Cernan stepped off the lunar surface in 1972 with the final words, "We came in peace for all mankind." This center helped enable that voyage, and now we're readying for a return.

It took the collective effort of several hundred thousand people so 27 Apollo astronauts could see what billions had imagined as this nation proved it could make a dream come true. We can further that vision to foster peace through broadened knowledge of our universe for all humanity. Yes, we can. What better resolution could we have in the season of hope?

Dream big; work harder!

## Leaders break ground for new INFINITY facility

Community leaders from Mississippi and Louisiana break ground for the new INFINITY at NASA Stennis Space Center facility during a Nov. 20 ceremony. Construction of the 72,000-square-foot science center is under way with the awarding of a \$4.8 million infrastructure development contract. INFINITY will house science and space-related exhibits and will serve as a valuable resource for the next generation of scientists and engineers. Groundbreaking participants included (l to r): Gottfried Construction representative John Smith, Mississippi Highway Commissioner Wayne Brown, INFINITY board member and Apollo 13 astronaut Fred Haise, Stennis Director Gene Goldman, Studio South representative David Hardy, Leo Seal Jr. family representative Virginia Wagner, Hancock Bank President George Schloegel, Mississippi Rep. J.P. Compretta, Mississippi Band of Choctaw Indians representative Charlie Benn and Louisiana Sen. A.G. Crowe. The shovel and hard hat in the foreground were placed in memory of Seal, a Mississippi bank executive who served as chair of INFINITY Science Center Inc. from 2001 until his recent death.



## FULFILLING NASA'S EXPLORATION MISSION

# Stennis selected to test AJ26 engine

NASA's John C. Stennis Space Center has entered into a contract to provide propulsion system acceptance testing for the Taurus II space launch vehicle being developed by Orbital Sciences Corp. Taurus II early missions will be flown out of NASA's Wallops Flight Facility, Wallops Island, Va., in support of various missions for International Space Station resupply and Commercial Orbital Transportation Services-Demonstration flights.

Orbital's Taurus II design uses a pair of Aerojet AJ26 rocket engines to provide first-stage propulsion for the new TII launch vehicle.

Orbital anticipates the first AJ26 will be delivered to Stennis in mid-2009, with testing beginning shortly after the test article is installed in the stand.

"We've been tasked to design and modify one of our most versatile test facilities and have it checked out and ready for testing in 11 months," said

Robert Bruce, Stennis' AJ26 test project manager.

"While this is an aggressive schedule, we are confident in our ability to support Orbital's development effort. We are excited to be selected by Orbital and are now fully integrated into their launch vehicle development team."

Stennis engineers will have less than one year both to design and make modifications to the E-1 Test Stand to accommodate testing of the AJ26. The engine uses RP-1 hydrocarbon fuel as rocket propellant. RP-1, which basically is refined rocket-grade kerosene, has not been used at Stennis to test a rocket engine this powerful since the late 1960s.

Bruce said the modifications will provide exciting new capabilities for the E-1 Test Stand.

"When Stennis Space Center develops this capability, it will give Stennis hydrocarbon fuel testing capabilities

for the first time at the E-1 Test Stand, and essentially renew a capability that the center had when it first opened in the 1960s," Bruce said.

"This fuel was used at the B-2 Test Stand in the 1960s, when Stennis tested the S-1C stage for the Apollo Saturn V Launch Vehicle, and we've only tested with RP-1 in the E Complex on two much smaller test articles since that time. This new capability makes Stennis' test expertise available to a whole new line of rocket engine developers in both the commercial and government space launch arenas."

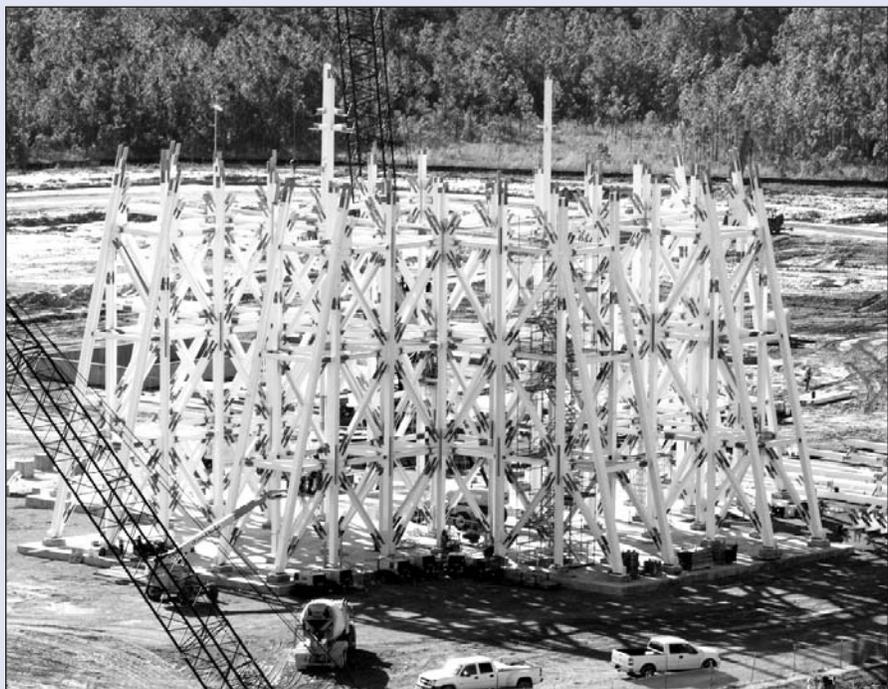
Testing the AJ26 will require two phases of work. The initial phase will ensure the facility is meeting its designed requirements. Then, engineers will test the AJ26 to determine whether the engine meets the contractor's requirements. This second phase, the acceptance testing, is scheduled to take place in late summer of 2009.

## A-3 Test Stand work continues to progress

Fabricated steel continues to rise from the foundation of the A-3 Test Stand being constructed at Stennis Space Center. By April 2009, some 4 million pounds of steel is scheduled to be in place – creating a 300-foot-tall stand for testing the new J-2X rocket engine that will help humans go back to the moon.

The J-2X engine is a centerpiece of NASA's Constellation Program – and Stennis Space Center is responsible for testing the engine before it is used in flight. The new test stand will enable engineers to simulate altitudes of up to 100,000 feet for testing the new engine.

The new stand is scheduled for full completion in May 2011.



# 2008 in review – looking ba

For NASA, 2008 marked a half century of achievement and excellence in space exploration. For John C. Stennis Space Center, it also was a year that focused on looking back as well as to the future.

Two events in 2008 had significant roles in the center's history:

## AIAA historical site designation

In an April ceremony, the American Institute of Aeronautics and Astronautics designated Stennis Space Center as a historic aerospace site. The designation made Stennis the fourth NASA site to be granted such an honor and placed the testing facility in elite company with such aerospace historic sites as Kitty Hawk, N.C. and Tranquility Base on the moon, where Apollo 11 astronauts landed in 1969. "Our test stands are monuments to our accomplishments of the past, but they are also the launch pads for the dreams of what we can accomplish in the future," then-Stennis Space Center Director Bob Cabana said during the ceremony.



(L to r) AIAA representative David Throckmorton presents a plaque designating John C. Stennis Space Center as a historic aerospace site during an April 10 ceremony. Joining Throckmorton were AIAA Greater New Orleans Chapter Chair Mark Hughes, then-Stennis Space Center Director Bob Cabana and Pratt & Whitney Rocketdyne Vice President John Plowden.

## Last space shuttle flight engine test

The shake, rattle and roar of a successful firing of space shuttle main engine No. 2061 on Oct. 22 may have marked much more than the end of a typical test at Stennis Space Center. It possibly signaled the end of an era – certification of the final flight engine built for the nation's Space Shuttle Program, which is scheduled to end in 2010. Stennis will continue testing space



Steam blasts out of the A-2 Test Stand during an Oct. 22 test of space shuttle main engine No. 2061, the last shuttle flight engine scheduled to be built.

shuttle main engine components through 2009, but there are no plans to build another flight engine at this time. Since 1975, Stennis has tested every flight engine used in the Space Shuttle Program, about 50 main engines in all for use on more than 120 flights. During that time, no mission has failed as a result of engine malfunction.

However, even as the year offered a time of remembering and reflecting on Stennis' history of achievement, the focus of the facility was squarely on the future.

## J-2X power pack testing

The year began with Stennis engineers performing 1A power pack tests for the J-2X engine being built to help humans go back to the moon and possibly beyond as part of NASA's Constellation Program. By late spring, engineers had completed a series of tests, providing valuable data to use in refining the J-2X components. Once the new J-2X power pack is assembled, it will be returned to Stennis for additional testing, expected to begin in early 2010. Stennis also is responsible for testing the full J-2X engine when it is completed. Thus, as was the case with the Apollo Program, the path to go back to the moon runs squarely through Stennis.



Smoke and flames bear evidence of the success of an April test of the J-2X power pack 1A at the A-1 Test Stand.

## A-3 Test Stand work

When NASA was given a charge to go back to the moon, Stennis was given the responsibility to test the new J-2X

engines that will help do the job.

However, it was quickly apparent that a new test stand would be needed to perform the task. So, Stennis was selected to build the first large test stand at the center since the 1960s, a 300-foot-tall structure that will be able to simulate altitudes of up to 100,000 feet. The foundation for the new stand was poured in August 2007, and erection of steel began in October 2008. By April 2009, some 4 million pounds of fabricated steel will be in place, forming a structure that can withstand up to 1 million pounds of thrust. "This is a tremendous time for everyone involved," said Robert Ross,



One of the first pieces of fabricated steel is lifted into place in late October at the A-3 Test Stand site.

# Back, moving to the future

deputy project manager for the A-3 Test Stand. “For the rest of our lives, we’ll be able to look at the stand and all it enabled and say, ‘I worked on that.’”



Left photo) New Stennis Space Center Director Gene Goldman (right) talks with former Sen. Trent Lott of Mississippi during a 2007 event.

(Right photo) Former Stennis Space Center Director Bob Cabana (right) is inducted into the Astronaut Hall of Fame in a 2008 ceremony.

Of course, it was not just high-profile events that marked the Stennis year. In 2008, the center endured another summer of hurricane scares, although none made a direct, damaging hit. The center, which operates as a federal city housing various government, civilian and higher education agencies, also held a ribbon-cutting on its newest facility, the NASA Shared Services Center.

During the year, Stennis also welcomed crew members of three shuttle missions as well as area Special Olympics participants. The center continued its support of such innovative programs as FIRST Robotics, FIRST LEGO League, Astro Camp, Explorer Schools and DEVELOP, as well as many more education initiatives. Stennis leaders participated in the annual Capitol Day in Jackson, Miss., and many representatives traveled to Washington, D.C., to participate in the Smithsonian Folklife Festival, offering hands-on, space-related activities to visitors to the nation’s capital.

In commemoration of NASA’s 50th year, Stennis also found itself credited twice on a list of the agency’s top “spinoff” technologies developed as a result of the space program but benefiting daily life as well.

Stennis Space Center also received the 2008 Award of Excellence from Hancock County, Miss., where the facility is based. County leaders praised Stennis for its outstanding service to the surrounding community. They also recognized the StenniSphere, the visitor’s center at Stennis Space Center, as the Hancock County Tourism Business of the Year. As many as 46,000 people tour and visit the space center each year.

## Change in leadership

On Sept. 30, 2008, exactly one year after it was announced he would serve as director of Stennis Space Center, NASA announced Bob Cabana was leaving the rocket engine testing facility to become director of the John F. Kennedy Space Center in Florida. Less than one month later, Deputy Director Gene Goldman was selected to succeed Cabana. “I’m honored to be selected,” Goldman said following the announcement. “We have a lot of exciting and challenging work ahead of us at a pivotal time in NASA’s history.”



Stennis employees wearing commemorative T-shirts form a huge “50” on the administrative building lawn to mark the anniversary of NASA.



## Stennis employees honored

Fourteen Stennis Space Center employees were honored by NASA's Space Flight Awareness Program for their contributions to flight safety. The awards were presented by Stennis Space Center Director Gene Goldman during a ceremony held Nov. 20 at Stennis. Pictured are (front row, l to r) Kathy Lehr of Applied Geo Technologies; George Paz with the Defense Contract Management Agency; Annette Moran and F. Elizabeth Palm, both of Pratt & Whitney Rocketdyne; Mary Washington of Computer Sciences Corp.; (back row, l to r) Wendy Holladay of NASA; Vance Hathcock of Jacobs Technology Facility Operating Services Contract Group; Bill Brumfield of Lockheed Martin Enterprise Solutions & Services; Kenny Dubuisson and Charles Gandy, both of Pratt & Whitney Rocketdyne; Catherine Lizana and Mary Lou Matthews, both of Jacobs Technology NASA Test Operations Group. Recipients not pictured are Gregory Fletcher of NASA and Larry Lafontaine of Jacobs Technology Facility Operating Services Contract Group.



## Workers recognized for project funding system

(L to r) Ian Walters of SaiTech Inc. and Charles Broussard, Tim Jones and Susan Gray, all of Computer Sciences Corp., recently received NASA Frontline Awards from John C. Stennis Space Center leaders for their design and development of the ITS Project Funding Priority. The system developed by the four Stennis employees helped streamline and automate the project submittal, funding and priority process for the Engineering and Test Directorate at the South Mississippi rocket engine testing facility. The user-friendly application provides automated e-mail to users when funding calls open or close. The system also provides managers with the ability to rank projects by criticality, urgency and risk assessment, as well as reporting capabilities.

# DEVELOP team invited to report

The DEVELOP team at NASA's John C. Stennis Space Center has been invited to report research findings from two fall projects to the national meeting of the American Geophysical Union (AGU) this month in San Francisco.

The Stennis team includes Lauren Childs (team lead), Angela Maki (assistant team lead), Madeline Brozen (water quality project lead) and Marco Allain, all students at the University of New Orleans, as well as Jennifer Frey (forest health project lead), Jason Jones, Brandie Mitchell and Sadaf Malik, all students at the University of Southern Mississippi in Hattiesburg.

Stennis team members were invited to report on a pair of projects focusing on forest health and water quality during the Dec. 15-19 meeting. Both projects are based in the Big Creek Lake, Ala., watershed area. The team members will report on their summer project during the meeting as well. It focused on the use of NASA's Ice, Cloud and Land Elevation Satellite Geoscience Laser Altimeter System instrument to measure hurricane-caused forest loss in coastal Mississippi and Louisiana. The students presented phase 1 of that project at a poster session during last year's AGU fall session.

During this year's fall term, the eight students worked for

10 weeks on the Big Creek Lake projects under the supervision of Kenton Ross with Science Systems and Applications Inc. and Joe Spruce with Computer Sciences Corp. Big Creek Lake is the primary source of Mobile County's drinking water, making watershed management a priority for the area. Working with the Mobile Area Water and Sewer Systems, the team sought to use NASA Earth Observation Systems to determine how environmental conditions and human activity relate to water quality and watershed management, as well as to assess the impact that construction and changes in land use have had on the forest health and water quality in recent years.

In the spring term, the team will conduct three projects focusing on using NASA Earth Observation Systems to detect barrier island loss in Louisiana, forest regeneration following hurricanes in Florida and land cover changes in the Big Creek Lake watershed.

DEVELOP is a student-led, student-run program that focuses on developing projects to help communities. Working with science advisers from NASA and its contracting agencies, high school and college students spend internships developing and demonstrating possible responses to community-related problems.

# Resolve to foster greater kindness

In many cultural traditions, this time of year motivates reflection about our lives and assessment of possible changes we want to make in the New Year. The tradition of setting resolutions invites us to look back over the year and determine what issues we may want to focus on in the upcoming months.

Several cultures also share this tradition.

Omisoka Day is celebrated in Japan on Jan. 31 as a time of taking stock of one's life, cleaning house and paying debts.

During Ramadan, worshipers engage in self-purification and renewed commitment to their spiritual lives.

The African American holiday of Kwanzaa provides time for cultural reaffirmation and renewed commitment to family and the community.

So, in the spirit of these traditions, it might be valuable to engage in similar reflections within our work environment. What is it that you enjoy? What is it that you value and respect about your co-workers? What has been your most significant contribution to your team or organization? Our busy schedules don't always allow us time to acknowledge our peers for the skills, creative ideas and friendships they bring to our work lives.

Likewise, what have been your biggest challenges during

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the past year? Are there relationships that have been strained because of work tensions or misunderstandings? Is there something you can do to mend some fences? Are there ways in which you could stretch yourself and act more respectfully at work?

During this time of reflection and "taking pause," let's look at what we might do differently. If there is someone with whom you've had a longstanding conflict, you might consider one more attempt at coming to a better understanding. We spend so many hours of our lives each day at work. It just makes sense to make our time at work more enjoyable for ourselves and for our co-workers.

In the spirit of the season, then, may we each consider what we might do to foster greater kindness with each other.

*"I've learned that people will forget what you said, people will forget what you did, but people will never forget how you made them feel."*

– Maya Angelou

## Hail & Farewell

### NASA welcomes the following:

**Andrew Guymon**

AST, Mechanical Engineer  
Engineering and Test Directorate

**Marguerite Jones**

AST, Quality Assurance  
Office of Safety & Mission Assurance

## @ Stennis

### What is the greatest challenge facing NASA as the agency begins its next 50 years of work?

**Editor's Note:** @ Stennis is a monthly feature highlighting the views and opinions of Stennis Space Center employees.



"The biggest challenge is to surpass the amazing accomplishments of the past 50 years and to get society involved and understanding that space exploration is necessary for our future." **Leanne Drapeza, Computer Sciences Corp.**

"NASA's biggest challenge in the future will be funding. They also need to establish a goal of getting humans to Mars."

**Patrick Bruno, Helios Systems**



"I think the biggest challenge is going to be trying to keep up with, and ahead of, all the foreign nations." **Russell Cuevas, Helios Systems**

"Our biggest challenge may be the expected Baby Boomer retirement 'mass exodus.' We need to attract, cultivate and retain Gen Xers and Yers."

**JoAnn Larson, NASA**



# FIRST Robotics mentors sought



Mentors are being sought for Mississippi and Louisiana teams preparing to compete in the 2009 FIRST Robotics competition.

The kickoff for the 2009 competition is set for Jan. 3 in the StennisSphere auditorium at NASA's John C. Stennis Space Center. The FIRST competition is designed to encourage students to pursue engineering and technology degrees. Teams are given six weeks to build robots that can perform assigned tasks. They then compete in regional events to earn a chance to go to national finals.

Persons interested in serving as mentors for a competing team may call Katie Wallace at 228-688-7744 or Barbara Marino at 228-688-1378.

# Central Mississippi team wins LEGO title

The Central Mississippi Robotics team from Brandon won top honors during the FIRST (For Inspiration and Recognition of Science and Technology) LEGO League 2008 Mississippi Championship Tournament held Dec. 6 at the Mississippi Gulf Coast Community College campus in Gautier.

Students ages 9 to 14 from private, public and home-schooled sectors from around the state competed in the tournament. At the end of the daylong competition, the Central Mississippi team claimed the Champion's Award.

In addition to that overall prize, competition is judged in four areas: robot



A FIRST LEGO League judge looks on as two young competitors monitor the progress of their robot during the Mississippi championship tournament in Gautier on Dec. 6.

performance; technical design and programming of the robot; project presentation; and teamwork.

The Long Beach Middle School team won first place for robot performance. Oxford Middle School won top prize for robot design. The Home Educators of Southwest Mississippi team from McComb won top honors for their response to this year's "Climate Connection" research challenge. The team from Roseland Park Baptist Church Academy in Picayune won first place for teamwork.

NASA recognizes FIRST activities as an excellent hands-on method to increase student knowledge of science, engineering, technology and mathematics. Stennis Space Center supports FIRST by providing mentors and training, as well as competition judges and event personnel.

## LAGNIAPPE

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