

NASA-tested engines powering commercial flights to space

Engineers at NASA’s Stennis Space Center conducted a test of Aerojet Rocketdyne’s AJ26 Engine E13 on August 8, the first test firing since installation of an upgraded thrust vector control system at the E-1 Test Stand, Cell 3. The upgrade brings the test facility into the flightlike configuration used on the Orbital Sciences Corporation Antares launch vehicle.

A team of NASA, Orbital Sciences and Aerojet Rocketdyne engineers conducted the hotfire test of the engine. After test data is reviewed, the engine will be shipped to NASA’s Wallops Flight Facility in Virginia, to be joined with a twin engine on Orbital’s Antares rocket first stage. The next time it is fired, it will power the launch of an Antares rocket on a commercial cargo mission.

“Stennis Space Center plays such a critical role in providing propulsion ground testing services in NASA partnerships with companies like Orbital Sciences,” said Randy Holland, AJ26 project manager at Stennis. “The Aug. 8 test was particularly exciting because it was the first with the



NASA, Orbital Sciences Corporation and Aerojet Rocketdyne engineers conduct a full-duration test of an AJ26 engine on the E-1 Test Stand at Stennis Space Center on Aug. 8.

upgraded thrust vector control system, which means it closely reflected how the engine will perform on an actual flight, a key goal of ground testing.”

NASA has been testing AJ26 engines at Stennis Space Center since November 2010, following more than a year of test stand modifications, including construction of a 27-foot-

deep flame deflector trench. The first test of a flight engine was conducted in February 2011 and was viewed by NASA Administrator Charles Bolden and executives from Orbital and Aerojet Rocketdyne.

A pair of AJ26 engines tested at the facility in the fall of 2011 powered

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Hurricane evacuation update

Trent Lott Blvd. through Stennis Space Center will not be open as a hurricane evacuation route for the 2013 season.

“Education is one topic that many rally around because it touches everyone’s life, and it is how the future is shaped!”



From the desk of
Katrina Emery

Director, Office of Education, Stennis Space Center

It’s with delight that I write my first Lagniappe article as the new education director at NASA Stennis Space Center.

In this role, it is my responsibility to develop and implement the center’s education programs throughout Mississippi and Louisiana. They are designed to inspire and strengthen student interest in science, technology, engineering and mathematics (STEM) through NASA’s unique missions, workforce, facilities research and innovations.

STEM is vitally important to America’s global competitiveness. Unfortunately, our students are falling behind, particularly in the areas of math and science, when compared with our international competitors. In fact, the interest of students in STEM has eroded over time, and at this rate, we will NOT be able to meet our workforce demands in the future.

According to the U.S. News & World Report article, “The State of STEM and Jobs,” STEM jobs are projected to grow by 17 percent by 2018. Yet, an overwhelming number of jobs will require specialized skills and talents.

Fortunately, I joined a team that is already committed to address this deficit and has been successful at inspiring students and equipping teachers with the necessary resources and tools by providing quality, sustained professional development experiences that will increase and deepen content knowledge in STEM.

One such flagship program is Astro Camp that offers a series of weeklong summer camps, one-day Saturday camps and special events for children ages 7-15 to inspire future astronauts and engineers to learn about space and STEM. Astro Camp presents math

and science principles through fun, hands-on activities, teaching teams of campers to work together to complete missions.

Astro Camp sessions inform children about manned space flight, NASA’s Space Launch System Program, the space shuttle and Stennis propulsion testing. This year marked the 25th year of the program and was the first year the camp was held at the INFINITY Science Center to provide greater accessibility to the public. Over 600 students participated in the summer camps and special event camps in the last fiscal year.

NASA Stennis also partners with organizations such as Boy and Girl Scouts, Boys and Girls Club, FIRST (For Inspiration and Recognition of Science and Technology) Robotics and the 4-H Club, to name a few. Programs such as these encourage curiosity and creativity, which are cornerstones of independent thinking. These programs provide exposure to STEM education and STEM careers and provide enrichment activities to demonstrate real-life technological application of theoretical learning.

My personal commitment is to collaborate with government, industry and academia within the federal city at Stennis Space Center and throughout Mississippi and Louisiana to leverage investments in STEM to reach a greater number of students and educators. Education is one topic that many rally around because it touches everyone’s life, and it is how the future is shaped!

Katrina Y. Emery

Lagniappe is published monthly by the Office of Communications at NASA’s John C. Stennis Space Center.

Access monthly copies at: www.nasa.gov/centers/stennis/news/publications/index.html

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FULFILLING NASA'S EXPLORATION MISSION



NASA conducts gimbal test of J-2X engine

NASA conducts a test of the next-generation J-2X rocket engine on the A-1 Test Stand at Stennis Space Center on Aug. 15. During the test, the engine was gimballed, or pivoted, the same way it must move during an actual

flight to ensure proper trajectory. The test provided critical data on the performance of the engine. The 885-second test was the longest-duration hotfire of a full J-2X engine.

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the successful test flight of Antares from the new Mid-Atlantic Regional Spaceport Pad-0A at Wallops on April 21. Orbital now is preparing for its first demonstration flight to the International Space Station (ISS) in the coming months.

On the flight, Antares will launch experiments and supplies to the space station aboard Orbital's new Cygnus cargo spacecraft through NASA's Commercial Orbital Transportation Services (COTS) Program. After successful completion of the

demonstration mission, Orbital will begin conducting eight planned cargo resupply flights to the space station through NASA's \$1.9 billion Commercial Resupply Services contract with the company.

The flights are scheduled through 2016. All will be launched from Wallops and powered by a pair of AJ26 engines tested at Stennis Space Center.

Orbital built its Antares rocket and Cygnus spacecraft under NASA's COTS Program. Antares is the largest rocket built to date by the company and its first cryogenically powered launch vehicle.

NASA initiatives, such as COTS, are helping develop a robust U.S. commercial space transportation industry with the goal of achieving safe, reliable and cost-effective transportation to and from the ISS and low-Earth orbit.

NASA's Commercial Crew Program also is working with commercial space partners to develop capabilities to launch U.S. astronauts from American soil in the next few years.

For additional information about upcoming Orbital test flights, as well as links to NASA's COTS and commercial crew programs, visit: www.nasa.gov/orbital

Happy 1-year anniversary, Mars Curiosity rover!



NASA's Mars Science Laboratory rover Curiosity (left inset) appears as a bluish dot near the lower right corner of this enhanced-color view from the High Resolution Imaging Science Experiment (HiRISE) camera on NASA's Mars Reconnaissance Orbiter. The rover's tracks are visible extending from the landing site, "Bradbury Landing," in the left half of the scene. Two bright, relatively blue spots surrounded by darker patches are where the Mars Science Laboratory spacecraft's landing jets cleared away reddish surface dust at the landing site last August. For scale, the two parallel lines of the wheel tracks are about 10 feet (3 meters) apart. HiRISE shot this image on June 27, 2013, when Curiosity was at an outcrop called "Shaler" in the "Glenelg" area of Gale Crater. Subsequently, the rover drove away from Glenelg toward the southwest. The Curiosity rover marked one year on Mars the week of Aug. 5 and has already achieved its main science goal of revealing ancient Mars

could have supported life. The mobile laboratory also is guiding designs for future planetary missions. "Successes of our Curiosity – that dramatic touchdown a year ago and the science findings since then – advance us toward further exploration, including sending humans to an asteroid and Mars," said NASA Administrator Charles Bolden. "Wheel tracks now will lead to boot prints later." After inspiring millions of people worldwide with its successful landing in a crater on the Red Planet on Aug. 6, 2012 (CDT), Curiosity has provided more than 190 gigabits of data; returned more than 36,700 full images and 35,000 thumbnail images; fired more than 75,000 laser shots to investigate the composition of targets; collected and analyzed sample material from two rocks; and driven more than one mile (1.6 kilometers). The one-year anniversary of the mission was marked with Curiosity team members at NASA's Jet Propulsion Laboratory in Pasadena, Calif., sharing remembrances

about the dramatic landing night and the overall mission in an event aired on NASA Television and the agency's website Aug. 6. A live public event from NASA Headquarters in Washington also featured NASA officials and crew members aboard the International Space Station as they observed the rover anniversary and discussed how its activities and other robotic projects are helping prepare for a human mission to Mars and an asteroid. Curiosity, which is the size of a car, is making its way to the base of Mount Sharp, where it will investigate lower layers of a mountain that rises three miles from the floor of the crater. HiRISE is one of six instruments on NASA's Mars Reconnaissance Orbiter. The University of Arizona operates HiRISE, which was built by Ball Aerospace & Technologies Corp. in Boulder, Colo. NASA's Jet Propulsion Laboratory manages the Mars Reconnaissance Orbiter and Mars Science Laboratory.

2013 NASA Honor Awards

Stennis Space Center Director Rick Gilbrech and NASA Chief Financial Officer Elizabeth Robinson presented annual NASA Honor Awards to center employees during an onsite ceremony July 23.

One Stennis employee received NASA's Outstanding Leadership Medal. This medal is awarded to government employees for notable leadership accomplishments that have significantly influenced the NASA mission. The award recognizes an individual's leadership and effectiveness in advancing NASA's goals and image.

Dorsie Jones received NASA's Outstanding Leadership Medal for her work as manager of the NASA Office of Human



Capital at Stennis. Jones leads and directs all NASA human resources services at Stennis. She has been responsible for a number of key successes, most notably in securing much-needed staff to complete assigned work and in guiding a cultural evolution that has led Stennis to rank second among 292 federal agency subcomponents as a best place to work and first among all NASA centers.

Four Stennis employees received NASA's Exceptional Service Medal. This medal is awarded to a government employee for sustained performance that embodies multiple contributions which contribute to NASA projects, programs or initiatives.

Gary L. Benton received NASA's Exceptional Service Medal for his work in the Stennis Propulsion Test Project Office. During his tenure, Benton served as manager for space

shuttle external tank ice/frost testing and space shuttle external tank diffuser testing. He currently serves as manager for the J-2X test project. In each of his roles, Benton has used his leadership and expertise to address significant technical challenges.



James D. Huk received NASA's Exceptional Service Medal for his work as deputy procurement officer and senior adviser



to the procurement officer. Huk was responsible for refurbishment of the liquid hydrogen barge and served as procurement lead for the Stennis Test Operations Contract. He also contributed to a 14.4 percent increase in total contract dollars awarded to small businesses in fiscal years 2009-11, allowing the center to exceed the small business goals in every category in 2010.

Nathan E. Laborde received NASA's Exceptional Service Medal for 47 years of service to the Stennis propulsion test community. Since arriving at Stennis in 1966, Laborde has served in various contractor capacities to support Apollo and space shuttle test projects, including as a systems test engineer, an instrumentation engineer and an electrical operations lead. He joined the NASA team in 2001 and currently supports test operations at the A-1 Test Stand.



Edward J. Toomey received NASA's Exceptional Service Medal for his work as senior cost accountant and lead for the financial accounting branch within the Stennis Office of the Chief Financial Officer. He has assisted, led and mentored many civil servants and contractors in key areas to ensure the accuracy and integrity of NASA's financial information. Since 2010, he also has been responsible for preparing the annual economic impact report analyzing the financial impact of NASA and Stennis.



Five Stennis employees received NASA's Exceptional Achievement Medal. This medal is awarded to any government employee for a significant, specific accomplishment or substantial improvement in operations, efficiency, service, financial savings, science or technology which contributes to the mission of NASA.

Robert S. Harris received NASA's Exceptional Achievement Medal for service in various capacities within the Stennis



Office of Procurement, including his current role as procurement officer and senior procurement official. Among notable achievements, Harris led in the drafting of the first multiple award construction contract at Stennis. He led the effort in Stennis exceeding its small business goals and to the facility receiving its first-ever NASA Small Business Administrator's Cup in fiscal year 2011.

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Richard T. Rauch received NASA's Exceptional Achievement Medal for sustained achievements in space exploration



program support and propulsion test planning with NASA's Marshall Space Flight Center and NASA Headquarters. His accomplishments through the years have helped advance NASA's approach to propulsion test planning and execution.

Michelle M. Stracener received NASA's Exceptional Achievement Medal for her work as small business specialist and



procurement analyst within the Stennis Office of Procurement. Stracener serves as the sole small business specialist for Stennis and helped the facility exceed small business goals in every category for the first time ever in fiscal year 2010. She also was instrumental in development of the NASA Small Business Improvement Plan and supports various small business activities at Stennis.

Charles C. Thurman received NASA's Exceptional Achievement Medal for his work as the high-speed data



acquisition system engineer for the E Test Complex within the Stennis Engineering & Test Directorate. He provides critical support for the system. Thurman is known for his innovative approaches in collecting

engine test data and for his ability to overcome technological obstacles.

Monica M. Watts received NASA's Exceptional Achievement Medal for her work as property accountant in the



Stennis Office of the Chief Financial Officer. Among her notable efforts, Watts provided key support to implement major changes in asset accounting and materials management. She also worked with the U.S. Army to complete the documentation process needed to transfer 4,400 acres of Mississippi Army Ammunition Plant property and facilities at Stennis to NASA ownership.

One Stennis employee received NASA's Exceptional Engineering Achievement Medal. This medal is awarded to government and nongovernment individuals for exceptional engineering contributions toward achievement of the NASA mission.

Daniel C. Allgood received NASA's Exceptional Engineering Achievement Medal for his work as a computational



fluid dynamics subject matter expert within the Stennis Engineering & Test Directorate. Among other contributions, he serves as the technical expert for flame trench performance for the Aerojet AJ26 commercial rocket engine test project at Stennis. His state-of-the-art efforts have resulted in successful and cost-effective commercial and NASA propulsion test campaigns to support the nation's space program.

One Stennis employee received NASA's Outstanding Public Leadership Medal. This medal is awarded to non-government employees for notable leadership accomplishments that have significantly influenced the NASA mission.

Michael E. McDaniel received NASA's Outstanding Public Leadership Medal for his work as general manager of



Aerojet Rocketdyne Inc. at Stennis. In that role, McDaniel is responsible for leading his workforce in performing rocket engine hardware assembly and test operations for federal and commercial operations. Under his leadership, NASA recognized the company, formerly Pratt & Whitney Rocketdyne, with the Stennis Contractor Excellence Award in 2012.

One Stennis employee received NASA's Exceptional Public Service Medal. This medal is awarded to any nongovernment individual for sustained performance that embodies multiple contributions on NASA projects, programs or initiatives.

Luke M. Scianna received NASA's Exceptional Public Service Medal for more than 33



years in various capacities with the Facility Operating Services Contract at Stennis. His primary responsibility has been as a systems engineer for maintenance and operation of heating, ventilation and air conditioning systems. He has provided critical support for operational improvements at the center, including the use of communication fibers to revolutionize how preventative maintenance is performed on systems.

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One Stennis employee received NASA's Silver Achievement Medal. This medal is awarded to government or nongovernment individuals or teams by NASA center directors for a stellar achievement that supports one or more of NASA's core values.

Vincent R. Pachel received NASA's Silver Achievement Medal for key leadership within the Stennis Engineering & Test



Directorate in supporting NASA's effort to prepare the A-2 Test Stand at Stennis for J-2X rocket engine testing and in the successful completion of the engine test series. He previously served as lead mechanical operations engineer and now serves as A-2 Test Stand test director with responsibility for all phases of the ongoing J-2X test project.

One Stennis employee received Stennis' J. Harry Guin Outstanding Leadership Award. This is awarded to an individual who has provided exemplary leadership that has significantly enhanced the role, capability or professional recognition of Stennis Space Center within the space, scientific or administrative communities.

Robert C. Bruce Jr. received Stennis' J. Harry Guin Outstanding Leadership Award for sustained leadership within the Stennis Project Directorate in new business development efforts for rocket propulsion testing. Bruce is the Stennis entry point for rocket propulsion test services for both agency and commercial customers.



Several additional Stennis Space Center individuals and groups were recognized for service and contributions during the NASA Honor Awards ceremony. Those honors included:

Length of Service Awards

35 years

Robert Bruce Jr.
Patricia Fairley
Donald Griffith
Kirk Sharp

30 years

Marina Benigno
Freddie Douglas III
Mark Hughes
Bonnie Humphrey
Dorsie Jones
Christel McDonald
David Walters

25 years

Terry Addlesperger
Don Beckmeyer
James Bryant
Randy Canady
Hugh Carr Jr.
James Cockrell
Kimberly Guin
Brian Hey

Group Achievement Awards

A-1 Test Team

NASA

Rae Anderson
Gary Benton
William Camus
Gregory Carmouche
Thomas Carroll
David Carver
Jack Conley
Howard Conyers
Robert Drackett
Robert Ek
David Failla
Jennifer Franzo
Daniel Goad
Jared Grover
Jeffery Henderson
Paula Hensarling
Michael Holmes

Jason Hopper
Justin Junell
Nathan Laborde
Jessie Lamont
Lester Langford
Ryan McKibben
Michael Perotti
Paul Rieder
Amanda Schmidt
Marc Shoemaker
Dwayne Stockstill
Nyla Trumbach
Mark Turowski

Contractor Support

Bryan Averill
Chris Coogan
Skip Cox
Mike Dantoni
Brad Denmark
Eddie Drago
Kenny Dubuisson
Mark Dyle
Jack Fabre
Glenn Faciane
Blake Ford
Alan Forsman
Ralph Fowler
Dwayne Garcia
John Giveans
Josh Hansell
Megan Harrington
Haynes Haselmaier
Scottie Herrin
Mike Howard
Jay Labat
Byron Ladner
Chase Ladner
Lavell Ladner
Richard Ladner
Roger Ladner
Mike Laptas
Dwayne Lavigne
Joel Lee
Dan Lewis
Ira Lossett
Stephen Lossett
Bruce McLain
Mark Mitchell
Don Necaie

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Barney Nokes
 April Page
 Tim Richmond
 Nick Riesner
 Mounir Sabbagh
 Philip Schemanski
 Eric Vanderklis
 Lance Walthall
 Christopher Woods



Group Achievement Award – A-1 Test Team

**E-2 Main Injector/Turbulator
 Test & Support Team**

NASA
 Henry Bakker
 William Camus
 Craig Chandler
 Kimberly Drievergen
 Robert Ek
 Andrew Guymon
 Tiffany Hawkins
 Bridget Jones
 Megan Martinez
 Raymond Nichols
 Stephen Rawls
 Barry Robinson
 Sonia Rushing
 Charles Thurman
 Darrel Varner
 Christina Zeringue

Contractor Support

Glen Beech
 Arie Bell
 Gary Bennett
 William Besheres
 Byron Bordelon
 Terrence Burrell
 Dennis Butts
 Cheley Carpenter
 Roy Carroll
 Scott Curet
 Darrel Day
 Michael Easley
 Scott Fleming
 Don Gardner
 William Gilbert

Dale Green
 Pat Guidry
 Capt. Ashton Hainge
 Capt. Alex Henning
 Darwyn Hilsher
 Travis Kennedy
 Chad Ladner
 Lisa Ladner
 Marsha Ladner
 Jake McKinley
 Jimmy Meitzler
 Dennis Necaise
 Pike Saunders
 Jan Smith
 Tim Smith
 Kathryn Stephens
 Gary Storey
 Perry Waller
 Capt. Scott Waltermire
 Ben Weisel
 Brad Winkleman
 Tom Wolfe



Group Achievement Award – E-2 Main Injector/Turbulator Test & Support Team

ForWarn Development Team

NASA
 William Graham

Contractor Support

Jesslyn Brown
 William Christie
 Caroline Dougherty
 Gerald Gasser
 Nancy Grulke

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William Hargrove
 Forrest Hoffman
 Matt Hutchins
 Callie Jenkerson
 Jitendra Kumar
 Phillip Kuper
 Danny Lee
 David Meyer
 Richard Mills
 Derek Morgan
 Steve Norman
 Mark Phillips
 Karin Rogers
 Joseph Spruce
 Sean Schroeder
 James Smoot



Group Achievement Award – ForWarn Development Team

Stennis Space Center Test Communications & Radio Encryption Team

NASA
 James Bryant
 Mary Byrd
 Mark Carley
 Gregory Carmouche
 Jennifer Franzo
 Michael Harbart
 Jeffery Henderson
 Randolph Holland

Mark Hughes
 Kerry Klein
 David Roberts
 Maury Vander
 David Walters

Contractor Support

Jack Allen
 Mike Antoine
 Byron Ladner
 Jay Stevens
 Edgar Waguespack
 Emma Daniels

Stennis Space Center/Johnson Space Center Morpheus Test Team

NASA
 Daniel Allgood
 Brian Butcher (JSC)
 Craig Chandler
 Sue Cockrell
 Jacob Collins (JSC)
 Robert Ek
 Jared Grover
 Andrew Guymon
 Roderick Haley
 Tiffany Hawkins
 Wendy Holladay
 Melissa Huggins
 Eric Hurlbert (JSC)
 Truc Le
 John Melcher (JSC)
 Robert Morehead (JSC)
 Travis Kennedy
 Thomas Nicolaides
 Nina Patel (JSC)
 Stephen Rawls
 Eric Ross
 Sonia Rushing
 Gary Taylor
 Charles Thurman
 Darrel Varner
 Richard Wear



Group Achievement Award – Stennis Space Center Communications & Radio Encryption Team

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Contractor Support

- Glen Beech
- Arie Bell
- Gary Bennett
- Byron Bordelon
- Don Brewster
- Terrence Burrel
- Brian Corr
- Scott Curet
- Scott Fleming
- Bill Gilbert
- Dale Green
- Pat Guidry
- Darwyn Hilsher
- Butch Howard
- Chad Ladner
- Joseph Lizana
- Jake McKinley
- Todd Meitzler
- Robbie Miller
- Dennis Necaie
- Kevin Parker
- Christopher Radke
- Tim Smith
- Peggi West
- Howard Wilson
- Tom Wolfe



Group Achievement Award – Stennis Space Center/Johnson Space Center Morpheus Test Team

Wallops Flight Facility Support Team

NASA

- David Coote
- Arlen Griffey
- Donald Griffith
- Aaron Head
- Bartt Hebert
- Justin Junell
- Son Le
- Jeffrey Lott
- Thomas Meredith

- Rosa Obregon
- Vincent Pachel
- David Roberts

Contractor Support

- Carolyn Anderson
- Raymond Breault
- Marla Carpenter
- Larry Clayton
- Roger Clements
- Steven Costello
- Taylor David
- Casey Deschamp
- Douglas Dike
- Jeanetta Dunhurst
- Willie Ellis
- Jimmy Everett
- Richard Ferrill
- Troy Fleming
- Bradley Gallagher
- Dale Green
- Daniel Gurneck
- Josh Hancock
- Lawrence Haselmaier
- Ken Hawkins
- Robert Hayward
- William Ivey
- Kurt Jarrell
- Marsella Jones
- Kevin Jurich
- Jerry Knight
- Philip Kopfinger



Group Achievement Award – Wallops Flight Facility Support Team

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Joey Malley
Kenneth McCormack
Mark Mills
Timothy Mitchell
Dennis Necaie
Jimmy Necaie
Bobby Rodriguez
David Slavinsky
Timothy Smith
Darrin Spansel
William Spansel
Carmalee Tarter
Andrea Thornton
Terry Wactor
Gregory Walls
Roger Walters Jr.
Anita Wilson
Skip Wright

Special Recognition Awards**Director's Certificate of Appreciation**

Cynthia P. Canady
Kanokwan Kooamphorn
2012 Diversity Day Planning Committee
NASA
Apolonia Acker
Marina Benigno
Anthony Goretski
Janet Haselmaier
Tiffany Hawkins

Brian Hey
JoAnn Larson
Jeanne Macksoud
Ruth McNeil
Patricia White

Contractor Support

Shanda Bennett
Kevin Cognevich
Bill Fisher
Liz Flynt
Belinda Gill
Marlene Lafontaine
Cecy Lewis
Vicky Looney
Millie Lucco
Bridgett May
Mike McDaniel
Tameka Page-Green
Brent Premer
Lakeshia Robertson
Angela Strong
Sheila Varnado
Jim Wahl
Debra Wilson
Denise Woods

Special Agency Award Recognitions**NASA Honor Awards****NASA Acquisition Forecast Team**

Michelle Stracener
John Cecconi

Data-at-Rest Encryption Team

Christopher Carmichael
Charles Hallal

Monti Muhsin
Debra Rushing

Mars Science Laboratory Launch and Landing – NASA Management & Support

Pamela Covington
Earnest Foerman

National Rocket Propulsion Strategy Team

Kirk Sharp

Space Launch System Engine Integrated Acquisition Team

Ronald Rigney

Space Launch System Stages Preliminary Design Review Team

Bryon Maynard
Eric Ross

Space Launch System SRR/SDR/KDP-B Team

Randolph Holland

Wallops Liquid Fueling Facility Certification Team

Son Le

2012 Virtual Executive Summit Team

Christopher Carmichael
Anita Douglas
Dorsie Jones
Ashley Speed
David Walters

NASA 2012 Small Business Advocate Award**Multiple Award Construction Contract Source Evaluation Board**

Jason Edge
Arlen Griffey
Scott Olive
Michael Rewis
Thomas Stanley
Casey Wheeler
Dale Woolridge

United States Patents**In-Situ Health Monitoring of Piezoelectric Sensors**

Scott Jensen
George Drouant

Conical Seat Shut-Off Valve

Bruce Farner

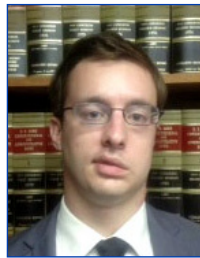


Group Achievement Award – 2012 Diversity Day Planning Committee

Intern reflects on Stennis experience

Note: David Balajthy recently completed a summer internship with the NASA Office of the Chief Counsel at Stennis Space Center. This is his reflection on that experience. Balajthy was born in New York State. He earned his undergraduate degree from the State University of New York at Geneseo, and is currently a third-year law student at the University of Georgia School of Law.

I was overjoyed when I learned of my opportunity to intern at Stennis Space Center this summer. I have been an avid fan of space travel and science fiction since I was young. NASA has always represented something special to me; there is something inspiring about a group of civil servants pursuing a vision that has such a far-reaching impact: “To reach for new heights and reveal the unknown so that what we do and learn will benefit all humankind.”



I felt instantly at home upon arriving at Stennis. I was quickly introduced to many of the directorates, and everyone I met was extremely welcoming. I was mentored by a dynamic group of leaders and future leaders and found the work of the Office of the Chief Counsel very rewarding.

From the first day of my internship, I received substantive assignments that challenged and enriched my understanding of the law. I had the opportunity to research and craft opinions on a wide range of subject matters, including ethics, procurements and collective bargaining agreements. Additionally, the chief counsel arranged for me to “intern” with the Stennis Office of the Chief Technologist, where I worked on subjects such as patent rights and license agreements.

It was an incredible opportunity to work in such a dynamic environment. During my short stint at Stennis, I was able to watch several rocket engine tests, meet a pair of astronauts, gain exposure to multiple federal agencies and, most importantly, get an idea of what it meant to be a part of the NASA family. My experiences have shown me how rewarding it can be to work in civil service, and I plan to continue to support NASA’s mission once I leave Stennis!

NASA in the News

DEVELOP project earns national award

The NASA DEVELOP Program received a second-place 2013 Gulf Guardian Award on June 26 for its project on Louisiana Ecological Forecasting: Utilizing NASA Satellite Data to Assist in Determining Ideal Planting Locations for Bottomland Hardwood Trees in St. Bernard Parish, La. For the project, DEVELOP interns at Stennis Space Center partnered with local nonprofit organizations to provide analysis and recommendations for suitable planting sites for bald cypress trees in St. Bernard Parish. Partners used the analysis to direct the spring 2013 planting of 6,000 saplings. The Gulf of Mexico Program began in 1988 to protect, restore and maintain the health and productivity of the Gulf of Mexico ecosystem in economically sustainable ways. The Gulf of Mexico Program initiated the Gulf Guardian Awards in 2000 as a way to recognize and honor the businesses, community groups, individuals and agencies that are taking positive steps to keep the Gulf healthy, beautiful and productive.

Hubble answers 40-year mystery

Astronomers using NASA’s Hubble Space Telescope have solved a 40-year mystery on the origin of the Magellanic Stream, a long ribbon of gas stretching nearly halfway around our Milky Way galaxy. The Large and Small Magellanic Clouds, two dwarf galaxies orbiting the Milky Way, are at the head of the gaseous stream. Since the stream’s discovery by radio telescopes in the early 1970s, astronomers have wondered whether the gas comes from one or both of the satellite galaxies. New Hubble observations reveal most of the gas was stripped from the Small Magellanic Cloud about 2 billion years ago, and a second region of the stream originated more recently from the Large Magellanic Cloud. For photo illustrations and more information about the Magellanic Stream, visit: www.nasa.gov/hubble.

NASA prepares for next Mars mission

NASA’s next spacecraft going to Mars arrived Aug. 2 at Kennedy Space Center in Florida, to begin final preparations for its November launch. The Mars Atmosphere and Volatile Evolution (MAVEN) spacecraft is undergoing detailed testing and fueling prior to being moved to its launch pad. The mission has a 20-day launch period that opens Nov. 18. The craft will conduct the first mission dedicated to surveying the upper atmosphere of Mars. Scientists expect to obtain data that will help them understand how the loss of atmospheric gas to space may have played a part in changing the planet’s climate. To learn more, visit: www.nasa.gov/maven.

For NASA news releases, visit online: www.nasa.gov/news/releases/latest/index.html.

Astronauts with Louisiana-Mississippi ties

Note: For more than 50 years, NASA's John C. Stennis Space Center has played a pivotal role in the success of the nation's space program. This month's Lagniappe provides a glimpse into the history of the south Mississippi rocket engine test center.

Eight former NASA astronauts have close ties to Mississippi and Louisiana. Mississippians Fred Haise, Richard "Dick" Truly and Donald Peterson were born in the Magnolia state, while Robert Stewart and Stuart Roosa were residents at one time. James Halsell Jr. and Dominic Gorie, native Louisianans, share their home state with Endicott, N.Y., native Douglas Hurley, a 1988 Tulane University graduate.

Apollo 13 astronaut Fred Haise was born in Biloxi, Miss., where his education began at Gorenflo Elementary School and included his graduation from Biloxi High School. Haise's Apollo 13 lunar mission in April 1970 suffered an inflight explosion that crippled the spaceship and precluded a moon landing. However, the flight was termed a "successful failure" since the astronauts were able to circle the moon and return home safely. The drama captured world attention and has been recounted in books and a major motion picture.

In 2009, NASA honored Haise with the agency's Ambassador of Exploration Award for his career that included one of space exploration's most-dramatic chapters. He was presented an encased moon rock, and in turn, presented it to Gorenflo officials for display at the school. The moon rock is part of the 842 pounds of lunar samples collected during six Apollo expeditions from 1969 to 1972.

Haise is currently a board member and spokesperson for INFINITY Science Center, a NASA visitor center.

Fayette, Miss., native Dick Truly attended schools in Fayette and Meridian. Truly's first flight in space and NASA's second shuttle mission, STS-2, was the first manned spacecraft to be reflown in space. He served as a pilot of space shuttle Columbia in 1981 and commander of STS-8 in 1983 aboard the Challenger shuttle, which was the first night launch and landing in the shuttle program. He served as NASA administrator from 1989-92.

Donald Peterson, born in Winona, Miss., graduated from Winona City High School. He was a mission specialist on STS-6 in 1983.

Hattiesburg High School and University of Southern Mississippi graduate Robert Stewart was born in Washington, D.C. Stewart served as a mission specialist on STS-41B in 1984 and STS-51J in 1985.

Stuart Roosa, a native of Durango, Colo., completed his



Astronauts Dominic Gorie (top row, 1 to r), Fred Haise, James Halsell; (second row, 1 to r) Douglas Hurley, Donald Peterson, Stuart Roosa; (third row, 1 to r) Robert Stewart and Richard Truly.



first space flight as command module pilot on Apollo 14 in 1971, with Alan Shepard and Edgar Mitchell. In 1981, he opened Gulf Coast Coors Inc., in Gulfport, Miss.

Born in Lake Charles, La., Dominic Gorie served as pilot on STS-91 in 1998 and STS-99 in 2000 and was a crew commander on STS-108 in 2001 and STS-123 in 2008.

James Halsell Jr. was born in West Monroe, La., where he graduated from high school. Halsell served as pilot of STS-65 in 1994 and STS-74 in 1995 and commanded STS-83 and STS-94, both in 1997, and STS-101 in 2000.

Doug Hurley served as pilot on STS-127 in 2009 and STS-135 in 2011, International Space Station missions.

Since the inception of NASA's human spaceflight program, the term "astronaut" derives from the Greek words meaning "space sailor," and refers to all who have been launched as crew members aboard NASA spacecraft bound for orbit and beyond. The crew assignments and duties of commander, pilot, space shuttle mission specialist or International Space Station flight engineer are drawn from the NASA professional career astronauts.

For more information about all NASA astronauts, go to http://www.nasa.gov/pdf/740566main_current.pdf. To view NASA's next generation of astronaut trainees, go to <http://www.nasa.gov/astronauts/2013astroclass.html>.

Office of Diversity and Equal Opportunity

Women's equality still needs improvement

"We must raise both the ceiling and the floor."

Sheryl Sandberg

(Lean In: Women, Work, and the Will to Lead)

As we prepare for this year's Women's Equality Day on Aug. 26, one might think women have come a long way and no longer have to deal with inequality. While it is true that women have made great strides toward equality over the last several decades, there are still areas where more improvement must come.

At a time when women are astronauts and truck drivers, it is hard to believe that the U.S. Constitution does not guarantee women the same rights as men. For most women, equality is a bread-and-butter issue. Women are still paid less on the job and charged more for everything from dry cleaning to insurance.

In 1776, Abigail Adams urged her husband, John, that he and other framers of our founding documents should, "Remember the ladies." Nearly 100 years later, Congress adopted amendments to the Constitution to end slavery and provide justice to former slaves. The 14th Amendment, passed in 1868, guaranteed all "persons" the right to "equal protection under the law." However, the second section of the amendment used the words "male citizens" in describing who would be counted in determining how many representatives each state gets in Congress. This was the first time the Constitution said point-blank that women were excluded. Similarly, the 15th Amendment in 1870 extended voting rights to all men, but not to any women.

It wasn't all doom and gloom for women in the 19th and early 20th centuries, though. Two women active in world anti-slavery efforts, Lucretia Mott and Elizabeth Cady Stanton, were leaders at the first-ever "Women's Rights Convention" in Seneca Falls, N. Y., in 1848. Their "Declaration of Sentiments" included this play on the Declaration of Independence, "We hold these truths to be self-evident: that all men and women are created equal."

These women and others went on to form what became

known as the suffrage movement. We now consider the suffragists the "first wave" of the U.S. feminist movement. During their long campaign to win women the right to vote, they used strategies such as marches, pickets, arrests and hunger strikes. They triumphed in 1920 when the states ratified the 19th Amendment to the Constitution, which corrected the longtime injustice the 15th Amendment had put into writing.

Some historic dates in the women's rights movement:

1971 – Pioneering feminist attorney Ruth Bader Ginsburg made the first breakthrough in the U.S. Supreme Court's "anything goes" attitude toward sex discrimination. She convinced the court to throw out an Idaho law that automatically gave preference to a man over an equally qualified woman when appointing the person responsible for disposing of the property of someone who has died. Ginsburg went on to become the second woman appointed to the U.S. Supreme Court.

1987 – In its only decision dealing with affirmative action for women, the U.S. Supreme Court upheld a county's voluntary affirmative action plan. In the case, a qualified woman was promoted over a man who had a slightly higher score based on interviews with a team of three men. The justices allowed the promotion to stand, and the woman became the first ever promoted to one of the county's 238 skilled craft jobs.

1994 – The Violence Against Women Act was passed, tightening federal penalties for sex offenders, funding services for victims of rape and domestic violence and providing for special training of police officers.

2009 – President Obama signed the Lily Ledbetter Fair Pay Restoration Act, which allows victims of pay discrimination to file a complaint with the government against their employer within 180 days of their last paycheck.

This year's Women's Equality Day event is sponsored by Lockheed Martin and Jacobs Technology at Stennis on Aug. 28 at 11 a.m. in the Logtown Conference Room.

Hail & Farewell

NASA bids farewell to the following:

Sue Cockrell	Management & Program Analyst Project Directorate
David Balajthy	Summer Intern Office of the Chief Counsel

And welcomes the following:

Alec Banks Jr.	Management Support Assistant Office of Procurement
Amy Langdale	Auditor Office of Procurement

Stennis DEVELOP students participate in summer sessions

NASA DEVELOP students at Stennis Space Center participated in a pair of summer conferences to present information on scientific research projects.

Stennis DEVELOP young professional Jason Jones joined three others from Mobile, Ala., and the national DEVELOP office in making a presentation at the Southern Legislative Conference in Mobile on July 29. The presentation to legislators from several southern states provided an overview of the DEVELOP/Mobile County Health Department partnership and how it contributes to workforce development and to producing scientific data products that benefit decision makers.

Jones and Stennis DEVELOP students Shelby Barrett and Timothy Sutherlin also attended the DEVELOP Annual Earth Science Applications Showcase/Summer Closeout on Aug. 1 at NASA Headquarters in Washington, D.C.

At the event, Barrett gave a short presentation on her team's Gulf of Mexico salinity project and presented a research poster. Sutherlin presented a poster about his team's gas-flaring project on air quality/climate and interacted with participating program managers. Jones moderated discussion about DEVELOP's impact with a panel of former DEVELOP interns, project partners from the USDA and a member of the Rwandan embassy in the U.S.

During the Washington showcase, Jones also had an opportunity to meet with U.S. Sen. Roger Wicker, R-Miss., and speak about his DEVELOP experience and how the research work done by program participants benefits both the students and community decision makers.



Stennis hosts teachers

Educators attended a two-day "Rockets and Robots" workshop at Stennis Space Center on July 11-12 to learn the basics of launching rockets that deliver payloads into space and of robots that NASA has designed and launched on missions. Educators also took a field trip to the A-2 Test Stand (above), which included a ground floor presentation. Stennis Astro Camp staff instructed educators on building scale rockets and assisted with launches (below). Several types of simple, easy-to-use rockets were built and launched. Educators also studied types of robots that NASA has designed and launched to the International Space Station and to Mars, as well as other robotic endeavors. In addition, they used NASA curriculum and hands-on activities to study science, technology, engineering and math (STEM) that cover Newton's laws of motion and the basics of engineering. The goal of the workshop is to enable educators to take the curriculum and activities back to their classrooms.

