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Constellation Program managers visit SSC

Stennis crucial in return to the moon

NASA Stennis Space Center will play a critical role in the agency's Constellation Program, according to managers who visited the site July 13.

The Constellation Program is NASA's plan of work for the new spacecraft that will return humans to the moon and blaze a trail to Mars and beyond, fulfilling the Vision for Space Exploration. The centerpiece of the system is a new crew launch vehicle, Ares I, designed to boost the Crew Exploration Vehicle into orbit. The CEV will carry four astronauts to and from the moon, support up to six crewmembers on future missions to Mars and deliver crew and supplies to the International Space Station.

Constellation Program managers toured SSC's rocket engine test complex and spoke to employees about the crucial role the center will play in fulfilling America's Vision for Space Exploration.

"Our work now is in the predesign stage," said Jeff Hanley, NASA's Constellation Program manager. "But we hope to see the first manned launch as early as 2012." He said Con-



Steve Cook (left), director of the Exploration Launch Projects office at Marshall Space Flight Center; Jeff Hanley, Constellation Program manager; and Skip Hatfield, Crew Exploration Vehicles manager, conducted an all-hands meeting with Stennis Space Center employees July 13. The three, along with other Constellation Program managers, visited SSC to discuss the critical role the center will play in America's Vision for Space Exploration.

stellation's crew exploration vehicle is targeted to be flying by 2014.

With more than 40 years of experience in rocket propulsion testing, SSC will continue to serve in its traditional test

See **CONSTELLATION**, Page 11

Space Shuttle Atlantis on Launch Pad for STS-115 mission

Space Shuttle Atlantis sits on the hardstand of Kennedy Space Center's Launch Pad 39B after its nearly 8-hour rollout from the Vehicle Assembly Building. To the left of the shuttle are the rotating service and fixed service structures. Atlantis' launch window begins Aug. 27 for an 11-day mission, STS-115, to the International Space Station.

See more mission, crew information, Page 4



From the desk of
Dr. Richard Gilbrech
 Director,
 Stennis Space Center



This month marks the one-year anniversary of the day Hurricane Katrina made landfall along the Louisiana-Mississippi coast. Many of our employees were significantly impacted by this storm, yet continued to perform outstanding work at Stennis while dealing with their own issues at home. Several events are planned to mark the anniversary. Please watch for announcements in Orbiter and Stennis News on dates and times of these remembrance activities.

In July, the successful mission of STS-121, powered by engines tested and proven flight-worthy at Stennis, was the second in NASA's Return to Flight sequence. The mission was also unique, being the first ever space shuttle to launch on Independence Day. For me, I will always remember STS-121 as my first launch sitting in the Stennis Center Director's seat at the Kennedy Space Center Launch Control Center just four miles from the pad. Now, Space Shuttle Atlantis is sitting on that same pad as we look forward to another great mission for STS-115.

Returning the shuttle to flight is a first step in fulfilling the Vision for Space Exploration of returning humans to the moon and eventually traveling on to Mars and beyond. Stennis will play a crucial role in this new frontier. Several

managers with the Constellation Program, NASA's plan of work for the new spacecraft to accomplish this journey, visited Stennis on July 13 to discuss the work plan with employees.

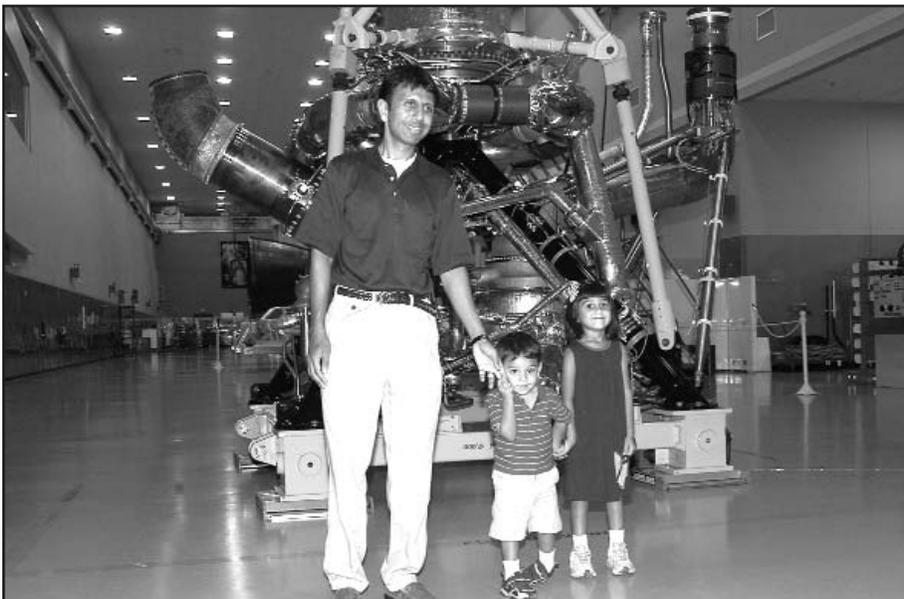
Jeff Hanley, the Constellation Program manager, said that half the cost of developing the new Ares I and Ares V space vehicles will be in test and certification services. The same test stands that were built for testing engines and stages for the Apollo Program, and were converted for testing space shuttle main engines, will once again play an important part in this developmental work. Stennis will be responsible for rocket propulsion testing of the upper stages for the Ares I and Ares V as well as the first stage of the Ares V.

The pace of rocket propulsion testing has already begun to increase in preparation for this very important work. The article on the next page goes into detail about the upcoming testing. However, it's important to note that for the first time since the 1990s, on July 31 engineers in the test complex conducted two engine tests on the same day, an RS-68 and a space shuttle main engine. This is a testament to the capabilities of the outstanding workforce at our center.

Looking ahead, in October we expect to start modifications to the A-1 test stand in preparation for J-2X upper stage engine testing for the Constellation Program. I am very excited about our future and look forward to the day when we'll see the large stages for Ares I and Ares V roar to life on the test stands of NASA Stennis Space Center.

Richard D. Gilbrech

Louisiana Congressman looks into SSC's future



U.S. Rep. Bobby Jindal (R-La.) and his children, 1-year-old Shaan, and 4-year-old Selia, tour Pratt & Whitney Rocketdyne's RS-68 assembly facility at Stennis Space Center's Army Ammunition Plant Industrial Complex during their Aug. 4 visit to SSC. The RS-68 currently powers the Boeing Company's Delta IV launch vehicle, and will power the core stage for NASA's new cargo launch vehicle, the Ares V. Testing on the RS-68 rocket engine is under way at SSC's B-1 Test Stand. In addition to viewing the future of rocket engine testing at SSC, the Jindal family visited StenniSphere and toured the test complex, accompanied by SSC Center Director Richard Gilbrech. Twenty-seven percent of SSC's work force lives in Louisiana, many of them in Jindal's congressional district.

FULFILLING THE VISION FOR SPACE EXPLORATION



BACK TO BACK TESTS – On Monday, July 31, two engine tests occurred in one day at Stennis Space Center's rocket engine test complex. After a few weather delays, Pratt & Whitney Rocketdyne tested its RS-68 engine (above, right) on SSC's B-1 stand. The test ran for a planned 180 sec-



onds. Several hours later, a space shuttle main engine test was conducted on SSC's A-1 Test Stand (above, left), part of a series of tests to certify the SSME's high-pressure oxidizer turbopump. That test ran for a planned 503 seconds.

Test schedule helps pave road for Constellation Program work

A hefty testing schedule for the space shuttle main engine program will keep engineers, technicians and facilities especially busy at NASA Stennis Space Center for the next two months.

Don Beckmeyer, space shuttle main engine project manager in the Test Projects Office of SSC's Project Directorate, said tests on the calendar through September are part of a series of 12 on the SSME's high-pressure oxidizer turbopump. In addition, SSC expects to conduct its 1,000th SSME test on the A-1 Test Stand sometime in August.

The series to be conducted on SSC's A-1 Test Stand is a run-up to the stand's temporary decommissioning for upgrades and modifications – necessary for testing the new J-2X engine. The J-2X will power the second stage of the Ares I, the crew launch vehicle being developed under NASA's Constellation Program. Ares I will carry the shuttle's successor into space.

In October, crews will begin work on the A-1 stand, emptying fuel tanks, removing the test article and pulling special cabling required for the delicate instrumentation that reads every aspect of an engine's performance.

"A big part of the refurbishment will be to strip and repaint parts of the stand," said Gary Benton, J-2X engine project manager. "The stands get corroded over time due to weather and normal wear and tear of engine

testing. We need to make sure we do this right, to make A-1 safe and efficient for another 15 to 20 years."

Benton said the big challenge will be to make sure the A-1 crews finish their work on time so testing on the J-2X powerpack and pumps can begin. Components will be added to the test article as time goes on, with a complete engine test set for 2010.

Working around weather and other unforeseen delays, Beckmeyer said it's critical to meet every deadline along the way "for scheduling propellant deliveries, for support systems, to have everything coordinated in order to maintain the test schedule and get the J-2X project up and running."

That means more people working on the test stands. "And they're still personally dealing with the effects of Hurricane Katrina at home," Beckmeyer said. "But they're stepping up to do the work and make the schedule."

A second series of tests to certify another SSME turbopump is being conducted on SSC's A-2 stand through December. SSME tests will be conducted on A-2 through the end of the Space Shuttle Program.

America's Vision for Space Exploration calls for NASA to retire the space shuttle by 2010. The crew exploration vehicle will succeed the shuttle as NASA's spacecraft for human space exploration.

[STS-115 to conduct 3 spacewalks](#)

Unique challenges mark next shuttle mission



NASA's STS-115 mission crewmembers are (from left): front row, Pilot Christopher J. Ferguson, Commander Brent W. Jett Jr.; back row, mission specialists

Heidemarie M. Stefanyshyn-Piper, Joseph R. Tanner and Daniel C. Burbank; and Steven G. MacLean, who represents the Canadian Space Agency.

The launch window for NASA's third return to flight mission, STS-115, opens Aug. 27. Until then, Space Shuttle Atlantis, its external tank and two solid rocket boosters will remain enclosed by the rotating service structure on Launch Pad 39B at Kennedy Space Center, Fla., while the payload for the mission is loaded into the cargo bay.

Carried by the crawler transporter, Atlantis' slow, 4.2-mile journey from KSC's Vehicle Assembly Building to the launch pad took place Aug. 2. Its prime payload for the STS-115 mission is the space station's port three and four (P3/P4) integrated truss segment, which the crew will install during their 11-day mission.

The STS-115 crew consists of Commander Brent W. Jett Jr., Pilot Christopher J. Ferguson and mission specialists Heidemarie M. Stefanyshyn-Piper, Joseph R. Tanner, Daniel C. Burbank and Steven G. MacLean, who represents the Canadian Space Agency.

Their main objective is to resume space station construction by installing and activating the segment during three scheduled spacewalks. The trusses are part of the 11-segment structure that will eventually span more than 300 feet when the station is completed.

Resembling a cocoon when tucked inside Atlantis for flight, the segment will look more like an extremely large butterfly when deployed. Its two large solar arrays will provide a quarter of the completed station's power capability.

"It's going to provide two primary capabilities, the first being power," said Robbie Ashley, STS-115's space station mission manager. "The power module will provide the capability to generate, store, distribute and regulate power for the space station."

On Earth, the P3/P4 segment weighs almost 35,000 pounds – one of the heaviest station payloads. It will be weightless in orbit, allowing the astronauts to remove the segment from Atlantis' payload bay using the shuttle's remote arm to hand it off to the space station's remote arm.

The astronauts will then maneuver the segment into place before attaching it to the port one integrated segment.

A major spacewalk task will be deployment of the two solar wings. When extended, each wing measures 115 feet by 38 feet and uses nearly 33,000 solar cells. Together they can meet the power needs of 30 average homes.

Tribal construction company is test bed for \$25,000 incentive

A new safety incentive program at NASA Stennis Space Center has contractors coming up with some incentives of their own – like fishing trips and four-wheelers.

The NASA Acquisition Management Office at SSC recently implemented a new safety incentive program to help companies like IKBI Inc., a tribally-chartered company of the Mississippi Band of Choctaw Indians, motivate employees to work safer.

The new program offers 2 percent of the contract price, up to \$25,000, to contractors who meet NASA's stringent safe-work-practice guidelines. Awarded the money at the beginning of the contract, the company faces deductions from the incentive if NASA discovers safety violations at its work site.

Jason Edge, NASA's contracting officer, and Kenny Volante of SSC's Safety and Mission Assurance Office, developed the idea last year, and pitched it to officials, who immediately saw the benefit.

“Safety has always been a top priority for NASA,” Edge said. “The safety incentive is our way of motivating contractors to perform a project without safety violations. Twenty-five thousand dollars seems like a small price to pay for a safe work site. So far, it's working – IKBI has not had one safety violation yet.”

“Because we've been offered this opportunity, we were able to increase our in-house incentives,” said Josh Gamblin, IKBI president, “and, more importantly, improve the overall attention associated with site safety. This is a great effort by NASA to help ensure what we're all after, and that's making sure everyone goes home at night safe and sound.”

IKBI's incentive is a four-wheeler that currently stands atop a dirt mound at the H-1 Test Complex at SSC, the future home of Rolls-Royce's new outdoor jet engine testing facility. IKBI put the four-wheeler on the mound at the site of its latest construction job to motivate its employees to work safely. Each worker who goes a week without a safety violation becomes eligible for a drawing at the end of the project in April,



A new four-wheeled, all-terrain vehicle sits on top of a dirt mound at the entrance to the H-1 Test Complex at NASA Stennis Space Center. IKBI Inc. hopes the four-wheeler will motivate its employees to work safely at its H-1 Test Complex construction site. Each worker who goes a week without a safety violation can qualify for a drawing that will award the vehicle at the end of the remodeling project. IKBI is the first participant in a new safety incentive program initiated by NASA SSC that awards up to \$25,000 to construction contractors for zero safety violations. IKBI is remodeling the future home of Rolls-Royce's new outdoor jet engine testing facility.

when the four-wheeler will be awarded.

Edge said the incentive creates a winning situation for every participant. NASA upholds its high safety standards; the contractor reaps a double monetary reward from lower insurance costs in the long term; and the employees get a safe working environment.

The idea seems to be catching on. The incentive's second recipient will be awarded to Can't Be Beat Fence Co., which has a contract to rebuild the perimeter fence around SSC's fee area. Can't Be Beat's owner will motivate her employees with a weeklong, all-expense-paid deep sea fishing trip if they can work safely enough to keep the \$25,000 incentive intact.

“We hope to pay every contractor the full incentive,” Edge said.

SSC employees receive NA

Stennis Space Center Director Richard Gilbrech and NASA Associate Administrator Rex Geveden presented the annual NASA Honor Awards during a ceremony held at SSC on July 20.

Diamondhead, Miss., resident John E. Stealey, chief of the Business and Facility Management Office, Project Directorate at NASA Stennis Space Center, received NASA's Outstanding Leadership Medal.



John Stealey

NASA's Outstanding Leadership Medal recognizes an individual who has exhibited notably outstanding leadership that has had a pronounced effect on the technical or administrative programs of NASA. Stealey was given the award for contributing significantly to the improvement of safety, reliability and quality assurance at SSC during his tenure in the center's Safety and Mission Assurance Office. Working extended hours to successfully perform his duties with a reduced staff, Stealey earned the respect of his co-workers for his honest, open communications and leadership style.

Ocean Springs, Miss., resident Terry D. Addlesperger, lead facilities manager for the propulsion test complex at NASA Stennis Space Center, received NASA's Exceptional Service Medal.

NASA's Exceptional Service Medal recognizes significant, sustained performance characterized by unusual initiative or creative ability that results in engineering, space flight, administrative or support endeavors that contribute to NASA's mission. Addlesperger received the award for his recent efforts to conserve

gaseous nitrogen in SSC's rocket engine test complex. By controlling purge flows to each application in the center's E Test Complex, nitrogen consumption was reduced, resulting in a savings of \$216,000 per year. In 2001, Addlesperger also initiated a five-year refurbishment of the barges that transport propellant fuels through SSC's canal system to its test stands.

Diamondhead, Miss., resident Mary C. Whitehead, deputy chief financial officer in the Business Management Directorate at NASA Stennis Space Center, received NASA's Exceptional Service Medal.

Whitehead received the award for her leadership in reimbursable funds management and other areas supporting Operation Clean Opinion, striving to maintain the integrity of NASA's financial statements. She established new business arrangements and managed ongoing financial operations, contributing to the success of SSC as a federal and commercial city.

Pearlington, Miss., resident Janet M. Austill, secretary to the director at NASA Stennis Space Center, received NASA's prestigious Exceptional Achievement Medal.

NASA's Exceptional Achievement Medal recognizes a significant, specific accomplishment or contribution that improves operations, efficiency, savings, science or technology that contributes to the mission of NASA. Austill was given the award for her valuable support to the office of the director under several successive management changes. Austill has aggressively sought to strengthen the role of the SSC Secretarial Council, and was noted for her enthusiasm, dedication and skillful diplomacy.

Austill is a native of Bunker Hill, Ill.

Slidell, La., resident Maury A. Vander, technical assistant for the operations division of the Engineering and Science Directorate at NASA Stennis Space Center, received NASA's Exceptional Achievement Medal.

Vander was given the award for his role as lead test conductor for the Integrated Powerhead Demonstration (IPD) engine test project, in which he demonstrated abilities to lead and mentor. He created improved operating procedures for SSC's E-1 Test Facility that saved money and resolved critical propellant issues for the IPD project.



Terry Addlesperger



Mary Whitehead

NASA Honor Awards

Picayune, Miss., resident Mark V. Glorioso, chief of the Engineering and Science Directorate's Science and Technology Division at NASA Stennis Space Center, also received NASA's Exceptional Achievement Medal. Glorioso was given the award for his support of NASA's Return to Flight efforts as leader of the Test Operations Division, Propulsion Test Directorate. His division enabled the testing of all space shuttle main engines and components to support NASA's STS-114 mission, and led three critical test programs required to help return the shuttle's external tank to flight. Glorioso's hands-on style, optimism and energy were considered key to the success of these efforts.

Poplarville, Miss., resident Gloria J. Jordan, Jacobs Sverdrup's propellants manager for the NASA Technical Operations Group at NASA Stennis Space Center, received NASA's Public Service Medal.

NASA's Public Service Medal is awarded to any individual who is not a government employee, and is granted for exceptional contribution to NASA's mission. Jordan administers the logistics of more than 3,800 trucks that pass through the site each year to deliver approximately \$16 million worth of liquid hydrogen, liquid oxygen, nitrogen and helium. In the aftermath of Hurricane Katrina, even though she had no direct communication with SSC, Jordan negotiated liquid nitrogen deliveries to assure critical equipment protection purges could be maintained. Jordan has worked at SSC since 1966.

Group Achievement Awards

Applied Sciences

Program Knowledge Management Team:

NASA SSC

Troy E. Frisbie
Frederick S. Policelli

NASA HQ

Martin E. Frederick
Michael Lucien Cox

NASA LaRC (DEVELOP Team)

Jonathon L. Gleason
Brian E. Tisdale
Tommy F. Hannah

NASA GSFC

Shahid Habib

Computer Sciences Corporation

Laura S. Pair
Larry S. Bracey
Sean J. Labat

Stinger Ghaffarian Technology, Inc.

Thomas L. Hood

Science Systems & Applications, Inc.

Bruce Lunde
Kristen J. Russell
Shannon L. Ellis

Daniel F. Olive
Slawomir Blonski
Arthur Brennan Grant

Mississippi Space Act Public Health Team

NASA

Vaneshette Henderson
Timi S. Vann
Robert A. Venezia

Computer Sciences Corporation

Colby V. Albasini
Cherie E. Beech
Larry S. Bracey
James W. Closs
Rose M. Fletcher
Anthony J. Lisotta
Roxanna F. Moore
Lamar B. Nicholson
James Doc Smoot
Timothy S. Stiglets
Ruby A. Stubbs
Larry D. Wilson
Marcia Wise

Striving to Achieve Real Safety (STARS) Committee

NASA

Jason R. Adam
Michele A. Beisler
Nicholas A. Cenci
Diana Lynn Heberling
Theodore J. Mason
Andrew J. Valente
Kenny E. Volante

Mississippi Space Services

Kelly L. Austin
Catriona M. Ladner
Elwin Doug Lee
Steve E. McCord, Sr.
Debra Nichols
Alan M. Phillips
William C. Spansel
Stacy L. Sumrall
Julie Viera

Computer Sciences Corporation

John W. Bridges
Rodney T. Pearson

Defense Contract Management

Agency

James H. Watson

Paragon

Robert W. Bowman

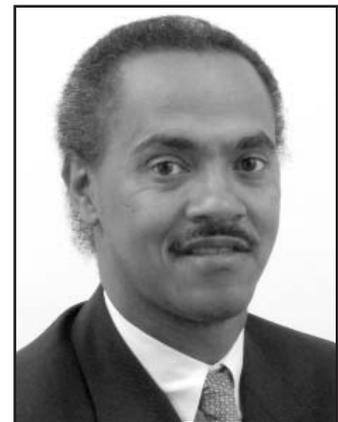
Pratt & Whitney Rocketdyne

Henry Potts

Continued on next page ...



Janet Austill



Maury Vander



Mark Glorioso



Gloria Jordan



Group Achievement Award
Striving to Achieve Real Safety (STARS) Committee



Group Achievement Award
Applied Sciences Program Knowledge Management Team



Group Achievement Award
Space Operations Mission Directorate (SOMD) Transformation Tasks Team

SAI Tech Inc.
Omega L. Childs
Janne M. Lady

Science Systems & Applications, Inc.
James R. Sever

Sverdrup
Allen Colombo
Steven M. Martin
James R. Mirandy

Space Operations Mission Directorate

NASA
David P. Brannon
David J. Coote
Bartt J. Hebert
Mark S. Hughes

Thomas E. Jacks
Casey K. Kirchner
Michael P. Nichols
Nickey G. Raines
Richard T. Rauch
Richard G. Rider
Steven A. Taylor

NASA MSFC
Kendall K. Brown
Mark Neeley

Pratt & Whitney Rocketdyne
Gregory W. Byrd
William G. Davis
Anthony W. Sones
Teresa L. Ehrlich

Mississippi Space Services
Clyde E. Adcox
Roger M. Blake
Kenneth A. Broom

NASA Test Operations

Group
Lorna L. Ammond
Rick C. Ellis
Dale Larson
William A. McDuffie
James A. Smith
James B. Worden

A-2 Test Control Center Modernization Team

NASA
Reginald B. Ellis

NSSC
Linda Ann Sharpe

Pratt & Whitney Rocketdyne
Nathan M. Antoine
David A. Carey
Prentice L. Carte
Brian D. Childers
Jonathan W. Clemens
Christopher A. Coogan
Shawn M. Cordray
Nathan W. Ficken

Roger D. Flynt
Kelly A. Geroux
Larry T. Giveans Jr.
Karen T. Ho
Victor R. Hobson
Andrew B. Jackson Jr.
Henry R. Johnson
Lynn A. Ladner
Gary C. Marshall
David P. McConnell
Kendra S. Moran
Ronald W. Roberts
Brian R. Sproles
Stephen S. Steelman
Jonathan A. Stockstill
Randall W. Strong
Donnie R. Walters
Phillip R. Watkins
Brian J. Yochim

External Tank Return to Flight Test Team

NASA
Jason R. Adam
Gary L. Benton
Daniel A. Brady
William J. Camus Jr.
Nick A. Cenci
Craig A. Chandler
David J. Coote
Stanley G. Gill
Jared B. Grover
Phillip W. Hebert
Wendy T. Holladay

Thomas E. Jacks
Kerry D. Klein
Son K. Le
Glen M. Liebig
David K. Lorance
Jeffrey W. Lott
Thomas O. Meredith
James H. Morgan
Christopher A. Mulkey
Wayne L. North II
Deborah S. Norton
Rosa E. Obregon
Vincent R. Pachel

Nickey G. Raines
David E. Roberts
Ryan E. Roberts
Dwayne K. Stockstill
Charles C. Thurman
Peter V. Tran
Maury A. Vander
Stanley C. Warren
James Washington
Burnley T. Wigley

Hernandez Engineering, Inc.
Charles J. Bopp Jr.

Mississippi Space Services
Jesse T. Bilbo



Group Achievement Award
External Tank Return to Flight Test Team

Ethan W. Calder
 Don N. Caudill
 Brian P. Corr Sr.
 Mark S. Corr
 Jonathan C. Dickey
 Kenneth J. Fortenberry
 Dale W. Green
 Michael L. Haralson
 Willie E. Johnson
 Kevin A. Jurich
 Walter C. King
 Jerry G. Knight
 David W. Ladner
 Danny P. Lambert
 Harley E. Lee Jr.
 Tracey J. Lee
 Ronnie A. Lyons
 Roy R. Malley
 Benjamin A. McGrath
 Robbie D. Miller Jr.
 Kermit E. Northrop
 Thomas M. Rich
 Benjamin B. Robertson
 Rodney E. Sampson
 Donald G. Seymour
 Randall R. Shaw
 Wallace R. Smith
 Jay W. Sones

NASA Test Operations Group

Fred K. Abell Jr.
 Alan F. Alderman
 John H. Bakker
 Bryon B. Bordelon IV
 Terrence D. Burrell
 Dennis M. Butts
 Cheley F. Carpenter Jr.
 Rick C. Ellis
 Kerry J. Gallagher
 Patrick J. Guidry
 David W. Harriel
 Petter J. Hobgood
 Travis D. Kennedy

Chadwick B. Ladner
 Jody D. Ladner
 Richard O. Ladner
 Roger D. Ladner
 Clifford Lee
 Steven M. Martin
 Bruce E. Matthews
 William A. McDuffie
 James R. Mirandy
 Kenneth L. Morgan
 Binh T. Nguyen
 Randy L. Overton
 Charles S. Polk
 Alvin D. Richard
 Mounir Z. Sabbagh
 Michael L. Shaw
 Michael E. Slade
 Paul D. Smith Jr.
 Terry W. Wactor
 Raymond J. Williams
 Tom H. Wolfe

Length of Service Awards

25 Years
 Stephen P. Brettel
 Judy Bruscano
 Laurence deQuay
 Melissa P. Ferguson
 Richard W. Harris
 Mattie A. Kirschenheuter
 Mary C. Whitehead

30 Years
 Miguel A. Rodriguez

35 Years
 Eddie C. Gobert
 Larrie I. Kelly
 Ronald B. Kent
 Linda L. Theobald

40 Years
 David A. Throckmorton
 Theodore R. Franklin



Group Achievement Award
A-2 Test Control Center Modernization Team



Group Achievement Award
Mississippi Space Act Public Health Team

Space Flight Awareness Leadership Award
 Michael D. Smiles

Special Recognition Award: J. Harry Guin Outstanding Leadership Award
 Shamim A. Rahman



Test complex monitoring system wins awards

John Schmalzel (left), Fernando Figueroa and Harvey Smith on July 31 receive NASA TechBrief and NASA Software awards for their new software technology: Framework and Methodologies for Intelligent Integrated Health Management Systems. The innovation defines an intelligent, integrated health management system that monitors the condition of every element in a system-of-systems, providing data and information for controlling and improving operations. Figueroa used SSC's E Test Complex as a proving ground for the technology. Ray Bryant of NASA's Science and Technology Division, SSC, presented the awards. Schmalzel and Figueroa work in NASA's Engineering and Science Directorate, Science and Technology Division. Harvey Smith is a scientist with Jacobs Engineering.

SSC technology licensed for commercial production

A handheld hydrogen flame imager developed by NASA at Stennis Space Center has now been exclusively licensed for commercial development by International Electronic Machines Corp. of Albany, N.Y.

Calling its product FlameFinder, the company is making and marketing the instrument that allows firefighters to see the otherwise-invisible flames of hydrogen or alcohol fires.

The patented NASA spinoff technology was conceived at SSC in the 1990s to keep the center's own firefighters and rocket test complex personnel safe.

Weighing about 5 pounds and used much like a pair of binoculars, FlameFinder produces an easily understood image that clearly shows the location and size of any flames or other heat sources.

For information about International Electronic Machines Corp., visit: <http://iem.net/>

For information about SSC's Science and Technology Division and its technology transfer programs, visit: <http://technology.ssc.nasa.gov/>

Best way to stop racist, bigoted words: Confront them

Many of us choose to ignore racist, biased and bigoted comments, rather than confront them. Perhaps we are made so uncomfortable by the ignorance that we feel we can only stand mute in its presence, or perhaps we fear negative repercussions.

From the
**Office of Diversity
and Equal Opportunity**

always thought of you as a fair-minded person, so it shocks me when I hear you say something that sounds so prejudiced." Appeal to their better instincts. What they

say in one moment is not necessarily an indication of everything they think.

Following are some ways you can address bigotry:

- **Be Ready.** You know another moment will happen, so prepare yourself for it. Think of yourself as the one who will speak up. Promise yourself not to remain silent. Have something to say in mind before an incident happens. Open-ended questions often are a good response. "Why do you say that?" "How did you develop that belief?"
- **Identify the Behavior.** Sometimes, pointing out the behavior candidly helps someone hear what they're really saying: "Sue, what I hear you saying is that all overweight people are lazy" (or whatever the slur happens to be).
- **Appeal to Principles.** If the speaker is someone you have a relationship with – sister, friend, co-worker, for example – call on their higher principles: "John, I've

- **Set Limits.** You can't control another person, but you can say, "My home is not a place I allow bigoted remarks to be made. Please respect that." The point is to draw a line, to say, "I don't want you to use that language when I'm around."
- **Don't laugh.** Meet a bigoted "joke" with silence and body language to communicate your distaste. Tell the individual why the "joke" offends you, that it feels demeaning and prejudicial.
- **Address the speaker.** A simple comment – "I'm sorry; what's so funny?" – can jar someone from their rudeness.

Change happens slowly. Keep speaking up. Don't risk being silent. If you don't speak up, you're surrendering part of yourself and letting bigotry win.



Gary Benton (center), Stennis Space Center's J-2X engine project manager, explains work at the A-1 Test Stand to NASA officials (from left) Jeff Hanley, Constellation Program manager; Marsha Ivans, Johnson Space Center; and Mike Kynard, Marshall Space Flight Center.

CONSTELLATION

Continued from Page 1

role, taking the lead on integration for all propulsion testing. SSC is responsible for rocket propulsion testing for the upper stages of Ares I, and Constellation's cargo launch vehicle, Ares V, as well as testing the engines for Ares V's main stage.

"Half the cost of developing these vehicles goes toward the testing and certification services you already provide to the country," Hanley told employees during an all-hands meeting July 13.

The first rocket engine to be tested will be the J-2X, an engine derived from those tested at the center 40 years ago for Apollo's Saturn V rockets. In the Constellation Program, the J-2X will be used to power the upper stages of the Ares I and Ares V.

"The J-2X is a critical path" to meeting the Constellation Program's goals, said Steve Cook, director of the Exploration Launch Projects office at the Marshall Space Flight Center in Huntsville, Ala. "SSC will play a critical role in the program."

NASA has chosen Pratt & Whitney Rocketdyne's RS-68 engine to power the main stage of the Ares V. Testing for Boeing's commercial applications of the RS-68 engine is under way on SSC's B-1 Test Stand.

Cook also said "SSC, Marshall and the Michoud Assembly Facility have a long, rich history of working together," an asset that will smooth development and delivery of the Ares vehicles. The Michoud facility in New Orleans is responsible for building and processing elements of the new launch systems.

AROUND NASA

■ NASA heads global coalition to study hurricanes:

Scientists from NASA, the National Oceanic and Atmospheric Administration, universities and international agencies will study how winds and dust conditions from Africa influence the birth of hurricanes in the Atlantic Ocean. The field campaign, called NASA African Monsoon Multidisciplinary Analyses 2006, runs from Aug. 15 to mid-September in the Cape Verde Islands off the coast of West Africa.

To study the specific environmental conditions hurricanes require, researchers will use NASA's DC-8 research aircraft as a platform for advanced atmospheric research instruments. Remote and on-site sensing devices will allow scientists to target specific areas in developing storms. Sensors on board the aircraft will measure cloud and particle sizes and shapes, wind speed and direction, rainfall rates, atmospheric temperature, pressure and relative humidity.

The campaign will use data from NASA's Earth observing satellites, including the Tropical Rainfall Measurement Mission, QuikScat, Aqua, and the recently-launched CloudSat and Cloud-Aerosol Lidar and Infrared Pathfinder Satellite Observations (Calipso).

■ STEREO will take first 3-D measurements of sun:

NASA's Solar Terrestrial Relations Observatory (STEREO) is set to launch aboard a Boeing Delta II rocket on Aug. 31 from Launch Pad 17-B at Cape Canaveral Air Force Station, Fla.

STEREO consists of two spacecraft that comprise the first mission to take measurements of the sun and solar wind in 3-D. This new view will improve our understanding of space weather and its impact on the Earth.

During the two-year mission, the two nearly identical spacecraft will explore the origin, evolution and interplanetary consequences of coronal mass ejections, the most violent explosions in our solar system. When directed at Earth, these billion-ton eruptions can disrupt satellites, radio communications and power systems.

NASA's Goddard Space Flight Center in Greenbelt, Md., is responsible for the project management.

Hail & Farewell

NASA welcomes the following to SSC:

John Bakker – Aerospace technologist, electrical systems engineer, Engineering & Science Directorate

Christine Grapusa – Program analyst, resources management division, Business Management Directorate

Jody Woods – Aerospace technologist, structural mechanic, Engineering & Science Directorate



Take Our Children to Work Day

Approximately 250 children participated in Stennis Space Center's Take Our Children to Work Day on July 25. The children took a tour of the site, learned about different types of work at the center and watched demonstrations of a driverless SUV, cryogenics and a real-time flythrough of the Gulf Coast. The annual day of learning and fun is a cooperative effort of NASA and other SSC resident agencies.

Astro Camp wraps up summer 2006

More than 400 children attended 12 sessions (the normal number of sessions is seven) of Astro Camp this summer, a record-breaking total for the series of weeklong day camps held at Stennis Space Center.

The theme of this year's camps was "Moon, Mars and Beyond," in which children studied phases of the moon, the life cycle of a star and the Martian environment – all through hands-on activities like building and launching their own rockets. A new camp for teens, Astro Camp Plus, allowed students to learn the same principles using iPods and video cameras.

Six Astro Camp Saturday sessions have been scheduled for the fall. The dates are:

- Sept. 23, Astro Camp Goes to the Science Fair (for parents and children, grades K-6)
- Oct. 14 and 21, International Space Station (ages 7-12)
- Nov. 4 and 18, Return to Flight (ages 7-12)
- Dec. 9, Astro Camp Plus (ages 13-15)

Each Astro Camp Saturday session costs \$30.

For more information, call 800-237-1821, Opt. 4, or visit <http://education.ssc.nasa.gov/astrocamp.asp>



Astro Campers watch a model rocket shoot skyward on the last day of their weeklong camp. Record enrollments, dual sessions and a new curriculum for teens made 2006 a record-breaking summer.

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