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# Spaceport News

John F. Kennedy Space Center - America's gateway to the universe


# Kennedy inspires, reaches out on Space Day

*Activities include visit with state legislators, students*

***By Linda Herridge***
*Spaceport News*

NASA

Kennedy Space Center Director Bob Cabana presents a plaque containing a state of Florida flag that was flown on the space shuttle to the state legislature during Space Day in Tallahassee, Fla., on Jan. 11. Looking on, at right, is Senate President Mike Haridopolos.

During a Space Day presentation by state legislators Jan. 11, Kennedy Space Center Director Bob Cabana spoke about the 50th anniversary of Kennedy Space Center and the center's plans for the future, and thanked the state for the partnership it has with Kennedy in space projects. A video on the future of Kennedy also was shown to legislators and guests.

While there, Cabana visited with students and attended a Space Day presentation by state legislators during Florida Space Day activities in Tallahassee on Jan. 10 and 11.

Cabana spoke to about 140 eighth-grade students at Griffin Middle School on Jan. 10, along with NASA astronaut Nicole Stott and Kennedy's Chief of the Education Division Hortense Diggs. The students also participated in hands-on education activities coordinated by Kennedy education specialists

"Partnerships are critical to our future success as we transform KSC into a true multiuser launch complex. The State of Florida is one of our major partners," Cabana said, "and Space Day gave our industry partners the opportunity to educate Florida lawmakers on the impact of the space industry to the state."

He presented State of Florida flags that were flown aboard space shuttle missions to Lt. Governor Jennifer Carroll, the Florida House of Representatives and the Florida Senate.

Jim McCarthy, deputy general manager with URS Federal Technical Services Inc. on Kennedy's Institutional Services Contract, served as honorary chairman for this year's Florida Space Day.

McCarthy said Space Day is an opportunity to educate and inform legislators on the importance of the space industry and the economic impact that it has on the local, state and national level.

Some topics discussed included NASA's transition from the Space Shuttle Program to future exploration programs.

McCarthy said the emphasis was on thinking of ways to diversify the center to attract more research and

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## Inside this issue...

# No slowing down in 2012 as Kennedy is busy as ever

**Director's Note**

**Bob Cabana**

A new year is on the horizon and we at NASA's Kennedy Space Center are as busy as ever. We're standing up two new programs, preparing to launch three scientific missions, updating our facilities and processing the space shuttles for their new homes.

In 2012, Kennedy celebrates 50 years as the space agency's pre-eminent launch site, and our commitment to sending payloads and humans into space has not wavered. NASA's Commercial Crew Program will continue to work toward developing a commercial crew capability that will once again carry our astronauts into space on a U.S. spacecraft, so that we can routinely and affordably journey to our unique orbiting laboratory, the International Space Station.

The 21st Century Ground Systems Program is revitalizing existing infrastructure and enhancing the Space Coast's range flexibility to support commercial aerospace companies and NASA's future heavy-lift rocket and Orion spacecraft.

NASA's Launch Services Program already is readying a Pegasus XL rocket to launch the Nuclear Spectroscopic Telescope Array (NuSTAR) early this year. This explorer mission will study the most extreme active galaxies, exciting even the most novice stargazers. Later in the year, the program will launch the Radiation Belt Storm Probes (RBSP) to help us understand the sun's influence on Earth, the Interface Region Imaging Spectrograph (IRIS) to study the solar atmosphere, and the latest piece of NASA's telemetry and communications network, the TDRS-K.

Shuttles Atlantis, Endeavour and Discovery will continue to be processed for their future public display sites, where they will inspire NASA's next generation of explorers.

And as the nation embarks on this new chapter in space exploration, Kennedy will continue to play an integral role in NASA's and America's scientific research and discoveries for the next half century and beyond.

Happy New Year,
Bob

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technology opportunities.

"As the shuttle is phased out and the new programs are coming on board, how do we retool the highly technical work force that is here and throughout the state?" McCarthy questioned. "There's a tremendous amount of competition from other states that are trying to get into the space industry."

McCarthy said there's a lot that Kennedy can offer. To retain the center's unique capabilities, he said it's important to educate the legislators, continue to pursue opportunities and continue to inspire young students to pursue studies in science, technology, engineering and mathematics.

Throughout the day, space industry representatives visited with legislators. Cabana met with the Lt. Governor, Senate President Mike Haridopolos, Speaker of the House Dean Cannon, the staff of incoming Senate President Don Gaetz and incoming Speaker Will Weatherford to highlight Kennedy's path forward.

"There's a ton of opportunity that is still out there. We need to preserve and leverage the capabilities and the resources here at Kennedy," McCarthy said.


*NASA*

Brittani Sims, left, with the Commercial Crew Program, and Tiffany Nail, of the Launch Services Program, share information with students during Space Day on Jan 11.

NASA exhibits were placed on display in the Capitol Building third-floor rotunda for viewing. They highlighted the Launch Services Program (LSP), Commercial Crew Program, Center Planning and Development, the Multi-Purpose Crew Vehicle and the Ground Systems Development and Operations Program. An interactive table highlighting all the LSP missions from 1998 through 2011 also was on display.

This year's Florida Space Day participants were NASA, the 45th Space Wing at Cape Canaveral Air Force Station, Abacus Technology Corp., ASRC Aerospace Corp., Astrotech Space Operations, ATK Space Systems, Bionetics, The Boeing Company, Brevard Workforce, Delaware North Companies Parks & Resorts at KSC Inc., Dynamac Corp., Economic Development Commission of Florida's Space Coast, InDyne Inc., ITT Corp., Jacobs, L2 Aerospace, Lockheed Martin, Millennium Engineering and Integration, Northrop Grumman, QinetiQ North America, SAIC, Sierra Lobo, Space Florida, Space Coast Launch Services, SpaceX, SRTI, United Launch Alliance, United Space Alliance and URS.


*CLICK ON PHOTO* *NASA/Gianni Woods*

Technicians guide a transportation canister as it encloses a Pratt & Whitney Rocketdyne space shuttle main engine (SSME) in the Space Shuttle Main Engine Processing Facility at Kennedy Space Center on Jan. 12. This is the second of the 15 engines used during the Space Shuttle Program to be prepared for transfer to NASA's Stennis Space Center in Mississippi. The engines will be stored at Stennis for future use on NASA's new heavy-lift rocket, the Space Launch System (SLS), which will carry NASA's new Orion spacecraft, cargo, equipment and science experiments to space. For more information, click on the photo.

# Real shuttle engines head to Stennis; replicas installed

***By Linda Herridge***
*Spaceport News*

The Pratt & Whitney Rocketdyne (PWR) engine shop at NASA's Kennedy Space Center was buzzing with activity this week as technicians and engineers prepared one of the space shuttle main engines for shipment to Stennis Space Center in Mississippi, and continued work on replica shuttle main engines (RSMEs) for Endeavour and Atlantis.

The main engines, now called RS-25Ds, were used to launch 135 shuttle missions. The RS-25Ds are being transported to Stennis where they will remain in storage until testing begins at a future date for their use on NASA's new heavy-lift rocket, the Space Launch System.

PWR Kennedy Site Director Dan Hausman said that NASA wants to use the RS-25D engines for the first stage of the Space Launch System.

The first engine, a brand new engine built at Kennedy but never flown, was shipped in October 2011. The second engine was shipped on Jan. 9. The third engine is being readied for shipping on Jan. 16.

"Now we're in a packaging and shipping operation, and there are 13 flight engines that need to be shipped," Hausman said. "We're going to ship them at a rate of one per week."

Flight support and ground support equipment are being inventoried and will be shipped separately to Stennis.

Work also continues on RSMEs for Endeavour and Atlantis. Three RSMEs were completed Nov. 16 and signed over to United Space Alliance. They were transported to Orbiter Processing Facility-1 and installed on Discovery Dec. 5-7.

According to Bill Muddle, PWR engineering manager, six more RSMEs currently are in the engine shop in different stages of completion.

Muddle said the RSMEs, or nozzles, were hot-fired during previous tests and now are being repurposed.

"There are two parts to the RSME, the nozzle and the adapter," Muddle explained. "The nozzle includes the feed and drain lines just like the real main engines that helped launch the space shuttle for 30 years."

Hausman said the design and remanufactured nozzles were created at the company's site in Canoga Park, Calif. The RSME adapters were designed at Kennedy but also manufactured in California.

"Historically, the Smithsonian's National Air and Space Museum is known for displaying authentically flown flight hardware," Hausman said. "The museum requested that the engines look as authentic as possible after flight."

Guard-Lee Inc., of Apopka, Fla., created the Explorer space shuttle replica that was on display at the Kennedy Space Center Visitor Complex. According to Hausman, the company specializes in creating authentic-looking space vehicles and hardware.

Guard-Lee replica specialists were hired by the Smithsonian to come to Kennedy to sand and paint the RSMEs to simulate what a flown nozzle looked like after a shuttle mission.

"It required an artistic approach to achieve the look of post-flight engines," said Guard-Lee president and owner Tom Wilkes.

Wilkes said four technicians took about a week to repaint some areas of the RSMEs and lightly abraded other areas so the nozzles looked as if they had flown in space.

The current plan shows Discovery being delivered to the Smithsonian at the Udvar-Hazy Center in Chantilly, Va., in mid-April.

Meanwhile, work continues to prepare the remaining shuttle engines for transport to Stennis and the remaining RSMEs for installation on Endeavour and Atlantis.

# Scenes Around Kennedy Space Center

NASA/Jim Grossmann

Kennedy Space Center Director Bob Cabana addresses employees about NASA's astronut selection process during January's Leadership Lunch and Learn at the Kennedy Learning Institute on Jan. 6.

NASA

Interns, from left, Martin Hayes, Dean Meagher and Stacey Shine work Dec. 26 at Kennedy Space Center's Space Life Sciences Lab (SLSL). The three Irish bio-science graduates from the Limerick Institute of Technology (LIT), Ireland, will be at Kennedy through March. With the support of Dr. Ray Wheeler (NASA-KSC), Dr. Gary Stutte (SLSL) and Space Florida, these three scientists are continuing an international tradition of intern exchange, which commenced back in 2004. To date, 25 Irish science graduates have worked at the SLSL. The internships are sponsored by LIT's Internship Program in Space Life Sciences (IPSLS).

NASA/Jim Grossmann

Eight aerospace engineering students from the Massachusetts Institute of Technology take a tour of the Operations and Checkout Building at Kennedy Space Center on Jan. 11. The students are at Kennedy to see firsthand the operational aspects of space flight and the relationship between design and operations. The students will be at the center until Jan. 24.

NASA/Jim Grossmann

## Shuttles make transition toward retirement

Transition and retirement of the space shuttles continue at Kennedy Space Center. Above, workers attach a tail cone on space shuttle Discovery on Jan. 12. Bottom left, engine actuators are removed from shuttle Atlantis inside Orbiter Processing Facility-2 on Jan. 6. Bottom right, technicians remove the top emergency escape window from shuttle Atlantis. For more on transition and retirement, click on any photo.

**Shuttle Atlantis powers down for final time, page 8.**

NASA/Jim Grossmann

NASA/Kim Shiflett

# Secondary dune near launch pads attracts new residents

***By Linda Herridge***
*Spaceport News*

Beach mice, gopher tortoises and even an indigo snake have found new homes in a newly created secondary dune habitat near NASA Kennedy Space Center's Launch Complex 39. That's a good thing, according to NASA biological scientist Don Dankert, from the center's Environmental Management Branch.

Dankert said recent field-sampling results revealed these animals and others have taken up residence in the dune system since it was created about nine months ago.

"What was once a barren pile of sand near the railroad tracks is now a thriving dune with vegetation and wildlife," Dankert said.

The secondary dune project, which began in 2010, is a cooperative effort between Kennedy, the U.S. Fish and Wildlife Service, the Merritt Island National Wildlife Refuge (MINWR) and Innovative Health Applications (IHA).

According to IHA wildlife ecologist Becky Bolt, a monitoring program conducted in November documented 17 beach mice, four spotted skunks, three gopher tortoises, two cotton rats and one indigo snake.

"Beach mice and indigo snakes are federally protected species, so the ability to create a habitat that they will occupy and use has great species management potential," Bolt said.

Vegetation for the newly created secondary dune habitat near Kennedy Space Center's Launch Complex 39 was donated by Wal-Mart and includes sea grape, sea oats, dune sunflower, saw palmetto, beach grass, beach elder, marsh hay cordgrass and blanket flower.

This beach mouse is a new resident of the newly created secondary dune at Kennedy.

An indigo snake slithers across the newly created secondary dune at Kennedy.

An IHA monitor holds a juvenile spade-foot toad at the newly created secondary dune.

The dune project was initiated to shield the beach from launch pad lights, which can disorient nesting and hatchling sea turtles, and to protect the shoreline from severe erosion.

Dankert said about 24,000 cubic yards of sand were used to build the secondary dune. Of that amount, about 8,000 cubic yards were donated by the U.S. Air Force's 45th Space Wing.

The new dune, set back from the primary dunes about 70 feet, is 725 feet long, 15 feet high and 75 feet wide.

**Photos courtesy of Becky Bolt, Innovative Health Applications**

The vegetation, donated by Wal-Mart through a grant procured by the MINWR from the National Fish and Wildlife Foundation, includes sea grape, sea oats, dune sunflower, saw palmetto, beach grass, beach elder, marsh hay cordgrass and blanket flower.

Aquatic Plants of Florida in Sarasota, a landscape company that has extensive experience in coastal dune restoration, completed the planting in a week.

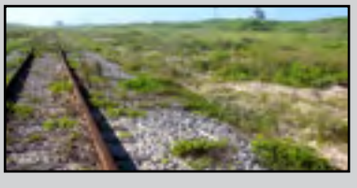
"We have a lot of satisfaction in helping to restore habitats in Brevard County," said Vice President Gil Sharell Jr. "We were pleased to work on the project and be part of the collaborative effort."

"The project has given Kennedy the opportunity to study and monitor the effects of creating a secondary dune habitat," Dankert said. "This effort provides valuable data for future environmental permits, monitoring programs and design criteria."

Bolt said that IHA plans to monitor the dunes quarterly for a year to get a clear picture of how development of the dune habitat progresses over time.

"Our goal is to collect data that will help us understand what it takes to create a functioning, healthy dune ecosystem," Bolt said. "This knowledge will become very important as we contend with the realities of climate change and sea-level rise."

## Creating a dune from scratch



Inland dune site

Sand deposition 1

Sand deposition 2

Aerial view

# Kennedy proud supporter of New Year's resolutions

*By Kay Grinter*
*Spaceport News*

Traditionally, the start of a new year is a time for personal reassessment. Vows to lose weight, exercise more and stop smoking during the upcoming year are commonly at the top of the list of New Year's resolutions.

Dr. David A. Tipton, Kennedy Space Center's chief medical officer, leads the team that supports the wellness services offered by the center's Health Education and Wellness Program (HEWP) and Employee Assistance Program (EAP). Kennedy's HEWP and EAP are managed through a contract with Innovative Health Applications (IHA).

"We are very fortunate that the senior managers at KSC recognize the importance that the health and well-being of the work force plays in morale and productivity," Tipton said. "As the KSC chief medical officer, I would encourage all our employees to utilize the myriad opportunities open to them."

The services the HEWP and the EAP provide are available free of charge to Kennedy employees and are designed to help those that take advantage of them achieve their health-related goals.

HEWP kicked off 2012 with Kennedy's first-ever Diabetes Risk Reduction Program screening Jan. 11 in the Occupational Health Facility (OHF).

Jessica Sapp, wellness program manager for IHA, oversaw the screening.

"To be only in our second week after the holidays, I was very pleased to have such a great turnout. We had 54 participants in a one-hour time slot, which is fantastic."

This screening will be offered bi-monthly, alternating with the long-running


NASA

Holly Martin, right, a nurse with Innovative Health Applications (IHA), checks the blood pressure of Ruth Gillenwater, a medical logistician with IHA during the program's first free Diabetes Risk Reduction Program (DRRP) screening Jan. 11 at the Occupational Health Facility. For more on Kennedy Space Center's Health Education and Wellness Program, click on the photo. More than 50 employees took advantage of the DRRP screening.

cardiovascular disease screening. A schedule and additional information about the programs are provided at http://hewp.ksc.nasa.gov/index.cfm, where monthly and quarterly health-related newsletters are available for download.

Health Insurance Portability and Accountability Act (HIPAA) privacy policies apply to all medical testing conducted during the screenings. The results are confidential and provided only to health professionals with the employee's knowledge and consent.

The routine cholesterol and blood sugar screenings, scheduled at the start of the work day, save the participant the time it would have taken to visit a medical laboratory off center and allow sick or personal leave to be preserved for other needs. Test results are on file at the OHF and copies provided to support appointments with personal physicians, as requested.

Individual counseling and group workshops also are offered to support any health goal an employee may set.

Patricia Bell, an EAP counselor, explained, "The EAP supports all kinds of wellness initiatives and partners with HEWP on such programs as smoking cessation, stress reduction and sleep improvement. The first Lunch and Learn in 2012, planned for Jan. 18, is called 'Setting Goals for the New Year,' and will focus on life-changing goals and how to achieve them.

"Stress management and reduction are one of the most sought after modules the EAP offers, and we are always happy to tailor them to the needs of the particular group. For instance, EAP and HEWP will be partnering again in May to focus on mothers and stress in honor of Mother's Day."

For more information and a schedule of the EAP's 2012 Lunch and Learns, visit http://eap.ksc.nasa.gov.

Dr. Skip Beeler, medical director for occupational medicine at the OHF, supports proactive measures to avoid illness: "There are early indications that influenza activity in the United States is beginning to increase. The best way to prevent the flu is by getting vaccinated each year. The Occupational Health Program at KSC still has plenty of flu vaccine available and encourages all employees to get vaccinated now. It is not too late. Flu season runs until at least April."

Free flu shots are being offered around the center during lunchtime every Wednesday through the OHF's new "Now Coming to You" program. Watch the KSC Daily News for announcements with the dates and locations. The vaccine will be available Jan. 18 in the Headquarters lobby.

A three-quarter mile fitness trail, complete with exercise stations, winds around the front of the Operations and Checkout Building for those preparing for the KSC Annual Walk/Run in April.

And the KSC Fitness Center, in OSB I, may be used by any Kennedy employee without charge after a brief health overview form has been submitted. Assistance formulating an exercise plan is available from the trainers on staff. After the fitness center resumes operation in the O&C in March, the locker room in OSB I will remain open to those who continue to exercise in the Launch Complex 39 (LC-39) area.

Two Weight Watchers at Work groups are active on center, one meeting at Headquarters and another in the O&C. Interest in a third group forming in the LC-39 area is being assessed, as well. Details are published weekly in the KSC Daily News.

Any employee interested in nutrition counseling should contact Sapp.

Kennedy employees also have a staunch supporter of achieving their fitness goals in Center Director Robert Cabana, a former astronaut: "Every new year, I renew my resolve to make time for fitness activities. I challenge every employee to join me throughout 2012 in maintaining and improving our overall level of fitness and productivity by taking advantage of the health and wellness services and facilities available to us all here at Kennedy Space Center."

## Feedback from diabetes screening

***"I recently was diagnosed with diabetes and I have to pass a flight physical to do my job. So, I'm working on getting my numbers down so I can work at the Shuttle Landing Facility. I don't want to ride the pine."***

Donnie Linton,
URS

***"Diabetes runs in my family and this was a very convenient way to find out where I stood."***

Cindy MacMillan,
CNC International

***"When I was pregnant with my second child, I was diabetic. I'm not diabetic now, but I just wanted to check. I do all the screenings offered here at KSC. It doesn't hurt to check."***

Dorothea Kuzma,
NASA

***"I figure I'm at that stage in my life where my body is changing, and there's no excuse not to take advantage of this screening."***

Marianne Lewis,
IHA

***"I am diabetic and thought I'd take advantage of the screening. As a diabetic, I'm supposed to check my blood sugar every day. But they offered the A1c Testing which gives a better indication of how your blood sugar is over time."***

Larry Third,
NASA

*Editor's Note: According to the American Diabetes Association, the A1c test measures your average blood glucose control for the past two to three months. For more information, go to* ***http://www.diabetes.org****.*

## NASA Employees of the Month: January

NASA/Rick Wetherington

Employees of the month for January are, from left, Susan Yeung, Human Resources Office; Christine L. Weaver, Safety and Mission Assurance Directorate; David E. Ward, Engineering Directorate; Yves C. Lamothe, 21st Century Ground Systems Program Office; Rami F. Intriago, Commercial Crew Program; Alice F. Smith, Center Operations; Janet C. Thodos, Procurement Office; and Andra Jackson, Information Technology and Communications Services. Not pictured: Louie Garcia, Ground Processing Directorate; Timothy O'Brien, Ground Processing Directorate; Kevin E. Smith, Engineering Directorate; and Donald Johnson, Launch Services Program.

# Looking up and ahead . . .

*** Launch windows to be determined in 2012**

### 2012

| | |
|---|---|
| No earlier than Jan. 19 | Launch/CCAFS (SLC-37B): Delta IV, WGS 4<br>Launch window: TBD |
| Targeted for Feb. 7 | Launch/CCAFS (SLC-40): SpaceX Falcon 9, Dragon C2/C3<br>Launch window: TBD |
| No earlier than Feb. 16 | Launch/CCAFS (SLC-41): Atlas V, MUOS<br>Launch window: TBD |
| No earlier than March 14 | Launch/Kwajalein Atoll: Pegasus XL, NuSTAR<br>Launch window: TBD |
| No earlier than April 27 | Launch/CCAFS (SLC-41): Atlas V, AEHF 2<br>Launch window: TBD |
| June | Launch/CCAFS (SLC-37B): Delta IV-Heavy, NROL-15<br>Launch window: TBD |
| No earlier than Aug. 23 | Launch/CCAFS (LC-41): Atlas V-401, RBSP<br>Launch window: TBD |
| No earlier than September | Launch/CCAFS (LC-37B): Delta 4, GPS 2F-3<br>Launch window: TBD |
| Dec. 1 | Launch/VAFB: Pegasus XL, Interface Region Imaging Spectrograph (IRIS)<br>Launch window: TBD |
| No earlier than Dec. 1 | Launch/CCAFS (LC-41): Atlas V, Tracking and Data Relay Satellite-K (TDRS-K)<br>Launch window: TBD |

## Atlantis powers down final time

Above, the flight deck of space shuttle Atlantis is illuminated one last time during preparations to power down the spacecreaft during transition and retirement activities in Orbiter Processing Facility-2. At right, a technician monitors data displayed on space shuttle Atlantis' glass cockpit during preparations for power down. Below, a view of Atlantis' payload bay is captured through the window of the flight deck. Atlantis is being prepared for public display in 2013 at the Kennedy Space Center Visitor Complex. For more information, click on any photo.

Photos by NASA/Jim Grossmann

John F. Kennedy Space Center

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Managing editor . . . . . Candrea Thomas
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Copy editor . . . . . Kay Grinter

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