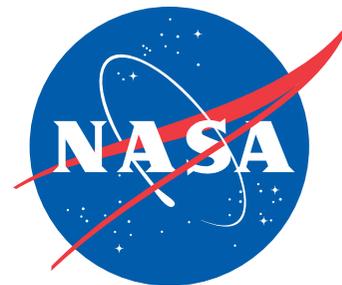


Spaceport News

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



TDRS-K replenishes NASA Space Network

By *Steven Siceloff*
Spaceport News

Thunder and fire created a brilliant pseudo-sunrise over the Space Coast Jan. 30 as an Atlas V leapt from the launch pad to place the newest member of NASA's Space Network into orbit. The United Launch Alliance Atlas V rocket lifted off from Space Launch Complex 41 at Cape Canaveral at 8:48 p.m. to place the Tracking and Data Relay Satellite-K (TDRS-K) into a geosynchronous transfer orbit.

"I'm just thrilled with our team," said Tim Dunn, NASA launch manager for TDRS-K.

The team is made up of both NASA and United Launch Alliance employees and subcontractors.

"We just have one of the finest launch teams assembled," Dunn said, "and I just couldn't be more proud of them."

TDRS-K was the first launch of 2013 for NASA's Launch Services Program (LSP), which already is gearing up for another liftoff Feb. 11.

The first stage of the Atlas V performed flawlessly during the first four minutes of the ascent before falling away so the Centaur upper stage could take over. The Centaur's

single RL-10 engine provided two burns separated by a one-hour 22-minute coast phase that put TDRS-K on its proper course.

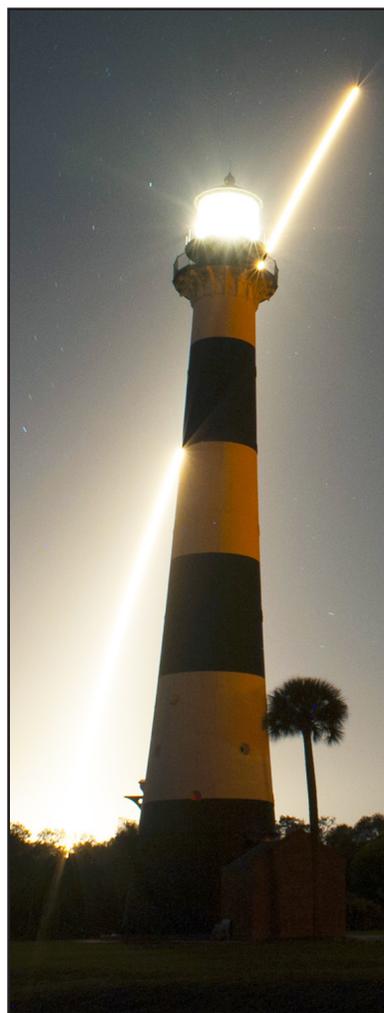
Leaving the Centaur behind, the TDRS-K spacecraft unfurled its twin single-access antennas before unfolding a pair of solar arrays. Using its own small thrusters, TDRS-K will lift and circularize its orbit to take a position 22,300 miles above the Pacific Ocean, roughly over Hawaii.

The satellite will become the tenth spacecraft in NASA's Space Network constellation that relays signals between Earth-orbiting spacecraft and ground stations. The International Space Station, NASA's Hubble Space Telescope and the agency's fleet of Earth observation spacecraft communicate through the TDRS system.

"With this launch, NASA has begun the replenishment of our aging Space Network," said Jeffrey Gramling, TDRS project manager. "This addition to our current fleet of seven will provide even greater capabilities to a network that has become key to enabling many of NASA's scientific discoveries."

The next launch, TDRS-L, is

[To TDRS-K, Page 3](#)



CLICK ON PHOTO NASA/Rick Wetherington

The United Launch Alliance Atlas V 401 rocket carrying NASA's Tracking and Data Relay Satellite-K (TDRS-K) streaks past the lighthouse on Cape Canaveral Air Force Station after launching from Space Launch Complex 41 at 8:48 p.m. on Jan. 30. The TDRS-K spacecraft is part of the next-generation series in the Tracking and Data Relay Satellite System, a constellation of space-based communication satellites providing tracking, telemetry, command and high-bandwidth data return services. For more information on the mission, click on the photo.

LDCM to obtain precious imagery

By *Anna Heiney*
Spaceport News

When the newest Landsat spacecraft trains its state-of-the-art sensors on Earth's surface, it will provide images of our ever-changing planet in unparalleled clarity.

Launched by NASA's Launch Services Program based at Kennedy Space Center, in partnership with the U.S. Geological Survey, the Landsat Data Continuity Mission (LDCM) will add a new chapter to an enduring program.

Since 1972, Landsat has enabled people around the globe to observe our planet's land masses. The enhanced images that will be provided by improved Landsat data come at a time when such information is vitally important.

"With increasing population, and with advances in technology, our land cover and land use are currently changing at a rate unprecedented in human history," said Jim Irons,

[To LDCM, Page 2](#)

Inside this issue...

In remembrance



[Page 3](#)

Hard-working miner



[Page 6](#)

Tornado season



[Page 7](#)

Spinoffs of the heart

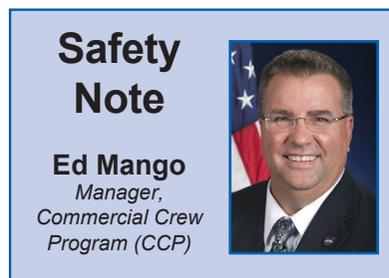


[Page 8](#)

'Our duty is to get our crews home safely'

Ten years ago, I was on an Army Reservist Blackhawk helicopter flying over East Texas just west of Hemphill, looking for a tire from space shuttle Columbia that had landed in a farm. We found it, and hundreds, OK, tens of thousands of pieces. The family of the farmhouse stood there as we landed this huge helicopter and examined Columbia's main landing gear tire. After introducing myself to the family, the mother asked simply, "Are we going to fly again?" Tears filled my eyes as I said, "Yes."

Our path for human spaceflight changed on Feb. 1, 2003. We were



once again taught the extremely unforgiving science of human spaceflight.

We did fly again, and safer than ever before. NASA's Space Shuttle Program reorganized and rebounded to perform a series of flights to complete the International Space Station

and upgrade the Hubble Space Telescope for all of humankind. Each and every mission we've flown throughout the past 50 years has taught us valuable lessons, and we're working with our partner companies to make sure those lessons learned are incorporated into the designs of America's next generation of human spaceflight vehicles.

Today, we in the Commercial Crew Program, as well as NASA's other human spaceflight programs, must never forget the lessons from Columbia. Spaceflight is hard and there always will be risk. Our perseverance to sound systems-

engineering principles need to guide us as we ask the key questions to understand designs, operations and flight rationale. We should always remember that our duty is to get our crews home safely to their families.

I will never forget the first few days of the recovery effort in 2003, focused on the STS-107 crew. Life is fragile enough; within our science it is extremely fragile. We have been honored with the responsibility of doing everything within our talent to make future human space systems as safe as possible. Today, that "yes" in East Texas still drives me to fly again and to do so safely.

From LDCM, Page 1

LDCM project scientist at NASA's Goddard Space Flight Center in Greenbelt, Md.

LDCM will be lofted into orbit aboard a two-stage United Launch Alliance Atlas V rocket. The five-year mission will begin with a launch from Space Launch Complex 3 at Vandenberg Air Force Base in California. Liftoff is scheduled for Feb. 11 at the opening of a 48-minute launch window that stretches from 10:02 to 10:50 a.m. PST (1:02 to 1:50 p.m. EST). After three months of extensive testing, the LDCM satellite will be renamed Landsat 8 and operational control will then be transferred to USGS.

Six Landsat satellites have successfully launched since the first made its debut in 1972. Jointly managed by NASA and the U.S. Geological Survey, the Landsat program has provided continuous views of Earth's surface for more than four decades. Landsat 7, the most recent in the series, launched in April 1999.

The Landsat Data Continuity Mission builds on this foundation and brings with it two advanced science instruments that will deliver more

data -- and clearer images -- than ever before. The Operational Land Imager (OLI) is designed to measure visible, near infrared, and short wave infrared wavelengths, while the Thermal Infrared Sensor (TIRS) monitors temperatures on the Earth's surface. Using what scientists call a "push-broom" approach, these detectors will record a constant stream of data as the spacecraft passes 438 miles overhead in a near-circular, near-polar orbit.

"All earlier Landsat sensors, on Landsats 1 through 7, were called 'whisk-broom sensors.' Each one of these sensors used a mirror that oscillated back and forth," Irons said.

"In contrast, both of the sensors on the Landsat Data Continuity Mission, OLI and TIRS, instead of using an oscillating mirror, they will use long arrays of detectors across the focal plane of each instrument."

During each satellite pass, OLI and TIRS will observe and collect image data for a 185-kilometer-wide swath of land. As Earth rotates beneath the satellite's orbit, subsequent seams of land will come into view, providing a complete picture of the planet's surface every 16

days.

To keep Landsat over water during the critical period of liftoff and ascent, managers selected Vandenberg Air Force Base as the mission's launch site. LDCM will be the first NASA mission launched at Space Launch Complex 3 since the agency's Terra satellite launched more than a dozen years ago. But despite a few changes, the launch team hasn't encountered any difficulties during launch preparations, said Omar Baez, senior launch director for LSP.

"They're operating out of a new control center since we launched back then," Baez said. "But it's still the Atlas V, still the Atlas V crew. There are folks we've worked with for years. It's like coming home."

The rocket's booster and Centaur stages were erected at the pad in October 2012. The LDCM spacecraft arrived at Vandenberg in December and underwent final prelaunch tests and closeouts before it was installed atop the rocket Jan. 25.

LDCM/Landsat 8 soon will begin sending home data to be used for years to come.

"The data is used by thousands of users all over



CLICK ON PHOTO

Technicians encapsulate the NASA's Landsat Data Continuity Mission (LDCM) satellite in its payload fairing at the Astrotech processing facility at Vandenberg Air Force Base in California. Liftoff is planned for Feb. 11 aboard a United Launch Alliance Atlas V rocket. For more information, click on the photo.

NASA/VAFB

the world for things like land resource monitoring, crop health identification, crop yield calculations, monitoring urban sprawl, urban planning -- the data is used all over the place," said Del

Jenstrom, deputy project manager for the mission.

"And to me, that's very rewarding, to work with such a great team of people on a mission that really does affect people's lives."

Day of Remembrance honors fallen astronauts

By **Bob Granath**
Spaceport News

On Feb. 1, Kennedy Space Center employees and guests joined others throughout NASA to pay their respects to astronauts who have perished in the conquest of space. Annual Day of Remembrance activities included a ceremony at the Space Mirror Memorial at Kennedy's visitor complex.

The ceremony included gospel singer BeBe Winans singing the national anthem and his song, "Ultimate Sacrifice," which honors heroes who lost their lives in service to the nation.

The date marked the 10th anniversary of the loss of the seven-member crew of space shuttle Columbia as they were re-entering the atmosphere over east Texas at the conclusion of the STS-107 mission. The ceremony also honored the astronauts of Apollo 1 who died in 1967 and STS-51L's Challenger crew lost in 1986.

Kennedy's Director Bob Cabana, a former shuttle commander, emphasized that flight safety will continue to be a paramount concern.

"We must never forget



NASA/Jim Grossmann

Kennedy Space Center employees and guests placed wreaths and flowers at the Space Mirror Memorial at the spaceport's visitor complex during NASA's Day of Remembrance on Feb. 1.

the hard lessons we have learned in the past," he said. "It's important that we pause to remember and reflect.

We must do our very best to prevent something like that from ever happening again."

Cabana went on to pledge that exploration beyond Earth will continue.

"We promise to continue your thirst for knowledge, to learn from our mistakes, to rise above failings, and to one day lead the way beyond our home planet in our never-ending quest to explore."

Former NASA astronaut Eileen Collins, who commanded Discovery on the STS-114 mission that returned the shuttle program to flight following STS-107, emphasized that risk is a part of any great mission.

"We remember the astronauts who took the daring steps of accepting the challenges of spaceflight," she said.

Collins went on to stress that a desire to explore has always been a part of the human experience.

"I often tell my children

what my parents told me," she said. "Generations pass and centuries pass, but people don't change. It seems to me the sense of curiosity in people doesn't change. We still have it. Sure, our environment changes, technology changes, but people are still human. We still carry the spirit of adventure."

During the observance, a wreath was placed at the Space Mirror Memorial by NASA Associate Administrator Robert Lightfoot, Associate Administrator for Human Exploration

and Operations William Gerstenmaier; Evelyn Husband-Thompson, widow of STS-107 commander Rick Husband; and Sandra Anderson, widow of Columbia payload commander Michael Anderson.

The ceremony also included a flyover by T-38 jets, piloted by astronauts.

Also participating in the ceremony were state Sen. Thad Altman, president and chief executive officer of the Astronauts Memorial Foundation (AMF); former NASA astronaut Jon McBride, chairman of the AMF board of directors; and Mick Ukleja, chairman of the AMF board of trustees.

The Astronauts Memorial Foundation, a private, not-for-profit organization, sponsors the Space Mirror Memorial and implements innovative educational technology programs.

The names of the fallen astronauts from Apollo 1, Challenger and Columbia, as well as the astronauts who perished in training and commercial airplane accidents are emblazoned on the monument's 4.5-foot-high-by-50-foot-wide polished black granite surface.



NASA/George Roberts

Fireworks begin as NASA's Tracking and Data Relay Satellite-K (TDRS-K) heads to orbit from Cape Canaveral on Jan. 30.

From **TDRS-K**, Page 1

planned for January 2014.

The TDRS network was envisioned in the 1970s as an in-space network that would provide continuous communications for spacecraft.

It also would replace the scattered network of ground stations on Earth that had been used to track and communicate with spacecraft.

The first TDRS was launched in April 1983 aboard space shuttle Challenger. Two of the TDRS spacecraft have been retired.

TDRS spacecraft are placed

in geosynchronous orbits that exactly match the rotation of the Earth so the satellites appear to hover over the planet.

Distributed at different locations in orbit around Earth, a TDRS satellite almost always is within sight of a spacecraft's communications antennas.

With the first launch of the year successfully under its belt, LSP already is reorienting itself for the second, which comes up Feb. 11.

Another Atlas V is scheduled to lift the Landsat Data Continuity Mission spacecraft into orbit from Vandenberg Air Force Base in California.



Here are some interesting tweets from the TDRS-K launch selected by the Spaceport News team to share with its readers.

Christina Strommer @jamminpsu

So the kids & I watched the rocket launch on my iPhone since we weren't home. Really cool! Technology rocks. #TDRS #NASASocial

Tim Bailey @tim846

My mom sent me a text letting me know she heard & saw the #TDRS K #AtlasV launch tonight :-)

iJason Blog @iJasonblog

WOW! What a perfect viewing night for the #TDRS-K launch! Could see it the whole way for a long time from Southwest Orlando!!

Jennifer Doctor @jidoctor

That was AWESOME!!! #TDRS #NASASocial can we do it again???

Scenes Around Kennedy Space Center



Photos by NASA/Frankie Martin

Kids go Wild, Wild West at CDC

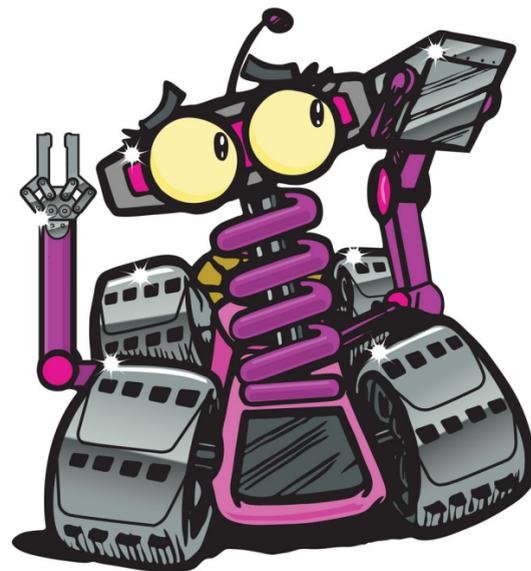
A happy youngster saddles up during the Child Development Center's "Wild, Wild West" day Jan. 25 at Kennedy Space Center. Children had the opportunity to ride ponies, as well as make some new rabbit friends (below).



CLICK ON PHOTO

NASA/Jim Grossmann

Workers from Canaveral Construction in Mims, Fla., have removed the Alabama river rock from one side of the crawlerway near Launch Pad 39B at Kennedy Space Center. The crawlerway is being upgraded to improve the foundation and prepare it to support the weight of NASA's Space Launch System (SLS) and mobile launcher on the crawler-transporter during rollout. Workers are removing the original rock and restoring the layer of lime rock below to its original depth of three feet. Then, new river rock will be added on top. The Ground Systems Development and Operations (GSDO) Program office at Kennedy is leading the center's transformation to safely handle a variety of rockets and spacecraft. Look for a story about the crawlerway upgrades in the next issue of "Spaceport News." For more information about GSDO, click on the photo.



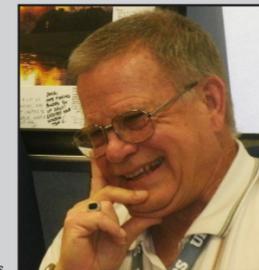
NASA image

CLICK ON IMAGE

Luna*Bot, the mascot and new member of the NASA Lunabotics team, makes its debut. This robotic mascot will be used as an ambassador of sorts to promote the Lunabotics Mining Competition held annually at the Kennedy Space Center Visitor Complex in May. Lunabotics felt the need to increase its outreach toward elementary-school-age girls, and thus, Luna*Bot's pink and purple colors were selected for their popularity among this demographic.

Retirement celebrations

Doug Carraway, right, celebrated his retirement from URS Corp. on Jan. 30 at OSB I with family, friends and co-workers. Carraway started his career at Kennedy Space Center with Wackenhut as a fire protection engineer and worked in this field for 34 years, designing, testing and maintaining just about every fire system at Kennedy -- from the Halon systems of yesterday to the sprinkler systems of today.



Reader-submitted photos



Jackie Henderson, Lynn Meadows and Larry Guilford are retiring! A celebration with their family, friends and co-workers was held in the ISC Central Supply Facility on Jan. 31. From left are Henderson; Meadows; Frank Kler, Yang Enterprises project manager; Guilford; and John Muzzy, ISC Logistics Division manager. The combined tenure of this trio is nearly 100 years in support of Kennedy Space Center.



NASA/Jim Grossmann

Kennedy Space Center narcotics K-9 handler Wendy Law introduces 3-year-old King during a visit to the Press Site newsroom Feb. 5. King, a Groenendael or black Belgian Malinois, is replacing the hard-working Nero who is retiring from active narcotics and patrol duty after 10 years of service. Law began her career at Kennedy in 1988. Since then she has been assigned to S.W.A.T., Traffic, and the K-9 Unit, of which she has been a member since 2001.

Engineers build hard-working mining robot

By Steven Siceloff
Spaceport News

After decades of designing and operating robots full of scientific gear to study other worlds, NASA is working on a prototype that leaves the delicate instruments at home in exchange for a sturdy pair of diggers and the reliability and strength to work all day, every day for years.

Think of it as a blue collar robot.

Dubbed RASSOR, for Regolith Advanced Surface Systems Operations Robot and pronounced "razor," the autonomous machine is far from space-ready, but the earliest design has shown engineers the broad strokes of what their lunar soil excavator needs in order to operate reliably.

"We were surprised at what we could do with it," said Rachel Cox, a Kennedy Space Center engineer on the RASSOR team.

The primary challenge for any digging robot operating off Earth is that it has to be small and light enough to fly on a rocket, but heavy enough to operate in gravity lower than that of Earth.

"The lighter you make your robot, the more difficult it is to do this excavating," said A.J. Nick, an engineer on the RASSOR team.

RASSOR tackles this problem by using digging bucket drums at each end of the robot's body that rotate in opposite directions, giving enough traction on one end to let the opposite side dig into the soil.

The team built a weight off-loading harness that simulated working the rover in the moon's 1/6 gravity field.

"We proved that if you engage one bucket, it pulls itself, but when you lower the other bucket and rotate it, once they both catch in, it



CLICK ON PHOTO

With a pair of drums positioned on arms, the Regolith Advanced Surface Systems Operations Robot (RASSOR) can take on a number of different shapes to accomplish its work, as shown here on July 13, 2012.

NASA/Rachel Cox

starts digging," Nick said.

Another secret of the drum, inspired by a previous Lockheed Martin design, is the staggered shallow scoops that shave the soil a bit at a time rather than scoop large chunks of it all at once, the way bulldozers do on Earth.

A concept mission for RASSOR would have a 2,000-pound payload in addition to the lander, which would be about the size of the Phoenix lander NASA sent to Mars. RASSOR is expected to weigh about 100 pounds. The remaining payload would be used to process the lunar soil delivered by RASSOR.

RASSOR looks like a small tank chassis with a drum at either end, each at-

tached with arms. The drums are perhaps the robot's most innovative feature. Because they are mounted on moving arms, they can act almost as legs letting the robot step and climb over obstacles.

Team members call such moves "acrobatics." They point out the robot can safely drive off the lander and right itself, flip itself over to get unstuck from fine soil and lift its body off the ground to let its treads run smoothly to remove built up soil. RASSOR is designed to easily transform into a Z-shaped position to drop its soil collection into the hopper.

With the drums positioned above the main body of the robot, it stands about 2.5 feet tall.

The robot is designed to skim lunar soil and dump it into a device that would pull water and ice out of the dirt and turn their chemicals into rocket fuel or breathing air for astronauts working on the surface. The device would be part of the lander that carries the RASSOR to the moon's surface. The robot, therefore would be the feeder for a lunar resource processing plant, a level of industry never before tried anywhere besides Earth.

Producing water and fuel from the lunar soil would save the tremendous expense of launching the supplies from Earth, since 90 percent of a rocket's mass normally consists of propellant, which can be made on the moon.

"This has been kind of the dream, the mission they gear this around," Nick said.

The concept could work on Mars, too, since its soil also is suspected of holding large amounts of water ice.

"There are some areas at the poles where they think there's a lot of ice, so you'd be digging in ice," Nick said. "There's other areas where the water is actually 30 centimeters down so you actually have to dig down 30 centimeters and take off the top and that depth is really where you want to start collecting water ice."

In order to provide enough material to the production platform to create usable amounts of resources, RASSOR would need to operate about 16 hours a day for five years. It would drive five times faster than the Mars Curiosity rover's top speed of 4 centimeters per second, then shave the moon's surface with a pair of rotating drums and return to the resource processing plant with some 40 pounds of lunar soil for processing.

Devising a robot for such demands called for numerous innovations, and the team says it has at least one major decision to make before it begins construction of the second-generation RASSOR prototype: keep going with tracks, such as those that tanks use, or switch to wheels.

A 25-foot-square area has been cleared in part of the engineers' workshop to make room for a large area of imitation lunar soil that will allow the robot to be tested in material close to what it will face on the moon.

The team already is designing RASSOR 2, a prototype that will be much closer to what NASA could launch in the future. RASSOR is expected to begin testing in early 2014.



NASA/Rachel Cox

RASSOR, which is 2.5 feet high and expected to weigh 100 pounds, performs a variety of "acrobatics" in October 2012, including flipping itself over to get unstuck from fine soil and lifting its body off the ground.



NASA/Jason Schuler

Spring tornado season puts spaceport on alert

Spaceport News Report

Tornadoes can happen anytime in Florida, but many of Florida's tornadoes typically occur in the spring and summer, according to William Roeder of the 45th Weather Squadron at Cape Canaveral Air Force Station.

Roeder said spring season tornadoes (February-April) can be more powerful and deadly as they are spawned from severe super cells along a squall line ahead of a cold front. These types of tornadoes also are possible in the winter months (December-January). Summer season tornadoes (June-September) are usually associated with thunderstorms. Landfalling tropical cyclones also can produce tornadoes during the summer and fall. While summer season tornadoes mostly happen during the day, spring season tornadoes often strike in the middle of the night.

Are you prepared? Tornado safety is an easy two-step process.

Step 1: Have a plan! Identify the safest room in your building and home, and ensure everyone knows which one it is. The safest rooms usually are located on the lowest floor, preferably with inside walls between you and the outside wall, small rooms with solid construction such as restrooms and closets, and away from windows. A strong table and thick pads can protect you against falling debris. Motorcycle and sports helmets can protect your



A small water spout forms east of Launch Complex 39 at Kennedy Space Center on Aug. 27, 2002. In the foreground, the American flag takes on the looming storm's winds at the Press Site, near the mission countdown clock in front of the turn basin.

NASA file/1969

head. People in mobile homes or other weak portable buildings should seek shelter elsewhere.

Step 2: Stay informed! The 45th Weather Squadron gives the potential for severe weather at Kennedy Space Center and Cape Canaveral Air Force Station in its daily 24-hour and weekly forecasts available online at <http://www.patrick.af.mil/weather>. If the threat continues, the squadron issues a Severe Weather Watch with a desired lead time of four hours. Finally, if tornadoes are imminent or observed, the squadron issues a Tornado Warning with a desired lead time of five

minutes. Follow local procedures for adverse weather.

At home, stay informed about approaching weather. The National Weather Service (NWS) in Melbourne gives the potential for severe weather in their general forecasts, issues a Tornado Watch when tornadoes may be produced, and issues a Tornado Warning when a tornado is detected or is imminent. If severe weather is likely, ensure you and your family reviews your safety plan and knows which room is the safest. If there is time before the high winds start, secure any loose outside materials and close protective shutters, but don't put yourself in danger to do so. If a Tornado or Severe Weather Watch is issued, listen for weather warnings and be ready to act. If a warning is issued for your area, go to your safe room immediately. Regardless of whether a warning is issued, go to your safe room if threatening weather approaches — there may not be time for an official warning to be broadcast.

One of the best ways to prepare for severe weather is to own a NOAA All Hazards Radio, formerly known as a NOAA Weather Radio. This is essential if you live in a location without a tornado siren. However, even if you live near a tornado siren, it may not be loud enough to wake you while asleep inside your house. Tornadoes between midnight and

dawn are 2.5 times more likely to kill than tornadoes during the day. A NOAA radio by your bed easily is loud enough to wake you. NOAA radio provides alternatives for the hearing and visually impaired. However, it doesn't cover two percent of the country, so test your reception to be sure you're covered.

A second way to receive Severe Weather Warnings is recommended, such as a cell phone with text messaging or email capability. Some county emergency management offices and most of the Orlando TV station websites relay official NWS warnings free, direct to your cell phone. However, check with your cell phone provider to determine if they charge for receiving these messages. Some companies also offer this service for a small annual fee. You can even set different ring tones for those calls, such as a loud alarm to better alert you. Some of these services allow targeting of the messages to specific locations so that you are notified only of warnings that affect you. Also, a new FEMA/DHS program called Wireless Emergency Alerts (WEA) sends local NWS tornado warnings direct to your cell phone. This free service is being phased in by each cell phone provider and should be available on most phones by the end of 2013. Check with your provider for additional details.

IN CASE OF EMERGENCY

EMERGENCY NOTIFICATION SYSTEM

The Emergency Notification System (ENS) provides the ability to send messages to all personnel employed at Kennedy in the event of an emergency or critical situation at a NASA facility.

The ENS System will contact personnel by email, telephone, cellular phone and pagers.

Make sure NASA has your accurate and up-to-date personal contact information.

Employees should enter their information into the User Self-Service (USS) tools, part of the Identify Management and Account Exchange (IdMAX):

<https://idmax.nasa.gov>

Under "User Self Service," click "Update-Emergency Notification Information."

Then click the "Personal Information" tab. Populate the fields with your information.

Click the "Update Address" button.

FACILITY EVACUATION PLANS

Kennedy personnel are required to be familiar with the emergency evacuation plans for facilities they utilize. These plans are prepared per KDP-KSC-P-3001 and are submitted by the IMCS EPC to the NASA NEMO and are available at

<http://businessworld.ksc.nasa.gov/acilitydoc.html>

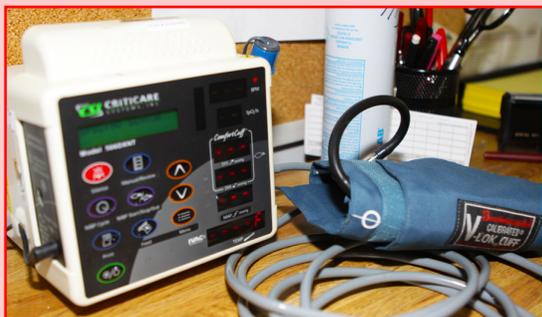
NASA KSC EMERGENCY INFORMATION GUIDE

For the NASA KSC Emergency Operations Center home page, go to

<http://eoc.ksc.nasa.gov>

NASA Spinoffs: Valentine's Day Edition

With love in the air and Valentine's Day next week . . . did you know NASA technology is vital to our hearts?



Heart rate monitors are mobile thanks to NASA technology.



NASA helped pioneer a heart monitoring system used to advance the electrocardiograph (EKG) process.



NASA technology improved blood pressure management by getting more accurate readings and making the process quicker.



NASA technology created a device to enhance blood circulation, which led to the improvement of cardiopulmonary resuscitation (CPR).



NASA researchers developed a life-saving fetal heart-rate monitor using sensor technology originally created to detect faint sounds on airplane wings.

Photos by NASA/Jim Grossmann

Looking up and ahead . . .

* All times are Eastern

Feb. 11

Mission: The Landsat Data Continuity Mission (LDCM)

Launch Vehicle: Atlas V 401

Launch Site: Vandenberg Air Force Base, Calif.

Launch Window: 1:02 to 1:50 p.m.

Description: The Landsat Data Continuity Mission (LDCM) is the future of Landsat satellites. It will continue to obtain valuable data and imagery to be used in agriculture, education, business, science and government.

Feb. 12

Mission: ISS Resupply

Launch Vehicle: ISS Progress 50

Launch Site: Baikonur Cosmodrome, Kazakhstan

Description: Progress 50 will carry supplies, hardware, fuel and water to the International Space Station (ISS).

March

Mission: Orbital Sciences Corporation Test Flight

Launch Vehicle: Antares

Launch Site: Wallops Flight Facility, Va.

Launch Pad: OA

Launch Window: TBD

Description: The Antares is scheduled for a test flight under NASA's Commercial Orbital Transportation Services agreement with the company.

March 1

Mission: SpaceX CRS-2 Commercial Resupply Services flight

Launch Vehicle: Falcon 9

Launch Site: Cape Canaveral Air Force Station

Launch Pad: Space Launch Complex 40

Description: SpaceX CRS-2 will be the second commercial resupply mission to the International Space Station by SpaceX.

To watch a NASA launch online, go to <http://www.nasa.gov/ntv>.

NASA Employees of the Month: February



NASA

Employees of the Month for February are, from left, Bradford Lytle, Engineering and Technology; Jonathan Baker, Chief Financial Officer; John Jackson, ISS Ground Processing and Research (Employee of the Quarter); Christopher Spears, Center Operations; and Martha Williams, Engineering and Technology. Not pictured are Tracy Belford, Chief Council; Douglas Melin, Education and External Relations (Employee of the Quarter); Dwight Rogers, Ground Processing; Rogelio Curiel, Procurement; Gregory Harrigan, Launch Services Program; and Romeo Enriques, Safety and Mission Assurance.



John F. Kennedy Space Center

Spaceport News

Spaceport News is an official publication of the Kennedy Space Center and is published online on alternate Fridays by Public Affairs in the interest of KSC civil service and contractor employees.

Contributions are welcome and should be submitted three weeks before publication to Public Affairs, IMCS-440. Email submissions can be sent to KSC-Spaceport-News@mail.nasa.gov

Managing editor Candra Thomas
Assistant managing editor Stephanie Covey
Editor Frank Ochoa-Gonzales
Copy editor Kay Grinter

Editorial support provided by Abacus Technology Corp. Writers Group.

NASA at KSC is on the Internet at www.nasa.gov/kennedy

SP-2013-01-005-KSC