

# Spaceport News

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

[www.nasa.gov/centers/kennedy/news/snews/spnews\\_toc.html](http://www.nasa.gov/centers/kennedy/news/snews/spnews_toc.html)



## INSIDE . . .

KSCVC earns  
top business honor



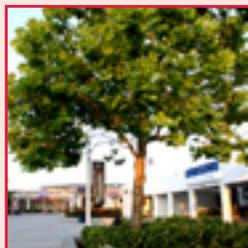
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## WISE keeping its cool before infrared mission

By Linda Herridge  
Spaceport News

NASA's Wide-field Infrared Survey Explorer, or WISE, kept its cool as it waited to launch into space aboard a Delta II rocket from Space Launch Complex-2 at Vandenberg Air Force Base in California.

Unlike any other spacecraft processed by the agency's Launch Services Program, or LSP, at Kennedy Space Center, preparing WISE for its launch presented some chilly challenges.

Before WISE was mated to the payload fairing, engineers and technicians encased the telescope's sensitive instrument in super-cold solid hydrogen at the Astrotech payload processing facility at Vandenberg.

Armando Piloto, the WISE mission manager in the Flight Projects Office of LSP, said the group has been working on the mission since 2003, with a significant amount of work and trade studies completed in order to find a good launch vehicle solution for the spacecraft.

"The team completed a great deal of excellent work to get to this point in the processing flow,"

### WORD ON THE STREET

With WISE being the latest addition to NASA's acronym dictionary, what is your favorite NASA acronym?

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Piloto said. "A driving requirement for infrared spacecraft is that the telescope must be cooler than the objects it will observe in space."

The science payload was built by the Space Dynamics Laboratory in Logan, Utah, and the spacecraft was built by Ball Aerospace and Technologies Corp. in Boulder, Colo.

Dr. Fengchuan Liu is the WISE deputy project manager at NASA's Jet Propulsion Laboratory in Pasadena, Calif. Liu explained that infrared light, which humans can't see, has longer wavelengths and is good for seeing

See WISE, Page 3

### Launch info

As of presstime, the launch of NASA's Wide-field Infrared Survey Explorer aboard a Delta II was scheduled for Dec. 11. The launch window was from 9:09 to 9:23 a.m. EST.

For complete coverage and photos, go to:  
[www.nasa.gov/wise](http://www.nasa.gov/wise)



NASA's Wide-field Infrared Survey Explorer wrapped in the outer nose cone, or fairing, that will protect it during its launch from Vandenberg Air Force Base, Calif.

NASA

# Cabana reaches students through Digital Learning Network

By Linda Herridge  
Spaceport News

When students can't participate in educational events in person at Kennedy, the center broadcasts to them live by way of the Digital Learning Network, or DLN.

Dressed in his blue astronaut jacket, Center Director Bob Cabana, a first-time DLN guest, spoke to 200 students Dec. 8.

"It was fun talking to the students," Cabana said. "If we can't do it in person, then the DLN is the next best way to reach them."

During the hour-long interaction, Cabana answered questions about his education and career, launching and flying a space shuttle, eating space food, wearing a spacesuit and adjusting to weightlessness in space.

He spoke to students and their teachers from Conyers Middle School in Conyers, Ga.; Farnsworth Aerospace Magnet School in St. Paul, Minn.; Vintage Math Science Technology Magnet School in North Hills, Calif.; and students from the middle school he attended, Folwell Middle School, in Minneapolis, Minn., during the "America's Spaceport: John F. Kennedy Space Center" DLN module.



NASA/Jack Pfaller

Center Director Bob Cabana addresses 200 students around the country during a Digital Learning Network event Dec. 8 at the Educator Resource Center.

Cabana told the students it's important to have goals and work hard in school. When asked about valuable lessons he's learned during his career he said, "Always do your best, be kind and considerate of other people and have integrity."

DLN Coordinator Damon Talley, with Oklahoma State University, is responsible for the development, delivery and production of all live interactive videoconferences for the center's Education Division,

and serves as presenter and moderator during DLN events.

"It's so important to reach students across the country who can't travel to Kennedy," Talley said. "Since its start at Kennedy in 2005, DLN has reached 38,413 students in K-12."

NASA's DLN was formed in 2003 and the program is funded in part by the agency's NASA Explorer Schools program and the Johnson Space Center in Houston.

## More online

For more about Kennedy's Digital Learning Network, go to:  
<http://dln.nasa.gov/dln>.

It is an agencywide education program that uses content from all 10 NASA centers.

The DLN mission is to inspire, engage and educate students and teachers, connecting them with NASA scientists, engineers and education specialists through interactive technology, including videoconferencing and Webcasting. DLN focuses on four mission directorates: Aeronautics Research, Exploration Systems, Science, and Space Operations.

According to Cheryl Johnson, NASA DLN project specialist, the goal was to make a network of NASA centers with the capabilities and resources to promote high-quality, interactive and educational programs for teachers and students.

"All of the modules adhere to the Education National Standards," Johnson said. "The America's Spaceport module is the second most popular and requested module throughout the nation."



NASA

Kennedy Space Center Visitor Complex Chief Operating Officer Bill Moore is all smiles as he holds the trophy for winning Business of the Year.

## Delaware North, visitor complex earn top business honor

As the world celebrates a new year, the operators of the Kennedy Space Center Visitor Complex will look to build upon a successful 2009.

Delaware North Companies Parks and Resorts division was recognized as Business of the Year at the 18th annual FLORIDA TODAY Volunteer Recognition Awards ceremony. Local business and community leaders, volunteers, and Kennedy Director Bob Cabana gathered to honor the complex at Brevard Community College in

Cocoa, Fla., on Nov. 19.

The complex's Chief Operating Officer Bill Moore accepted the award on behalf of the company and fellow employees.

"Delaware North's managers and associates at the Visitor Complex are strongly committed to improving the community and making Kennedy Space Center a must-see attraction for visitors," said Moore. "I am very proud of what they do and how much they do."

During the ceremony, the complex was recognized for its dedication to community service, education

efforts, improving small businesses and green initiatives. Also noted was the leadership example set by Delaware North's senior managers, who are involved in a wide variety of charitable organizations, including the Make-A-Wish Foundation and the American Red Cross.

Additionally, this year's Salute to Brevard Residents weekend successfully collected more than 16 tons of food for the local community.

"There's so much need in this community," Moore said. "It's very humbling."

The Volunteer Recognition Awards were created to acknowledge the countless hours and endless contributions that individuals, businesses and organizations make to the local community every day. Brevard County's local United Way submitted the complex's nomination for its continued support, including a contribution of \$42,000 in 2008.

Moore said, "We know these are tough times and not everyone is as fortunate as we are, working in an extraordinary place like Kennedy. So we are eager to give something back."

# Physicist earns title as Kennedy's best in 2009

By *Steven Siceloff*  
Spaceport News

**B**ob Youngquist rarely is happier than when he's solving problems for the space program.

As someone might expect, the launch business offers plenty of unusual opportunities for Youngquist and NASA Kennedy Space Center's Applied Physics Laboratory, which he leads.

A day can bring in a request to find a better way to dry a shuttle's heat shield tile, a need to improve an existing hydrogen fire detector or a chance to predict the outcome if a solid rocket booster accidentally ignited inside the Vehicle Assembly Building.

"I come into work every day expecting to think and hoping to solve something," Youngquist said. "Anytime where you can come to work and it's a different duty . . . I don't see how you could have a better job than that."

His enthusiasm and the solutions developed by him and the lab earned the 20-year Kennedy veteran the center's first Engineer/

Scientist of the Year award.

It's a far different career outcome than Youngquist expected.

Youngquist earned two bachelor's degrees in math and physics and then turned to applied physics for his master's degree. He followed that with a doctorate in applied physics from Stanford University in California.

"I was planning on being a professor," the physicist said. "I had never considered aerospace."

Working at University College London in England was wearing Youngquist out, though, and he came back to the United States.

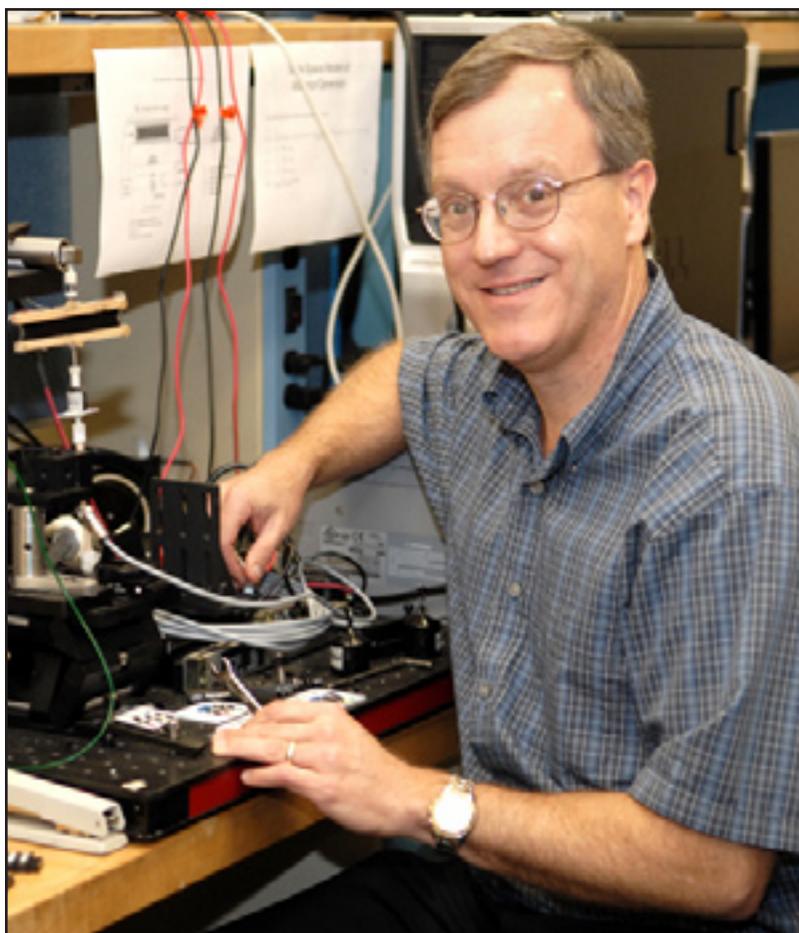
Youngquist had lived in Florida since he was seven, having moved down from New York, so the Space Coast was a natural home base for him. He took a post with a contractor in 1988, then moved to a NASA position in 1999.

With a specialty in fiber optics just as the field was burgeoning, Youngquist earned nine patents. His work at Kennedy would earn nine more.

Throughout the 1990s, almost all the work the lab did was focused on the Space Shuttle Program. It often dealt with ground support equipment, launch needs and inventions to help analyze shuttle components after a mission.

The current decade has seen a shift as the engineers turn their attention to the needs of the Constellation Program. They also work with the Launch Services Program on the expendable rockets that loft scientific and observation spacecraft for the agency. These days, shuttle program work accounts for 40 percent of the lab's manifest.

Still, Youngquist said he



NASA/Glenn Benson

Bob Youngquist, who wanted to be a college professor before finding his niche in the aerospace industry, has earned 18 patents, nine of which while working at NASA. Youngquist was given Kennedy's first Engineer/Scientist of the Year award at a ceremony Dec. 1.

## Editor's note

Tracy Gibson with ASRC Aerospace Corp. also received the Engineer/Scientist of the Year award for exceptional technical excellence and leadership in the development of ground and surface systems technologies supporting the NASA Space Operations and Exploration Missions.

Look for a feature about Gibson in the next issue of Spaceport News on Jan. 8, 2010.

doesn't know what to expect. Depending on the problem, a solution can be as simple as suggesting a new way to do something, or it might require an invention.

"There have been so many unique days out here," he said. "I spent a Sunday afternoon at the top of the fixed service structure with acoustic equipment measuring the pressure waves as they set cannons off to scare away birds."

With seven other NASA engineers in the lab, Youngquist

doesn't have to research and solve each problem himself.

"It's a very diverse lab and we get involved with a large number of activities," he said.

The award also is a recognition of Youngquist's work with students and engineers working toward higher degrees.

When engineering and math students visit the lab, Youngquist said "in almost every case these students unanimously agree that this is where they would like to work."

## From WISE, Page 1

objects that are cold, dusty and older.

Liu said the WISE telescope and its detectors need to be kept very cold so there is no other heat source that could interfere with the glow of objects it will

observe. Asteroids, cool dim stars, dusty galaxies and other objects that might otherwise be hidden from optical telescopes, such as NASA's Hubble Space Telescope, can range in temperature from minus 330 to 1,300 degrees F.

WISE will circle the

Earth over the north and south poles and map the entire sky at four infrared wavelengths with sensitivity hundreds of times greater than its predecessors. It will scan the entire sky one-and-a-half times in nine months in search of hidden cosmic objects.

Liu said WISE will uncover objects never seen before, including the coolest stars, the universe's most luminous galaxies and some of the darkest near-Earth asteroids and comets.

The data WISE collects will serve as navigation charts for other missions,

pointing them to the most interesting targets.

Liu said, "It will help answer fundamental questions about the origins of planets, stars and galaxies, and provide a mountain of data for astronomers to investigate for decades to come."

# Scenes Around Kennedy Space Center



NASA/Jack Pfaller

Behind the Vehicle Assembly Building, a crane lowers a fifth tower segment onto four segments already secured to a new mobile launcher, or ML, being constructed to support NASA's Constellation Program. When completed with five additional segments, the tower will be about 345 feet tall and will have multiple platforms for personnel access.

## NASA Employees of the Month: December



NASA/Tony Gray

Employees of the month for December are, from left: Kathleen Poole, Chief Financial Office; Employee of the Quarter Cheryl Johnson, Safety and Mission Assurance Directorate; Jacob Rogers, Information Technology and Communications Services; James Behling, Launch Services Program; Harry Batey, Chief Counsel; and Maggie Forbes, Center Operations. Not pictured are, Juan Gordon, Constellation Project Office; Ellen Arens, Engineering Directorate; Shaun Green, Engineering Directorate; Jeremy Graeber, Launch Vehicle Processing Directorate; and Gabriel Vazquez Ramos, Safety and Mission Assurance Directorate.



NASA

Fifteen space shuttle work force employees and their loved ones take a photo from the Operations and Support Building II's fifth floor after a Flow Director Award ceremony on Oct. 30. Each award recipient was given a certificate and a keepsake shuttle clock for their outstanding dedication and commitment to NASA's Space Shuttle Program. The awards recognize shuttle employees who consistently go above and beyond their normal duties, often working extended hours, weekends and even holidays.



NASA/Jim Grossmann

Co-op Corrie Lamkin presents her semester project Dec. 3 in the Kennedy Learning Institute. Lamkin was among the students who explained processes, procedures and information they learned during the past couple of months while working at Kennedy.



NASA/Kim Shifflett

Civil service and contractor employees enjoy refreshments and other goodies at the 30th annual KSC Holiday Coffee on Dec. 2 and 3 in the Operations and Checkout Building's Mission Briefing Room and in the Operations and Support Building II's fifth floor conference room. Workers also had the opportunity to take a photo with the KSC Visitor Complex's Spaceperson.

## 2009 Kennedy Awards

This award is intended to recognize contributions made by NASA employees, individual citizens, contractors or public organizations to Kennedy endeavors.

<b>NASA</b> Pamela Adams Stephen Anthony Arun Arora Jon Arrington William Atkinson Lawrence Batterson Joseph Bell Kent Beringer Deborah Bitner Dale Breidenbach Richard Bukac Tammy Burlein David Burris Jose Camacho Matthew Carroll Troy Cochran Emilio Cruz Frances Cunningham Gustavo Diaz Tyrone Frey Michael Gardner Denton Gibson Janet Gobaira Jimmy Gonzalez Cindy Gooden Brian Graf Megan Grande John Graves James Herndon Donald Johnson Lori Jones Justin Junod Robert Kuczajda Roger Liang Jeannette Lockman	James Lunceford Kristen Luther Bonni McClure Sudhir Mehta Gisela Meinert Ramon Mejias Sonia Miller Chad Moeller Robert Morrison James Nelson John Newport Christian O'Conner Kevin Panik Bartholomew Pannullo Derek Petrek Roger Pierce Joseph Roeder Patricia Ross Jessica Scheffman Lashanda Slaiman Lowell Spaulding Phillip Swihart Mary Taiclet Derrick Thomas Liliana Villarreal Eugene Walker Skip Williams Donald Wilson	Tyrece Lewis Wayne Watkins  <b>The Boeing Company</b> William Bahr Jeffery Boykin Michael Dahm Robert Humeniuk Mia Little Joseph Ross Allen Saad  <b>Lockheed Martin Astronautics</b> Albert Hale  <b>ASRC Aerospace Corp.</b> Tracy Sweet  <b>Abacus Technology Corp.</b> Richard Beard  <b>REDE/Critique JV</b> Wendella Collamore Rene Lull Tori McLendon Laura Sharp Annesly Wood	Jane Jolley Amy Misakonis Danny Reilly Eddy Solon  <b>Millennium Engineering Inc.</b> Donald Clarkson Richard Garzaro Megan Jaunich Philip Johnson Daniel Victor  <b>Dynamac Corp.</b> Lorretta Filiault Nishelby King  <b>Analex Corp.</b> Elliott Hulscher Stephen Jefferson John Jones Latife Kuguoglu David Loisselle Matthew Olenick Christopher Rhodes Teresa Sauter Ben Smegelsky  <b>Mantech SRS International</b> Joseph LeBlanc  <b>Innovative Health Applications</b> Jeanine Meister
<b>40 Years of Service</b> William Franklin	Kevin Herrington Robert Hubbard Ken Mulla Tim Pirlo Jennifer Sizemore Bill Sloan Iris Zimmerman	Yamil Nieves-Martinez Timothy Patton Edward Puls Martin Rosman Danny Russ Jeffrey Saylor Mark Sorger Carla Stodgel-Wright Matthew Taylor Bruce Terwilliger Robin Turner David Ungar Steven Weaver Matthew Zbin	Brian Klein Francis Kline Linda Shaykhian  <b>Executive Safety Forum Awards</b> Harry Moore Karen Thompson Dennis Yee  <b>Small Business Prime Contractor of the Year</b> Abacus Technology Corp.  <b>Small Business Sub-contractor of the Year</b> Creative Management Technology Inc.  <b>Large Business Prime Contractor of the Year</b> Analex Corp.
<b>Secretarial Excellence Award</b> Joette Feeney	Robert Youngquist Tracy Gibson	<b>Environmental Team Award</b> Raymond Arieux Lawrence Church Brice Crossley Kenneth Culberson Judith Donall Alberto Esperon Sharon Farrar Christopher MacFarlane Ronald Funk Philip Green Billy Hazelett Margaret Heimlich Charles Kincaid Christina MacDonald	<b>Science Applications International Corp.</b> George Caruso Sherri Craig Harold Donald  <b>United Space Alliance</b> Keith Braun Russell Brucker Jacklyn Duff Ralph Esposito Paul Hudson Brian Johnson
<b>Best Of The Best</b> Tom Tinsler John Jones Steven Davis Robert Straney		<b>Environmental Individual Award</b> Garry Broughton Eric Jespersen	<b>You Make A Difference Awards</b> Nicole Delvesco Leonard Duncil
<b>Group Achievement Award</b> Steven Bliss Laurie Brown Chris Carlson Ann Heimlich			

# 'Moon Trees' flourish around world

By Elaine M. Marconi  
Spaceport News

Anything having to do with the moon remains an unfolding mystery. And "Moon Trees" are part of that lunar mystique.

Are there actually trees on the moon? No . . . but tree seeds flown into space by NASA astronaut Stuart Roosa on the Apollo 14 mission in 1971, now grow strong and tall out of the Earth's soil.

It all began after Roosa was selected to pilot the Apollo 14 command module. As a former smoke jumper with the U.S. Forest Service, he was contacted by then chief of the Forest Service, Ed Cliff, and asked if he would be willing to take tree seeds into space.

As his way of paying tribute to the Forest Service, Roosa agreed and packed hundreds of seeds from redwood, loblolly pine, sycamore, Douglas fir and sweet gum trees into

his personal travel kit. Roosa and his seeds orbited the moon 34 times while stationed in the command module "Kitty Hawk."

Scientists were curious to know if the seeds, after their journey into the microgravity of space, would sprout and look the same as Earth-grown trees. In the early 70s there were very few experiments done in space.

Unfortunately, after returning to Earth the seed canister burst open during the decontamination process and all the different species of seeds, not only were mixed together, but thought to be no longer useful and able to germinate.

After being shipped to the Forest Service labs, it was found that most of the seeds did survive and ultimately were planted. After 20 years of growing side-by-side with their Earth-bound equivalent as controls, no one could tell the difference.

The seedlings, now known as Moon Trees, were planted across

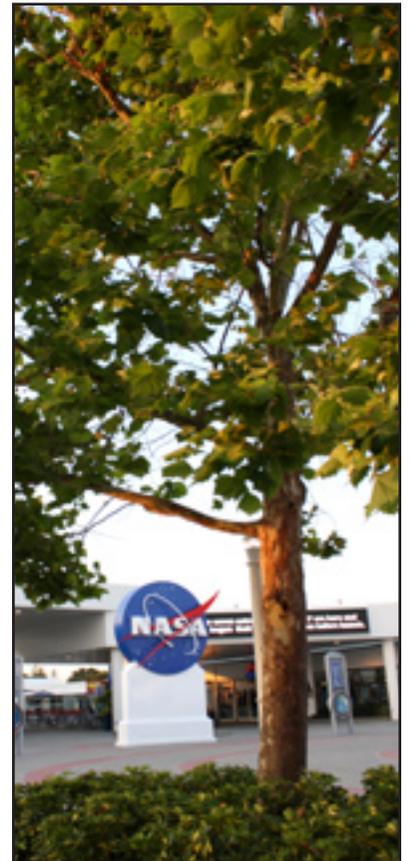
the United States and throughout the world. Many were planted as part of the nation's bicentennial celebration in 1976 and grow at national landmarks, such as the White House, Independence Square in Philadelphia, state capitols and university campuses.

There also was a "Moon Tree 1976" planting ceremony at Kennedy Space Center during the center's Bicentennial Expo on Science and Technology. That tree still thrives at the center.

Second-generation trees, called "half-moon" trees, have been planted from seeds or cuttings from an original Moon Tree and are thriving as well.

Roosa passed away in December of 1994, but the Moon Trees continue to flourish -- a tribute to our first visits to the moon and a memorial to Roosa.

A moon sycamore graces Roosa's grave at Arlington National Cemetery in Virginia.



Courtesy of Daniel Gruenbaum, Delaware North Corp.  
The "Moon Tree" planted at the Kennedy Space Center Visitor Complex courtyard is a sycamore.

# Pentrack will be missed by co-workers, friends

By Linda Herridge  
Spaceport News

Kennedy Space Center co-workers and friends remember Thomas Pentrack as someone who cared about others more than himself. Pentrack, 45, who was the deputy director of the Space Station and Spacecraft Processing Directorate, died Nov. 23, after about a year-long battle with a rare form of bone cancer. His funeral was Nov. 30, at Divine Mercy Catholic Church on Merritt Island.

Russell Romanella, director of the directorate, said he was very fortunate to work with Pentrack day in and day out for many years and that his welcoming smile always was a pleasure to see in the morning.

"Tom had a way about him. He was confident, calming, intelligent, reassuring, and a good listener," Romanella said. "There are people in your life who impact you and you'll never be the same. I will miss him terribly."

"It was a privilege to work with



for NASA

Thomas Pentrack joined NASA in 1989, and worked in many directorates at Kennedy. His last assignment was deputy director of the Space Station and Spacecraft Processing Directorate.

and know Tom," said co-worker Tammy Belk, who is the directorate's administrative officer. "He's irreplaceable and will always be missed."

Pentrack's 20-year career with NASA began at Kennedy in 1989. He held various positions in the Space Shuttle Operations Director-

## In Remembrance

ate through 1996. He transitioned to the Space Station Hardware Integration Office as an operations engineer in 1996 and was responsible for overseeing assembly operations, testing, acceptance and delivery of the U.S. laboratory "Destiny" at the center.

In 1998, Pentrack became the Multi-Element Integration Testing Branch chief where he led a large multicenter, multiagency and multinational test team of international partners and space station program engineers.

Beginning in 2001, he served as the Integration Engineering Branch chief and was named Engineering Division chief in January 2004. He led a large group of contractor and government engineers who were responsible for space station flight element processing, testing and preparations for launch.

After the Columbia accident in 2003, Pentrack served as the direc-

torate's management representative to the Columbia recovery efforts, reconstruction, Columbia Accident Investigation Board and the Return to Flight effort.

In 2005, he accepted a remote assignment at NASA Headquarters to represent the center on the Exploration Systems Mission Directorate Systems Engineering and Integration procurement team and source evaluation board. Pentrack also served as deputy program manager for launch vehicles in the Constellation Project Office at NASA Headquarters.

He received NASA's Exceptional Achievement Medal in 2003 for his outstanding leadership in the Checkout, Assembly and Payload Processing Services Source Evaluation Board and was recognized as a Spaceflight Awareness Launch Honoree in 2004 for his leadership during the Columbia Return to Flight activities.

Pentrack is survived by his wife, Monica, and two children, Michael and Lauren.

# 2009 BY THE NUMBERS . . .



NASA/Jack Pfaller

This year, about 30 elements passed through Kennedy's Space Station Processing Facility and Payload Hazardous Servicing Facility. International Space Station elements included the S6 truss and final set of large power-generating solar arrays; the Exposed Section and Exposed Facility for the Japan Aerospace Exploration Agency's Kibo module (above); the Multi-Purpose Logistics Module Leonardo with science and storage racks, and the COLBERT Treadmill; two Express Logistics Carriers with spare parts. Elements for upcoming space station missions include the Tranquility node and Cupola observatory; MPLM Leonardo; MPLM Donatello and Express Logistics Carrier 4; and an Orbital Replacement Unit and Express Logistics Carrier 3. The team also processed hardware and experiments for several science missions, including a new camera, gyroscopes and batteries for NASA's Hubble Space Telescope.



NASA/Tony Gray-Tom Farrar

NASA's Ares I-X (above) roared off the modified Launch Pad 39B on Oct. 28 at 11:30 a.m. EDT. The fast-paced assembly of the 327-foot-tall rocket began in November 2008, paving the way for rollout less than a year later. The flight test lasted about six minutes from launch to splashdown, providing an enormous amount of data for developers of NASA's next-generation spacecraft.

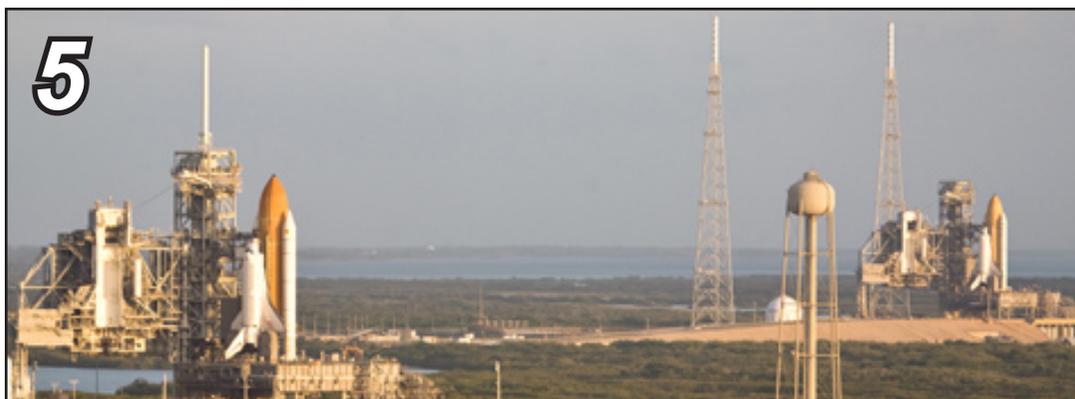


NASA/Amanda Diller

Kennedy's scenery changed dramatically this year with the help of 46 active construction projects, ranging from the new Launch Pad 39B lightning protection towers (above) for NASA's Constellation Program and new institutional support facilities to hurricane repairs and demolitions. Thirty-two facility projects reached completion in 2009, and 15 new projects broke ground, including the "green" Propellants North Facility. The Life Support Facility achieved LEED silver certification from the U.S. Green Building Council, and the four others were in the process of being LEED certified.



NASA's Launch Services Program, or LSP, processed and launched seven missions from two U.S. coasts this year. NOAA-N Prime (left) a polar-orbiting weather satellite, kicked off the year aboard a Delta II rocket from Vandenberg Air Force Base on Feb. 6. The Orbiting Carbon Observatory mission was lost when the payload fairing of its Taurus XL rocket failed to separate during ascent Feb. 24. On March 6, Kepler launched aboard a Delta II from Cape Canaveral Air Force Station on a mission to find Earth-sized planets moving around the sun. LSP also launched the U.S. Missile Defense Agency's STSS-ATRR aboard a Delta II from Vandenberg on May 5. Two moon-bound missions, the Lunar Reconnaissance Orbiter and the Lunar Crater Observation and Sensing Satellite, took off from the Cape on June 18 aboard an Atlas V. LSP provided advisory support to NASA's Goddard Space Flight Center for the launch of the GOES-O satellite aboard a Delta IV on June 27. Next, LSP launched two STSS-Demo satellites aboard a Delta II on Sept. 25. As of presstime, the Wide-field Infrared Survey Explorer was scheduled to launch Dec. 11 aboard a Delta II from Vandenberg, the eighth and final launch for LSP in 2009.



NASA/Dimitri Gerondidakis

Shuttle Discovery launched to the International Space Station on March 15, taking with it seven astronauts and the final set of large power-generating U.S. solar arrays for the STS-119 mission. Discovery landed at Kennedy's Shuttle Landing Facility on March 28. Shuttle Atlantis (above, left) and seven astronauts flew to NASA's Hubble Space Telescope on May 11 for the STS-125 mission, the telescope's fifth and final servicing mission. Atlantis landed at Edwards Air Force Base in California on May 24. Shuttle Endeavour (above, right) and seven STS-127 astronauts took off toward the orbiting outpost July 15, setting a record for the most humans in space at the same time in the same spacecraft when combined with the station's crew of six. The 16-day mission ended July 31. On Aug. 28, shuttle Discovery took off again, this time on the STS-128 mission to deliver extra supplies and equipment to the space station, including the COLBERT treadmill. The fifth and final shuttle mission of the year was STS-129. Shuttle Atlantis launched to the space station Nov. 16, taking with it six astronauts and spare parts. Atlantis landed 11 days later, on Nov. 27, at Kennedy, marking the last time a shuttle would transport a station crew member.



NASA

In 2009, a NASA program managed by Kennedy's Education Office, Interdisciplinary National Science Program Incorporating Research and Education Experience, reached more than 2,000 students nationwide. INSPIRE encourages the nation's future generation of explorers, from ninth grade through rising college freshman, to pursue careers in science, technology, engineering and mathematics.

# Spaceport News returns in 2010

This is the final issue of Spaceport News in 2009.  
Pick up your next edition on Jan. 8, 2010.

## Kennedy retail stores offer holiday discounts

The NASA Exchange is holding its annual holiday sale as all seasonal items are 25 percent off, while giftware, memorabilia and clothing are 20 percent off. The sale runs through Dec. 24.

For more information, contact Sandrine Rouillard at 321-867-1715 or **Sandrine.I.Rouillard@nasa.gov**.

The Kennedy Space Center Visitor Complex is offering badged Kennedy and Cape Canaveral Air Force Station employees a 30 percent discount on space-themed merchandise now through Dec. 24. Select from thousands of items, such as ornaments, toys, apparel, jewelry, books, mugs, mission merchandise and more, at The Space Shop inside the visitor complex and the gift shop at the U.S. Astronaut Hall of Fame.

The Space Shop is open until 5:30 p.m. now through Dec. 20, and will be open until 6 p.m. Dec. 21-24. The U.S. Astronaut Hall of Fame is open until 6:30 p.m. now through Dec. 20, and will be open until 7 p.m. Dec. 21-24. To visit The Space Shop, present your badge at a group will-call ticket window (1-4) for entry.

The discount does not include the KSC bus tour, IMAX movies or Shuttle Launch Experience. To receive your discount, present your badge at the beginning of the transaction. This offer is not transferable and cannot be combined with any other discount.

For more information, call 321-449-4400.

## Lockheed Martin collects supplies for troops in Afghanistan

Lockheed Martin Space System Company's Diversity Council, the Eastern Range Diversity Council and the Next Generation Leaders are working together in a "Support the Troops" initiative at Cape Canaveral Air Force Station.

The Support the Troops drive involves collecting food, hygiene items, books, small games and magazines to send directly to troops deployed in the Kandahar -- Zabul Province in Afghanistan.

Employees have collected about 100 pounds of donations. Additional items will be delivered to the Veterans Administration Hospital in Viera, Fla.

Collection efforts began in October and the group started sending supplies in November.

Collection boxes can be found near many building entrances on Kennedy and CCAFS. For more information, call 321-476-7147, 321-476-7350 or 321-476-6998.

## Looking up and ahead . . .

- Scheduled for Dec. 11 Launch/VAFB: WISE; Window: 9:09 to 9:23 a.m. EST
- No earlier than Feb. 2 Launch/CCAFS: Falcon 9, Window 11 a.m. to 3 p.m. EST
- No earlier than Feb. 3 Launch/CCAFS: Atlas V, SDO; 10:53 to 11:53 a.m. EST
- Targeted for Feb. 4 Launch/KSC: Endeavour, STS-130; 5:52 a.m. EST
- No earlier than Feb. 25 Launch/CCAFS: Delta IV, GOES-P; Window 6:28 to 7:18 p.m. EST
- Targeted for March 18 Launch/KSC: Discovery, STS-131; 1:34 p.m. EDT
- Targeted for April 19 Launch/CCAFS: Atlas V, OTV; TBD
- Targeted for May Launch/CCAFS: Delta IV, GPS IIF-1; TBD
- Targeted for May 14 Launch/KSC: Atlantis, STS-132; 2:28 p.m. EDT
- Targeted for May 23 Launch/VAFB: Delta II, Aquarius / SAC-D Satellite; TBD
- Targeted for July 29 Launch/KSC: Endeavour, STS-134; 7:51 a.m. EDT
- Targeted for Sept. 16 Launch/KSC: Discovery, STS-133; 11:57 a.m. EDT
- No earlier than Oct. 1 Launch/VAFB: Taurus, Glory; TBD
- Targeted for Fall 2011 Launch/CCAFS: Atlas V, Mars Science Laboratory; TBD

# WORD ON THE STREET

*With WISE being the latest addition to NASA's acronym dictionary, what is your favorite NASA acronym?*



*"LOC. Every time I hear it, it reminds me of where we are . . . Launch Operations Center."*

**Elaine Liston,**  
with Abacus Technology Corp.

*"RFD (Requirements Formulation Document). Because it reminds me of 'rural-free delivery' back home in Missouri."*

**Stephen Van Genderen,**  
with NASA



*"BOC (Base Operations Contract). Every time I see it, I think of the band Blue Oyster Cult."*

**John Brady,**  
with NASA Exchange

*"MECO (Main Engine Cutoff). Whenever I hear it, I feel like I know the astronauts got up safely."*

**Cassy Adams,**  
with Abacus Technology Corp.



*"I know it may sound cliché . . . but NASA . . . It's short, sweet, to the point and something to be proud of."*

**Leroy Smith,**  
with NASA



John F. Kennedy Space Center

## Spaceport News

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