

Spaceport News

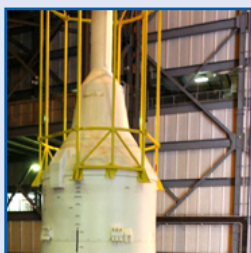
John F. Kennedy Space Center - America's gateway to the universe

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INSIDE ...

Worker a fixture at LC-39



Page 2

STS-125 crew returns to Kennedy



Page 3

Interns present summer projects



Page 6

Heritage: The first payload specialist



Page 7

VAB hosts first rocket in 25 years

By Steven Siceloff
Spaceport News

Not since the days of Apollo has a rocket reached so far into the rafters of the Vehicle Assembly Building as the Ares I-X.

Standing 327 feet tall, the rocket is almost twice as tall as a shuttle stack. It is the same size and roughly the same shape as the Ares I rocket that NASA expects to become operational later in this decade.

"It's obviously a big visual milestone," said Jon Cowart, deputy program manager of the Ares I-X. "Now you can really get a feel for the scope of the project."

The Ares I-X program was developed to test the first stage of the Ares I, which is intended to carry astronauts into low Earth orbit inside an Apollo-like spacecraft called Orion.

With a few workers watching from different points inside the Vehicle Assembly Building on Aug. 13, a crane hoisted the inactive launch abort system tower off the floor and placed it atop the Ares I-X to complete the rocket. The second stage of Ares I-X is inactive and the nose of the rocket is strictly a weight and shape simulator to test whether the first stage can lift and control the thin-profiled craft.

The rocket is wired throughout with more than 700 sensors to gather data during the flight so engineers can test their predictions

Launch info

The Ares I-X flight test is targeted to launch Oct. 31 at 7 a.m., pending NASA Headquarters approval.

and refine their computer models.

The test rocket has been assembled on the top of a modified mobile launcher previously used by the shuttle. The rocket's first stage is based on the shuttle's solid rocket booster and is held onto the platform by four massive bolts that, just as with the shuttle, will split apart at launch to let the rocket launch.

Now that the test rocket is assembled, numerous tests will be run on all the systems, including complex instruments that will constantly measure the rocket's movements as it launches and the first stage separates.

The evaluations include a process called "modal testing," which will shake the stack slightly to test stiffness of the rocket, including the pinned and bolted joints, and make sure the rocket can handle the strain of launch and ascent.

While those tests are conducted, a team of about 30 launch controllers also will practice their roles in the firing room.

Just a few days before liftoff, the doors of the Vehicle Assembly Building will open all the way to the top again and the Ares I-X will be slowly carried to Launch Pad 39B.



NASA/Dimitri Gerondidakis

The yellow framework, nicknamed the "birdcage," lowers Super Stack 5 onto Super Stack 4, completing the assembly of the Ares I-X rocket. Standing at 327 feet tall, the rocket is almost twice as tall as a shuttle stack and is the first new space vehicle in Kennedy Space Center's Vehicle Assembly Building in more than 25 years.

Worker a fixture at Launch Complex 39

By Linda Herridge
Spaceport News

Kennedy Space Center Security Officer Jack Hilderbrand was hoping space shuttle Endeavour's STS-127 mission would launch on July 12, his 70th birthday.

"Missed it by three days," Hilderbrand said with a laugh.

The Space Gateway Support security officer has worked at the center for 41 years, with the last 31 years as a guard at Launch Complex 39. That makes him almost as much a fixture as Kennedy's launch pads.

"My main responsibility is to protect lives and protect all assets at Kennedy," Hilderbrand said.

During preparations for Discovery's STS-128 mission, he's been stationed mostly at the Launch Pad 39A guard gate.

In 1961, Hilderbrand started as surveyor and inspector for Launch Complex 34 construction at Cape Canaveral Air Force Station, Launch Pads 39A and B, and the Vehicle Assembly Building area, followed by surveyor for the Indian River Bridge.

He joined Kennedy's security force as a patrol officer in 1964, and his duties included traffic enforcement at all posts and gates. He quickly was promoted to sergeant in December 1966, and then became duty officer to supervise the patrol officers.

In 1969, while working for Boeing, he had the opportunity to work on the Apollo Program.

"I wanted to broaden my knowledge of the space program and transferred to work on the Apollo 11 launch and landing on the moon," Hilderbrand said.

While with Boeing, he became the fire inspector for all Boeing-occupied facilities at the cape and in Cocoa Beach, Fla. In 1970, he returned to a sergeant position in security.

Hilderbrand took a hiatus from Kennedy in 1973 to manage his own painting/contracting business, but returned to Kennedy in 1980 as a patrol officer. He then tried out for and joined the SWAT team from 1986 to 1991.

During the Cassini Program,



Photo courtesy of Gary Rothstein/EPA

Kennedy Space Center Security Officer Jack Hilderbrand, who has worked at the center for 41 years, guards Launch Pad 39A as NASA prepares for the STS-128 mission to the International Space Station.

Hilderbrand said protesters objected to the plutonium being used for the mission.

"We traveled through swamps and outlying areas, looking for protesters," Hilderbrand said. "At times we would find them and remove them from Kennedy property."

Hilderbrand said one of the biggest challenges of his job is the unknown.

"I have to be prepared and ready for the unexpected to happen, any time and any place," he said.

He recalled a time, several years ago, when the driver of a vehicle being chased by police ran his gate on NASA Causeway near U.S. 1 at 100 mph.

"They got the vehicle stopped by shooting the tires and windows out on the vehicle," Hilderbrand said. "You just never know what might happen."

He has seen a lot of wildlife and oftentimes helps the U.S. Fish and Wildlife Service catch alligators near the launch pads

"I have to be prepared and ready for the unexpected to happen, any time and any place."

Jack Hilderbrand,
security officer

and other facilities.

Hilderbrand hopes that NASA's space program will continue on for decades to come and people will enjoy it as much as he has.

"Even when the shuttle program comes to an end, I just hope and pray NASA will come up with something to replace it and continue on so there will be a future in space and people living in this area will have jobs," Hilderbrand said.

As for Hilderbrand, he has enough to keep him busy for awhile, as does the STS-128 crew, which includes Commander Rick Sturckow, Pilot Kevin Ford, and Mission Specialists John "Danny" Olivas, Patrick Forrester, Jose Hernandez, Nicole Stott and European Space Agency astronaut Christer Fuglesang.

They are set to deliver the Multi-Purpose Logistics Module Leonardo, containing science and storage racks, a new sleeping compartment and the COLBERT treadmill, to the International Space Station. Their 13-day mission will include three spacewalks to replace experiments outside the European Space Agency's Columbus laboratory and installation of a new ammonia storage tank. During the mission, Stott will transfer to the space station to replace Tim Kopra as Expedition 20 flight engineer. Kopra will return home aboard Discovery.

"It's been steady work at the launch pad preparing Discovery to fly," Hilderbrand said. "I'm looking forward to a safe and successful launch."

STS-125 crew returns with final memories of Hubble

The crew of the STS-125 mission forever will be remembered as the group that gave NASA's Hubble Space Telescope its final tune-up.

It's been three months since the crew left Kennedy Space Center in a billow of smoke and clouds. On Aug. 7, they returned to where the mission began to talk about their accomplishments, share personal stories and thank the team that made it all possible.

"We've been traveling around the country saying thank you to everyone involved," Commander Scott Altman said. "But it's really special for us to be back here, because this is where it

really came together.

"You are the guys who got two vehicles ready to go at the same time to give us that back for launch."

Altman, Pilot Gregory C. Johnson, and Mission Specialists Mike Massimino and Megan McArthur attended the crew return in the Operations and Support Building II. Mission Specialists John Grunsfeld, Andrew Feustel and Michael Good could not make the visit due to prior obligations. According to Altman, Good is busy training for the upcoming STS-132 mission to the International Space Station.

Baseball was a hot topic throughout the ceremony.

One worker asked Massimino if he had taken the home plate from Yankee Stadium up in space, knowing the astronaut was a New York Mets fan.

"There's a lot of cleat marks on that thing . . . and I don't think a lot of them belonged to the Mets," Massimino joked.

The astronauts repaired and upgraded Hubble during five spacewalks.

"If any mission ever showed the importance of human spaceflight, it's got to be these guys," Kennedy Center Director Bob Cabana said. "I don't know of any robot that can think like them, act like them or perform like them."



NASA/Amanda Diller

STS-125 mission Commander Scott Altman signs items for Kennedy Space Center workers at the crew return ceremony Aug. 7 in Operations and Support Building II.

Space club honors trio with Lifetime Achievement awards

Most people think working for the nation's space program is an honor . . . but what if you dedicated your life to it? Three men have, and they recently were honored by the National Space Club of Florida.

Dr. James "Jim" Johnson, Gerald Oppliger and Guenter Wendt were awarded a Lifetime Achievement Award at a luncheon Aug. 11, at the Oceanfront DoubleTree Hotel in Cocoa Beach, Fla.

"Jim, Gerald and Guenter each have made significant contributions to the space community through their impressive careers," said Roy Tharpe, committee chair of the National Space Club. "The space club is proud to acknowledge their achievements."

Johnson has served the space program since 1955, from his distinguished career at NASA to his lifelong service to the community in educational and public arenas.

Following his retirement from NASA in 1995 as deputy manager of the Russian Integration Office, Johnson remained active in the space community. He served in key leadership positions with the Cavanaugh Council of Technical Societies, Space Congress, NASA Alumni



NASA/Kim Shifflett

Guenter Wendt, center, discusses how to get younger Americans interested in the space program with Gerald Oppliger, left, and Dr. James "Jim" Johnson at the National Space Club's Lifetime Achievement Award luncheon Aug. 11 in Cocoa Beach, Fla.

League and Brevard Space Week. He also received numerous awards, including two NASA Exceptional Service medals.

Oppliger served the space program for 50 years, beginning with Sperry Utah Co. as a project engineer in 1959 and ending with his long service as president of Lockheed Martin Space Operations Co. in 1997.

In the late 1950s he worked on the nation's early missile systems.

In the 1960s, he helped design the solid propellant motors for the Titan missile system, as well as the solid propellant rocket motors for the Apollo launch escape system.

In the 1980s, Oppliger served as executive vice president and program manager for the construction and checkout of the Space Shuttle Launch Facility at Vandenberg Air Force Base in California. He later served as Lockheed Martin Space Operations Co. president for the Shuttle

Processing Contract with NASA.

Wendt, a space industry legend, served on every spacecraft closeout crew from the launch of the monkey "Ham" until his retirement in 1989. A confidant and personal friend of most of the astronauts, Wendt received NASA's Letter of Appreciation Award, several Group Achievement awards and the Silver Snoopy.

Born and educated in Germany, Wendt came to the U.S. in 1949 and became an American citizen in 1955. Working as a mechanical engineer for the McDonnell Aircraft Corp., he was given primary responsibility for testing, checkout and launch operations for all Mercury and Gemini crewed flights.

After the Apollo 1 accident in 1967, the astronauts rallied to transfer Wendt to North American Rockwell Corp., where he resumed his duties as self-proclaimed "Pad Fuhrer." He was responsible for launch preparations for all crewed Apollo, Skylab and Apollo-Soyuz test flights and was the last man seen by the flight crews prior to liftoff.

Residing in Merritt Island, Fla., Wendt frequently is consulted for historical productions and remains active as a space advocate.

Scenes Around Kennedy Space Center



NASA/Kim Shifflett

STS-128 crew members take a break from their Terminal Countdown Demonstration Test in Kennedy Space Center's Payload Changeout Room at Launch Pad 39A on Aug. 7. From left, Mission Specialist Patrick Forrester, Pilot Kevin Ford, and Mission Specialists Nicole Stott and Danny Olivas. The STS-128 mission is targeted to launch from Kennedy at 1:36 a.m. Aug. 25.



for NASA

Members of the Disability Awareness and Action Working Group, or DAAWG, load up ice cream sundaes to help raise funds for upcoming activities taking place during National Disability Employment Awareness Month, which is October. A Kennedy Space Center event featuring blind tri-athlete, Aaron Scheidies, is scheduled for Oct. 30.



for NASA

Employees of the Launch Services Program, which includes NASA, Analex, a subsidiary of QiniteQ North America, aiSolutions, and SAIC, collected 117 pairs of shoes and \$235 for the Central Brevard Sharing Center, or CBSC, as part of Analex's annual "Best Foot Forward" shoe drive. From left, Pam Pugmire, Diane Haider, and David Brubaker, vice president of the CBSC, are seen with some of the shoes collected.



For NASA

A Camp Kennedy Space Center participant takes a tumble in the Multi-Axis Trainer, or MAT, at the Visitor Complex this summer. Participants also were able to take part in hands-on activities, a simulated space shuttle launch and enjoy various motion-based simulators. Weekly camps ran from June 8 to Aug. 14.



NASA/Jack Pfaller

Al Worden shows Center Director Bob Cabana a moon rock encased in Lucite at the Kennedy Space Center Visitor Complex on July 30. NASA honored Worden with an Ambassador of Exploration Award for his contributions to the U.S. space program.



NASA

Barbara Stephenson, the U.S. Ambassador to Panama, toured Kennedy Space Center facilities Aug. 6. From left are: Dana Gray, IBM Corp.; Kenneth Mouradian, Orlando director, U.S. Department of Commerce; Valerie Guenther, district director, office of congresswoman Suzanne Kosmas; Kathleen McInerney, TradeRoots manager, U.S. Chamber of Commerce; Kennedy Deputy Director Janet Petro; Stephenson; and Malvina Gasco, field representative for Kosmas.



NASA photos

Students, parents unite for Inventor/Invention Week

Allen Jensen, above, and Bryce Lawton, show inventions they and their parents created during Inventor/Invention Week at the Child Development Center at Kennedy Space Center on July 24. Allen is holding a ball-catch game and Bryce is totting a water-purification unit. Trophies were given to all 17 children who participated, including Tyler Healey, Joel Freeland, Madison Cox, Nicholas Dent, Kathryn Morris, Travis Murr, Michael Murr, Shay Strott, Mason Hewett, Danielle Haddox, Gavin Thomas, Christain Calero, Lauren Batterson, Chelsea Whalen and Erik Schlichenmaier.



Summer interns wrap up work with project showcase

By Linda Herridge
Spaceport News

Lindsay Greene, a senior at Florida Tech in Melbourne, was one of more than 100 high school, college and graduate students and professors who completed a 10-week summer internship at Kennedy Space Center.

Greene and others displayed overviews of their projects on posters during a mentor appreciation ceremony, Aug. 14, at the Operations and Checkout Building Mission Briefing Room.

The summer internships were coordinated by

the Education Programs and University Research Division of Kennedy's External Relations Directorate.

Greene worked in the Marshall Space Flight Center resident office at Kennedy with mentor Jolene Martin. She reviewed launch facility shuttle propulsion processes and focused on solid rocket booster integration from beginning to end.

"It was great to be with the hardware, and learning the integration process will be priceless knowledge that can be used in the future," Greene said. She compiled and presented her overview to Kennedy and Marshall

processing teams.

Berta Alfonso is the acting education director and lead for agencywide education projects at Kennedy. Alfonso said interns are competitively selected according to set criteria, including grade point average.

"We appreciate all the mentors who provided their talent to help the students grow," Alfonso said. "The Kennedy Education Office is here to serve the directorates in providing them the resources needed to accomplish their missions."

The next call for mentors will around the holiday break.



NASA/Troy Cryder

Summer intern Alex Miller, left, of Embry Riddle Aeronautical University, was one of more than 100 high school, college and graduate students who completed a 10-week summer internship at Kennedy Space Center. Miller and several others displayed overviews of their projects during a mentor appreciation ceremony Aug. 14.

Education lead receives national 'Women of Color' award

By Linda Herridge
Spaceport News

Inspiring young students to seek careers in science, technology, engineering and mathematics, or STEM, is one of Hortense Burt's passions.

Burt, who is Kennedy Space Center's education projects manager, recently was recognized for her work in promoting minority education advancements in STEM by the National Women of Color organization.

Since 2006, Burt has worked in the NASA Education Programs and University Research Division of the External Relations Directorate. She oversees the center's University Education Projects with primary responsibility for the formulation and implementation of new initiatives and student internships.

Burt will receive the award for Educational Leadership during the 2009 Women of Color Technology Awards Conference in October.

"Receiving this award is an honor to my mothers, for I was blessed with two, my grandmother and everyone else in my life who required that I do my job excellently," Burt said. "They told me to keep my eyes on where I wanted to go, but never forget where I came from, and



Hortense Burt will receive the award for Educational Leadership during the 2009 Women of Color Technology Awards Conference in October.

that true success should be measured by how many folks I brought with me and helped along the way.

"It couldn't have happened without the support of my wonderful co-workers," Burt added.

Glenn Research Center Director Dr. Woodrow Whitlow and Deputy Director Robyn Gordon nominated Burt for the award.

"Hortense recognizes our critical national need to increase the number of students who are pursuing careers in STEM fields and she is more than doing her part to make this a reality," Whitlow said.

"Her enthusiasm in engaging students and faculty is nothing short of inspirational. I would consider it a privilege for Hortense

to work with my grandchildren."

According to Tyrone Taborn, CEO and publisher of the Women of Color magazine, Burt was selected from hundreds of nominees reviewed by the selection panel.

"Hortense is very deserving of this honor," said Division Chief Gregg Buckingham. "Her passion for reaching out to the public, especially students, is contagious. She is a great role model -- as a parent, co-worker and citizen."

Burt said her personal mission in her current job is to encourage every minority student she comes in contact with to do their best in school and seek a STEM field of study.

"My goal is to aid in increasing the number of young minorities employed throughout NASA in these fields," Burt said.

She is responsible for university-level projects, but believes there is a need to inspire students at the elementary level, to ensure there are students who qualify for NASA and Kennedy's university programs as well as employment with the agency.

She said the most rewarding aspect of her job is talking to K-12 students about STEM careers and hosting minority K-12 students during a space shuttle launch.

"Many of these students do not have a clue what we do here," Burt said. "This gives them an opportunity to learn and be inspired."

She said some of her challenges are convincing minority students they can be an engineer, astronaut or scientist; acquiring resources to fund and manage new projects; and having a diverse pool of students selected, by Kennedy mentors, as interns.

Burt is a graduate of Prairie View A&M University in Texas, where she received a Bachelor of Science in mechanical engineering. In 2000, she joined NASA as a flight assurance manager in the Expendable Launch Vehicles Safety and Flight Assurance Office. She also was the mission assurance manager on Mars Exploration Rover Missions A and B and the Deep Impact missions.

A native Texan, Burt and her three children, James, Bobby and Afaton, reside in Titusville, Fla. She is a member and actively involved in St. James African Methodist Episcopal Church and the Alpha Kappa Alpha sorority. When she isn't working with students, she enjoys reading, exercising and traveling with her children.

Remembering Our Heritage

'Plan B' brings success for first payload specialist

By Kay Grinter
Reference Librarian

Charlie Walker can testify from personal experience that there is more than one path to achieving a goal. Although not chosen for NASA's first astronaut class in the space shuttle era, he went on to become NASA's first fare-paying payload specialist.

His launch as a representative of the McDonnell Douglas Corp. with the astronaut crew of the STS 41-D mission on Aug. 30, 1984, opened up the space frontier to private industry.

Aerospace jobs were scarce as the Apollo Program came to a close. Following graduation in 1971 from Purdue University with a bachelor's degree in aeronautical and astronautical engineering, Walker accepted a position as a civil engineering technician with the U.S. Forest Service, an agency that had employed him while he was a student.

Employment as a design engineer with the Bendix Aerospace Co. and as a project engineer with the Naval Sea Systems Command followed.

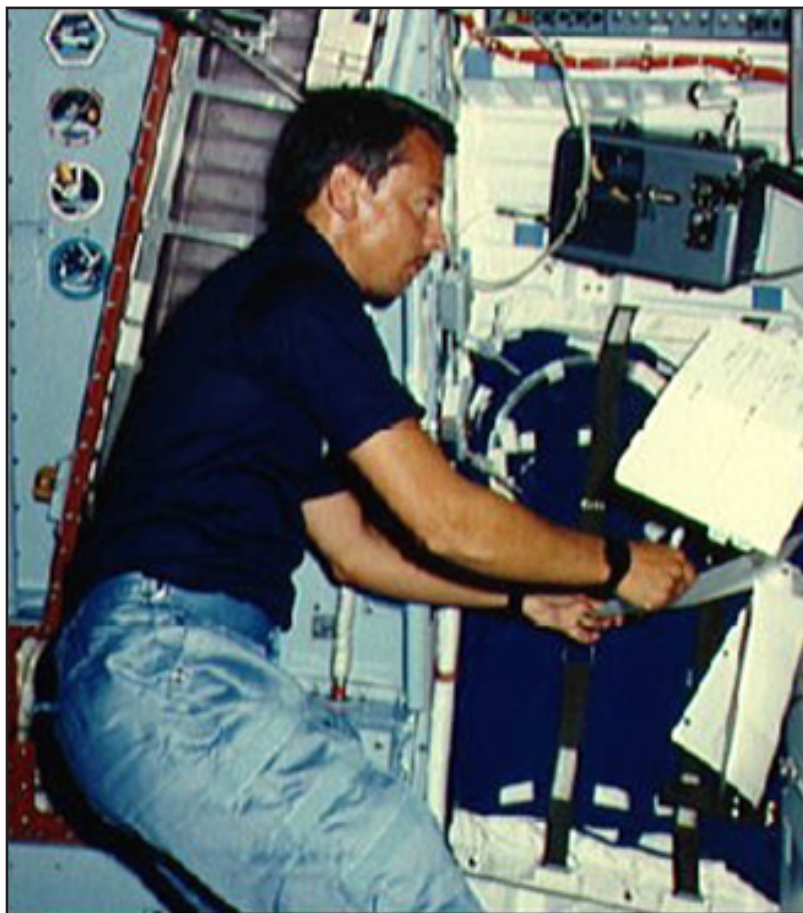
When NASA put out a call for candidates for the first astronaut class in the space shuttle era, Walker applied, but his search for the perfect job continued. During an interview for employment with McDonnell Douglas, he was forthcoming and explained that one of his goals was to fly in space.

McDonnell Douglas already had plans to develop an advanced piece of pharmaceutical equipment, an electrophoresis device, and to send it into space for testing and research.

In an interview with the Spaceport News, Walker said, "I told them, if the opportunity presents itself, I would like to be the person who does that research."

Disappointingly, NASA did not select Walker for the astronaut class, but McDonnell Douglas liked what they heard.

Following plan B, Walker started working for the company in 1977 as a test engineer on the aft propulsion subsystem for the space



NASA file/1984

Payload Specialist Charlie Walker works with the continuous flow electrophoresis device, or CFES, experiment, located in the middeck of space shuttle Discovery during STS 41-D.



NASA file/1984

Payload Specialist Charlie Walker talks with friends at Ellington Air Force Base in Houston on Sept. 8, 1984, following the STS 41-D mission.

shuttles before joining their space manufacturing team as one of its original members.

"In medical research, as well as medical pharmaceutical production, there is a need to achieve high purity," Walker explained, "and a process widely used is electropho-

resis. McDonnell Douglas pursued the concept that the environment of orbital flight -- microgravity -- would improve the purification of those materials 100 times better than could be done on Earth."

The result was the continuous flow electrophoresis device, or the CFES.

Walker became the chief test engineer and payload specialist for the company's Electrophoresis Operations in Space, or EOS, commercialization project, as it came to be known.

Before his first flight in 1984, Walker trained NASA astronauts in the operation of the CFES payload that flew on shuttle missions STS-4, STS-6, STS-7 and STS-8. Walker then accompanied the device himself on missions STS 41-D, STS 51-D and STS 61-B.

By the end of his third flight in 1985, he had accumulated 20 days of experience in space.

"For the researcher to have

More online

To read more about the 42 payload specialists trained to fly on NASA missions, visit: <http://www11.jsc.nasa.gov/Bios/psbio.html>

access to his laboratory is an extremely important aspect of any program," Walker said. "In space -- just as on Earth, having a laboratory, but being unable to get into it, is a problem. Somebody else has to be trained to do the experiments and report to the researcher. It can be effective, but it's not the most efficient way to make progress."

Walker also recognized the value of an experienced launch team.

"The McDonnell Douglas and pharmaceutical communities could not have flown the CFES device without the expertise of Kennedy Space Center's work force in integrating the equipment and our processes into the vehicle and the launch preparation protocols," he said.

Another McDonnell Douglas employee, Robert Wood, trained to operate the CFES on shuttle missions.

"In 1986, McDonnell Douglas was planning to fly an up-scaled version of the equipment but canceled the plans after the Challenger accident."

Two other industrial payload specialists flew in the shuttle program -- Robert Cenker, who flew on the STS 61-C and the last being Greg Jarvis on STS 51-L.

Walker hopes, though, that payload specialists will be included in future space programs.

"The opportunity for researchers to fly with their work is invaluable for any science or engineering or commercial project development," he said.

Although the EOS program came to an end, the technology developed for use on spaceflights resulted in improved designs and processes for the electrophoresis devices in use in the pharmaceutical industry on Earth.

Visitor Complex offers free admission, discounts to active military personnel

In honor of the brave men and women who serve and protect our country, the Kennedy Space Center Visitor Complex has announced a new "Salute to America's Heroes" offer for U.S. military personnel. Active duty military service members, including members of the National Guard and reservists, can obtain complimentary tickets and discounted tickets for family and friends through Dec. 15.

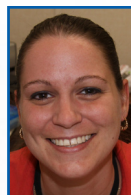
Complimentary tickets for active military and discounted tickets for family and friends are available at participating military base ITT travel offices.

Complimentary admission includes the new Shuttle Launch Experience, a Kennedy Space Center tour, 3D IMAX space films, Astronaut Encounter and the U.S. Astronaut Hall of Fame, featuring historic spacecraft, simulator rides and the world's largest collection of personal astronaut mementos.

Admission tickets are valid for a second day free at the Visitor Complex, if used within a seven-day period. Active military members also will receive a 10 percent discount on retail and food items at the Visitor Complex. For more information, call (321) 449-4400.

WORD ON THE STREET

We're taking the COLBERT treadmill up to the International Space Station on the STS-128 mission. What on the space station would you want named after you?



"A hammock . . . they need one up there so they can feel like they're at home."

Cathy Dixon,
with REDE Critique Inc.

"A solar array . . . because that would be pretty unique like me"

Joyce Wood,
with Brevard Achievement Center



"The arm on the space station . . . to an extent it controls what goes on up there."

Doug Tomlin,
with NASA

"The antigravity shower . . . when and if they ever get one up there."

Tom Price,
with Innovative Health Applications



"The kitchen . . . the 'Ivette Cafe.' I'm a cook . . . that's my other gig."

Ivette Jones,
with REDE Critique Inc.

Looking up and ahead . . .

Targeted for Aug. 25 Planned for Sept. 6	Launch/KSC: Discovery, STS-128; 1:36 a.m. EDT Landing/KSC Shuttle Landing Facility: TBD
Late August	Launch/CCAFS: Atlas V, PAN; 4:55 p.m. EDT
September TBD	Launch/CCAFS: Atlas V, Commercial Payload; TBD
Sept. 15	Launch/CCAFS: Delta II, STSS Demo; TBD
Sept. 30	Launch/CCAFS: Delta IV, WGS SV-3; 7:38 p.m. EDT
Targeted for Oct. 31 (Pending HQ Final Approval)	Launch/KSC: Ares I-X flight test; 7 a.m. EDT
Targeted for Nov. 12 Planned for Nov. 23	Launch/KSC: Atlantis, STS-129; 4:22 p.m. EST Landing/KSC Shuttle Landing Facility: TBD
No earlier than Nov. 12	Launch/CCAFS: Delta IV, GOES-P; TBD
No earlier than Dec. 4	Launch/CCAFS: Atlas V, SDO; TBD
No earlier than Dec. 10	Launch/CCAFS: WISE; TBD
Early 2010	Launch/CCAFS: Atlas V, OTV; TBD
Target Feb. 4, 2010	Launch/KSC: Endeavour, STS-130; 6:20 a.m. EST
Target Feb. 10, 2010	Launch/CCAFS: Delta IV, GPS IIF-1; TBD
Target March 18, 2010	Launch/KSC: Discovery, STS-131; 1:08 p.m. EDT
No earlier than April 1, 2010	Launch/VAFB: Taurus, Glory; TBD
Target May 14, 2010	Launch/KSC: Atlantis, STS-132; 3:05 p.m. EDT
Target May 23, 2010	Launch/VAFB: Delta II, Aquarius / SAC-D Satellite; TBD
Target July 29, 2010	Launch/KSC: Endeavour, STS-133; 8:45 a.m. EDT
Target Sept. 16, 2010	Launch/KSC: Discovery, STS-134; 1 p.m. EDT
Targeted for Fall 2011	Launch/CCAFS: Atlas V, Mars Science Laboratory; TBD



John F. Kennedy Space Center

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