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Spaceport News

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

http://www.nasa.gov/centers/kennedy/news/snews/spnews_toc.html

STS-120 launch brings Harmony to station

THE STS-120 mission is a critical one in the assembly of the International Space Station. Space shuttle Discovery will deliver the Italian-built U.S. Node 2, named Harmony, thus opening the door for NASA's partners to participate in the future of the space station. The addition of Harmony to the space station will allow the installation of the European Columbus Laboratory and the Kibo Japanese Experiment Module, providing a passageway between them and the U.S. Destiny Laboratory. The Columbus Lab and the Kibo module will be flown to the space station on missions in December and February.

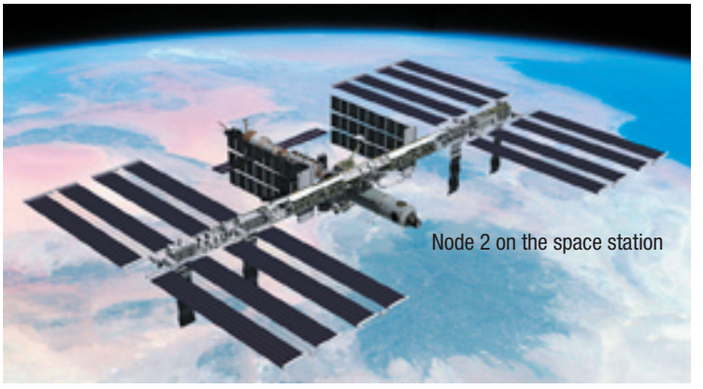
"As the station is configured today, there's nowhere to put all the international partner modules until we deliver and activate Harmony. That's the piece that makes the rest possible," said lead station flight director Derek Hassman about Harmony.

The installation of the Harmony module will increase the living and working space inside the station to approximately 18,000 cubic feet. The additional life support equipment will allow the expansion of the crew to more than three and will boost the space station's capability.

The mission crew will have to install Harmony in a temporary spot on the connecting node Unity until the mission is over because the shuttle will be docked to the existing adapter port where the node is meant to attach. After the shuttle leaves, the station crew will then move Harmony to its permanent position.

The node will also provide connecting ports for multi-purpose logistics modules, the Japanese H II Transfer Vehicle and the pressurized mating adapter 2 to which space shuttles dock. The space station robotic arm, Canadarm2, can operate from a powered grapple fixture on the exterior of Node 2.

The Node 2 module was developed for NASA under a European Space Agency contract with European industry, with Alcatel-Alenia Space as the prime contractor. Responsibility for the Node 2 development was assigned to the Italian space agency, ASI. The structural design is based on that of the multi-purpose logistics module and the Columbus laboratory.



Node 2 on the space station

STS-120 Commander Pam Melroy checks out the Harmony module during a crew equipment interface test. The module is 23.6 feet long and 4.5 feet in diameter. Its pressurized volume is 2,666 cubic feet.

VIPs receive flu vaccine

AN ounce of prevention is never as easy as being vaccinated against the flu. To reinforce that idea and encourage employees across the center to follow suit, members of the executive staff waited in line Oct. 15 to get their shots.

"Safety and health are a number-one priority at Kennedy and this event is the perfect example of keeping to that commitment," said Center Director Bill Parsons (photo at left).

"Being protected from the hazards of the flu is important not only for ourselves but also our families and coworkers. Staying healthy is the right thing to do."

At right is Associate Director for Business Operations Jim Hattaway.

Director's Update

By Joe Dowdy

Special Operations Manager, Office of the Director

THE rules of the road are still the same, but the way Kennedy Space Center is now enforcing those rules is about to change.

NASA is enhancing the current point system for drivers who violate traffic regulations on the center. The new system, which will include tougher penalties for those who speed or don't wear a seat belt, is expected to take effect beginning Nov. 1.

In the past, traffic violators on center property received points on their driver's license and monetary fines. Violators are now subject to an administrative citation which could result in the suspension of driving privileges while on KSC property.

The center's Protective Services Office already is working with Space Gateway Support security police in a selective enforcement campaign for KSC roadways.

Safety is the number-one NASA core value, and these enforcement efforts are a way to encourage the KSC work force to slow down, obey the posted speed limit and, above all, to maintain a safe environment for drivers, passengers and pedestrians.

Accumulating 24 points within 24 months will bring a one-year suspension.

Here are some examples of the new point system:

- Driving too fast for road conditions – 6 points
- Failure of the driver or occupants to use seat belts – 4 points
- Driving 1 to 10 mph over the speed limit – 3 points
- Driving 11 to 19 mph over the speed limit – 4 points
- Following too close – 4 points
- Failure to yield the right of way to emergency vehicles – 4 points
- Failure to wear an approved helmet while driving a motorcycle – 3 points

Drivers who accumulate 12 points within one year will receive a 30-day suspension of driving privileges on center. A total of 18 points within 18 months will lead to a 90-day suspension, and 24 points within 24 months will bring a one-year suspension.

A full list of the new point values can be found in KNPR 1600.1, Chapter 19.

For more information regarding traffic rules or selective traffic enforcement, contact Special Agent Roger Langevin at 867-3441 or send e-mail to *roger.g.langevin@nasa.gov*.

Integrated information systems in Constellation's future

By Jennifer Wolfinger
Staff Writer

MANY Kennedy Space Center employees recently took an opportunity to understand how command and control systems, including the kind NASA uses to control spacecraft, have evolved and will continue to impact future programs.

The Kennedy Engineering Academy hosted the briefing, which took place at the Training Auditorium on Sept. 27. According to Jack Fox of the Engineering Directorate, the mission of the academy is to foster the sharing of technical knowledge across programs and generations.

"If you look at all the work we've done here with command and control systems that are controlling significant national treasures, and you look at the people out here, they've been dedicated and talented folks and have done incredible jobs," said Ric Hurt, Applied Technology director.

Terry Greenfield discussed the use of command and control from 1955 to 1966, a period he calls predigital days. He said the evolution from analog to digital and simplicity to complexity were predominant themes. Greenfield also shared images of the consoles from the period.

Hurt followed to explain the early days of computers and software, a mystery at the time. He explained that primitive machines were hard to use and had minimal capability at that point, and the usefulness of the computers was unclear. He also described the heritage of KSC's control system, specifically how the systems of the 1970s and 80s continue to meet today's needs through updates. Rick Dawson of the Engineering Directorate contributed by clarifying how the Launch Processing System continues to thrive.

Harris Corporation's Lennis Bearden explained many aspects of the discipline, including architecture, monitoring, control set and firing room configuration, and reusing resources to minimize technical risk and nonrecurring costs. He also compared past and current software development.

Craig Jacobson of the Engineering Directorate and Hurt offered an overview of payload checkout systems. Jacobson informed the audience about which

Terry Greenfield discussed the use of command and control from 1955 to 1966.

systems originated at KSC or elsewhere, and explained topics such as the test, control and monitor system. Hurt summarized subjects such as the checkout and launch control system, and the benefits and downside of commercial off-the-shelf products, which are available without new development or in the vendor's catalog.

According to Hurt, workers

See Command, Page 7

Emergency Response Team builds skills

By Linda Herridge
Staff Writer

SCALING up and down the walls of a tower, running up a steep hill and demonstrating talents with various firearms all within a few minutes sounds like hard work. For Kennedy Space Center's Emergency Response Team officers, they are skills practiced daily in order to keep the center safe.

Several officers on the team, also known as the ERT, recently demonstrated their abilities during tryouts at the KSC Space Gateway Support firearms range in order to qualify to participate in the annual SWAT Roundup International competition. The Roundup will be held Nov. 4-9 in Orlando and is sponsored by the Orange County Sheriff's Department and the Orlando Police Department.

The competition draws participation from hundreds of law enforcement and military special tactics/SWAT teams from the U.S. and other countries. Capt. Dan Magetteri, who is commander of the NASA Emergency Response Operations, said participating in the annual Roundup is an opportunity to network and compare tactics and training with other teams.

"The Roundup competition also serves to validate all of our training as a tactics team," said Magetteri.

The officers vying for a spot on KSC's eight-person team were reviewed on their cardiovascular fitness, weapons manipulation skills and the ability to make decisions under stressful conditions.

Competitors, counterclockwise from above, Eric Munsterman, dragging a dummy; Charlie Pedrick and Michael Pettitt near a wall; Warren Hinson, Pedrick, Jason Sadowski and Dan Magetteri check schedules; Magetteri and Munsterman get ready for rifle practice; Speedy Patrick, climbing; and Pettit, running.

Before the international competition, the ERT officers get a chance to see the skills of a team from another country. Approximately two weeks before the event, the Special City Tactics team from Hanover, Germany, will arrive to train at the ERT facility. Because they cannot bring weapons into the country, the team is allowed to borrow and train with equipment from Kennedy.

Last year, the center's ERT officers placed 14th overall out of more than 100 teams and took second place in the team hostage rescue event. Magetteri said the team is looking forward to working hard and placing even better this year.

With help from center employe trains, practices for launch Oc

WITH space shuttle Discovery on Launch Pad 39A for mission STS-120, focus for some KSC employees turned to helping the mission crew prepare for the launch targeted for Oct. 23. From the safety trainers to the Closeout Crew in the White Room, all added their expertise to the training and exercises known as the terminal countdown demonstration test. The photos below capture some of the events the crew completed from Oct. 8 to 10.

The test focuses on safety procedures such as leaving the launch pad in the event of an emergency, and culminates with a simulated rehearsal of the countdown to launch. The test also provides an opportunity for the crew to see the payload as it is stored in the shuttle's payload bay.

The safety officers who helped with emergency egress training were Robert Parks and Ken Clark of United Space Alliance, or USA. The breathing apparatus instructor was Ed Ryan of Space Gateway Support.

The members of the Closeout Crew who helped the astronauts with their final launch suit preparations were as follows: (No. 1) Renee Arriens, USA at KSC; (2) Jose Hernandez, Astronaut Support Personnel; (3) George Brittingham, USA at Johnson Space Center; (4) Travis Thompson, USA at KSC; (5) Chris Meinert, USA at KSC; (6) Jack Burritt, NASA Quality; and (7) John Haselhurst, USA at Johnson. The numbers are worn on their s

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Driving the M-113 armored personnel carrier is part of the emergency egress training. At right, Pilot George Zamka takes the wheel. The rest of the crew rides along: Mission Specialist Daniel Tani, Commander Pamela Melroy and Mission Specialists Stephanie Wilson, Paolo Nespoli and Doug Wheelock.

Below, the crew learns about exiting the shuttle (behind them) in an emergency.

Directly below, tethered for safety in Discovery's payload bay, Tan
top of the U.S. Node 2, called Harmony, that will be installed on th
At the bottom, Parazynski and Tani look at the orbiter docking sys

ees, STS-120 mission crew ct. 23 on Discovery

suits.
The primary payload for mis-
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i and Parazynski get a look at the
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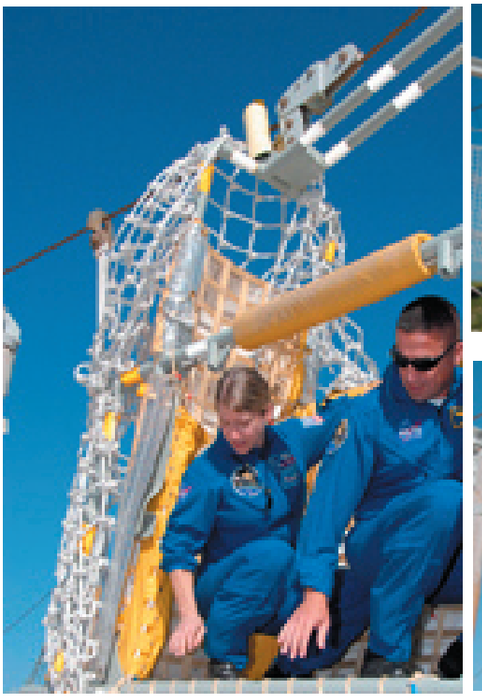

(Left) The crew eagerly walks to the Astrovan for the simulated launch countdown at Launch Pad 39A.

(Middle Left) Practicing safe procedures in an emergency, crew members are in slidewire baskets used to leave the launch pad: (clockwise from left) Commander Pamela Melroy with Pilot George Zamka; Mission Specialists Scott Parazynski, Daniel Tani and Paolo Nespoli; and Mission Specialists Doug Wheelock and Stephanie Wilson.

(Bottom Left) A crew member exits Discovery through the hatch.

(Bottom Right) The crew gathers after the simulated countdown.

(Below) the Closeout Crew helps Zamka and Melroy with their launch suits in the White Room.

Astronauts tell about life in space

By Steven Siceloff
Staff Writer

ONE year, one month and almost two weeks of experience in space shared the stage on Oct. 10 when astronauts Michael Lopez-Alegria and Sunita Williams talked to Kennedy Space Center employees about the two missions to the International Space Station that recently concluded.

Both astronauts set duration records with their flights and with a host of spacewalks.

"There's a lot of records up here, a lot of time on the space station," Michael Wetmore said when he introduced the crew at the Training Auditorium.

But for as much time as they spent in orbit, they didn't give a sense of being eager to get back to Earth.

"It's really a wonderful sensation to just float around," said Lopez-Alegria, whose stay aboard the orbiting laboratory lasted 215 days.

Explaining that the inside of the station is about as large as the inside of a jumbo airliner, Williams said there was plenty of room for working, day-to-day living and getting a little time away from others.

"It didn't feel cramped at all," she said. "There's different places to move around."

But that comfortable feeling did not come without some adjustment, and several aspects of life in microgravity were never easy to get used to.

"You don't really lie down," Lopez-Alegria said of going to sleep. "You don't have that sensation of relaxing. I was able to fall asleep pretty easily, but I had a hard time staying asleep."

Williams agreed, saying she felt quite tired when she got back to Earth.

"I slept probably 16 to 20 hours the first night I was back," she said.

Lopez-Alegria and Williams shared time on the station during Expeditions 14 and 15, but their paths to the space station and back were along different roads.

Lopez-Alegria flew onboard a Russian Soyuz to the station and rode one of the small capsules through a three and a half-hour plunge back to Earth. The return included landing the Soyuz on the Russian steppes, a trip that concludes with a jarring smack.

"The landing is a little firm," Lopez-Alegria chuckled.

Williams, on the other hand, rode in the middeck of a space shuttle each way. After taking space shuttle Discovery into orbit on mission STS-116 for her first liftoff, she said the experience was unlike any other.

"I think all we were doing was whooping and hollering on the middeck," she said.

Michael Wetmore presents Kennedy Space Center medallions to astronauts Suni Williams and Michael Lopez-Alegria. The astronauts recently returned from long stays aboard the International Space Station and visited Kennedy to discuss their missions.

During the course of her four-month adventure, Williams said she quickly learned how to move around and picked up strong clues regarding when she should cut her famously long hair. When her black locks started floating up near one of the fans, she asked for a haircut.

The pace is considerably more relaxed on the station than during a shuttle mission because the crew is staying in orbit for months at a time instead of a two-week stretch.

"You can almost forget sometimes that you have to go to work," Williams said.

Neither found themselves lacking in orbital tasks.

Lopez-Alegria added five more spacewalks to his resume during his increment and set a record with a total of 10 over his astronaut career. His spacewalking time extends almost three days in all.

One of his spacewalks included taking off a thermal blanket on the outside of the station and tossing it overboard at orbital speed.

"My fastball is recorded at 17,500 mph," he joked.

Williams set a spacewalk record of her own by completing four excursions totaling more than 29 hours during her flight, the most for any woman in the world.

There were also plenty of experiments for the crews to tend, including growing soybeans in a small centrifuge and examining how the brain reacts to radiation.

The station crews did their share of maintenance during the flight, as well. That meant raising machines as large as refrigerators off the walls, which is quite a bit easier to do in space than on Earth.

"The one thing about zero-g is that the access is really good," Lopez-Alegria said.

For Lopez-Alegria, the trip to Kennedy was his first in about three years. He was assigned to the center early in his career as one of the astronaut support personnel.

"It's easy to lose sight of how cool this really is," he said. "You're doing something that is really a historic effort."

Lopez-Alegria celebrates Hispanic Heritage Month with KSC workers

KENNEDY Space Center's Hispanic Heritage Month celebration ran from Sept. 15 through Oct. 15 to recognize Hispanic contributions to NASA's human spaceflight program. Astronaut Michael Lopez-Alegria came to the center Oct. 10 to help celebrate this year's theme, "Hispanic Americans: Making a Positive Impact on American Society."

Astronaut Michael Lopez-Alegria was treated to music by Rene Waterman on keyboard and Johnie Rojas on percussion during the Hispanic Heritage Month celebration.

Miguel Rodriguez, director of the Operational Systems Engineering Office, welcomed workers for a special conversation with the astronaut at the Training Auditorium.

Lopez-Alegria was born in Madrid, Spain, but grew up in a middle-class neighborhood in Mission Viejo, Calif. During his conversation with workers, he said he never felt disenfranchised, though there were very few Hispanics living in the area in those years.

"My roots are what I'm proud of," Lopez-Alegria said. "My country is the United States."

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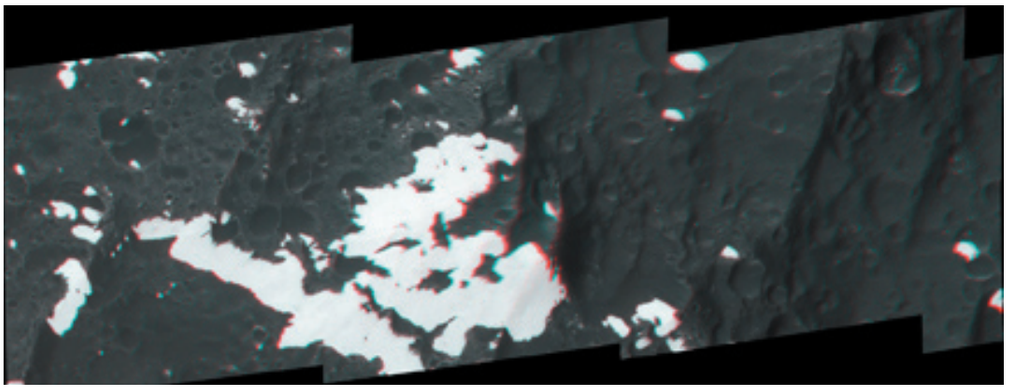
Remembering Our Heritage

10 years ago: Cassini's two-billion-mile voyage to Saturn begins at Cape Canaveral

THE nearly seven-year, two-billion-mile voyage to Saturn of NASA's Cassini spacecraft and its companion, the European Space Agency's Huygens probe, began at Cape Canaveral on Oct. 15, 1997. Liftoff from Launch Complex 40 atop a Titan IVB rocket came at 4:43 a.m. EDT.

"Orbiting Saturn, Cassini is in the middle of the greatest natural laboratory accessible to us in space," said Cassini project scientist Dennis Matson of NASA's Jet Propulsion Laboratory. "With its rings, dozens of moons and magnetic environment, Saturn is like a mini-solar system, with Saturn as a stand-in for the sun, and the moons and rings like planets in formation."

Cassini and its instruments provided the first glimpses of the surface of its moon Titan, with its complex chemistry and lakes of hydrocarbons, and the revelation that ice geysers shooting from its moon Enceladus contributed to the creation of one of Saturn's rings. For more on Cassini's discoveries, visit NASA's Web site: **http://www.nasa.gov/cassini.**



(Lower left) This stereo image, or anaglyph, shows huge mountains on Saturn's moon Iapetus, imaged by NASA's Cassini spacecraft during its very close flyby in September 2007. These mountains are located at the moon's equator in the westward-most part of the dark terrain. Here, the brightness pattern on the surface is very complex. The mountain in the center of this view is part of the range informally named "the Voyager mountains" that were first detected on the moon in NASA Voyager spacecraft images. Interestingly, its eastern (right) flank is dark, while the other flanks are bright.

(Upper left) At Launch Complex 40 on Cape Canaveral Air Force Station, workers are installing three radioisotope thermoelectric generators on the Cassini spacecraft.

(Above) A seven-year journey to the ringed planet Saturn begins with the liftoff of a Titan IVB/Centaur carrying the Cassini orbiter and its attached Huygens probe.

CELEBRATION. . . *Continued From Page 6*

Lopez-Alegria said he was inspired to become an astronaut during his Naval Academy days. After he became a test pilot, he applied to NASA and was accepted in 1992.

When asked what he liked most about his spaceflights, Lopez-Alegria said he enjoyed "floating, learning to maneuver in the shuttle and the station, and looking out the window at the Earth."

Lopez-Alegria was the first Spanish astronaut selected by NASA. His missions include STS-73, STS-92 and STS-113.

He also was a crew member of Expedition 14, on which he flew aboard a Soyuz spacecraft and returned from the station after a 215-day mission, marking the longest single flight by an American astronaut at the time. He accumulated 33 hours and 42 minutes of extra-vehicular time during five spacewalks. Lopez-Alegria speaks four languages: English, Spanish, French and Russian.

Edsel Sanchez, a NASA project manager in Center Operations, said the presentation was very moving and could inspire a new generation of Hispanic explorers. Victor Alvarez, a NASA logistics engineer in Shuttle Processing, said it was very interesting to hear about Lopez-Alegria's experiences.

The event also featured traditional Spanish music by pianist Rene Watermann and percussionist Johnie Rojas, and a traditional flan dessert.

Command . . .

Continued from Page 2

combined all their data and consulted computer experts, such as Bill Gates, to prepare for the Constellation Program.

Kirk Lougheed of the Constellation Project Office introduced the new launch site command and control system, and he provided an overview of the hardware and software.

Neil Ferguson of the Harris Corp. discussed integrated information systems. He said the system follows an architectural approach, and is adaptable.

October CFC 'Federal Hearts at Work' starts with kickoff rally

By Linda Herridge
Staff Writer

THE theme for this year's Combined Federal Campaign for NASA civil servants is "Federal Hearts at Work," and the work officially began for many of Kennedy Space Center's campaign leaders on Oct. 9 with a kickoff rally in the Training Auditorium.

Thomas Eye, deputy director of the Cape Canaveral Spaceport Management Office, is the chairman for this year's campaign which runs through Nov. 9. He welcomed workers to the rally on behalf of Center Director Bill Parsons and thanked all of the volunteers for their hard work each year.

Eye announced that Stephanie Hattaway of the Safety and Mission Assurance Directorate was the slogan contest winner. A special award was also given to Ed Markowski of the Launch Vehicle Processing Directorate for his many years of dedication and work on the campaign, also known as the CFC.

Mike Wetmore, the center's associate director for Engineering and Technical Operations, said the CFC is the largest charity drive that runs across all government agencies in the country.

"We are a very fortunate group of people here at KSC," Wetmore said. "Help those in need because you can, but also recognize that you never really know when it will be your time of need."

Wetmore noted that Kennedy is consistently the top CFC contributor among all NASA centers.

Rob Rains, president of United Way of Brevard, commended workers for their generosity every year. As the charitable organization celebrates its 50th anniversary this year, Rains hopes to keep more of the donations in Brevard where there is an increasing need. The goal this year is to raise $6.3 million countywide.

Ed Markowski, left, receives an award from Mike Wetmore, Kennedy's associate director of Engineering and Technical Operations, for his long-term association with the annual campaign.

"You care about the community. You are the best," Rains said. "We're fortunate to have a jewel like NASA in our community."

Eye asked the Kennedy workforce to take time to attend one of the Charity Showcases throughout the campaign, allowing local charities an opportunity to explain what they do for the local community. A schedule of CFC-related events is posted on the center's CFC Web page, **http://cfc.ksc.nasa.gov**.

NASA employees of the month: October

Front row (left to right): Marie Donat, Information Technology & Communications Service; Andrea Meyer, Chief Financial Office ; Laura Gallaher, Human Resource Office. Back row (left to right): Jeff Johnson, Center Operations; Edward Stanton, International Space Station & Spacecraft Processing; Ember Smith, Applied Technology Directorate; Michael Bruder, Constellation Project Office; Terry Parnell, Safety & Mission Assurance Directorate. Not Pictured: Rogelio Franco, Engineering Directorate; James Lunceford, Engineering Directorate; Clarise Stevenson, Launch Services Program; and J. Spencer Woodward, Launch Vehicle Processing Directorate.

Upcoming launches at Kennedy Space Center

STS-122	target date Dec. 6
GLAST	target date Feb. 5
STS-123	target date Feb. 14
GOES-O	target date April 21
STS-124	target date April 24

John F. Kennedy Space Center
Spaceport News

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