

Spaceport News

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John F. Kennedy Space Center

NASA's Gravity Probe B successfully launches

Two months of preparations will lead to 16 months of data collection

NASA's Gravity Probe B was successfully launched on its mission to test two extraordinary predictions of Albert Einstein's general theory of relativity.

After a 24-hour delay, Gravity Probe B (GP-B) was launched Tuesday, April 20 at 12:57 p.m. EDT on board a Boeing Delta II rocket from Vandenberg Air Force Base, on the central coast of California.

GP-B is among the most thoroughly researched programs ever undertaken by NASA. GP-B will measure two parts of Einstein's general theory of relativity by assessing how the presence of Earth warps space and time, and how Earth's rotation drags space and time.

"The geodetic effect" de-

scribes how the presence of Earth changes space and time. Visually, it is similar to holding a bedsheet by four corners and placing a basketball in the center. The bedsheet will slightly wrap around the ball.

GP-B will also measure the "frame dragging," the effect of Earth's rotation on space and time. Einstein predicted that very large objects in space distort time and space as they spin, like a tornado. Frame dragging has not been measured because the effect is so small that technology hasn't yet been able to record it.

The experiment uses three key components: a spinning sphere, a telescope and a star. Building GP-B required fundamental breakthroughs in a variety of technologies to ensure this experiment could be performed.

At the heart of the experiment are four gyroscopes, instruments for studying the Earth's rotation by means of a freely suspended flywheel.

The GP-B experiment will



AMONG THE BIGGEST CHALLENGES for Gravity Probe B is keeping its Science Instrument Assembly constantly cooled to a temperature of 1.8 Kelvin, or minus 271.4 degrees Celsius (slightly above absolute zero).

have two months of preparation before calculating data for 16 months. The latest GP-B news

and information is available online at <http://einstein.stanford.edu>.

Crawford and Kross added to KSC's team

James L. "Larry" Crawford is the Director of the newly created Safety and Mission Assurance (S&MA) organization at KSC, where he will manage nearly 250 professionals assigned to ensure KSC is a safe workplace and mission success is accomplished. In addition, Dennis A. Kross is the new Space Shuttle Deputy Program Manager, where he is responsible for all aspects of Space Shuttle preparation, launch and return of the orbiter to KSC following flight.

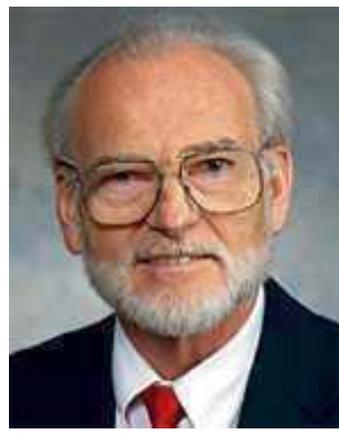
Prior to his selection for the KSC post, Crawford served as the Deputy Director for Safety at the NASA Engineering and Safety



LARRY CRAWFORD, Director of Safety and Mission Assurance

Center at the Langley Research Center in Virginia.

The new S&MA Directorate at KSC is being created to central-



DENNIS KROSS, Space Shuttle Deputy Program Manager

ize the safety and mission assurance mission into one organization. Specifically, the new directorate will help address

recommendations documented in the Columbia Accident Investigation Board report released in August 2003.

Joining KSC from NASA's Marshall Space Flight Center, Kross served as the Director of the Space Transportation Directorate since 2000. Last year, he was selected to lead the efforts associated with the External Tank Return to Flight Team.

Kross began his NASA career in 1967 as a Structural Dynamics Engineer at the Propulsion and Vehicle Engineering Laboratory at MSFC. Over the last 30 years, Kross has served in numerous roles in the Shuttle and International Space Station Programs.



Jim Kennedy
Center Director

The Kennedy Update

Hi, everybody! What a couple of super weeks for KSC and NASA. This week was highlighted by the successful launch of Gravity Probe-B from Vandenberg Air Force Base, Calif., Tuesday. It was a picture-perfect launch and the spacecraft was placed in its proper orbit due to the tremendous efforts of the GP-B launch team.

Congratulations to Chuck Dovale, GP-B Launch Director, and Wanda Harding, Mission Integration Manager, along with the entire GB-P team for this significant Launch Services Program accomplishment.

I was at Vandenberg and it was truly rewarding to see our government and contractor professionals working together to ensure a successful launch. I just wish Albert Einstein was still around to see your great work and to see if his theories come true.

I hope you were able to view

yesterday's All Hands and the unveiling of our new reorganization for KSC, as well as hear the results of the safety and culture survey taken by NASA employees. If not, here were some of the highlights:

In response to the Columbia Accident Investigation Board Report recommendations, we created a new, centralized and independent organization for Safety & Mission Assurance (S&MA). We're also forming another new organization to include the functions of the Center's Chief Engineer and Systems Management Office (SMO), as well as the responsibility for KSC's Independent Technical Authority (ITA).

The ITA will be supported by the S&MA and engineering organizations.

This was the main thrust of the reorganization, but other examples of changes include reorganizing the new business development function within

External Relations (XA) and changing the name of the Workforce and Diversity Management Office (BA) to the Human Resources Office.

Along with these changes, I'm excited to welcome two key individuals to the KSC team. Denny Kross is our new Space Shuttle Deputy Program Manager for KSC. He joins us from Marshall Space Flight Center in Alabama.

I know Bill Parsons, the Shuttle Program manager, and Mike Wetmore and the great team in Shuttle Processing are as excited as I am to have Denny here.

At the same time, Larry Crawford, a former KSC employee coming from Langley Research Center in Virginia, is our new Safety and Mission Assurance Director. His new directorate will help address safety recommendations documented in the CAIB report.

Larry's new organization tremendously strengthens KSC's safety reporting structure within the Space Shuttle program and throughout the Center. I'm extremely excited to have a person with Larry's diverse background, including his numerous years of experience in the S&MA arena, joining the NASA KSC team. Welcome home, Larry!

During the All Hands, we also addressed the results of the NASA safety and culture survey.

In February, KSC civil servants took part in the NASA-wide Survey.

Conducted by Behavioral Science Technology (BST), Inc., the report measured the Agency by a set of organizational categories, comparing NASA and KSC against 222 other firms. The Agency, and particularly KSC, scored well in categories such as teamwork, work group relations, approaching coworkers about safety concerns, and reporting incidents or deviations that affect safety.

Although we will always strive for improvement, I'm very proud of our progress in these areas.

The entire Agency and KSC results can be viewed at www.nasa.gov/about/highlights/index.html. We will use these results to continue to build upon our successes and focus on our weaknesses, while checking our progress along the way. Remember, the CAIB defined improving our safety culture as a key area to address in order to return our Space Shuttles safely to flight. I have no doubt we'll be able to do this, ensuring KSC remains a world-class organization.

I know everyone out there is working extremely hard and it shows every day. Please know that your Center recognizes and appreciates all the hard work, and trust me, your great reputation extends well beyond our Center's gates.

Energy and Environmental Awareness Week



JOAN DEMING from Archaeological Consultants, Inc. highlighted the range of cultural resource management activities at KSC over the past decade to kick off this year's Energy and Environmental Awareness Week. Deming spoke in the Training Auditorium about KSC-wide archaeological surveys. Look for complete coverage of all EEAW activities in the May 7 issue of *Spaceport News*.



KSC's "Pink" team wins in New York

The KSC-mentored "Pink Team 233" competing in the For Inspiration for Research and Technology (FIRST) Robotics Nationals in New York Center recently went undefeated and advanced to the international competition in Atlanta. Visit www.usfirst.org for details.

Specialist's safety efforts lead to QASAR award

By Linda Herridge
Staff Writer

David Robertson, a quality assurance specialist in the Shuttle Processing Directorate at Kennedy Space Center, recently received NASA's prestigious Quality and Safety Achievement Recognition (QASAR) Award.

Robertson was recognized April 14 during NASA's Continual Improvement and Reinvention Conference in Alexandria, Va. Bryan O'Connor, associate administrator for Safety and Mission Assurance, made the presentation.

Robertson received the award for identifying a vehicle anomaly to the left Orbiter Maneuvering System (OMS) pod to Shuttle Endeavor. During installation preparations, Robertson located a carrier panel incorrectly installed on the leading edge of the OMS pod deck. If not corrected, the situation may have

negatively impacted flight hardware.

"I felt proud that KSC was recognized for our excellent work," Robertson said. "Receiving this award exemplifies the professionalism of the Shuttle processing team."

The QASAR Award is sponsored by NASA Headquarters' Office of Safety and Mission Assurance. This Agencywide award recognizes NASA employees and other government and prime subcontractor employees for significant quality improvements and safety initiatives.

"Robertson continuously demonstrates his ability to identify flight hardware non-conforming conditions," said his supervisor, Robert Saulnier. "His initiative and dedication to the Space Shuttle program are characteristic of his commitment to quality and the safe and successful processing of the space transportation system."

QASAR Awards are presented



DAVID ROBERTSON, a quality assurance specialist in the Shuttle Processing Directorate at Kennedy Space Center, recently received NASA's prestigious Quality and Safety Achievement Recognition (QASAR) Award.

quarterly at the Center level in four categories: NASA Safety and Mission Assurance, NASA Non-Safety and Mission Assurance, Government Non-NASA and Contractor.

Annually, all QASAR honorees from the previous year are reviewed by a panel, and up to four from each Center are

selected to receive the "Best of the Best" award. Those awardees are then eligible to be considered for the Agencywide QASAR "Best of the Best" award.

Visit <http://www.hq.nasa.gov/office/codeq/qasar/index.htm> for more information about NASA's QASAR Award Recognition program.

Shuttle test director lands his ultimate career choice

By Linda Herridge
Staff Writer

When Neil Berger was in college, he dreamed of being a Disney developer or working at Kennedy Space Center.

"I think I got the better of the two," says Berger, NASA KSC's test director in the Shuttle Launch and Landing division since 2003.

Pivotal memories that influenced his career choice include attending the 1976 bicentennial celebration at KSC that included tours of the Vehicle Assembly Building, a launch pad drive-by and then viewing the 1981 STS-3 launch.

Berger's career at KSC includes supporting 76 Shuttle launches, three Titan launches, two Atlas launches, one Athena launch and two Super Loki launches. He helped to rebuild five launch facilities including Launch Complex (LC) 41 for the Atlas V, LC-36B for the Atlas III and LC-46 for Athena.



NEIL BERGER has been KSC's test director in the Shuttle Launch and Landing division since 2003. He began his career at KSC in 1987.

He began his aerospace career at KSC in 1987 as an electrical systems engineer with Lockheed Space Operations, and advanced to lead electrical engineer for the Orbiter Processing Facilities and then for Mobile Launch Platform 3.

In 1996, Berger left the

Shuttle program and joined Lockheed Martin Technical Operations at Dryden Flight Research Center to work on the X-33 team.

He returned to KSC in 2000 to work as an engineer in the Electrical Power Distribution and Control group, then became a

NASA Test Director in 2003.

His work on the Solid Rocket Booster Vibration and Fatigue Test in November 2003 earned him the employee of the month award for his directorate in January. The test involved working with teams from Johnson Space Center, Marshall Space Flight Center and others to collect vibration and load data that will be used to predict SRB, External Tank and Orbiter loads during the rollout of an integrated vehicle.

The information will allow engineers to more accurately define inspection and preventive maintenance requirements.

Outside of the space program, Berger's interests include travel and enjoying water sports. Over the years, he has visited Sequoia and Yosemite National Parks in California, among others.

Berger's future projects include plans for a Return to Flight tanking test. "I'm looking forward to being in the Launch Control Center for Return to Flight," said Berger.

New Florida quarter celebrates space

By Chad Cooper
Staff Writer

Thousands of Florida residents and visitors were joined by national and state officials April 7 to celebrate the release of the Sunshine State's new commemorative quarter.

Florida Gov. Jeb Bush, NASA Administrator Sean O'Keefe, Deputy Secretary of the Treasury Samuel Bodman and U.S. Mint Director Henrietta Holsman Fore were among those who took part in the event at the Kennedy Space Center Visitor Complex.

"Florida truly is the 'Gateway to Discovery,'" said Bush. "Our residents should be proud to know people nationwide will now be carrying a symbol of our state's history, its past and its future."

The Florida quarter design features a Space Shuttle, a 16th century Spanish galleon and the inscription, "Gateway to Discovery." A strip of land with sabal palm trees is also depicted.

The quarter's design was submitted by native Floridian Ralph Butler and was chosen from among 1,500 entries. KSC has been the launching point for many important scientific space expeditions, including the first

moon landing and the Voyager probe currently exploring deep space outside our Solar System.

From 16th century Spanish galleons to 21st century space exploration, Florida has been the stage for humanity's quest for knowledge and discovery.

"Today we celebrate not only the important role that coins play in our nation's economy, but also the many contributions of the great State of Florida to American innovation and to our national spirit of exploration and discovery," said Bodman.

Each child attending the festivities received a Florida quarter to commemorate the special event. Adults exchanged their dollars and coins for rolls of Florida quarters furnished by area credit union representatives.

The Florida quarter is the second to be issued in 2004, and the 27th quarter in the U.S. Mint's 50 State Quarters Program. On March 3, 1845, Florida became the 27th state to be admitted into the Union.

Florida quarters in two-roll sets and bags are available on the U.S. Mint's Web site at <http://www.usmint.gov>, and by calling (800) USA-MINT. Lesson plans can also be downloaded from the Web site. The plans feature the Florida quarter and the 26 quarters previously issued.



ABOVE, KSC DIRECTOR JIM KENNEDY thanks the standing-room-only crowd for attending the ceremony to launch the new Florida quarter at the KSC Visitor Complex. The backdrop is a map of the U.S., illustrating the state quarters issued to date. Also on stage are, from left, Florida Gov. Jeb Bush, U.S. Mint Director Henrietta Holsman-Fore, Deputy Secretary of the Treasury Samuel Bodman and NASA Administrator Sean O'Keefe. At right, Gov. Jeb Bush gives out free Florida quarters to children following the unveiling ceremony. Below, approximately 2,000 people attended the unveiling of the new Florida quarter.



Space exploration and discovery



ABOVE, THE U.S. MINT'S American Eagle mascot "Pete" gave all of the children attending the new Florida quarter unveiling another reason to smile.

Center Director Jim Kennedy (right) presents a Florida flag flown during construction of the KSC Space Life Sciences Lab to Florida Gov. Jeb Bush (left).



FORMER NASA ASTRONAUT and current Executive Director of the Florida Space Authority Winston Scott (left) presents a NASA flag flown during construction at the Space Life Sciences Lab to NASA Administrator Sean O'Keefe. The presentation was made during a tour of the Lab following the launching ceremony at the Visitor Complex for the new Florida quarter.

Administrator encourages positive mindset

By Jeff Stuckey
Editor

NASA Administrator Sean O'Keefe addressed the Agency's safety climate and culture in an April 13 All Hands Meeting broadcast from Headquarters. The administrator discussed a report from independent consulting firm Behavioral Science Technology, which will assist NASA in implementing a three-year plan to improve these two areas Agencywide.

"It's a rich culture and a fantastic one, born of tremendous triumph in over 45 years, as well as great tragedy," said O'Keefe. "We've benefited and learned in both instances, and this is yet another instance when we are being called upon to really understand that in a way that will make this a better, smarter, safer, stronger Agency in the time ahead."

The report is based on a review of existing information, an employee survey and interviews and focus groups. Three key themes emerged from the survey:

- Overall, NASA has strong work-group level teamwork and communications.

- NASA, as a whole, has improvement opportunities in upward communications about safety and in employee perceptions of the extent to which the

organization cares about employees.

- Overall, there is little variation among NASA locations, among offices within NASA locations, or between programs.

The results of this survey will help guide the Agency's efforts to strengthen the culture in ways that support its core values. Briefings on this effort soon will occur at each NASA location.

"You have to have respect for each other in a professional capacity that we all have to carry out the task we've been asked to do," said O'Keefe. "That's one of the elements in this survey that came out very clearly that suggests we don't think that is as strong as it needs to be.

"That's a very powerful observation that was made and one that is a very important professional assessment of ourselves, of what we need to do and what we need to be thinking about," he said.

According to the report, NASA's culture does not yet fully reflect the Agency's core values of safety, people, excellence and integrity. Employees are strongly committed to safety in concept, but open communication is not yet the norm. Employees do not feel fully comfortable raising safety concerns to management, the report said.

It also states excellence is a

treasured value when it comes to technical work, but is not seen by many personnel as imperative for other aspects of the organization in the same way as management skills.

Integrity is generally understood and manifested in employees' work. However, there appear to be pockets where the management chain has, perhaps unintentionally, sent signals that the raising of issues is not welcome, according to the report.

"If we begin with the mindset that our answer is going to be 'Yes, if. . .,' as opposed to 'No, because. . .,' that starts a different way of thinking about things," said O'Keefe. "It starts in a positive way. Indeed, it's what the whole exploration agenda is about, isn't it? It's about every one of those steps we have to achieve, and 'Yes, we can do that if we

conquer each of those individual challenges along the way.' And we build on those successes as they materialize."

Visit <http://www.nasa.gov/about/highlights/culturesurvey.html> to view the complete survey

STANDING UNDER the orbiter Atlantis, Shuttle Launch Director Mike Leinbach (center) provides information about the tiles and Thermal Protection System for NASA Administrator Sean O'Keefe (left) and Florida Gov. Jeb Bush. O'Keefe recently addressed the Agency about its safety climate and culture.



KSC network plans for Return to Flight changes

By Amber Marek
Staff Writer

Kennedy Space Center's Change Leaders Network (CLN) recently held a strategic planning retreat to identify ways its members could assist the Center during this time of change.

The CLN is a group of more than 80 civil service employee leaders appointed by the Center Director and their respective organizational directors to support the strategic direction of KSC.

"This was a great step toward improving our Center's culture,"

said Dr. Phillip Meade, change manager for KSC. "A cross-Center group like the CLN is an ideal mechanism for addressing this issue. Now we need to expand this effort to include our contractor teammates."

The strategic retreat aimed to define KSC's current culture - its values, beliefs and practices - and its desired culture, then identify the gap between them. The CLN also proposed opportunities for improvement as it considered feedback the KSC workforce provided during Safety and Mission Success Week in November.

The Columbia Accident

Investigation Board Report cited the Agency's culture as an important issue to consider as NASA plans for Return to Flight.

"With collaboration between the CLN and the senior managers, we were able to prioritize the CLN learning and development

These include analysis of KSC's methods of communication, facilitation of key meetings and accelerated-improvement workshops for specific purposes. The network also will focus on teambuilding and conflict resolution.

"This was a great step toward improving our Center's culture," said Dr. Phillip Meade, change manager for KSC.

required to help overcome these barriers," said CLN Chairperson Michelle Amos.

As a result of the planning retreat, CLN selected projects to help support the Center's future.

"The CLN Retreat was an inspiration to me," said Kennedy. "We witnessed our young leaders from KSC explore ways in which they can make our Center even better."

Remembering Our Heritage

35 years ago: Nimbus-3 helped buoy nation's space program

By Kay Grinter
Staff Writer

The successful liftoff of Nimbus-3 on April 13, 1969, lifted the spirits of space program employees, as well. Launch of the polar-orbiting satellite took place from Vandenberg Air Force Base, Calif., aboard the Thor-Agena 10 rocket.

It replaced Nimbus-B, which was destroyed in May 1968 when a booster malfunction forced a destruct command to be issued two minutes after launch.

Tom Page, a KSC guidance and control engineer at the time, was at Vandenberg to support both launches. Now retired from NASA and consulting on expendable vehicle issues, he recalls, "A launch attempt after a failure of this nature is very stressful on the whole team. We were quite relieved when Nimbus-3 made it to orbit."

The third in a series of seven second-generation meteorological research and development satellites, Nimbus-3 holds the distinction of being the first U.S.



weather satellite to make day and night global measurements from space of temperatures at varying levels in the atmosphere.

The satellite's solar paddles and control system housing were connected to a sensory ring by a truss structure, giving it the appearance of an ocean buoy.

Coincidentally, one of its onboard experiments, the Interrogation Recording and Location System, was used to

locate, identify and relay transmissions from data-gathering buoys back on Earth.

Its mission objectives included providing support for international programs designed to gather oceanographic data and collect large-scale atmospheric data for use in newly designed computer prediction models of the atmosphere.

Although designed and configured the same as Nimbus-

1, seven additional experiments made it the heaviest meteorological satellite to date. It weighed in at 1,269 pounds.

The spacecraft also carried an infrared spectrometer and spectrophotometer; an ultraviolet radiation monitor; an image dissector camera in place of the old vidicon cameras; and high resolution infrared radiometers to provide infrared images at night.

Power was provided by 10,500 solar cells and two SNAP-19 nuclear-powered generators.

Nimbus-3 performed as advertised until July 1969 when one of its experiments failed. When the rear horizon scanner also failed in September 1970, maintaining proper spacecraft attitude became impossible and no further useful observations could be made. The spacecraft was shut down on January 22, 1972.

Altogether, Nimbus satellites sent back more than 27,000 high-resolution photos. At the height of the Nimbus program, 70 percent of the Earth was photographed every day.

41st Space Congress starts next week

Don't forget next week's 41st Space Congress, taking place April 27 through 30 at the Radisson Resort at the Port in Cape Canaveral. The event, sponsored by the Canaveral Council of Technical Societies, teams a large portion of the aerospace community to discuss the status and future of space activities around the world.

This year's Space Congress, titled "Determination: Meeting Today's Challenges, Enabling Tomorrow's Vision," opens April 27 with three panel sessions, a luncheon and evening reception. The first panel session, "The Future of Space Exploration," includes panel members Doug Cooke, NASA deputy administrator for the Office of Exploration Systems, and Gary Martin, NASA space architect.

Following a luncheon presentation on "China's Foray Into Space," the second panel session titled "Space Shuttle Return to Flight and ISS Status" will be lead by William Readdy, NASA associate administrator for the Office of Space Flight. Two more panel sessions will be held April 28, followed by a luncheon, two paper sessions and a reception featuring legendary test pilot Chuck Yeager in the evening.

The fourth panel session will take place April 29, with the final paper session in the afternoon and a special "Evening with the Astronauts." Also, a "Technicians Recognition Night" reception will be held from 5:30 to 7:30 p.m.

There will not be an exhibit hall this year. Visit <http://www.spacecongress.org> for a complete schedule.



ASSOCIATE ADMINISTRATOR for Space Flight William F. Readdy (right) and Conrad Nagel, chief of the Shuttle Project Office for Processing, inspect flight hardware at the Orbiter Processing Facility. Readdy will address "Space Shuttle Return to Flight and ISS Status" at Space Congress.

Sea turtles prefer Space Coast sea and sand

By Linda Herridge
Staff Writer

Earth Day was celebrated April 22 to promote global environmental awareness and conservation.

For Kennedy Space Center's Mario Mota, a Dynamac Corp. marine biologist, protecting the environment is a goal that he and co-workers take seriously every day. Mota's work includes studying the health of sea turtles and their nesting habits on Florida's beaches.

Since 2001, Mota has studied how beach renourishment projects along Florida's coasts affect the incubation period of sea turtle hatchlings. The studies are part of Mota's Ph.D. work in conjunction with the University of Florida in Gainesville.

To study nest conditions, Mota inserted gas collection tubes inside randomly selected turtle nests. He returned to the nests weekly to collect the gases from the tubes and analyze the samples at the Space Life Sciences Lab.

Some samples revealed a larger buildup of carbon dioxide and less oxygen.

Mota studied four different beaches on the east and west

coasts of the state, including those in the Melbourne area. Future study sites may include Vero Beach and Anna Maria Island.

"West Coast beaches are more compact. East Coast beaches have softer sand and there are more nests," said Mota.

Studies indicate that more compact sand, as in the case of renourished beaches, may cause higher concentrations of carbon dioxide and less oxygen.

Mota works with the Merritt Island National Wildlife Refuge, Canaveral National Seashore and Cape Canaveral Air Force Station to study green turtles inhabiting Mosquito Lagoon. This area serves as a developmental habitat for young turtles before they are mature enough to return to the beaches where they were born.

Additional projects include tagging and recording new turtles nesting in the area. Current studies show nests declining throughout Florida, and smaller nesting adult loggerhead turtles.

Mota said sea turtle populations have been seriously reduced worldwide through a number of human influences. These include loss of coastal



SINCE 2001, MARIO MOTA, a Dynamac Corp. marine biologist, has studied how beach renourishment along Florida coasts affect the incubation period of sea turtle hatchlings.



habitat, killing for eggs, meat, leather and tortoise shell, and incidental capture in fishing nets and shrimp trawls.

"Sea turtle conservation is important because they have a significant ecological role in the world's oceans," Mota said.

One of Mota's most exciting moments was the sighting of a very rare Kemps Ridley sea turtle, the most endangered species in the world, at Canaveral National Seashore.

Mota worked with a team to reduce the lighting at KSC, especially at Launch Complex 39A and 39B. Reducing outdoor lighting or changing outdoor lights to low-pressure sodium lights (yellow in color) reduces sea turtle disorientations.

"As stewards of this planet, we have the duty to protect all species so that future generations can enjoy them as we do," Mota concluded.

Make plans for Astronaut Hall of Fame induction

The Kennedy Space Center Visitor Complex will host the induction of the third class of Space Shuttle astronauts into the U.S. Astronaut Hall of Fame on May 1.

Five Shuttle astronauts will be inducted at the event, which highlights a full day of space-related activities.

Inductees include: Kathryn D. Sullivan, the nation's first woman space-walker; Richard O. Covey, pilot of the Shuttle program's critical return-to-flight mission following the loss of Challenger; Frederick D. Gregory, three-time Shuttle astronaut and the first African-American to command a space mission; Norman E. Thagard, four-time Shuttle astronaut who spent 115 days on Mir; and the

late Francis R. "Dick" Scobee, pilot of the first Shuttle mission to repair an orbiting satellite and commander of the Challenger mission in 1986.



CURRENT NASA Deputy Administrator Frederick D. Gregory will be inducted into the U.S. Astronaut Hall of Fame May 1.

An Astronaut Scholarship Dinner will kick-off the festivities on April 30, hosted by the Apollo/Saturn V Center from 7 to 9 p.m.

Visit <http://www.kennedyspacecenter.com> or call 449-4444 for information about these and other events.



John F. Kennedy Space Center

Spaceport News

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