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Spaceport News

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http://www-pao.ksc.nasa.gov/kscpao/snews/snewstoc.htm John F. Kennedy Space Center

Bridges' merits transformed KSC

On the eve of his departure as director of Kennedy Space Center, Roy Bridges Jr. stands as a beacon that helped to bring KSC closer to its vision and mission as NASA's home for human spaceflight and unmanned launches.

While serving as KSC's director for nearly seven years, Bridges helped lay the groundwork for partnerships with state and local agencies and institutions of learning, helped transform the Center into a viable spaceport technology center, and led the KSC 2000 reorganization efforts.

He was also a steadfast leader in environmental and safety and health issues, keeping in line with KSC's Guiding Principles. As a result, the Occupational Safety and Health Administration (OSHA) team recently recommended NASA's civil servant workforce at KSC for the Voluntary Protection Program (VPP) Star qualification.

Congressman Tom Feeney, R-Oviedo, congratulates Roy Bridges Jr at a National Space Club dinner July 11 honoring the Directorís contributions. ìIf anybody can engender the sort of confidence that needs to be engendered for the future of manned space flight, itís Roy Bridges,î said Feeney.

According to Bridges, NASA's emphasis on safety and health "started here before it became a big NASA-wide program. In order to improve the safety and health program at KSC, we benchmarked other government agencies and industry, including duPont. Then we adapted some of their best practices for use at KSC and began a journey to improve our safety and health program, and of course, that really culminated in OSHA announcing certification of KSC as a VPP Star site."

Bridges helped to consolidate NASA's Expendable Launch Vehicle programs at KSC, and KSC was named lead center in 1997.

"This fit well into our vision and now means that KSC performs all of NASA's space launch activities," said Bridges. "There's a lot of synergy here and lessons learned across our various programs. The icing on the cake was the successful launch of our second Mars spacecraft Opportunity on July 7.

"So getting Spirit and Opportunity off and seeing how well the team worked was very thrilling to me. We started off with no team, and then we built a team, and we've been able to do some awesomely good work."

Another major accomplishment was making the vision of becoming a spaceport technology center a reality. "It started with the need for KSC to have a vision," said Bridges. "Becoming a spaceport technology center and all that means really encompassed our two-fold mission of space launch operations and spaceport and range technology. It was a major accomplishment getting NASA Headquarters to recognize our technology development mission element.

"We've also made considerable progress in focusing on the specific technology product lines where we felt we added the most value. We've built great teams that have been recognized for their contributions in that area and we've also won many awards," commented Bridges. "For three years running, KSC has received the most Space Act Award dollars of the civil service Centers."

Based on NASA's Vision, KSC and Bridges outlined a number of basic goals and strategies that were important, including reliance on others and partnerships. One example was the improved partnership with the 45th Space Wing on the Joint Base Operations Support Contract (JBOSC).

"It was a pioneering effort to partner on JBOSC. Instead of operating separately, we now jointly manage our two installations, and I think that's been a fabulous success. It has meant so much to me to have the opportunity to work so much closer with the Air Force," Bridges commented.

The payoff came on Sept. 11, 2001, with the security challenges on that day and those following. According to Bridges, the JBOSC contract enabled enhanced security and response to security threats.

"We do share all of our gates, air space and shoreline. Now we have one security force. We needed to have access to national assets, as well as a lot of Department of Defense assets both on the Air Force side as well as on the NASA side," said Bridges. JBOSC facilitated access to these assets.

Another example of a new partnership was the association with the state. The 50-Year Master Plan was a part of it. "A number of partners, the state and the Air Force, Fish and Wildlife, the National Park Services and other users of the range all participated in the Master Plan. I think it was a huge success," said Bridges.

Our vision also hinged on more university involvement, according to Bridges. Plans were soon under way to build the

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Inside

National Aeronautics and
Space Administration
John F. Kennedy Space Center
Kennedy Space Center, FL 32899

CENTER DIRECTOR'S COMMUNICATION

August 8, 2003

TO: All KSC Civil Service and Contractor Employees

SUBJECT: Farewell to Kennedy Space Center (KSC)

What could be better than living on the beach and launching rockets? It's a phrase most of you have heard me say countless times. With this, my last CD Comm. to the tremendous people of KSC, I wanted to pass along my sincere thanks to you as I depart this great Center.

I felt truly blessed and gave daily thanks for the past 6-1/2 wonderful years to perform a job most people only dream about - to serve as your Center Director. And now, Langley is where Sean O'Keefe and NASA need me to serve. But have no doubt, I'm saddened to leave because I love KSC and especially the people I've come to know so well and worked with since 1997. I will never forget you.

As I head north, I want everyone to know I'm grateful for all you have done for NASA and our Nation during my tenure. I was extremely proud to work here every day with our professional workforce. I could fill this page with a list of the many accomplishments you have achieved. While all are important and memorable, what I will always remember are the passion and excellence with which you approached every task.

In my book, you are the finest space industry workforce in the world. There was never a challenge too great or task too small that was met with anything less than 100 percent effort. People here understand that their individual work contributes to the greater cause of pushing our knowledge of the universe to new heights. For that, you have my utmost respect.

While the accomplishments are tremendous, the KSC team showed its true mettle when faced with adversity. For all of us, whether working here a year, six years, or 40 years, we'll count the loss of Columbia as one of the worst days of our lives and in our Nation's history. Through it all, you held your head high and began working the challenges now facing us. Because of your efforts, there is no doubt we'll return to flight safely and with 100 percent success.

I leave KSC in very good hands. Jim Kennedy and Dr. Woodrow Whitlow are two of the finest men NASA has to offer. They have my faith and confidence in leading KSC into new chapters of greatness. I only ask that you support them in the same way you did me so that KSC's future will continue to be one steeped in excellence.

From Benita and me, we wish each of you the best of everything and Godspeed!

Roy D. Bridges Jr.

Wetmore appointed launch integration manager

Michael E. Wetmore has been named the new launch integration manager for the Space Shuttle program. He assumes the responsibilities of this role effective immediately.

"Mike's technical expertise and high level of energy will be a great asset to the Shuttle program," said KSC Director Roy Bridges. "His leadership abilities will be an enormous benefit to the Agency helping to develop and implement NASA's plans for the Shuttle's return to flight."

Wetmore is responsible for all aspects of Space Shuttle preparation, launch, and return of the orbiter to KSC following flight. Wetmore succeeds N. Wayne Hale, who was recently assigned as deputy manager, Space Shuttle program. Until a replacement is named, Wetmore will also maintain his current responsibilities as acting director of Shuttle processing at KSC.

"I believe the civil servants and contractors that make up the Space Shuttle program represent one of the greatest teams ever assembled," said Wetmore. "I look forward to working with this team to assure a bright future for the Shuttle program."

Wetmore began his NASA-KSC career in 1987 as a Shuttle environmental control and life support system engineer. He later served as a Shuttle fuel cells/power reactant storage and distribution engineer in the Shuttle Management and Operations Directorate.

Michael E. Wetmore

He transferred to the directorate's Launch and Landing Projects Office as the lead for resources management; first becoming the senior lead for budgets and contracts, then manager, Launch and Landing Projects Office. He became deputy director, Processing Integration in 1998 and was appointed deputy director of Shuttle processing in 1999. In 2002, he was appointed to director of Shuttle processing.

Whitlow and Hattaway named to director positions

Woodrow Whitlow Jr., Ph.D., has been appointed the new deputy director of Kennedy Space Center (KSC) effective Aug. 31 and James E. Hattaway Jr. as the new associate director of KSC.

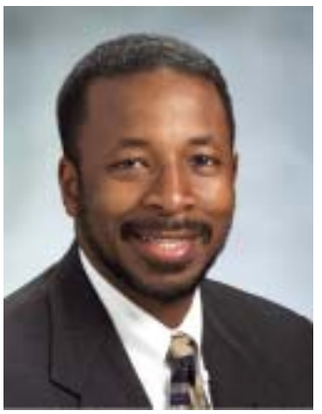
Whitlow succeeds James W. Kennedy, who becomes KSC director on Aug. 10. Hattaway assumed his new responsibilities July 24 and succeeds Marvin L. Jones, who retired in June.

"Dr. Whitlow is a tremendous addition to our KSC leadership," said NASA Administrator Sean O'Keefe. "Woodrow will help maintain the Center's unsurpassed performance as the world leader acquiring, preparing, managing and launching key payloads and expendable vehicles.

"He is an experienced, proven performer and leader with the right technical expertise to help NASA successfully return to flight, while successfully conducting other launch, science operations, and payload processing."

As director of Research and Technology at NASA's Glenn Research Center (GRC) since 1998, Whitlow led a staff of more than 470 scientists and engineers conducting research in high-temperature materials, aerospace power, propulsion systems, structures, and acoustics.

Whitlow planned and directed GRC research and technology development efforts to meet NASA programmatic commitments for advances in space power, space and aeronautics propulsion, and space communications.



Woodrow Whitlow Jr., Ph.D.

James E. Hattaway Jr.

Before moving to GRC, Whitlow was chief, Structures Division at NASA's Langley Research Center (LaRC). He planned, directed and coordinated the research of a division of more than 100 scientists and engineers.

The research included analysis, wind tunnel testing, ground and flight experiments. The experiments covered computational and thermal structures, structural mechanics and dynamics.

Prior to that, Whitlow was the deputy director, Aeronautics Program Group at LaRC. He led and managed key research programs to develop technology for airframe systems to help maintain the superiority of U.S. aircraft and to achieve a safe, affordable, global transportation system.

Whitlow also served at NASA Headquarters in Washington in the Office of Aeronautics as the director, Critical Technologies Division and program manager, Structures and Dynamics.

His NASA awards include, Senior Executive Service Performance Award; Equal Opportunity Honor Medal; Exceptional Service Medal; and the LaRC Special Achievement Award.

As associate director, Hattaway is no stranger to the KSC landscape.

"I am proud to share the leadership of KSC with a man of Jim Hattaway's caliber," said incoming KSC Director James Kennedy. "He has tremendous relevant experience in managing the institution of KSC after being here for 27 years. He also shares the core values of NASA that will enable us to return to flight safely, continue to explore the universe with our exciting ELV missions, and complete the assembly of the International Space Station.

"Jim is a truly respected and trusted member of the KSC community."

Hattaway will provide executive oversight of institutional operations at KSC. This will include integrating and deciding cross-organizational institutional issues in matters related to financial management, work force planning, infrastructure management and information technology.

In addition, Hattaway will provide oversight for NASA Exchange operations, and he will serve as KSC's point of contact for Agency initiatives such as implementation of the President's Management Agenda, Freedom to Manage, Competitive Sourcing and the NASA Shared Services Center.

Since joining NASA, he has held numerous managerial positions serving as chief, Purchasing Services Section; chief, Construction and Ground Support Equipment Section; chief, Operations Contracts Office; and deputy director, Procurement Office.

In 1995, he was appointed to his most recent position of director of the Procurement Office.

Throughout his career, Hattaway has received numerous honors and awards, including certificates of commendation from the KSC center director in 1988 and 1994, NASA Exceptional Service Medal in 1990, NASA Outstanding Leadership Medal in 1999, and the Meritorious Executive Presidential Rank Award in 2001.

Hattaway and his wife, Judy, reside in Titusville, Fla. They are the parents of two adult daughters, Jennifer and Jessica.

BRIDGES. . .

(Continued from page 1)

Space Experiment Research and Processing Laboratory (SERPL) at KSC that would focus on experiments for the International Space Station.

"We asked the State of Florida to help fund that facility so they would have a partnership role in running it," said Bridges. "And through a lead university and a university consortium, Florida universities could literally rub elbows with people from around the globe that are here doing microgravity-type research."

Bridges explained that out of SERPL came the Florida Space Research Institute, which would be "a prime player in helping KSC have more university collaboration."

Other examples of partnerships included NASA's re-competed engineering support contract that was written to include a partnership requirement with a university consortium. Bridges explained, "This partnership will help to expand our outreach to have universities here using our facilities and our engineers using the universities' facilities.

"The response to our partnership and teamwork initiatives was overwhelming. As a result, we have a much greater sense of being the Cape Canaveral Spaceport in all of Florida, and not just the Space Coast, and have a greater sense of the importance of the space program for the state and for its economy," said Bridges.

Other highlights during Bridges tenure as KSC director included the development and implementation of multi-element integrated testing by a team in the Space Station Processing Facility. It is used for final integration and testing of the International Space Station elements.

"This team is up to the challenges, and I'm convinced that we will return to flight and be successful in continuing to open the space frontier," said Bridges.

Explorer schools teachers begin program

Educators from five Florida and Georgia middle schools selected to participate in NASA's new education initiative, the NASA Explorer Schools (NES) Program, began their intensive training July 19.

The program sends extraordinary educators to NASA centers during the summer to acquire new teaching resources and technology tools for their fifth to eighth grade classes. NES was launched June 30 during the National Educational Computing Conference in Seattle where Dr. Adena Williams Loston, NASA associate administrator for education, and astronaut Don Pettit announced the first 50 competitively selected NES participants.

"The entire trip will be a highlight, but I think the hands-on experiences will be the best," explained Pamela Biegert, chief, Education Programs and University Research Division. "The teams participated in an 'e-Mission' with the Classroom of the Future in Wheeling, W.Va., where they are divided into teams—hurricane team, volcano team and evacuation team and put into a real life simulation of the Montserrat volcano eruption and an impending hurricane approaching the island. The team will use math, science, geography and problem solving skills that they can replicate in the classroom."

Science and mathematics teachers from the following schools are participating at KSC: Carol City Elementary School, Opa Locka, Fla.; Stewart Magnet Middle School, Tampa, Fla.; Oscar Patterson Elementary School, Panama City, Fla.; Howard W. Bishop, Gainesville, Fla.; and Bunche Middle School, Atlanta, Ga.

Teachers with the NASA Explorer Schools Program visit ed the Space Station Processing Facility as part of their training at KSC on July 21-26.

The 22 educators benefited from every minute of their time at KSC until they departed July 26. Center Director Roy Bridges and incoming Center Director Jim Kennedy welcomed the group July 21.

"There's an education connection with all we do. It all starts in the classroom. That's where people get inspired. Our first goal is to partner with you to inspire," said Bridges.

During one of the sessions, a basic conference room transformed to a haven for teachers to communicate with the International Space Station. The July 22 link-up offered educators a chance to interact with Expedition 7 crew members.

"KSC was the lead site so we collected questions from three other centers also hosting teams this week and the administrators/teachers asked the questions of the Expedition crew," said Biegert. "All of our participants got the opportunity to ask a question, and this was videotaped to take back to their classroom and share with their students. It was an awesome experience for each of them. They are now even more inspired to share their experiences with their students."

Kennedy also shared his thoughts about the program: "NASA's mission, in part, is to inspire the next generation of explorers. KSC is pleased and proud to be a part of a new agency education initiative to support NASA Explorer Schools. We will be working with the dedicated teachers of these schools to provide them with teaching materials that are challenging to their students and engage the students in problem-solving activities.

"Having these teachers here at KSC is providing them the opportunity to see what we do at KSC first hand so that they can also become more inspired in their teaching of space science and mathematics and bring that excitement back into their classrooms. This program is important to KSC because it is going to get more students, at younger ages, to consider what they might want to do as they grow up and make career choices—students who will eventually help us fill our pipeline of future explorers! It is a great opportunity for NASA to make an impact on the lives and learning of these students and teachers."

The new initiative is sponsored by the NASA Education Enterprise in collaboration with the National Science Teachers Association. It establishes a three-year partnership between NASA and 50 NES teams, comprising teachers and education administrators from diverse communities across the country.

For NASA's Explorer Schools Program information, visit ***http://explorerschools.nasa.gov***.

Irish students train at KSC

Florida Space Institute (FSI) is utilizing its Kennedy Space Center campus to offer 12 Project Emerald Irish university students practice-based instruction integrating the center's unique capabilities and space expertise.

Project Emerald was developed by FSI and the Irish National Education Department, FAS. The graduate students began their six weeks of study in Florida July 14. The course, taught by FSI faculty, former astronauts and NASA personnel, provides academic instruction, field trips and laboratory experience.

Guest speakers from KSC educated the group about the International Space Station and Space Shuttle programs, and organized related tours.

FSI helped select the final 12 students from an applicant pool provided by FAS, each with a background in engineering, science or mathematics.

Visit **www.fas.ie/discoverscience** for more information.

Twelve Project Emerald students tour the Cocoa Beach area with Mayor and KSC medical technician Skip Beeler (middle back row).

Faculty and students attend motivational workshop

The KSC Education Office has a full schedule of events planned for faculty and students here for the summer that are participating in the NASA Faculty Fellows Program (NFFP), the Graduate Student Researchers Program (GSRP), the Spaceflight and Life Sciences Training Program (SLSTP), and others.

On July 9, Education Program participants didn't head to the coast for vacation. Instead, the group attended an all-day NASA KSC Summer Education Programs workshop and appreciation luncheon held at the Cocoa Beach Holiday Inn.

The theme of the workshop was to "Envision and Pave the Path to Your Success." The Education Programs Team, comprising Eduardo Lopez del Castillo, Laurel Lichtenberger, Cassandra Black and Karroll Purer, explained to the group that the day's focus was to inspire the students and faculty to consider NASA in their path to success.

The workshops provided presentations on communication skills, motivation, professional development and achieving personal greatness, as well as tools to aid the students and faculty with each topic.

Approximately 160 summer students and mentors attended the luncheon designed to honor KSC-NASA and contractor personnel who volunteered as mentors and colleagues to students and faculty participating in KSC's Summer Education Programs.

Also, motivational speakers Fred Soto, Kimberly Geddings and Calvin Mackie spoke during the event to offer practical advice. In addition, each student and mentor received a portfolio with 'NASA Education Programs' inscribed on the cover.

Danny Wentworth, a former Summer High School Apprentice Research Program (SHARP) student and now a SHARP mentor, enjoyed the activity. "I've been to a number of workshops and conferences with all types of speakers and this was great," he said. "I gained some ideas on how to view my goals and new attitudes on how to obtain those goals. It was a very good learning experience for the students."

A business administration-marketing senior from Bethune Cookman-College, David Pierre-Louis, gained a lot from the opportunities as well. "Geddings and Mackie helped me refocus some of my actions. They helped me see that to achieve personal greatness I have to be passionate about what I want. Also, this workshop allowed me to network with my colleagues. It was a session where everyone was learning from start to finish - each one, teach one."

Above, Dr. Fred Soto speaks to a table of students at the July 9 workshop, which encouraged them to be passionate about their work. Below, Dr. Calvin Mackie explains the need to work toward goals to students from the KSC Education Office at a seminar held at the Cocoa Beach Holiday Inn.

KSC co-ops pitch in for Habitat for Humanity

Lee Finley, a graduate cooperative education (co-op) student from New Mexico State University, believes there is nothing more rewarding than lending a hand to help those less fortunate than himself.

Lee, along with some of his fellow co-ops and co-workers, has been attending local Habitat for Humaity events in order to give back to the community that has welcomed him. With the same tenacity and enthusiasm that makes them vital NASA employees, these volunteers have given their time and sweat to those in need.

Another Habitat for Humanity volunteer, Ivette Rivera, said, ìWe eagerly traded our hard hats and badges for paint brushes and paint. Our work clothes were replaced with painting clothes. We were assigned to paint, and paint we did.î Ivette is a graduate co-op student from the University of Puerto Rico.

Student interns participating in local Habitat for Humanity projects include (front row from left) Caley Burke, Ivette Rivera, Priscilla Garcia; (back row from left) Abe Grindle, Juan Gordon, Yibo Ling, Jessica Steinberger, April Lovelady, Mike Miller, and Lee Finley.

Jessica Steinberger, a co-op student from the University of Cincinnati, convinced several other co-ops, interns, and full-time employees to volunteer their time to assist the local Habitat for Humanity affiliate with building projects.

Locally, volunteers gather every Wednesday and Saturday to work on the various housing projects. A group from KSC has aided in construction on May 17, June 21, and July 12. Work usually takes place from 8 a.m. until 12 p.m.

Habitat for Humanity uses the concept of ëpartnership housingí to provide homes for the partner families, who are in need of adequate shelter and work side by side with the volunteers to build their home. The partner families displayed their gratitude for the many volunteers by providing a meal for the hungry workers after a hard day of building.

KSC earns VPP Star certification

It's been more than two years since Kennedy Space Center's civil service workforce embarked on their journey to become Voluntary Protection Program (VPP) qualified by the Occupational Safety and Health Administration (OSHA).

That goal was realized during the week of July 7-11 when a team of 12 of the most experienced representatives from OSHA, the federal agency that oversees safety and health practices, were on-site at KSC to review NASA's safety and health practices and procedures and observe workers at their jobs.

During the weeklong review, OSHA representatives conducted formal interviews with 70 members of the civil service workforce in order to gauge employees' knowledge and involvement in KSC's safety and health program. Additional interviews with workers were also conducted at random throughout the week.

OSHA representatives spent two days touring and inspecting work sites and another full day reviewing NASA's safety and health documentation.

In order to qualify for VPP certification, a work site must be in compliance with approximately 500 specific requirements. These elements are included in four specific categories that include Management Leadership and Employee Involvement, Worksite Hazard Analysis, Hazard Prevention and Control, and Safety and Health Training.

According to Steve Brisbin, NASA branch chief, Institutional Safety and Quality, the OSHA team recommended NASA-KSC for the highest level of VPP status. NASA's civil service workforce now joins the ranks of other KSC VPP Star sites, including United Space Alliance and Space Gateway Support. At least 78 percent of the workforce at KSC is now covered by VPP Star certified safety and health programs.

"KSC now joins three other NASA centers as VPP Star sites: Johnson Space Center, Ames Research Center and Langley Research Center," said Brisbin. "It was a rigorous procedure. But now we've established the foundation for continuous improvement and can build on it."

During the evaluation at KSC, the OSHA team recognized several areas considered as best practices for the industry. These included the center director's use of electronic communications to the workforce highlighting safety and health roles and responsibilities, stop work authority, and incident and close call reporting, and unannounced monthly work place inspections.

KSC Director Roy Bridges Jr. responds to the announcement that KSC earned the VPP Star certification.

The team also noted the establishment of a Rehab Works facility and fitness centers to enable employees with injuries to heal sooner and return to work, employee knowledge of the VPP program, display of the Employee Safety and Health Pocket Guide, and the NASA-KSC Business World Web site with safety and health links.

"Achieving OSHA 'Star' qualification was a good sign, a big milestone on our journey to becoming the best at safety and health," said KSC Director Roy Bridges Jr. "We made major improvements in our programs and OSHA noticed. Most gratifying were the indications of enthusiastic employee involvement during OSHA's employee interviews. Congratulations to the entire KSC Team on your achievement."

NASA-KSC is currently the only federal site in the region (that includes Florida, Georgia, Mississippi and Alabama) to be VPP Qualified.

During the review, the OSHA team noted only five action items that needed attention or correction within 90 days.

OSHA will return to KSC in 18 months for a follow-up review and to note continuous improvements.

JoAnn Morgan retires after 45-year career

JoAnn Morgan, director of External Relations and Business Development at Kennedy Space Center (KSC), has retired from NASA after 45 years of service, including her appointment as the first woman senior executive at the space center. She has been in leadership roles at KSC for the past 20 years.

"JoAnn's career is a model of success," said KSC Director Roy Bridges Jr. "She is the pioneer for all the female engineers at NASA. She is my hero, too. She has a passion for excellence that is rarely exceeded. She thinks 'out of the box' and makes things happen. What a joy to work with her!"

Her list of firsts also includes first woman in the Launch Control Center Firing Room during the Apollo program, first woman division chief, first woman to win a NASA medal, first woman associate director for KSC, and first woman to act as deputy director of KSC.

Additionally, Morgan was the first woman in NASA to win the coveted Sloan Fellowship. The Sloan Fellowship is one of the NASA fellowship programs and grants fellowships to MIT in Massachusetts and Stanford University, Calif., for graduate study.

Morgan entered the federal work force as a University of Florida student trainee with the Army Ballistic Missile Agency in 1958, and worked for NASA on the Mercury and Gemini programs. During her years in the Apollo, Skylab and Apollo-Soyuz programs, she was a key member of the KSC launch team.

She then became part of the KSC team developing the Space Shuttle launch processing system central data subsystem, which was initially used for the first launch of the orbiter Columbia.

Following this, she served in managerial positions including division chief and deputy director, Expendable Launch Vehicles; director, Payload Projects and Ground Operations; and director, Safety and Mission Assurance with overall responsibilities for the KSC safety, reliability, maintainability quality and mission assurance programs.

Morgan worked on teams at all the NASA centers and NASA Headquarters, including assignments at Marshall Space Flight Center and Langley Research Center. During the early part of her career, she spent 15 years on launch teams as an engineering member in instrumentation systems.

Expedition 6 astronaut discusses Space Station, Soyuz landing

Astronaut Ken Bowersox spoke to a standing room only audience at the Training Auditorium July 22 about his time spent on the International Space Station with Expedition 6 and the time spent with crewmates Don Pettit and cosmonaut Nikolai Budarin, including the Soyuz landing in Russia.

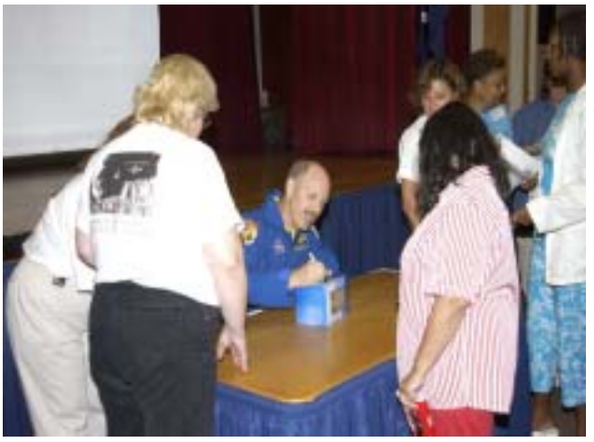
KSC Director Roy Bridges introduced Bowersox to the capacity crowd before giving him a framed montage of pictures and patches commemorating the mission.

Bowersox first talked about the first few weeks after landing when he spent time in Houston to debrief and for medical testing. He then started a slide presentation showing docking procedures with the International Space Station and the crew activities that took place inside.

"You can see we've got stuff stored everywhere," Bowersox said. "You can see our rows of boxes of food. We joke that the longer we're there, the smaller that row of boxes gets."

Clothing worn during duties dries out very fast, usually in three to four hours. That water is redistributed through the air and collected by the water recycling system.

According to Bowersox, cleaning is a big job. "It's hard to keep the Station neat because there is so much equipment up there. We spent three hours every Saturday doing that - at least we were scheduled for that much time - but we spent more time than that."



Astronaut Ken Bowersox signs autographs at the Training Auditorium after his speech about time spent on the International Space Station

And the little things you take for granted here on the ground take a lot more work on orbit, such as shaving, trimming your hair and bathing. Just keeping track of your food containers can take a lot of extra time during meals as well.

The astronaut then explained how the crew can do a lot of interesting experiments in space that can't be done here on the ground with gravity. He showed a bubble of water trapped in a wire loop with an air bubble inside before a bunch of small water bubbles were added.

"We took one and rolled it inside an air bubble," Bowersox said. "This is a water bubble rolling around on a water surface. Why doesn't it just absorb it? We don't really know, but we imagine one of the smart guys at one of the colleges we speak at over the next few months will be able to tell us why. We just thought it was cool to watch," he jokingly said.

Bowersox then described the crew's departure from the Space Station using the Soyuz spacecraft. Two hours after departure, the crew of three was back on Earth.

Getting back to Earth, however, was not easy. The Soyuz capsule was forced into a ballistic entry, which is different than a nominal entry. The normal g-force is three to four-and-a-half. During the reentry of Expedition 6, a 1-in-3,000 chance condition switched the reentry mode.

"For one thing, when you come in with that kind of entry, it goes by really fast," Bowersox said. "We were at 9-g's for a couple of seconds. After that, we coasted along for about a minute before the parachute opened and when that happens, the vehicle just bounces everywhere like being on a carnival ride."

He then jokingly said, "It was a nice firm touchdown."

Six hours later, Bowersox and the other two were back at crew quarters and welcomed with the traditional Russian greeting of bread and salt.

Bowersox summed up the speech by telling the audience he hoped there were two things remembered about Expedition 6.

First, as signified on the mission patch, he hopes "knowledge is being transferred from Earth to the Space Station and eventually out farther into our solar system. We think we did a lot of things to help that transfer, and I hope that's what people remember in the future."

The second thing is that he hopes people remember how hard everybody worked to keep the team together. "The first small part of that team was the three guys on orbit," Bowersox said.

"There were several times when people had to do things they necessarily didn't want to do for the benefit of the rest of the team."

The second part of the team was ground control teams in Russia and America. They kept moving along toward the goals.

"Then there is the even bigger set, all the people that design, build, service and prepare our vehicles for launch and reentry," he said. "We couldn't do anything without those people."

And the final part of the team is everybody on the planet – people who support the space program.

"It's the combined effort, the combined desire, of all those types of people here in America and in Russia and the desire to work on a common goal that will be our greatest benefit of the International Space Station."

Take Our Children To Work Day

A number of activities were planned as part of this year's Take Our Children To Work Day July 24, including fingerprinting, emergency vehicle displays and various activities at the Debus Center.

SCISAT launch will help monitor ozone

SCISAT-1 (Scientific Satellite-1) is scheduled for launch by NASA no earlier than Aug. 12 from Vandenberg Air Force Base, Calif.

On Feb. 4, 1999, the government of Canada announced the selection of the Atmospheric Chemistry Experiment (ACE) as the scientific mission of SCISAT.

The major scientific goal of the Atmospheric Chemistry Experiment (ACE) mission is to measure and understand the chemical processes that control the distribution of ozone in the Earth's atmosphere, especially at high altitudes.

Data recorded as SCISAT orbits the Earth will help scientists and policy makers assess existing environmental policy, and to develop protective measures for improving the health of the atmosphere and preventing further ozone depletion. The ACE mission is designed to last at least two years.

The ACE mission will work in conjunction with other instruments and missions planned by NASA, the European Space Agency, and other international partners over the next decade to gain a better understanding of the chemistry and dynamics of the atmosphere that affect the Earth's protective ozone layer.

Analysis of the large amount of data collected will lead to a more informed assessment of international environmental policies, such as the Montreal Protocol for the elimination of chlorofluorocarbons (CFCs).

The overall objective of the ACE mission is to improve our understanding of the depletion of the ozone layer, paying close attention to what is happening over Canada and the Arctic.

The measurements obtained by the ACE-FTS and MAESTRO instruments will be combined with data gathered by ground-based, balloon-based and other space-based projects in order to obtain the best possible information to predict future trends relating to the ozone layer and its depletion.

Canada is working with the international scientific community to determine the extent and causes of atmospheric changes that threaten human health and safety.

Environment Canada's studies of the ozone layer, which began over 50 years ago, support a worldwide research and atmospheric monitoring program.

The Canadian Space Agency, both in the past and now with the ACE-FTS and the MAESTRO instruments, continues to provide opportunities for Canadian involvement in space-based ozone research.

Scientists have found indications that over the past 20 years the total average ozone level over Canada has declined by six percent.

Of additional concern is the severe 20-40 percent ozone depletion observed in the Arctic in early spring.

Advances in our understanding of the mechanisms responsible for ozone losses will tell us whether an ozone "hole," such as the one found in Antarctica, is likely to occur above Canada in the future.

More importantly, continued research, such as that which will be carried out on the ACE mission, will also help us identify how the ozone layer can be restored and preserved. SCISAT-1 weighs approximately 330 pounds and will be placed in a 400-mile-high polar orbit.

The payload will be deployed by a Pegasus XL rocket mated to a L-1011 carrier aircraft.

KSC activates new security gates and opens Space Commerce Way

Kennedy Space Center has completed construction of two new security gates on State Road 3 and State Road 405, complementing the opening of the Space Commerce Park and a new roadway.

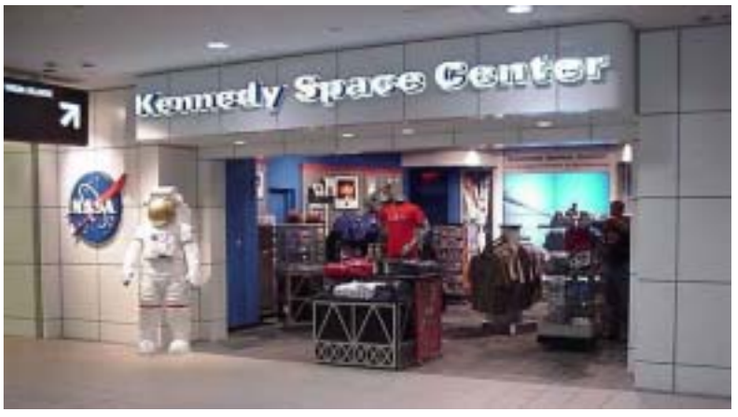
The new roadway, Space Commerce Way, will provide an alternate route for the general public between Titusville and Merritt Island and be accessible by the general public 24 hours a day.

The new gates and roadway opened Aug. 1.

The new roadway will also serve north Merritt Island and other barrier island residents as part of the hurricane evacuation route.

The current security gates have been in existence since the early days of KSC and will be removed after their deactivation.

The opening of the new roadway marks the beginning of a new era as Space Commerce Park anticipates its opening soon.



The Kennedy Space Center Store inside the Orlando International Airport terminal opened for business July 21. An extension of the Visitor Complex, the store will promote the space program to more than 26 million travelers who use the airport each year.

John F. Kennedy Space Center

Spaceport News

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