Oct. 17, 2003 Vol. 42, No. 21

Spaceport News

America's gateway to the universe. Leading the world in preparing and launching missions to Earth and beyond.

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

Administrators encourage more communication

All levels of the work force contribute to NASA's return to flight. To keep this team informed, an all hands meeting took place at the Training Auditorium Oct. 7.

Kennedy Space Center Director Jim Kennedy introduced Office of Space Flight Deputy Associate Administrator Mike Kostelnik and Space Shuttle Program Manager Bill Parsons, who shared their visions and then welcomed questions from attendees.

"The night before T.K. Mattingly was about to launch on Apollo 16, he got a little bit antsy in the crew quarters, so he went out to the pad and took the elevator up to the instrument unit. He saw a technician and said, 'What are you doing?'"

Kennedy then explained the technician's response, "I don't have the foggiest idea how you're going to get to the moon. I don't really know how you're going to get home from the moon. But what I can assure you of, if anything goes wrong it will not be a part of what I'm associated with.'"

The all hands meeting Oct. 7 at the Training Auditorim featured (from left) KSC Director Jim Kennedy, Office of Space Flight Deputy Associate Administrator Mike Kostelnik and Space Shuttle Program Manager Bill Parsons. The group encouraged employees to communicate their ideas.

"I think that story is so good," said Kennedy. "Each one of us needs to feel ownership of what we do to make sure we return to flight safely."

Kostelnik then took the stage and reminded listeners of how the NASA team has overcome tragedy and is capable of doing so again.

"If we look back into the history of NASA, I think there have been two other defining times," said Kostelnik. "Clearly, the first is the fire of Apollo. The way NASA responded to that tragedy defined what NASA thought of itself. In the 1980s when we lost Challenger, NASA's work force looked through this problem, fixed it and returned to flight," he said.

He also encouraged better communication. "How we're organized as centers has a lot to do with the flow of communication. People need to have a say. If our processes provide impediments to that where one does not feel the ability to do that, then that's one of those things we need to fix.

"It's OK to have an alternative opinion," said Kostelnik. "If you have a good idea or concern and take it up to your boss and he says, 'Well, I've listened to you but I don't agree with you.' You still have a choice."

Parsons encouraged NASA's teamwork to continue. "The fact that we fly humans in space, there's something that bonds us together in there. There's so many good things, and that's what we have to depend on, that foundation. Let's go do what we do the best and that's putting humans in space. In most cases, if we put our minds to it we can go solve any problem."

Inside

Tracking cameras improved

When the Space Shuttle lifts off from Kennedy Space Center, thousands of people watch it from nearby beaches, around the world on TV, and live on the Internet. As we prepare for return to flight, the most important set of eyes will be the dozens of cameras located everywhere from right next to the Shuttle on the pad, to several miles up and down the coast of Florida.

More than $3 million in digital analysis equipment has been recently added at KSC, marking a major improvement in the ability of NASA to study images in the days following

(See CAMERAS, Page 2)

Workers calibrate a tracking telescope, part of the Distant Object Attitude Measurement System (DOAMS).

Jim Kennedy
Center Director

The Kennedy Update

I'd like to bring everyone up to speed on the details of recent announcements made by NASA which affect our daily business at KSC. The Space Flight Leadership Council decided Oct. 3 to defer the return to flight launch date to no earlier than Sept. 12, 2004.

This is a target date and could be adjusted if needed. NASA did this to ensure it complies with the recommendations of the Columbia Accident Investigation Board and our own requirement to "raise the bar" in the safety arena. The eventual official launch date is milestone driven, not schedule driven.

While we aren't ready to pick a specific launch date, by having a launch planning window, we ensure the entire Space Shuttle team is marching in step and our actions are coordinated at all the different centers involved. Returning the shuttles safely to flight is unquestionably our number one priority.

When STS-114 does launch, many of its mission requirements will have changed from its original manifest prior to the Columbia tragedy. While the entire mission content and priorities haven't been determined, some mission items are defined.

The following are a few of the tasks the crew will perform. The crew will digitally photograph the external tank after its separation from the orbiter. They will also inspect the orbiter's reinforced carbon-carbon using the Shuttle robotic arm, a boom extension and sensors.

The orbiter will perform a rendezvous pitch-around maneuver during its approach to the International Space Station in order to photograph the Shuttle's Thermal Protection System (TPS). The astronauts will also perform tests of the TPS repair techniques during the mission's first spacewalk.

The council also decided to add a shuttle mission called STS-121 and it will follow STS-114. While its final manifest is not defined, the mission includes a rotation of the ISS Expedition crews, scientific experiments and equipment. The STS-121 crew will conduct further spacewalk testing of TPS repair techniques, as well.

The bottom line is our Shuttle program and NASA is getting stronger, smarter and safer. Whether you're a civil servant or contractor, I see everyone here as a part of the tremendous progress we are making for return to flight. I personally view evidence of this everywhere.

I see it at the program level with our leadership making tough decisions as they did with changing the launch date and adding another Shuttle mission. They aren't allowing anything but safety to drive the return to flight agenda, and it's the right way to bring our Shuttles back to space.

I also see it at KSC as evidenced by the great Spaceport Super Safety and Health Day held Oct. 15. I want to thank Conrad Nagel and his entire team for the hours of hard and dedicated work to pull off such a fantastic event.

It's great to see people who have a passion for our guiding principle of safety and health first while performing such a critical mission for our nation.

Finally, I want to thank everyone for their early and numerous contributions to our CFC campaign. If you've given: THANK YOU! If you haven't, I just ask that you consider giving assistance to those a little less fortunate than ourselves.

On Oct. 10, many KSC employees were privileged to visit such places as the Brevard Achievement Center and Sharing Center, the Association for Retarded Citizens and the United Way. It was a heart-warming day, and I know they appreciate whatever support we can provide.

Have a great week everyone and remember, with Halloween just around the corner, start looking for those pumpkins to carve for the kids. I'm grabbing the biggest one I can find!

CAMERAS . . .
(Continued from Page 1)

launch. Following recommendations by the Columbia Accident Investigation Board, NASA plans to double the number of cameras used during launch to get a clearer picture of the Shuttle on its way into space.

One of the upgrades includes a Photo Sonics high speed 35-millimeter motion picture camera at Pad 39B, one of many short range optical tracking locations used during liftoff.

On launch day, about two and a half miles north of the Pad, a technician will sit on top of a robotic camera, and use a joystick to track the orbiter as it heads into space. "The joystick is so sensitive, it evens responds to the heartbeat of the person using it," explains Bob Page, chairman of the NASA photography group.

These cameras will view every angle of the Shuttle during launch, and give engineers the pictures they need to make sure that the orbiter reaches space safely and without damage. But the tracking does not stop there.

About an hour after launch, a dozen engineers will sit in a dark projection room and carefully examine videos taken of important parts of the Shuttle, such as the pipes between the external tank and the orbiter, which delivers liquid hydrogen and oxygen to the Shuttle's main engines. The high-resolution film will be processed in the days following launch and examined by teams at NASA centers across the country.

Combined Federal Campaign close to goal
This yearís Combined Federal Campaign (CFC) is now in high gear.†At press time, 90 percent of the $280,000 goal had been raised.†Contributions can be made online at **http://cfc.ksc.nasa.gov** and weekly incentive prizes will be awarded. Remember, ìDonations DO Make A Difference.î

Biology outreach provides training in Ukraine

Thomas Dreschel, Ph.D., a KSC program manager for Fundamental Space Biology Outreach, Spaceport Engineering and Technology, returned from Kiev, Ukraine, in late September after spending nine days in the country.

The trip's purpose was to meet with Ukrainian educators, scientists and members of the Ministry of Education and Science to discuss the status of Collaborative Ukrainian Experiment-related (CUE) education and outreach programs and to conduct new training seminars for teachers and workshops for students.

Peter Chetirkin, a science education liaison with Dynamac International Corp., who speaks fluent Russian, accompanied Dreschel and served as an interpreter.

The CUE program was initiated with Space Shuttle mission STS-87, launched in November 1997. During the mission, a cosmonaut performed several plant experiments while Ukrainian and American elementary, middle and high school students monitored the progress.

Dreschel represented NASA's Fundamental Biology Outreach programs to provide training seminars for a new space biology educational program, "Brassicas and Butterflies."

The project provides activities centered on Brassica rapa plants and Brassica butterflies for students and teachers, with specific activities that can be conducted easily in a classroom. The class can also design experiments to be conducted in space.

Dreschel and Chetirkin traveled 14 hours by train southeast from Kiev to the city of Simferopol to participate in a four-day seminar. They also presented the "Brassicas and Butterflies" training seminar at the Regional National Ecological and Nature Center to teachers representing approximately 18 of the Ukraine's 25 regions.

According to Dreschel, many of the participating teachers had previous involvement in NASA programs.

Dreschel and Chetirkin also conducted a seminar on "Hydroponics Research at KSC" for teachers. The seminar featured the application of a porous tube hydroponic system in educational projects.

According to Dreschel, the seminar "brought out a lot of interest from the teachers that had experience in plant biomass production from previous programs.

Peter Chetirkin (front row, second from left), science education liaison with Dynamac International Corp., and Thomas Dreschel,†(front frow, right) NASA program manager for Fundamental Space Biology Outreach, visit with some of the teachers at National Tavriecheskyi University in Simferopol, Ukraine.

"All of the educators are eager to adopt our programs for their students," said Dreschel. "And we have a strong desire to continue this program. They continue on with every project we've taken them. Everything we send them, they immediately translate for their students."

During the trip, Dreschel and Chetirkin met with the head of the Ecology Department and colleagues at the National Tavriecheskyi University to discuss collaborative projects between the university and U.S. universities, and with KSC ecological programs through organizations such as the International Science and Technology Centers (ISTC), a program funded by the U.S. State Department.

Guidance was offered to the university on integrating field data, collections and imagery as well as ecology and education development, among other issues.

October Employees of the Month

Pictured in the back row (from left): David Crawford, ISS/Payload Processing; Greg Lohning, Shuttle Processing; Mary Faller, ELV and Payload Carriers Programs; Michael Canicatti, Spaceport Services. Pictured in the front row (from left): Cricket Stevenson, Workforce and Diversity Management Office; Nancy L. Bray, Information Technology and Communications Services; Marilyn Davidson, Chief Financial Office; Steven McDanels, Spaceport Engineering and Technology. Not shown is John Branard, Safety, Health and Independent Assessment.

2003 Employees of the Year

Pictured in the back row (from left): Geoffrey Swanson, Office of the Chief Counsel; Greg Melton, Spaceport Engineering and Technology; Wayne Kee, Spaceport Services; Jan Phillips, Procurement Office; Connie Stallings, Workforce and Diversity Management Office; Peter Nickolenko, Shuttle Processing. Pictured in the front row (from left): Sheldon Lauderdale, Chief Financial Office; Lynn Barnette, Safety, Health & Independent Assessment; Bennie Bell, External Relations and Business Development; Jennifer Wahlberg, ISS/Payload Processing; Isam Yunis, ELV and Payload Carriers Programs. Not shown is Tamiko Fletcher, Cape Canaveral Spaceport Management Office.

2003 Spaceport Hispanic Heritage celebrated

The Cape Canaveral Spaceport Hispanic Heritage Luncheon was held Oct. 3 at the Debus Center where guests enjoyed authentic food before listening to Jim Hattaway, KSC associate director, and Ray Lugo, deputy director of the Launch Services Program.

Hattaway helped kick off the luncheon, designed to help recognize and celebrate the culture diversity represented at the Spaceport. He then talked about the backgrounds of many famous Hispanics before Felix Soto-Toro, co-chairperson of the event along with Joe Tellado, invited everyone to enjoy a delicious lunch featuring dishes from Hispanic culture.

The guest speaker, Ray Lugo, began his speech by talking about the opportunities presented to him during his career.

"The reason I want to talk about opportunity is because we live and work in a place of a great deal of opportunity," said Lugo. "I spent most of my childhood here on the Space Coast, so I got to see a lot of interesting things such as the Apollo program, and the Apollo-Soyuz test program as an employee here at Kennedy Space Center, as well as the Shuttle program and the (International) Space Station."

He then talked about the perspective someone with his background brings to the space program.

"In the 1960s and '70s, this was not necessarily the most culturally embracing place in the world," said Lugo. "I was selected as a NASA co-op in 1975, and when I started I actually ended up working as an engineering co-op for George English in the Manpower and Organization Branch. Now, if you know George, he is about as far away from engineering as just about anybody can be. But it was an opportunity.

"What that opportunity gave me was a chance to see how this Center operated and how the different organizations worked together."

After graduation Lugo went to work in the construction branch, where he worked on facilities for the Space Shuttle. That opportunity gave him a chance to see how to modify things to make them work.

Lugo then talked about future opportunities: "The first one is the Shuttle's return to flight. It is important that you look at these opportunities within the light of 'What can I do to help the Shuttle program and our nation get back into safe space flight.'

"Then there's the second opportunity, which is called the Orbital Space Plane. And finally, there's the Launch Services Program, including all the things the Agency asks us to do to help it be successful because it's critical to the Kennedy Space Center, NASA and our country."

Guest speaker Ray Lugo, deputy director of the Launch Services Program, talked about opportunity, "The reason I want to talk about opportunity is because we live and work in a place of a great deal of opportunity."

Guests celebrate the cultural diversity represented at the Spaceport by sampling a variety of Hispanic recipes.

Native American Heritage Celebration planned

This year's Native American Heritage Celebration, hosted by Kennedy Space Center's Native American Intertribal Council (NAIC), is scheduled for Nov. 6.

The theme "Remember the Journey, Strengthen the Circle" is a tribute to John Herrington, the first Native American astronaut. Herrington, a Chickasaw Indian, served as a mission specialist aboard STS-113, launched Nov. 23, 2002.

The dinner program, hosted by USA/KSC Chapter 830 of the National Management Association, begins at 5 p.m. with a buffet dinner at the Cocoa Village Civic Center.

The evening will feature Native American foods and artist presentations as well as a speech by Herrington. Seating is limited, so dinner reservations are recommended. Tickets cost $20.

A tribute to Herrington will be held at the Cocoa Village Riverfront Park, scheduled to start at 8 p.m., following the dinner. The tribute will feature a grand entry by the Patrick Air Force Base Honor Guard.

For information, contact Martha Pessaro, (321) 867-5405; PessaroM@usa-spaceops.com or Gisele Altman, (321) 867-4000; gisele.altman-1@nasa.gov.

Astronaut John Herrington served as mission specialist aboard STS-113, launched Nov. 23, 2002. Herrington will be honored by KSCís Native American Intertribal Council on Nov. 6.

Crosby an example of KSC's can-do attitude

At 11 a.m., a third-floor corner of the Headquarters Building is buzzing. As if an alarm clock has sounded, employees swarm into the Crosby Snacks-owned shop for home-made lunch specials, salads, soups, fresh bread and more.

It's not just the tasty food that makes this place so distinctive, but the management, too. Randall Crosby, who's legally blind, owns and manages the snack bar, known as 'The Blind Man,' and the building's vending machines.

Randall is another shining example of a KSC employee with a disability. October is National Disability Employment Awareness Month (NDEAM), designated to highlight the abilities and skills of individuals with disabilities.

"I order supplies and snacks. I do purchasing, stocking and I'm the cashier. But Patty does all the hard work," Crosby said of his wife of 21 years, who prepares all the food.

Clearly modest about his role in the successful Crosby Snacks, his ability to overcome obstacles that many will never encounter is inspirational.

Crosby was diagnosed with Retinitis Pigmentosa at age eight, and unknowingly had night blindness his entire life. "I had never experienced normal night vision, so I had nothing to compare it to," he said. Because the disease, which degenerates the retina, was progressing, he was forced to quit driving and working during six short months in 1987.

Randall Crosby, and his wife Patty, own the snack bar on the third floor of the Headquarters Building at KSC. Randall is legally blind and works as a cashier, among many other things.

"I was home for two years while Patty did double duty," said Crosby. "I don't consider my job a challenge; it's a blessing. I'm so happy to be in a job. It's more financially rewarding and has more freedom than my old job in a lot of ways."

Like many, he considers day-to-day issues demanding. "There was no water at 10 a.m. We can't run a kitchen without water. Sometimes the delivery truck doesn't show. We try to keep the menu consistent," he said.

Three similar businesses are located at the Operations Support Building, the Launch Control Center and the Space Station Processing Facility.

Florida's Division of Blind Services sets up contracts with the federal government prompting these business opportunities for visually impaired people.

However, Crosby made it clear who the real supervisors have been during the couple's five years at KSC. "We report to our customers. We have hundreds of bosses," he joked.

The Crosbys not only work hard to meet the demands of a hungry work force, but they also remember customers' names, favorite foods and family stories.

"When we came here, I had to pinch myself to know that I'm actually here. I enjoy interacting with the customers," said Crosby.

National Disability Employment Awareness Month

National Disability Employment Awareness Month's (NDEAM) theme is "America Works Best When All Americans Work." In observance of the month, the Disability Awareness and Action Working Group (DAAWG) will hold a luncheon Oct. 22 at 11 a.m. in the O&C Mission Briefing Room.

Guest speaker Nelson Lauver will share his story about how he overcame learning disabilities. He was determined to overcome illiteracy forced upon him by dyslexia. At age 29, Lauver could not read; however, by 32 he was reading weather scripts as a TV broadcaster.

Tickets cost $10 and can be purchased from the following individuals: Robert Devore (NSLD2, room 316; 799-7278); Gabe Gabrielle (HQ, room 2161J; 867-9231); Charlene Killough (Hangar R&D, room 120B; 476-4357); Kurt Leucht (EDL, room 150; 861-7594); Peggy Parrish (Hangar I Annex, room 204; 476-4000); Jennifer Skaja (Visitor Complex, building 409; 449-4364); Ed Tugg (E&O, room 2030D; 476-3650). For more information and other ticket locations, contact Debbie Houston at 861-8930.

Huge quilt commemorating Columbia given to KSC
Kathy Walsh, a Kentucky homemaker, and her family presented KSC with a STS-107 memorial quilt at the Visitor Complex on Oct. 8. For seven months, Walsh worked on this 10-foot by 16-foot creation, comprising fabric decorated by children and adults from all over the U.S.

New KSC technology patent licenses granted

Kennedy Space Center's Technology Transfer Office recently granted patent licenses on four NASA technologies, developed at KSC, for application in several commercial and industrial markets. Two of the license agreements are coupled with Space Act Agreements, which allow the licensees to enhance the technologies for use in their commercial markets and for use by NASA.

This 'spin-in' mechanism is one way KSC partners with industry to leverage NASA's technology assets.

NASA signed a patent license with Toxicological and Environmental Associates, Inc., Baton Rouge, La., for the use and sale of Emulsified Zero-Valent Iron (EZVI). NASA developed the innovative solution with the University of Central Florida, Department of Energy, Department of Defense, Environmental Protection Agency, and GeoSyntec, Inc.

The new technology directly treats contaminant sources in ground water, reduces treatment time and costs, and produces less toxic and more easily degradable by-products. Toxicological and Environmental Associate's first deployment of the solution will be at Port Canaveral, Fla.

The Multi-Sensor Array helps determine the health of a transducer.

Pacific Instruments, Inc., Concord, Calif., obtained a patent license for the commercialization of the Signal Conditioning Amplifier Recorder (SCAmpR). SCAmpR provides signal conditioning, amplifying and recording capabilities in a single circuit board, and can significantly improve reliability, reduce cost and provide more flexibility than pre-existing Ground Measurement Systems (GMS) used during Space Shuttle launches.

SCAmpR exceeds the performance requirements established by the Space Shuttle GMS. A Space Act Agreement for co-development of SCAmpR and KSC's use of a Pacific Instruments-developed Windows-based, client-server software for SCAmpR will support the agreement.

TABER Industries of North Tonawanda, N.Y., received a patent license for the development and commercialization of the Multi-Sensor Array pressure transducer. This technology is composed of an algorithm to determine the health of a transducer.

It lends itself directly to application on a microprocessor with the sensor cluster composed of Micro Electro-Mechanical Systems (MEMS) elements fabricated together on a single chip. The Multi-Sensor Array works with sensor units placed around Space Shuttle launch pads to record physical phenomena.

The technology enables the sensor clusters to uniquely monitor their own health and estimate their own remaining lifetime.

Supporting the alliance is a Space Act Agreement for joint development between KSC and TABER Industries that will result in a new innovative transducer design. The technology will be part of ground support instrumentation systems in government and commercial aerospace programs, reducing operating and maintenance costs while increasing instrumentation reliability.

The Technology Transfer Office also successfully completed the negotiation and signing of a patent license with Armor Holdings Forensics, Jacksonville, Fla., for the manufacture and sale of the KSC-developed Scaling Device and accompanying software.

Engineers at KSC developed the Scaling Device to help technicians assess the damage to the Space Shuttle External Tank following a hailstorm several years ago. The device uses a laser that projects a known pattern into a camera's field of view.

When a photograph is taken, this pattern appears with the image of the object under investigation, allowing the viewer to quantify the size of the object. Accompanying software calibrates the pattern in the photo image and computes the distance scale for the entire image, saving valuable time in establishing and documenting measurements.

Armor Holdings Forensics intends to use the technology in the law enforcement field. Jim Seidel, general manager of Forensics at Armor Holdings said, "We believe crime scene investigators and traffic accident investigators will find this device particularly useful."

Team spreads NASA message in Puerto Rico

NASA has been searching for students who have the right stuff through a series of recruitment workshops at the University of Puerto Rico-Mayaguez on Oct. 1-5.

The NASA Awareness Days were part of an Agency wide approach to addressing the industry need for Science, Technology, Engineering and Mathematics (STEM) skills. This approach, known as the Corporate Recruitment Initiative (CRI), is designed to attract and maintain a work force that is representative of the nation's diversity and includes the competencies that NASA needs in order to deliver sustained levels of high performance that the Agency's challenging mission requires.

CRI targets students who possess the following critcal needs competencies: systems engineering; test engineering; mission assurance; human factors; nuclear engineering; integration engineering; design and development engineering; quality engineering and assurance; business management; and mission execution.

Workshop participants received information on current NASA vacancies and internship opportunities, participated in student/recruiter consultation sessions, and received training on how to search for NASA jobs utilizing the NASA STARS automated resume builder. Eligible participants must be current students or recent graduates of the University of Puerto Rico-Mayaguez, the Universtiy of Puerto Rico-Rio Piedra, the University del Turabo, or the Polytechnic University of Puerto Rico.

The opening session featured a keynote address by Jim Jennings, NASA deputy associate administrator for Institutions and Asset Management. The day's activities included a series of briefings to provide information on NASA's science and technology pipeline, faculty research, and student cooperative, internship, and fellowship opportunities. A campus tour of NASA-related research facilities concluded the day's events.

To submit a resume using NASA's automated staffing and recruitment system, visit: **http://www.nasajobs.nasa.gov**.

Flu vaccinations now available

The influenza season in Florida will be here in the next few months, so be protected from the most likely causes of the flu by being vaccinated. The schedule at the KSC clinics are as follows: Occupational Health Facility (KSC Industrial Area) Mon.-Fri., 7 a.m. to 5 p.m. Launch Area Clinic (LC39 Area, MFF Facility) Mon.-Fri., 7 a.m. to 3:30 p.m. Visitor Complex nurse's station, everyday, 9 a.m. to 7 p.m.

Recycling paper at KSC reduces waste

The key to recycling is collecting large quantities of clean, well-sorted, uncontaminated and dry paper.

Who is responsible for recycling paper at KSC? You are. The most logical recycler of goods is at the point source, and that is you. Kennedy Space Center, in conjunction with East Coast Paper Stock, has provided desktop trays for the purpose of recycling white ledger paper.

This includes white bond, notebook paper, adding machine paper, white computer paper, white copier paper that is not coated (slick), and office newsletters that are not coated (including *Spaceport News*). Items that are printed with colored ink are OK, but colored paper is not.

What do you do with shredded paper? Shredded paper can also be recycled. Start by placing a liner in the shredder bin. When the container is full, take the bag with white shredded paper to a blue recycling barrel/tote located in the hallway or custodian's closet nearest you.

Empty the shredded white paper into the recycling barrel/tote, ensuring that no shredded colored paper or shredded slick paper is mixed with the white shredded paper.

What do you do with phone books? If you want to recycle a KSC phone book, rip the front and back covers off and remove any colored pages. Then you may put the white pages into the blue recycling barrels/totes. No Bell South phone books please.

What do you do with newspapers? Take your newspapers home with you for your local curbside recycling.

Reduce your use of white office paper. Copier paper, like the kind used in photocopiers, computer printers and plain-paper fax machines, is the most common type of office waste paper. The U.S. EPA estimates that paper and paperboard account for almost 40 percent of our garbage. Office paper is highly recyclable, but a lot gets wasted.

Waste reduction is more cost-effective than recycling because it reduces the amount of material that needs to be collected, transported and processed. Waste reduction can save money for business and institutions of any size. Try some of the following suggestions:

• Always try to use both sides of a sheet of paper. If you have duplexing capabilities on you printer, please set this option so your papers automatically print on both sides.

• If your printer does not have duplexing capability, reuse paper that's already printed on one side by manually feeding it into the printers and copiers.

• Paper with print on one side can be reused for drafts, meeting agendas, etc. Once-used paper can also be used in plain paper fax machines since they only need one clean side.

• E-mail can be used to share documents and ideas. Be sure to only print e-mails when you need a hard copy. This also goes for Internet documents as well. Instead of printing a Web page, bookmark it to refer to when needed.

• Practice efficient copying. Use the size-reduction feature offered on many copiers to fit two pages of a book or periodical onto one standard-sized sheet.

These 50-gallon, 64-gallon and 96-gallon containers are located throughout the Spaceport for collecting large quantities of clean, well-sorted, uncontaminated and dry paper.

Paper That Canít Be Recycled: Paper that can't be recycled as normal "mixed paper" includes food contaminated paper, waxed paper, waxed cardboard milk and juice containers, oil-soaked paper, carbon paper, sanitary products or tissues, thermal fax paper, stickers and laminated paper such as fast food wrappers.

Other examples of items that should not be placed into the recycle bins are any papers that are of color such as yellow legal pads, colored bond paper, carbons of any kind, post-it notes including white ones (unless the sticky part has been removed), newspaper, wrappers from snacks, drink containers (plastic and aluminum), coated or "slick" paper from software publications, magazines, diskettes, envelopes, cardboard boxes and binders.

Please take the time to recycle your white paper properly; your commitment is required in this ongoing initiative to preserve and conserve our environment at KSC.

Remember to empty your desktop trays into the blue recycling bins that are located in your building hallway or custodian's closet.

The KSC Recycling program is managed through the Environmental Program Branch (Mail Code: TA-C3). If you have any questions or need a new desktop box, please contact Jim Reed at 867-6584 or Hien Nguyen at 867-8455.

North Brevard residents now have easier drive

Kennedy Space Center employees living in North Brevard got a welcome surprise on the drive home Oct. 3 as State Road 402 was officially reopened in a ribbon-cutting ceremony earlier in the day.

"This was a big team effort," said Brad Missimer, manager of Facility Support Services for Space Gateway Support (SGS). "There's a lot of environmental concerns out here. We took down over 1,700 trees by the roadway. It hadn't been cleared in over 15 years."

The project began two months ago, and SGS and Yang Roads and Grounds removed traffic hazards along six miles of the highway. The stretch had been closed because of the unsafe conditions, and traffic was detoured to S.R. 406 during the improvements. Visit **http://kscroadprojects.ksc.nasa.gov** for more information about ongoing road projects around the Center.

State Road 402 was reopened Oct. 3 with a ribbon cutting ceremony led by Jim Hattaway, KSC associate director (third from left) and employees of Space Gateway Support and Yang Roads and Grounds.

Pad A support building completed

A ribbon-cutting ceremony took place Sept. 30 to open the new Pad A Operations Support Building. The new building provides replacement work areas for personnel performing around the clock support of pad operations.

The 30,000-square-foot facility supports approximately 160 engineering and technical personnel with office, shop, documentation storage and break room areas.

As part of this project, the existing 5,000-square-foot operations building (J8-2109) is presently undergoing renovation for use as a new logistics facility. This building will be used to store flight critical hardware.

The new buildings at Pad A are part of a larger project to replace substandard housing across the Center, including a new Pad B Operations Support Building and logistics facility.

KSC Deputy Director Woodrow Whitlow helped dedicate the facility and talked about the Center's commitment to its employees.

The Pad A Operations Support Building was officially opened with a ribbon cutting ceremony Sept. 30. Particpants in the ribbon cutting (from left) included Krista Shaffer, NASA project manager; David Nash, president of Canaveral Construction; Conrad Nagel, chief Shuttle project officer; Scott Kerr, director of Spaceport Services; Dr. Woodrow Whitlow, KSC deputy director; Andy Allen, United Space Alliance associate program manager for ground operations; and Maurice Amozig.

"One of the things we are committed to at this Center is good jobs for all the employees and good working conditions for the employees, and this is a start to renewing that commitment," said Whitlow. "The twin building at Pad B is about the same size and will house approximately 150 employees.

"The building was completed four months ahead of schedule, often a rarity these days, but the construction company and the architects were able to pull that off, and I would like to express my appreciation for making that happen. Over at Pad B, I'm told that building will be ready for occupancy in three days (Oct. 3)."

Conrad Nagel, chief, Shuttle Project Office, also expressed his gratitude to NASA for the new support building. "I think what this facility represents is that our center director and the Center policy says, particularly over the last few years, that we care about people. I thank you for caring about people. It's just a wonderful opportunity to be standing here today after we were talking about this project four years ago."

United Space Alliance will be the primary organization housed at the facility.

The LC39A and B projects have a value of approximately $8,000,000, and underscore the Center's commitment to safety and health through the elimination of age deteriorated, unsafe and temporary housing.

Architect Jones, Edmunds and Associates of Titusville designed the facility, and Canaveral Construction of Titusville constructed the building.

NASA helps extend reef closure on east coast

With information from the National Oceanic and Atmospheric Administration and NASA, the South Atlantic Fishery Management Council extended a bottom-fishing ban along the rare Oculina Banks deep-sea coral reefs off the east coast of Florida. Specifically, the council voted unanimously to indefinitely continue the existing bottom-fishing ban in the Experimental Oculina Research Reserve, from Sebastian Inlet to Fort Pierce.

Research for the expedition took place onboard the Liberty Star, the Space Shuttle support ship operated by United Space Alliance. Dr. Grant Gilmore of Dynamac and KSC engineers Mike Lane and Steve Van Meter operated the Passive Acoustic Monitoring System (PAMS) for the study, a device developed by NASA to monitor the impact of launches on wildlife refuge lagoons at KSC.

The previous 10-year ban was to end June 27, 2004. All but hook-and-line are also banned from the Oculina Habitat Area of Particular Concern, which extends another 30 miles north to Cape Canaveral.

Business opportunities at Expo 2003

The annual Business Opportunities Expo 2003 will be held Tuesday, Oct. 21 from 9 a.m. until 3 p.m. at Cruise Terminal No. 4, Port Canaveral. This event is sponsored by the 45th Space Wing, the Canaveral Port Authority, and the Small and Small Disadvantaged Business Council.

Exhibitors will include vendors from a variety of product and service areas including computer technology, communication equipment and services, construction, and safety products.

Bus service will be available hourly from four locations from 8:30 a.m. to 3 p.m. One bus will begin at the HQ Building, stop at the SSPF, and also pick up at the E&L Bldg. at CCAFS.

A second bus will leave the east side of the OSB and proceed directly to the port.

For more information, visit **http://expo2003.ksc.nasa.gov** or contact Ember Smith or Gloria Marsh in the Central Industry Assistance Office at 867-7353.

John F. Kennedy Space Center

Spaceport News

Spaceport News is an official publication of the Kennedy Space Center and is published on alternate Fridays by External Relations and Business Development in the interest of KSC civil service and contractor employees.

Contributions are welcome and should be submitted two weeks before publication to the Media Services Branch, XA-E1. E-mail submissions can be sent to Jeffery.Stuckey-1@ksc.nasa.gov

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Editorial support provided by InDyne, Inc. Writers Group.
NASA at KSC is located on the Internet at *http://www.ksc.nasa.gov*

USGPO: 733-133/600042