



# 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

## Atlantis takes brief VAB vacation



ATLANTIS, minus its nose cap and forward reaction control system, exits the Orbiter Processing Facility en route to the Vehicle Assembly Building.

### Temporary move needed for OPF maintenance work

The Space Shuttle orbiter Atlantis was moved from the Orbiter Processing Facility (OPF) to the Vehicle Assembly Building (VAB) Dec. 5.

The move to the VAB will allow work to be performed in the OPF that can only be accomplished while the bay is empty. Work scheduled in the processing facility includes annual validation of the OPF cranes, work platforms, lifting mechanisms and jack stands.

Atlantis was last launched for STS-112, which launched Oct. 7, 2002, with the International Space Station's S1 truss structure.

Atlantis will remain in the VAB for approximately 10 days, then return to the OPF as work resumes to prepare it for launch in September 2004.

### Inside

Page 3 - FEW get the Christmas spirit early

Page 5 - Delta IV Heavy to make historic first launch



Page 8 - Lighthouse restored to original 1894 specifications

## KSC a perfect fit for deputy director

A recent poll of government workers revealed that NASA is one of the best places to work in America. You won't get an argument about that opinion from Dr. Woodrow Whitlow, KSC deputy director since September.

"In all of the jobs I've had at NASA, the thing I like most is the opportunity to work with some of the smartest people in the world," said Whitlow, who has spent 24 years with the Agency. "I had always wanted to work at NASA as an astronaut and this is the closest I can get."

(See WHITLOW, Page 5)



DR. WOODROW WHITLOW (center), KSC deputy director, and Conrad Nagel (left), chief of the Shuttle Project Office, listen to a KSC employee.



**Jim Kennedy**  
Center Director

# The Kennedy Update

Season's greetings everyone! While we have important work to accomplish, I hope everyone takes advantage of the Holiday Season to spend quality time with family and friends. I fully understand NASA is in the middle of one of its most critical times in Agency history.

A great deal of hard work related to the Columbia accident and return to flight was accomplished this year, and there is still a great deal of work ahead to return our Space Shuttle fleet safely to flight.

But nothing is more important than family, and any time we spend with them is time well spent. If you have children, you

know how fast they grow up.

Don't miss this opportunity to spend some extra special time with them, your spouse and close friends. Trust me, they'll remember that as a gift that keeps on giving.

I was very pleased to see in the latest Office of Personnel Management survey that NASA-KSC was listed as one of the top two government center locations for "work-life" balance.

It shows our priorities are in the right place, and I want to congratulate everyone for that. If there was ever a contest I want us all to win every year, it's the "balancing the demands of work with the joys of life" contest.

Remember, when people are in their twilight years, nobody ever looks back on life and says, "I wish I had spent more time at work and less time with my family."

I know many of our people, whether NASA or contractor, are veterans and currently serve in the military Reserves. Some have even been called to duty in the Middle East this year.

Please keep all of these brave men and women in your prayers, not only through the holiday season, but every day! They protect the very freedoms we all

big trip or taking local day trips, please enjoy and BE SAFE, but don't overdo it. The last thing we all want is to come back to work in January to the news of a preventable tragedy involving one of our KSC family members.

You know drinking and driving is forbidden, so don't even think about doing it. Remember, tragedy never takes a holiday - your common sense can't afford to either.

Get a friend to drive when it's time to have fun and let loose. Your family and loved ones will appreciate having you home,

Nobody ever looks back on life and says, "I wish I had spent more time at work and less time with my family."

enjoy.

I'm proud to serve with people who love our great nation so much they are willing to serve America at KSC and in the military. God bless our KSC Reservists and all of our service members fighting the war against terrorism!

Finally, if you are planning a

safe and sound, for many years to come.

As we close out 2003, and on behalf of Dr. Woodrow Whitlow, Jim Hattaway and my wife Bernie, I'd like to wish everyone the joyous of holiday seasons and a prosperous 2004! God Bless you all!

## Brevard sixth graders invade KSC



BREVARD SPACE WEEK gave more than 5,500 Brevard County sixth-graders the opportunity to tour the Kennedy Space Center. All students were given a family pass for a future visit. The Brevard Space Club, NASA and other contractors helped sponsor the event. These students learn about space in the Apollo/Saturn V Center.



# FEW get the Christmas spirit early

The Space Coast Chapter of Federally Employed Women (FEW) began filling stockings for the Salvation Army Christmas Kids in 1999. The first year, between 35-50 stockings were filled by chapter members.

Many of the group's co-workers became interested in the project and volunteered their help. So each year, FEW solicits support for filling the stockings from other KSC employees.

Collection points were set up throughout the Center. KSC employees who helped out this year included Tara Gillam, Jane Eitel, Michelle Burch, Barbara Powell, Karen Jansma, Vickie Hall, Dawn Partlow, Patricia Christian, Traci Just, Cassie Spears, Andrea Dempsey, Becky Fasulo, Valarie Franklin, Laurel Lichtenberger, Ely Miller, Gina O'Shaughnessy, Arden Belt and others.

Stockings were filled for either a boy or girl and were for specific age groups.

This year, FEW will be delivering 400 stockings, plus many shoe boxes filled with goodies and other gift items to



THE SPACE COAST CHAPTER of Federally Employed Women (FEW) filled stockings for the Salvation Army Christmas Kid program. This group, including (from left) Renee Sawyer, Patti Lacanne, Cherry Lozanda, Melinda Smith, Dana St. Jean, Cris Dundys and Lisa Smith, helped fill the stockings.

the Salvation Army. The ISS/Payload Processing directorate, under the guidance of Dana St. Jean, has exceeded the expecta-

tions of FEW, filling 100 stockings and coming up with the idea of filling shoe boxes when no more stockings were available.

A special 'Thank You' goes out to all the KSC individuals that shared in the holiday spirit for this program.

## Barnette's standout attitude has opened many doors during her 24-year career

She may have abandoned a center director, but this civil servant standout strengthened the Agency in the meantime, earning her recognition as a NASA-Kennedy Space Center 2003 Employee of the Year.

This acknowledgment is only a launch pad for further success. "I will continue to strive to display my 'can do' attitude," explained Safety, Health & Independent Assessment (SH&IA) Administrative Officer Lynn Barnette. "You'd be amazed how much easier it is to get your job done. I will always be available to assist anyone in my directorate who asks for help."

Assuring cohesiveness within SH&IA, Barnette's duties include improving the organization, cultivating strategies, monitoring efficient resource use and representing the directorate, staff and the SH&IA director. When she's not selflessly serving NASA, she enjoys the beach, time with her two chihuahuas, shopping and bowling, and she anticipates volunteering following her retirement.

"I am a team player," said Barnette. "My attitude afforded me many opportunities. I enjoy working with people and doing the best job I possibly can."

Being recognized for hard work is special in itself, but she felt this award was unique. "My peers voted, so I was very touched," said

Barnette, mother of Alexandria, 19.

After 24 years with NASA, Barnette's accumulated many memorable, even hilariously infamous, experiences.

"I've had a great career with NASA here at KSC, and some of my former bosses have helped make it great. I've worked for our previous Center Director Bob Crippen. Back in September 1993, I left him and his wife, Pandora, in Las Vegas with no way to get to Houston.

"He was traveling to Las Vegas to attend a conference, then to Johnson Space Center for a meeting," she said. "Crip and Pandora were traveling at the end of one fiscal year and returning the beginning of the next fiscal year. So, the Travel Office had to process two different sets of travel orders. I picked up only one set and that's what I sent him out the door with."



Lynn Barnette

# NASA names crew for new Shuttle mission

Four NASA astronauts have been chosen to fly on the newly created Space Shuttle mission, STS-121. It is the mission following the Space Shuttle's return to flight.

Veteran astronaut Steven W. Lindsey (Col., USAF) is the commander of STS-121. Mark E. Kelly (Cmdr., USN) is the pilot; Carlos I. Noriega (Lt. Col., USMC, Ret.) and Michael E. Fossum are the mission specialists.

Other crewmembers will be named later.

STS-121 was added to the flight schedule to help accommodate the growing list of requirements originally assigned to the return-to-flight mission.

The crew will resupply the International Space Station with equipment and consumables.

The crew recently began their premission training together at Johnson Space Center. Initial activities focus on general procedural training on Shuttle and Station systems, preliminary spacewalk development and robotics training.

Lindsey is a three-time Shuttle astronaut, including commanding the STS-104 mission in 2001.

Kelly has flown in space once, and Noriega twice. Fossum is making his first trip.

For crew biographies visit: <http://www.jsc.nasa.gov/Bios>.



STS-121 Commander Steven W. Lindsey



STS-121 Pilot Mark E. Kelly



STS-121 Mission Specialist Michael E. Fossum



STS-121 Mission Specialist Carlos I. Noriega

# No space too small for Shuttle employees



IN THE ORBITER PROCESSING FACILITY, United Space Alliance technician Jamie Haynes (left) does a gap test on the tiles of the nose of orbiter Atlantis as part of return-to-flight activities. Atlantis is scheduled for mission STS-114, a return-to-flight test mission to the International Space Station. At right, workers raise the liquid oxygen feedline for the 17-inch disconnect toward orbiter Discovery for installation. The 17-inch liquid oxygen and liquid hydrogen disconnects provide the propellant feed interface from the external tank to the orbiter main propulsion system and the three Shuttle main engines.



# Delta IV Heavy to make historic first launch

The Delta IV Heavy vehicle recently achieved a significant milestone in the Horizontal Integration Facility (HIF) at Cape Canaveral Air Force Station. Boeing Delta Launch Team engineers and technicians mated the 5-meter diameter second stage with the center Common Booster Core (CBC) using a computerized laser alignment system uniquely developed for this process.

On Dec. 9, the vehicle was moved from the HIF to Launch Complex 37. The launch vehicle will be carrying a demonstration payload (an Air Force instrumented satellite), configured to identify ascent environments and their effect on the vehicle's payload.

Each of the Delta IV Heavy's three parallel CBC's measure 150 feet in length, 16 feet, seven inches in diameter and weigh 54,000 pounds when un-fueled.

"Boeing is quite proud of this vehicle, and we believe the Delta IV Heavy has a bright future in the Orbital Space Plane program," said Dan Collins, vice president of Delta programs for Boeing.

Each CBC has an RS-68 engine, a liquid oxygen/liquid hydrogen main engine, which produces 650,000 lbs. of thrust. The engine, weighing 14,761 lbs., is mounted on each CBC first stage.

"The significance of this mission is that it will be our first opportunity for a bird's eye view of the Delta IV launch site processing activities, enabling the launch services program to gain valuable experience which can be directly applied toward the upcoming GOES mission," said Tammy Herrington, NASA mission integration manager.

At press time, the vehicle is scheduled to launch July 2004.



LAUNCH TEAM ENGINEERS and technicians working on the Delta IV Heavy launch vehicle mated the 5-meter diameter second stage (above) with the center Common Booster Core (CBC) using a computerized laser alignment system uniquely developed for this process. Below, the Delta IV Heavy measures 235-feet tall when fully stacked with the payload.



The hardest part of being a deputy director is managing the time to get everything done. Days are consumed very easily, plus there are travel schedules to juggle.

But once his responsibilities are taken care of, Whitlow enjoys winding down with a good exercise program, including running and lifting weights.

"When you're working out, it's hard to worry about everything else that is going on around you," said Whitlow, who considers Ingster, Michigan, as home. "I also like to play sports.

I played baseball in college (at the Massachusetts Institute of Technology) and on softball teams. While I was at Glenn and Langley, I participated in softball and basketball."

Whitlow also sees a huge commitment of the entire work force to the space program. "The work force and community are into supporting the space program, and everybody knows where they fit," he said. "No matter where you are in this organization, everybody knows what the mission is and are committed to it."

## WHITLOW . . . (Continued from Page 1)

Dr. Whitlow joined KSC after serving as director of research and technology at the Glenn Research Center, where he led a team of more than 470 researchers in disciplines that included high-temperature materials, aerospace power and more. He began his professional career in 1979 as a research scientist at the Langley Research Center and achieved the rank of senior research scientist.

At KSC, Whitlow sees a different perspective. "It's nice to be able to see the hardware, the vehicle, the rockets and more," he said. "In this business you have a chance to be involved in doing things that no one has done before. And it's more than just at Kennedy Space Center, but all over the Agency. It's just fun."

Since he started down the career path that led to his current position, Whitlow had always thought of KSC as an operations center. That opinion has changed now that he has seen the technology developed here.

"Over in the Space Station Processing Facility, there are

details that have to be thought about, such as cleaning an element so that when it's in space there won't be debris flying around," said Whitlow. "Another interesting aspect of KSC is the launch services we provide and the fact of how early on we have to get involved in providing a vehicle for a payload, such as the Jovian Icy Moons orbiter scheduled to launch in 2012."

Having been involved in conducting research for areas such as aeroelastic capabilities and composite structural concepts, Whitlow made the switch to a job in administration after participating in the NASA Professional Development Program (PDP). His supervisor, Charlie Blankenship, told Whitlow that when he entered the program, he would be getting out of research.

"That was a big turning point in my career," said Whitlow. "That program, now called the Leadership Development Program, is one I highly recommend to anybody. Two of my PDP classmates work here and we're going to have lunch together after the holidays."

# Dr. Freeman brings universities and KSC together

As a NASA-KSC University Programs Office member, Dr. Michael Freeman serves as a Spaceport Technology Research Liaison, and will continue doing so through 2004. Hired in May 2002, Freeman works under the Intergovernmental Personnel Act (IPA) funded by the Education Programs and University Research Division.

"As KSC moves from operations toward more spaceport technology design, testing and applied research activity, university relationships become more important," said Pamela Biegert, KSC's education director. "Having faculty or graduate student researchers on-site brings fresh ideas to KSC personnel, and, in return, provides great hands-on knowledge faculty can take back to the college campus.

"Mike has been instrumental in communicating with the national university community to let them know what technology areas KSC has a primary interest in and how to get involved with KSC."



DR. MICHAEL FREEMAN, Spaceport Technology Research liaison, helps partner universities and KSC in research endeavors.

The tenured University of Alabama faculty member functions in several leadership positions. Freeman is the director of NASA's Opportunities for Visionary Academics, which enhances scientific and mathematics literacy of future K-12 teachers.

Since 1983, he served as Marshall Space Flight Center's NASA Faculty Fellowship Program co-director. Under his guidance, program involvement doubled.

Freeman is continuously

recognized for his teaching excellence and NASA contributions. Specifically, his dedication helped the Center gain distinction as a university and space grant leader.

His representation at regional Space Grant meetings has triggered several technical partnerships. For example, a West Virginia Space Grant funded faculty to perform spaceport technology-related work at KSC for a summer. A Nebraska Space Grant financed graduate student work for a year

of Center technology projects.

Freeman prompted support of several education developments including mentoring programs, and generated several proposal matches between faculty researchers and KSC technical personnel.

KSC's research connections with minority universities are strengthened through Freeman's initiatives. He paired up a researcher at Alabama A&M University, a historically black college, with a KSC spaceport technology researcher in the area of acoustics and vibrations.

He's collaborating with the February 2004 KSC minority university conference to engage researchers in KSC's spaceport technology needs.

"Mike not only brought in more funding to KSC, but he also strengthened the University Programs Office personnel knowledge about how universities operate and what faculty are looking for," said Gregg Buckingham, KSC's university affairs officer. "The partnership with Mike has been a great boost to our office."

## December Employees of the Month



STANDING IN THE BACK ROW, from left, are Lee Lerner, Information Technology and Communications Services; Juan Riquelme, Cape Canaveral Spaceport Management Office; Brian Rutkowski, Spaceport Engineering and Technology; Hector Borrero, ISS/Payload Processing; and Troy Heron, Shuttle Processing. Standing in the front row, from left, are Michelle Edelman, Chief Financial Office; JoAnn Brophy, Spaceport Services; Sue Gross, Executive Staff; and Karen Crook, ELV and Payload Carriers Programs.

## Help meet tomorrow's space challenges - Space Congress paper deadline approaching

The 41th Space Congress, sponsored by the Canaveral Council of Technical Societies, will be held in Cape Canaveral on April 27-30, 2004. This event gathers a significant portion of the aerospace community to discuss the status and future of space activities.

The theme for this year's Congress is "Determination: Meeting Today's Challenges, Enabling Tomorrow's Vision."

Panel sessions and paper presentations will address how the combined efforts of the scientific, commercial, military and educational communities contributed in the past, and will in the future, to the growth of knowledge of space.

Those interested are encouraged to e-mail abstracts, and indicate on the top of each, which technical paper session best applies.

1A - Technologies for Future Spaceports and Ranges

1B - Technology Solutions Delivered to Operational Space

Programs

1C - Commercial Use of Spaceport Technologies

2A - Spaceport Materials

2B - Hydrogen Research and Technology Applications

2C - University Research for Future Spaceport Applications

Individuals interested in submitting papers and presentations on the listed subjects must submit a 200-word abstract by Jan. 16, 2004, to: Felix A. Soto Toro, Ph.D., technical papers chairman (e-mail: SpaceConTechPapers@kscems.ksc.nasa.gov).

# Parrish's chemical earns Mother Nature's nod

Fire usually doesn't come to mind when thinking of preserving the ozone layer and preventing global warming.

However, at Kennedy Space Center those objectives were ever-present in the development of a new fire suppression agent.

KSC has filed a patent application for the dry powder substance that combines the best properties of water and Halon fire extinguishing agents.

The agent is made of microencapsulated water, which means it's not evaporated into the atmosphere.

This makes it a more powerful suppressant that's also appropriate for the environment.

"This is providing a replacement for Halons currently being used, but are banned from being manufactured because they are harmful to the environment," said the technology's visionary, Dr. Clyde Parrish, NASA senior chemist at KSC.

"This is a new class of fire extinguishing agents that can compete effectively against other hand-held systems."

Companies have expressed

interest in the development, which can be used indoors and outdoors, and could license the technology and manufacture the agent, while KSC would earn royalties.

NASA then has the option to purchase the commercial product for use.

Parrish explained its potential. "Locally, it can be used in firing rooms for electrical equipment and on board the Shuttle."

While the suppressants, in place at numerous Center locations, are dated, it takes time to research and resolve issues, and develop a better option.

Knowing the need for a new agent, Parrish envisioned the concept, and personally decided to begin development.

After two years, working primarily with three lab associates, he realized the goal of creating the non-toxic fire suppression agent.

"It's always good to see your ideas develop and have some value," said Parrish. "I think this has a lot of interesting potential."



## Latest space flight advances will be discussed at conference

The Payload Safety and Mission Success Conference on April 19-22 at the Radisson at the Port will discuss the latest developments and opportunities associated with the successful acquisition of science in low-Earth orbit. The target audience will be space flight personnel, ISS/Shuttle payload developers and customers in the international human spaceflight community.

For information, visit <http://jsc-web-pub.jsc.nasa.gov/psrp/>. If you have any questions, contact John Dollberg, 867-5926 or Maxine Daniels, 867-5976.

# Processing facility opens its doors to media

## Fifth anniversary of ISS recognized

Members of the media were invited to commemorate the fifth anniversary of the launch of the International Space Station by touring the Space Station Processing Facility.

NASA and contractor personnel provided media an overview of Space Station processing, including (from left) David Bethay, Boeing/ISS Florida Operations; Charlie Precourt, deputy manager of the International Space Station Program; and Tip Talone, director of Space Station and Payload Processing at KSC.

Reporters also viewed ISS components being processed for deployment once the Space Shuttles return to flight.



# Lighthouse restored to original 1894 specifications

Restoration work has begun at one of the oldest historical landmarks on Cape Canaveral Air Force Station - the Cape Canaveral Lighthouse. Originally run by the U.S. Lighthouse Service and then the U.S. Coast Guard, the lighthouse became property of the U.S. Air Force in December 2000.

Work was recently completed on the restoration of a small facility used as part of the lighthouse operation over a hundred years ago. The oil house, located adjacent to the present main entrance of the lighthouse, was constructed in 1894, the same year the lighthouse was reconstructed on its current site.

The original and now-restored oil house is 16 feet in length, 12 feet in width and 18 feet in height. Within it on numerous shelves were the many containers of kerosene used to keep the flame of the lantern lit that burned within the center of the Fresnel lens.

The fuel was carried in five gallon buckets by the lighthouse keeper up the 167 steps to the lantern room, where it was used to keep the wick of the lamp burning. It was brought to Cape Canaveral by boat every six months and stored in the oil house.

Later, about 1930 upon electrification of the lighthouse, two large fuel tanks were placed in the oil house to power a pair

of generators installed in the lighthouse basement. Also, possibly about this time, a single window was cut into the east wall of the oil house which had no windows at all when designed.

The generators and the tanks were later removed when commercial power arrived at the lighthouse in the early 1950s. The roof blew completely off the oil house during a storm in the early 1970s after the oil house had been abandoned.

When the money was appropriated to restore the oil house, it was mandated that it be done as an authentic historical restoration, meaning that it would be restored to the specifications at the time it was built in 1894. When the Air Force took custody of the Cape Canaveral Lighthouse, the U.S. Coast Guard turned over copies of the original architectural plans, including the the keeper's dwellings and the oil house.

The oil house restoration was done by Nelco, a Tampa company, and took three months to complete.

It is hoped that sufficient money can soon be found to paint the lighthouse. However, some rust has been observed between the exterior cast iron metal plates and the interior brick. This will need to be addressed before painting can begin.

The Cape Canaveral Lighthouse is still a working aid to



BUILT IN 1894, the Cape Canaveral Lighthouse is the Spaceport's oldest historic landmark. Work was recently completed on the restoration of a small facility used as part of the lighthouse operation over a hundred years ago.

navigation. While the Air Force owns and maintains the lighthouse structure, the U.S. Coast Guard still maintains its modern optic.

The restored oil house and the original living quarters contained within the first three

levels of the lighthouse are open to badged employees on Tuesday, Wednesday and Thursday from 10 a.m. - 2 p.m. Information about the lighthouse may be found online at <http://www.capecanaverallighthousefoundation.com>

## Civil service employees invited to attend Holiday Celebration

The Holiday Celebration for all KSC civil service personnel will take place Dec. 16 from 11:30 a.m. to 3 p.m. at KARS 1. Featuring entertainment, door prizes and a catered dinner, the celebration is sponsored by the Change Leaders Network with assistance from the Combined Federal Campaign committee and funding from the NASA Exchange.



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](mailto:Jeffery.Stuckey-1@ksc.nasa.gov)

Managing editor. . . . . Bruce Buckingham  
Editor. . . . . Jeff Stuckey

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

USGPO: 733-133/600046