



# Spaceport News

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John F. Kennedy Space Center

## KSC instituting Freedom to Manage

Managers are laying the groundwork to make positive changes in the way we do business at Kennedy Space Center.

Employees are being asked to assist in the process, which will benefit themselves, the Center, NASA and the country.

Under the direction of NASA Administrator Sean O'Keefe, KSC is participating in the Agency's "Freedom to Manage" initiative, which is a directive from President George W. Bush to all government agencies.

"The President's Management Agenda very clearly states that a principal goal of this Administration is to remove barriers to more efficient management with the expectations of improved accountability and performance," O'Keefe stated in a letter to managers.

O'Keefe has created a Freedom to Manage (F2M) task force to identify and stimulate needed changes to allow for more effective management.

Some of those changes will

*"No doubt that all of you know of some impediments to improving the way you do your job. This initiative is a great opportunity for you to facilitate change and improve the way we do business. I am asking that all KSC team members support the F2M (Freedom to Manage) initiative and encourage you to submit your ideas on removing barriers and improving performance."*

**ROY BRIDGES JR.**  
KENNEDY SPACE CENTER DIRECTOR



require changes in legislation or administrative rules. Others can be instituted by changes within the agency.

NASA has already implemented changes that range from the elimination of restrictions on travel to the delegation of significant human resource authorities to the lowest possible levels at the Centers.

To learn more about changes being considered, visit the Web site [f2m.nasa.gov](http://f2m.nasa.gov).

KSC representatives on the Agency F2M Team include Jim Jennings, deputy director, and Rick

Arbuthnot, director of the Workforce and Diversity Management Office.

KSC employees can contribute to the process by offering F2M reform suggestions when they note significant management impediments in their own areas. They are encouraged to send questions or suggestions to the e-mail address [F2M@kscems.ksc.nasa.gov](mailto:F2M@kscems.ksc.nasa.gov).

Employees may also submit suggestions using the existing Opportunity for Improvement (OFI) System, selecting the "F2M" OFI Category as the identifier.

"This is a focused, results-

oriented program, so we believe employees are going to be seeing many positive changes," Arbuthnot said.

Center Director Roy Bridges Jr. supports the initiative.

"No doubt that all of you know of some impediments to improving the way you do your job," he said. "This initiative is a great opportunity for you to facilitate change and improve the way we do business. I am asking that all KSC team members support the F2M initiative and encourage you to submit your ideas on removing barriers and improving performance."

### Inside

**Page 2** – "Recognizing Our People" honors employees.

**Pages 3** – Convoy command vehicle commissioned.

**Page 4** – Take Our Children to Work Day draws many.



**Page 7** – International sound and vibration congress participants visit KSC.

## Shuttle launch dates under review

NASA Shuttle managers continue to investigate the small cracks found last month in the flow liners of all four of the orbiter vehicles.

According to Ron Dittmore, NASA Shuttle Program manager at JSC, all four vehicles have small cracks in at least one liquid hydrogen flow liner.

Flow liners are internal metal "collars" that smooth the flow of the cryogenic propellants through the Space Shuttle's main propulsion system.

Three cracks were found in each orbiter: Atlantis, Discovery and Columbia. Two cracks were found in Endeavour. The cracks vary in size from about 1- to 3-tenths of an

inch in length.

With safety the number one concern, the decision was made to delay all Shuttle launches until the cause of the cracks can be determined and a course of action is decided upon.

The two likely remedies, Dittmore said during a news conference July 19, are to develop a rationale that says we can fly safely with assurance the cracks will not worsen or present additional risk, or we will have to repair them in place. Teams have been assigned to develop techniques to repair the cracks.

(See **LINERS**, Page 3)



Gerry Kathka (right), with United Space Alliance, hands part of a fiber-optic camera system to Scott Minnick, who wears a special viewing apparatus for inspecting Endeavour's flow liner.

# Recognizing Our People

## Chris Fairey retires after 33-year career with NASA

J. Chris Fairey, director of Spaceport Services at Kennedy Space Center, will be retiring August 3 after 33 years of government service.

His wide-ranging career in Manned Space flight (Apollo, Apollo/Soyuz, Space Shuttle, International Space Station), Expendable Launch Vehicle and institutional programs helped prepare him to become head of a directorate that encompasses Information Technology Systems, Facilities, Facility Services, Occupational Health, Medical Operations, Environmental Programs, Institutional Safety and Quality, Protective Services, Center Services, NASA Aircraft Operations, Export Control, the Worker's Compensation Program, the Individuals with Disabilities Program, Comprehensive Master Planning and Astronaut Crew Quarters.

The directorate was formed from functions from 13 organizations as part of the KSC 2000 reorganization.

"It's a lot like being a city manager and mayor of a town of 17,000," Fairey said. "One of our directorate's many functions is to keep the institution support running smoothly so all the programs and projects can complete their missions safely and successfully."

Prior to his current position, which he assumed in May 2000, Fairey was assigned as the director of Safety and Mission Assurance in February 1999. He was responsible for planning, managing, directing and implementing safety, reliability, maintainability and quality assurance for the Shuttle, ISS, ELV and institutional programs.

In 1998, he was appointed director of Process Integration for Shuttle Processing.

He concurrently served in 1997 as the co-chair of the Joint Base Operations and Support contract (JBOSC) Source Evaluation Board and



KSC Director Roy Bridges Jr. (left) presents Chris Fairey with his retirement certificate.

acting director of the Joint Performance Management Office with KSC and the 45th Space Wing.

Fairey was presented with the Exceptional Service Medal and the Vice President's NPR Hammer Award in 1999 for his leadership of the Joint NASA/Air Force Acquisition Team.

"Much of the success of JBOSC is due to Chris Fairey's pioneering efforts. It's one of his greatest legacies to the program," said Mike Sumner, chief of operations for Spaceport Services.

Sumner said of Fairey's leadership style: "People like working in this directorate because he runs it with integrity, fairness and openness. He listens to people and incorporates their suggestions into his decisions."

Fairey graduated in 1969 from Georgia Southern College with bachelor degrees in physics and mathematics. He joined NASA/KSC in 1969 and served as the lead station engineer and test conductor for the Facilities and Environmental Measurement Station in support of the Apollo, Skylab and the Apollo/Soyuz Test programs.

In 1980, Fairey served as operations section chief for the Launch Processing System Check-out, Control and Monitor Systems for Shuttle. In 1984, he was assigned as the technical assistant to the Guidance and Digital Systems Division of Shuttle Engineering and served concurrently as the project manager for the Kennedy Avionics Test Set development.

In 1985, he was appointed as the Flight Element Project Engineer Office chief and concurrently served as the Shuttle project engineer for fifteen Shuttle missions. In 1991, he was assigned as the Shuttle Discovery Flow Director (OV-103) for four Shuttle missions. In 1993, he was appointed as the deputy director for Shuttle Ground Engineering.

In 1995, he was appointed as the director of Quality Assurance for Space Shuttle, ISS and ELV programs at KSC.

Fairey received the Silver Snoopy Award in 1979 for his support to the Apollo program. In 1983, he received the Exceptional Service Medal for his support to the planning, development, and implementation of the Launch Processing System for the Shuttle Program.

He was presented the Exceptional Engineering Achievement Medal for Outstanding Engineering and Managerial Leadership in 1989, and also the National Space Club Eagle Manned Mission Success Award for contribution to STS Return to Flight.

"I've been blessed to have had the opportunity to work 33 years for NASA. It's been a wonderful experience," Fairey said.

Fairey and his wife, Glenda, reside in Titusville and have two sons, Chad and Craig.

"I'm looking forward to traveling and spending more time with my family, including my one-year-old granddaughter," Fairey said.



## July Employees of the Month

July Employees of the Month are (from left) Jaime Palou, Spaceport Engineering and Technology; David Board, ISS/Payloads Processing; Linda Adams, Safety, Health and Independent Assessment; and Margaret Hinds, Spaceport Services. Not shown are Dicksy Hansen, Workforce and Diversity Management; Mike Wheeler, Procurement Office; Marcia Groh-Hammond, Shuttle Processing; and Ralph Mikulas, ELV and Payload Carriers Programs.

# Federally Employed Women honor Fairey, others

The Space Coast Chapter of Federally Employed Women (FEW) recently held their annual Awards and Installation Banquet.

Spaceport Services Director Chris Fairey received the Distinguished Service Award, the chapter's most prestigious honor given to someone outside of the organization. Fairey was honored

for his policies, actions and leadership within the Spaceport Services Directorate and his continued support to FEW.

The chapter's Member of the Year Award was presented to both Jane Eitel of NASA and Carolyn Burnham of United Space Alliance.

This award is presented to a member of the chapter for having

served as a chapter officer, committee chair or team leader, for being active in all levels of the organization, and for taking time in her personal life or in outside activities to help other women develop their potential.

Also, recognized by their peers for support above and beyond, were Clara Anderson and Jean

Grenville, both NASA-retired. These individuals were honored for their continuing leadership given to the National Training Program 2002 Committee.

NASA's Karin Biega was honored with the President's Award, given to a person for support to the president and for chapter dedication over the year.

# NASA receives new convoy command vehicle

United Space Alliance Chief Operating Officer Mike McCulley hosted a commissioning ceremony June 27 to hand over a new, state-of-the-art convoy command vehicle to Kennedy Space Center Director Roy Bridges Jr.

The event was held at the Landing Operations Facility.

"The new convoy command vehicle will offer great new capabilities to the convoy team," Bridges said. "This addition is part of an ongoing commitment to the stewardship of the Space Shuttle program."

The new 40-foot vehicle is replacing a 15-year old model, and will be used as the prime command and control vehicle during Shuttle post-landing operations.

Those operations typically include egress of the astronauts, safing of orbiter systems, retrieval of time-critical experiments and preparations necessary to tow the orbiter to the processing facility.



Kennedy Space Center Director Roy Bridges Jr. addresses those who attended the commissioning ceremony for the new convoy command vehicle, which was built to replace the original 15-year-old model.

Many upgrades and high-tech features were incorporated into the design and development of this vehicle, making it more reliable and efficient for the convoy team, said Tony Shibly, United Space Alliance project manager.

"This vehicle also offers greater comfort," Shibly said. "The Landing Team were previously

working for six to 10 hours in a cramped modified motor home with an air conditioning system that wasn't working very well. This is a major improvement."

Seating capacity was increased from four to twelve consoles in the new command vehicle, and a video camera, video recorders and television monitors were added to

provide the convoy command team with the maximum amount of visual information.

"Before, the team had to rely on their eyes to monitor events happening 200 yards away. With the video camera, which is maneuverable, they can get a much closer view," Shibly said. "The video can be recorded and used for training purposes as well."

A weather system providing wind speed, direction and temperature was also installed.

The communication equipment is compatible with planned upgrades to KSC's communications infrastructure, and the vehicle includes dual generators to ensure that all critical communication systems stay operational.

Lynch Diversified Vehicles of Burlington, Wis., which manufactured the vehicle, also built "The Brute," KSC's Mobile Command Center, which is used for emergency preparedness.

## LINERS ...

(Continued from Page 1)

### S-1 truss

NASA's Gennaro Caliendo and Boeing's Mike Smith, along with the Boeing S-1 truss team, pose in front of the truss during a handing over ceremony June 27. The Boeing team delivered the truss to NASA for STS-112 pre-launch preparations. The truss will act as part of the Station's backbone and will carry power, data and environmental services throughout the orbital outpost.



The cracks were initially detected through visual inspections. Later, eddy current and ultrasound tests were used to locate others.

"I believe it's less of a safety issue now than it was when we originally started," Dittmore said. "I still have a lack of understanding that prevents me from flying – and until I have a better understanding, we will not fly."

At any rate, Dittmore said, we will not expect to see a Shuttle launch before Sept. 26.

"We believe we will come to a resolution for this problem very soon."

# Take Our Children



Above, children check out an airboat used to patrol KSC waterways. At left, a child checks out the view from a tank.



Emergency vehicles parked in the Kennedy Space Center parking lot were a big draw during Take Our Children to Work Day.

“Inspire Your Children” was the theme that set the tone at Kennedy Space Center on July 11.

Our country’s future pioneers had the chance to explore KSC at the 10th annual Take Our Children to Work Day.

The inspiration began in the IMAX Theater where Center Director Roy Bridges encouraged the children to work hard to make their dreams come true. “Then your life will be like playing everyday,” he said.

The event continued with Kelvin Manning, NASA’s Lead Vehicle manager for the Shuttle Atlantis, who reminded the audience that the answer to the question “What time is it?” is always “Time to learn.”

Eleven year-old Brian Gawronski was especially inspired by Manning’s presentation.

“I want to be an engineer just like him,” he said without hesitation. “And I hope to work at KSC.”

Both of Brian’s parents work for NASA. His mother Anne said that both Brian and his 10-year-old sister Lisa begged her to bring them to KSC

again after coming to work with her last year.

The children had their time to learn at the science demonstration given by Damon Talley, an education specialist from Berea College and Cookman College.

Talley had eager audience helpers demonstrate the conditions of space, the difficulty of working in space and the effect that occurs in space.

The children also got to simulate “the ride of a lifetime” with the help of astronaut Jim Halsell.

Besides demonstrating what it’s like to blast off, Halsell answered children’s questions ranging from “How do you eat food in space?” to “Do you miss your family when you’re up in space?”

“I liked it when he showed us how the boosters and main engines work off and what it feels like to launch,” said 9-year-old Michael. Michael was one of the children who participated in the presentation. Michael has been to KSC many times before. His mother Debbie, the chief of NASA’s Guest Services and

# Children to Work Day



Children to Work Day.



Children learn about spaceport technology at the Launch Equipment Test Facility.



A student enjoys exploring a computer graphics program.



Students act as moderators and speakers during a mock press conference.



Damon Talley, Bethune Cookman College education specialist, demonstrates the heat and weight of a spacesuit.



NASA employees and their children enjoy a presentation at the IMAX Theater.

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Events Directorate.

“It makes me want to work out here and be an astronaut one day,” he said, but for now his favorite thing at KSC is “eating Space Dots.”

Throughout the day children were taking their pictures with spacemen, getting fingerprinted, seeing the FIRST robots and experiencing what their parents do everyday after they put on their badges and head for KSC.

“I never realized how much hard work goes into everything from getting the Shuttle up to making news videos,” said 15-year-old Rebecca Mullen, who hopes to follow in her mother’s footsteps and work at the Press Site one day.

Children decided that they wanted to be part of the KSC team one day, discovered that science can be fun and learned about the important jobs their family and friends do.

It was a day of inspiration for everyone at KSC.



Security officers show how fingerprints are taken.

# SLSTP students take on life science challenges

Students involved in the Spaceflight and Life Sciences Training Program (SLSTP) do not learn about science passively.

For six weeks, 30 undergraduate college students worked in an intensive, hands-on environment at Kennedy Space Center.

The participants were chosen for their interests in designing and conducting biological research and operations in space, and assessing the environmental impacts of a launch site.

"The SLSTP is probably one of the best multi-discipline student programs for space life science and engineering training," said JoAnn Morgan, External Relations and Business Development director. "Students are here at the world's busiest spaceport, learning and contributing to real experiments as they near readiness for launch. It just can't be better, more exciting and rewarding than this!"

Laurel Lichtenberger, a KSC education specialist, welcomed this year's participants at the SLSTP opening day activities June 17.

There, the students met Morgan, their program dean Dr. Walter Hill from Tuskegee University (Ala.) and KSC senior scientist Dr. William Knott.

SLSTP's goals are to emphasize the unique features of experiments conducted in the space flight environment and the challenges associated with planning and conducting long-duration space flight missions and experiments, and to examine the use of space-related technology to study the environmental impacts of the Space



Spaceflight and Life Sciences Training Program students participate in a presentation in Hangar L at Cape Canaveral Air Force Station.

Shuttle Program at KSC and local ecology.

The program also emphasizes that success in space research requires an integrated team of individuals with diverse knowledge, skills and abilities.

The future scientists achieved these goals not only by conducting research, but by also taking advantage of additional program highlights.

They attended learning modules including a professional etiquette workshop, witnessed a Space Shuttle landing, toured KSC and participated in educational field trips such as visits to Sea World in Orlando to learn about animal rescue and to the Orlando Science Center.

On July 10, SLSTP alumni trekked back to the Center to share with current students what they learned from their experiences.

After a formal question and answer session, the group continued their discussions at a casual barbecue.

Physics major Kristina O'Brien considers her time at KSC unique.

"It's one phenomenal experience after another," said the Eastern Kentucky University junior. "There's no equivalent to the hands-on direction we get from our principle investigators and the research experience in lab.

"We get to attend lectures from world-renowned scientists that we wouldn't be able to attend without this program."

South Mountain College (Phoenix, Ariz.) sophomore Ismael Paderez, explained how he's gained valuable career experience through SLSTP.

"I've learned that if I want to be involved in the space program I will have to study different areas. It's

an incorporation of all different types of academics," said the computer systems engineering major. "Being here you learn a lot about teamwork and leadership. You have to learn to be a leader in your area of knowledge and apply what you know. It's not fair to your team if you don't."

Their hard work will be rewarded as they become SLSTP alumni at their closing banquet.

Colleagues, principle investigators and scientists, as well as many others program contributors will watch as trainees present posters on their research findings.

The presentations are part of course requirements that result in six credit hours from Tuskegee University.

For more information on SLSTP, visit the Web site <http://www-pao.ksc.nasa.gov/kscpao/educate/slstp.htm>.

## Research park industry briefing

Research park project officials answer industry questions during a June 28 briefing at the KSC Visitor Complex. More than 60 participants representing industry, academic and governmental organizations turned out to learn the latest on the International Space Research Park. Pictured from left to right are Connie Milton, ISRP integration manager; Frank DiBello, president and CEO of the Florida Commercial Space Financing Corp.; Tim Franta, director of Business Development and International Relations for Florida Space Authority; and Jim Ball, ISRP project manager. Industry has been asked to comment on draft use guidelines and the overall park concept. A recently completed year-long study assessing the park concept forecasts a "highly reasonable" buildout of 2 million square feet by 2022.



## Scientists discuss future space travel

Kennedy Space Center Director Roy Bridges Jr. introduces three leading scientists before their lecture "Leaving Earth's Orbit" July 10. The presentation on ongoing research in human space exploration was held in the Universe Theater at the KSC Visitor Complex. It was sponsored by KSC and the Florida Space Research Institute. The speakers (from left) were Dr. Kathryn Clark, chief scientist for NASA's Human Exploration & Development of Space enterprise; Dr. Robert Ferl, a molecular biologist and director of the University of Florida's new center for Space Agriculture and Biotechnology Research and Education; and Dr. Millie Hughes-Fulford, an astronaut and biomedical scientist. Dr. Clark spoke first, discussing some of the scientific challenges that NASA faces as it prepares for missions requiring long-duration human presence in space. Then Dr. Ferl explained his ground-breaking research on plant genetics for space and planetary travel. Finally, Dr. Hughes-Fulford shared her continuing research into the effects of space travel on human physiology.



# Sound and vibration experts visit KSC

About 400 participants at the Ninth International Congress on Sound and Vibration visited Kennedy Space Center for a banquet at the Apollo Saturn V Center July 10.

A smaller group of sound and vibration experts toured KSC, including the Launch Equipment Testing Facility (LETF), July 11.

The congress, held at the University of Central Florida in Orlando July 8-11, was co-sponsored by NASA/KSC, UCF and the International Institute of Acoustics and Vibration (IIAV). KSC Director Roy Bridges opened the congress.

Scientists and engineers representing 52 countries came away from KSC impressed by both historic and modern aspects of the Spaceport Technology Center.

"It was amazing to dine underneath the Saturn V rocket. You think to yourself, that is the vehicle that took man to the Moon," said Dr. Hanno Heller, a German aviation sound-and-vibration expert who is director and past president of IIAV.

The Saturn V is believed to have created the loudest continuous manmade sound in history.

Participants were also interested in viewing aspects of the modern space program, especially the Launch Systems Testbed at the LETF. The new Trajectory Simulation Mechanism, which was

demonstrated, is being used to simulate sound and vibration created by a moving vehicle rising from a pad. It will be used to help develop innovative launch exhaust management systems both for the Shuttle and future vehicles.

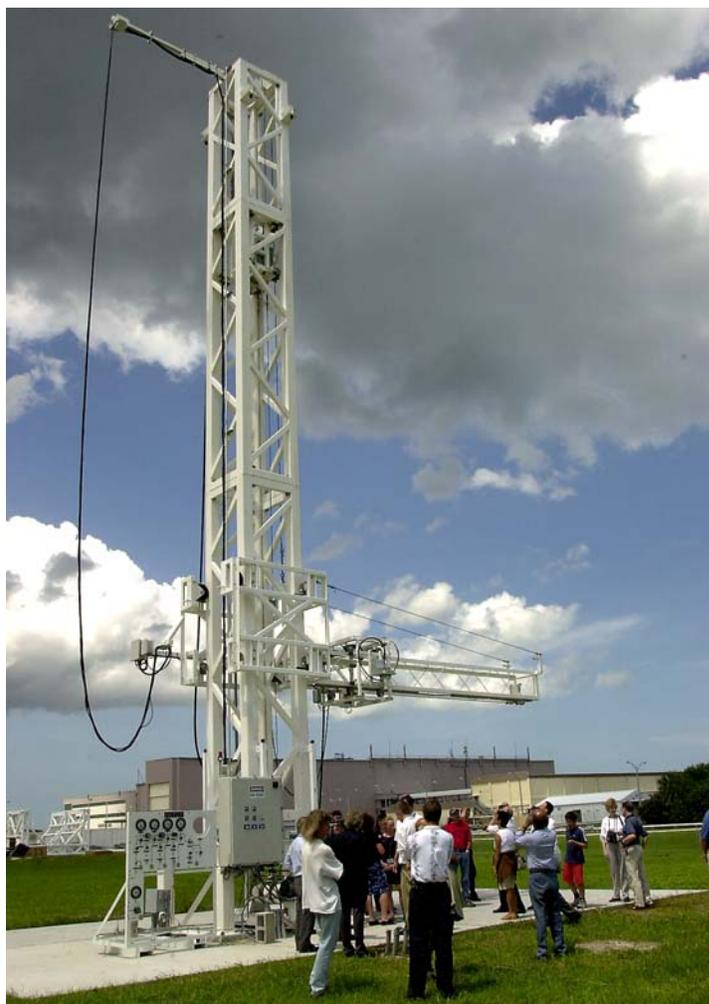
"Now you use water to quell the sound and vibration from a Shuttle launch, but in the future a different solution might be a less costly and more efficient choice," said Dr. Malcolm Crocker, IIAV's executive director, during the LETF tour.

Crocker, a distinguished university professor at Auburn University (Ala.) is working with a group of university and KSC researchers on such development ideas.

KSC's Dr. Ravi Margasahayam, of Dynacs Inc., and Raoul Caimi, NASA, were instrumental in bringing the congress to Central Florida, said IIAV President Colin Hansen, who heads the department of Mechanical Engineering at the University of Adelaide in Australia.

"KSC was a big draw for our IIAV members," Dr. Hansen said. "We had a great turnout this year."

The *Sound & Vibration* magazine's June 2002 issue was devoted to a preview of the congress and featured articles on spacecraft testing and vibro-acoustics and launch pad vibro-acoustics, including an article by Dr. Margasahayam and Caimi.



Sound and vibration congress participants view KSC's new Trajectory Simulation Mechanism at the Launch Equipment Testing Facility..

# KSC co-ops share weightless adventure

Fifteen minutes of weightlessness. It was an out-of-this-world experience for three Kennedy Space Center co-op students who were chosen to ride on NASA's KC-135 Weightless Wonder aircraft, dubbed "the Vomit Comet."

Lindsay Millard, David Shoemaker and Michelle Woloszyn had the opportunity to proudly fly their University of Michigan and Iowa State flags and float in zero gravity while conducting their original micro-gravity experiment called T.H.I.R.M.A. (Thermally Induced Refraction in a Micro-gravity Atmosphere) last April.

"We heard about the opportunity and submitted a proposal to JSC's Student Flight Program," said David Shoemaker, a co-op student in ISS Fluids. "When T.H.I.R.M.A. was chosen to fly, I was absolutely shocked and excited about the challenges our team had ahead."

JSC's Reduced Gravity Flight Opportunities Program, which was nationally launched in 1996, gives undergraduate students the chance to propose, design, fabricate, fly and evaluate a reduced-gravity experiment of their choice.

The overall experience includes scientific research, hands-on experimental design, test operations, outreach and 15 minutes of weightlessness.

"Our goal is to motivate students to pursue careers in science and technology," said Donn Sickorez, the University Affairs officer at JSC. "The fact that they get to be weightless excites their curiosity



Above, KSC co-ops David Shoemaker (left) and Lindsay Millard pose with journalist David Hartkop on the team's first flight day, April 25. Their experiment was bolted to the floor of the KC-135 aircraft. This picture was taken in route to the area over the Gulf of Mexico where the aircraft performs zero-g maneuvers. At left, Shuttle co-op Michelle Woloszyn uses the micro-gravity environment to fly around the cabin of the aircraft. Each parabola provided about 25 seconds of zero-g, enough time to try some interesting tricks, the students said.

and sets this program apart, but our focus is on good, solid science."

Although floating weightless was a large draw for these co-op students, they had to focus on exploring new technology in deep space optics during their ride.

The data collected from the T.H.I.R.M.A. experiment may be used to develop future lightweight space telescopes that have temperature controlled "gas lenses" instead of heavy mirrors. "If future telescopes are made out of gas, we could theoretically bring

up a telescope the size of a football field and really explore deep space," said ISS Mechanical co-op Lindsay Millard. "It's so encouraging to come back with positive scientific results. And the flight was my closest experience to flying in space, which I hope was just a taste for the future."

In addition to solid science, a large part of the program is outreach. Participating teams are required to share their experience and communicate the value and their excitement for science.

"We feel so fortunate to have had this opportunity," said Woloszyn, a co-op in Shuttle Processing who has hopes of becoming an astronaut. "A lot of factors had to come together just right in the end so that the team and the experiment could fly – and we did it! With our success, we can encourage others."

The T.H.I.R.M.A. team will be sharing their "Weightless Wonder" experience at KSC July 29 at 3 p.m. in the Space Station Processing Facility, Room 3006.



## Correction

Harold Collins (right) of the Astronaut Crew Quarters was misidentified as Charles Lindbergh in the July 12 special edition of *Spaceport News* commemorating the 40th Anniversary of Kennedy Space Center.



John F. Kennedy Space Center

## Spaceport News

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