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Spaceport News

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

John F. Kennedy Space Center

Mission update

Mission: STS-75 on Columbia.

Landing date, time: March 9, 8:58 a.m. at Kennedy Space Center's Shuttle Landing Facility.

Mission synopsis: Columbia landed on orbit 252 after traveling 6.5 million miles in orbit on mission STS-75. This was the 29th KSC landing in the history of the Shuttle program. The mission, at 15 days, 17 hours and 40 minutes, was the third longest in the Shuttle program.

Ken Szalai, director of the Dryden Flight Research Center and chairman of the panel investigating the loss of the Tethered Satellite, said members of that committee will be meeting at KSC over the next several weeks to study the tether which returned in Columbia's payload bay.

Mission: STS-76 on Atlantis.

Launch date, time: March 21, 3:35 a.m. from Launch Pad 39B.

Mission synopsis: The third docking between the U.S. Space Shuttle Atlantis and the Russian Space Station Mir will be highlighted by several activities: a crew transfer, an extravehicular activity (EVA), logistics operations and scientific research.

Landing date, time: March 30, 8:05 a.m. at Kennedy Space Center's Shuttle Landing Facility.

CREW MEMBERS for STS-76, posing during Terminal Countdown Test Demonstration (TCDT) activities at Launch Pad 39B, are, from the left, Mission Specialists Linda Godwin and Shannon Lucid, Commander Kevin Chilton, Mission Specialists Michael "Rich" Clifford and Ronald Sega and Pilot Richard Searfoss.

STS-76 to propel Lucid to long-term stay on Mir

Veteran space traveler Shannon Lucid is about to become a member of four different flight crews in a brief four-and-a-half month period.

Already assigned as a mission specialist on the upcoming flight of Atlantis on Mission STS-76, she will transfer to the Russian Mir Space Station during the nine-day flight and tag up with the Mir 21 crew already on board.

Mir 21 Commander Yuri Onufrienko and Flight Engineer Yuri Usachev and Lucid will work together aboard the station until July, when the Mir 22 crew takes over. Joining Lucid at that time will be Mir 22 Commander Gennady Manakov, Flight Engineer Pavel Vinogradov and Claudie Andre-Deshays from the French Space Agency.

LUCID

In August, Lucid will transfer back to Atlantis when fellow astronaut John Blaha arrives to take her place on Mir. She will then become a member of the STS-79 crew for the trip back home.

It's unlikely that this turnover in crew members or anything else she might encounter on Mir will faze Lucid, whom STS-76 Mission Commander Kevin Chilton believes was born to fly in space. "She's just a natu-

(See STS-76, Page 8)

KSC to be recognized as Quality award finalist

Although Kennedy Space Center was not selected as a winner of the 1996 Presidential Award for Quality, the center will be recognized at the 9th annual Office of Personnel Management (OPM) national conference on federal quality in Washington, D.C. on June 5th. As members of the "Winners Circle," ten finalists, including KSC, will be recognized by the OPM and will be presented an award by Vice President Al Gore.

The evaluation report provided by OPM stated that KSC is strong in all seven categories considered in the application. The report stated that KSC employees exhibit tremendous pride in their work, that management shows a high concern for employee safety and well being, that KSC is to be congratulated for its ongoing commitment to quality and that further success in the establishment of a comprehensive quality management system should lead to future gains and further consideration.

The Army Research, Development and Engineering Center, Picatinny Arsenal, NJ, was nominated for the Presidential Award for Quality. The U.S. Army C41 Logistics and Readiness Center, Fort Monmouth, NJ, was selected as a winner of the Quality Improvement Prototype award. KSC won that award in 1995.

A report from site visitors who helped make the final selection stated that KSC continues to be a prototype in the management of quality and performance improvement. It was sug-

(See QUALITY, Page 7)

Hands-on badge checks reduce KSC security risk

Most employees approaching a Kennedy Space Center security gate have experienced at one time or another that momentary panic that although they made it to work, maybe their badge did not.

And, to top it off, on that particular day the security officers inevitably aren't just looking for a flash through the windshield — they want to touch the badge itself.

Hands-on badge checks have been occurring more frequently in recent weeks and security officials say that once employees understand the importance of such close-range checks they are generally cooperative in supporting them.

Requirements for hands-on checks have been in place for about a decade, said Cal Burch, chief of the Protective Services Office.

The checks are emphasized at different times depending on any local or national security threat, he said. The hands-on checks currently in effect are primarily an effort to get drivers to slow down and give the officers a good look at the access badge.

With all the different badges that authorize entrance to the center, it is important to periodically check and make sure proper identification is being used, Burch said.

The recent checks have already uncovered an employee who has not had a picture badge for several weeks as well as employees who were using badges for other facilities to gain access to KSC.

Badges can also be replicated, Burch said.

Official badges contain a hologram which cannot be easily reproduced.

Use of a falsified badge or one that belongs to another employee is a violation of federal law and KSC security procedures and could result in disciplinary action.

SUE BOSCH, an EG&G security officer, conducts a hand-on badge check for an employee entering Kennedy Space Center.

The need for enhanced security at federal facilities was underscored after the Oklahoma City Federal Building bombing last year when President Clinton issued an executive order emphasizing the need for protective measures.

"The bottom line is we would ask employees to be cooperative, and to be prepared to show their badge when they enter the gate," Burch said.

If traffic backup at a particular gate is ever a problem, officers are authorized to stop the checks until the logjam is cleared, he said.

The checks will continue on a periodic basis for the indefinite future, he said.

KSC awards contract for lighter insulation

NASA's Kennedy Space Center awarded a $1.8 million contract to Albany International Research Company on Feb. 13 to manufacture lighter insulation materials needed to increase the orbiter's capability.

The contract calls for 6,560 square feet of a thinner Felt Reusable Surface Insulation (FRSI). Installing the lighter FRSI will increase the Shuttle's payload capacity for future space station-related missions.

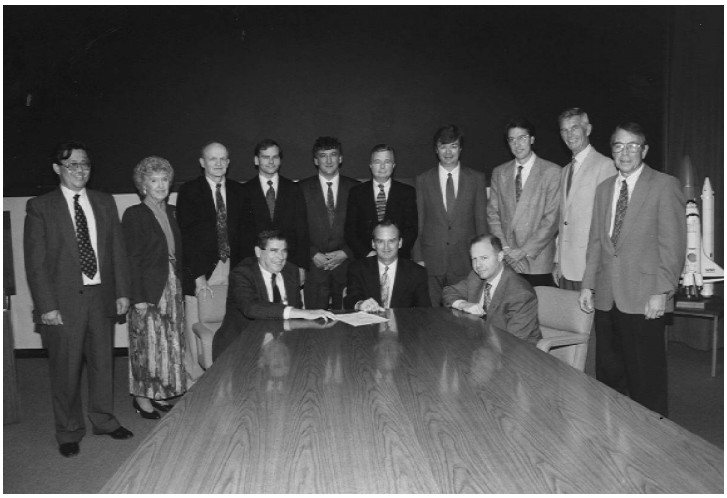
The FRSI is made of a felt material that is coated with a silicon rubber. It protects the orbiter from the extreme temperatures experienced during launch and re-entry into the Earth's atmosphere.

NASA decided to modify the orbiter's thermal protection system (TPS) in March 1994 following a thorough study. TPS data gathered from more than 70 Shuttle flights gave strong support to their decision.

The Space Shuttle Discovery is currently being modified in Palmdale, CA. The rest of the fleet will undergo similar modifications.

Employees of the month

HONORED IN MARCH are, from the left, Larry Jones, Shuttle Operations Directorate; Michael Cardinale, Biomedical Operations Directorate; Chris Beidel, Administration Office; Margaret Gibb, Payload Operations Directorate; Dennis Peterson, Safety and Mission Assurance Directorate; Linda Ranow, Procurement Office; Billy Wilson, Installation Operations Directorate; Ralonda Farrant, Engineering Development Directorate; and Steve Huff, Logistics Directorate. Not pictured is Cheryl Ford, Comptroller's Office.



SEATED FROM THE LEFT, KSC Deputy Director Gene Thomas, NASA Associate Deputy Administrator Michael Mott, and Andrew Cummins, vice president of Air Products and Chemicals, Inc., of Allentown, PA, approve a one-year cooperative agreement to jointly develop a prototype of a two-phase flow meter.

NASA, industry combine to develop innovative KSC-designed flow meter

By Joel Wells

An innovative, KSC-designed flow meter that could improve production in the cryogenic fuels, petroleum and food processing industries will be developed for commercial use through the first cooperative venture of its kind.

NASA and Air Products and Chemicals, Inc., of Allentown, PA, signed a one-year cooperative agreement March 7 to jointly develop a prototype of the two-phase flow meter. "This new technology will serve as the basis for the development of a cryogenic flow/quality measuring device that can be used by many industries," said Kristen Riley of the KSC Technology Programs and Commercialization Office.

"This is our first cooperative agreement where NASA developmental funds are provided to a for-profit organization," Riley said. "Both NASA and Air Products will provide funding, manpower and facilities to develop prototypes of the new technology."

The effort is a part of the NASA Dual-Use Program, in which space program technology is jointly developed with an industry partner for use both by the space agency and the commercial market.

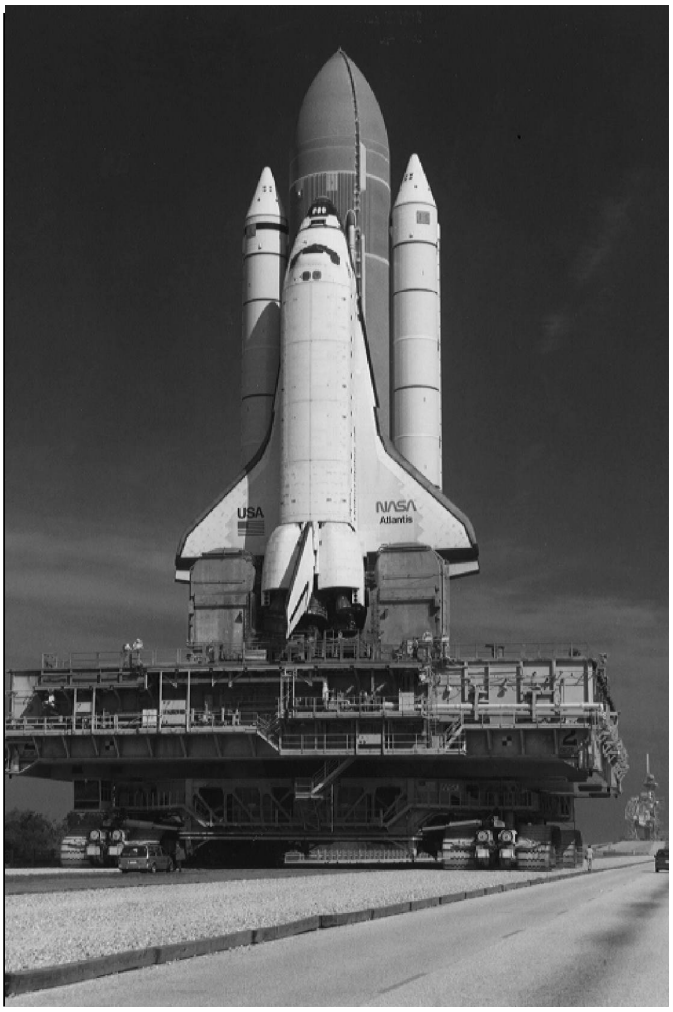
"This meter was conceived at the space center to provide a more accurate means to measure the flow of two-phase cryogenic fluids as they are loaded aboard the Space Shuttle before launch," said KSC lead project engineer Rudy Werlink.

"Existing sensors do not have the rapid response and sensitivity required to correlate the data of a flowing mixture. The fact that this flow meter will have that capability makes this design innovative," Werlink said. The flow meter also provides an accurate determination of the liquid-to-gas ratio or quality of the mixture.

Werlink initially conceived the design for the flow/quality meter in 1993. Bob Younquist of I-NET Inc., an engineering support contractor at KSC, led the developmental efforts on the electronic control system and collaborated on the physical design.

"Our initial testing of these prototypes has been encouraging," Werlink said. "We plan to provide enhancements to the microprocessor and make other modifications during the next phase of development."

Quick repair returns Atlantis to pad



THE SPACE Shuttle Atlantis' trip to Launch Pad 39B Feb. 28 experienced an unexpected delay when two of the 48 crawler transporters cleats, or "shoes," on the tread split apart during the early morning rollout. Repairs were completed in about six hours, delaying the arrival of the Shuttle at the pad by that amount of time.

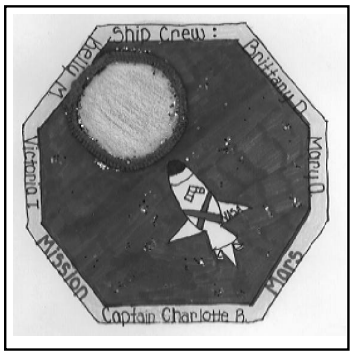
National Engineers' Week r

National Engineers' Week activities went on-line this year, enabling engineers, teachers and students to have immediate access to information on planned activities. During the month of February, 250 engineers and 5,000 Brevard County students took part in engineering-related events designed to increase awareness and appreciation of the engineering profession.

A National Engineers' Week (NEW) home page developed by the Society of Manufacturing Engineers and available on the World Wide Web (http://www.sme.org), provided objectives of the program to make it easier for those who were interested in participating.

NASA Headquarters went a step further by developing a short event report accessible on the Internet to document all presentations to the schools. Although National Engineers' Week was officially Feb. 18-24, KSC has always extended the objectives of the program throughout the year due to so many interested volunteers and requests from the schools. Most of the NASA directorates and contractors participate in the program along with hundreds of personnel involved in area schools.

The on-line data will pave the way for further automated documentation and record-keeping for all NASA programs.



ALTHOUGH focused on Brevard County, KSC's input into National Education Week extended throughout the region. Students at Mountain Road Elementary School in Atlanta created their own mission badges and sent them to the Public Affairs Office's Education Branch in appreciation for materials they used during the week.

All 76 Brevard County schools were contacted by KSC organizations and offered career speakers. Several other groups and private schools also requested speakers, said Jane Hodges, aerospace education specialist and KSC coordinator of National Engineers' Week.

Some examples of experiences of KSC employees include:

Cindy Mead, Lockheed Martin Space Operations chemical engineer, stated, "Not only do the teachers and students respond in a very positive manner, it gives us a morale boost to share our chosen professions. We can motivate students to often excel beyond the family norm that they are accustomed to." Lockheed Martin sent six engineers to seven different schools.

Steve Chance and George Veaudry of the Payload Operations Directorate led an effort to send 30 engineers to speak to Indialantic Elementary School students. That directorate has also developed a home page with a bulleted item on educational outreach to enable employees to learn about its education efforts and inform the general public about NASA's commitment to education.

The Shuttle Operations Directorate adopted Fairglen Elementary School three years ago and continued to share their careers during February. The engineers work with all grade levels throughout the year to encourage students to excel in math, science and technology. In addition, approximately 70 engineers sponsored Math Superstars, Lego Logo, Science Club and one-to-one tutoring.

The Shuttle Logistics Directorate followed the Shuttle Operations lead and adopted Atlantic Elementary School in February, replicating many of the programs previously implemented at Fairglen.

The Safety and Mission Assurance Directorate adopted South Lake Elementary School and continues to present career presentations to all grade levels. With 52 engineers talking to a grade level per month, the directorate reaches about 700 students during the year. The school's end-of-the-year program May 17 will include a simulated launch of a model Shuttle, with students participating as the launch team.

STUDENTS prepare for a model rocket launch during U.S. SPACE CAMP.

St. Mary's Catholic School was supported by the Administration Office. Five employees spoke to 4th-, 5th-, and 6th-grade students about becoming engineers, astronauts and scientists.

Four scientists from the Biomedical Operations Office shared their expertise at Golfview Elementary School as they judged the school's elementary science fair.

PHIL SWIHART of Rocketdyne demonstrates the propulsion system as related to the Astronauts' Manned Manuevering Unit (MMU) during a presentation at South Lake Elementary School.

students in person, on-line

SHARON WHITE and David Banks of the Procurement Office prepare for a presentation at the Caminiti Exceptional Center in Tampa.

The Equal Opportunity Office sponsored National Engineers' Day for Andrew Jackson Junior High School and Thomas Jefferson Middle School. Among the activities: 100 students attended a rocket building session at SPACE CAMP, an art poster contest was judged by Safety and Mission Assurance Director JoAnn Morgan and Launch Director Jim Harrington, and presentations were given by engineers Nate Wright and Joan Higginbotham and KSC Associate Director Al Parrish.

Sharon White and David Banks from the Procurement Office presented "Exploring Space" at the Caminiti Exceptional Center in Tampa to 75 students at all grade levels.

NASA alumnus Sam Beddingfield spoke on "Space Basics" at Mims Elementary School. He shared former astronaut Sally Ride's book to kick off the "Love of Reading Day" designed to encourage students to enjoy reading.

Lockheed Martin Astronautics Launch Operations-Cape Canaveral Air Station arranged for Gen. Forrest McCartney, vice president launch operations; Curt Bigalow, information systems chief; and M.J. Blanchard, special assignments; to speak to the first through sixth graders at Mila Elementary School. Gen. McCartney received the following letter from one of the fifth graders:

Dear Gen. McCartney:

I'm thanking you for coming in and teaching me about: Learning, Respect and Health. My most favorite speech was when you were talking about Respect. Because I really think you got into our heads about how to respect others. I especially enjoyed it when you told us about that when you treat others with respect you'll get respect back. Another thing I want to thank you for is telling us about is health because last night I started brushing my teeth. Because I wasn't brushing my teeth for awhile.

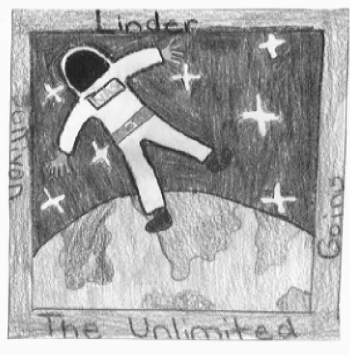
Steve Van Meter, a specialist with the Advanced Systems Robotics Lab in the Engineering Development Directorate, accepted Ellenton Schools' invitation to speak in Palmetto. More than l00 children responded enthusiastically to a robot demonstration. Questions from the students, such as "Can it be used in outer space?" were answered by, "This one is made for use on Earth, but others are made for space" and "Can it go through fire?" by "No, it has a computer in it and if it went through fire, the computer would stop working." He pointed out that some robots, however, are designed to work in fires.

Rocketdyne reached 402 students at Ronald McNair Magnet, Kennedy Middle and Astronaut High Schools. Presentations included group discussions, lectures, NASA videos, demonstrations, team activities and a tour of KSC.

McDonnell Douglas Space and Defense Systems employees visited students at Pinewood Elementary, Central Junior High, Melbourne High and Astronaut High Schools. A mini-engineering expo at Astronaut High School gave employees a chance to provide computer demonstrations and career discussions on Feb. 23. The Golfview Science Fair was also judged by McDonnell Douglas employees. In addition, McDonnell Douglas, Lockheed Martin, Rockwell, Harris and the United States Air Force participated in the Cocoa Academy for Aerospace Technology Student/ Mentor program.

The heightened emphasis placed on National Engineers' Week and the special events surrounding the event reflect a renewed drive by NASA and its contractors to educate the public on careers in engineering, Hodges said. She said it is hoped the ongoing effort will make a difference in students' futures.

LAUNCH DIRECTOR Jim Harrington and Safety and Quality Assurance Director JoAnn Morgan judge artwork submitted by students from Andrew Jackson Middle School and Thomas Jefferson Junior High School.



THIS MISSION PATCH, drawn by a student at Mountain Ridge Elementary in Atlanta, features an astronaut exploring "The Unlimited" universe.

KSC EMPLOYEE Mike Drummond looks over some of his handiwork. He does not use magnification when he carves.

AFTER the carving is complete, Drummond finishes a piece by carefully coloring it with an acrylic ceramic paint.

KSC high crew rigger's hobby really sticks out

By Barb Compton

Mike Drummond has the kind of job that can reduce an avid space junkie to wide-eyed amazement — he helps construct the rigging that allows workers access to the Space Shuttle while it is being processed at Kennedy Space Center.

Because the Lockheed-Martin space Operations Company employee routinely works face to face with the world's most reliable space plane, a marvel of technological achievement, it is perhaps a little more understandable that he often seems bewildered by the attention his hobby evokes.

Drummond carves toothpicks. More specifically, using an Exacto knife, he turns the tops of toothpicks into works of art.

The soft-spoken artist has created hundreds of sculptures, from sports figures to nature scenes to Space Shuttles — complete with solid rocket booster separation, all on a surface area approximately an eighth of an inch wide by an inch long.

While the hobby takes him away from work-related pressures, it doesn't eliminate stress from his life. In some ways, it adds to it.

"It wears you out," Drummond said. "It's real tedious — it puts wear and tear on your body."

Since creating his first miniature sculpture, a basketball player, in 1983,

SOME of Drummond's favorites include, from the left, football player Joe Montana, dancer Fred Astaire, boxer George Foreman, Bugs Bunny, a camera on a tripod, the Space Shuttle lifting off and dropping its solid rocket boosters, and a surfer girl.

Drummond has developed carpal tunnel syndrome in his hands. He says the tension develops to a point where he fears he could do permanent damage.

"If you let your guard down and your concentration goes you could slip and cut your finger off," he said.

Drummond has had a penchant for creating miniature art as long as he can remember.

When he was a boy he created a small elephant out of a piece of bread rolled up into a dough ball.

His father-in-law unwittingly started Drummond's fascination with toothpicks by jokingly commenting that he would probably be capable of carving on one.

His tools are basic — toothpicks (preferably of the Birch variety from California) and a No. 11 Exacto knife.

Once he completes the carving, he finishes the sculpture with an acrylic ceramic coating from bottles marked with the color names.

The names are a necessity because Drummond is color blind, a fact that doesn't deter him from brightly topping off his finished product.

The artwork is then inserted into the cork stopper of an inverted test tube which serves as a display case.

Drummond's sales have come largely through word of mouth.

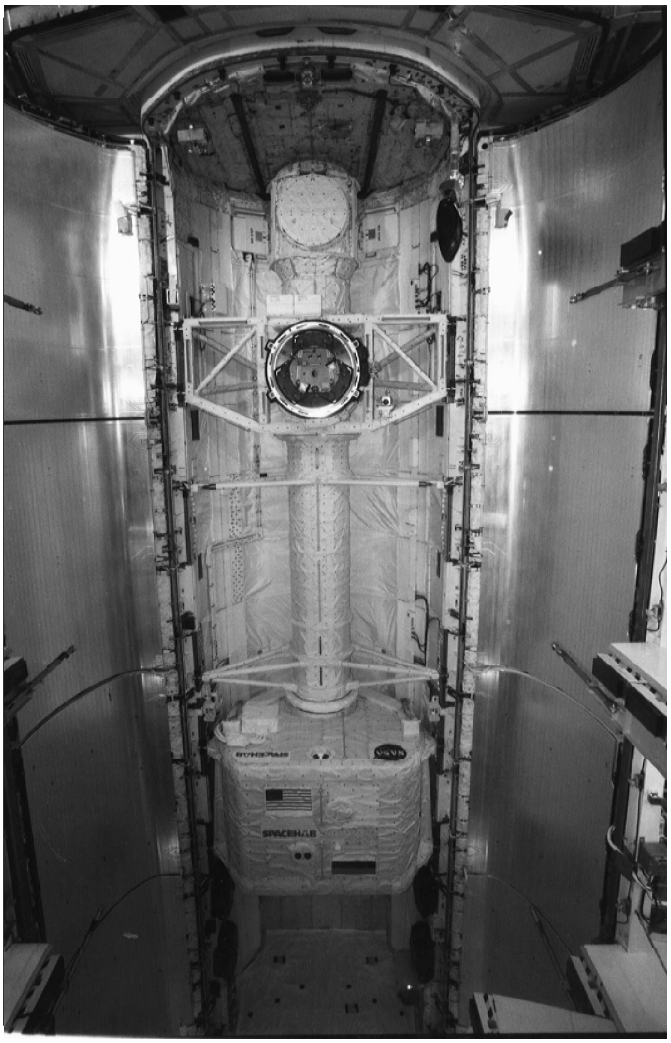
A fellow KSC employee put him in touch with a manager of Ripley's Believe it or Not Museum. Drummond sent a sample of toothpicks which he believes were displayed there but he has never been to see them.

He says most of his free time is spent on the actual carving rather than the promotion of his work.

He charges $75 for a custom carving but he is reluctant to give an estimate of how long a single piece will take him.

For such a small item, the time invested "is usually too long," he said with a grin.

Vertical first



THE SPACEHAB module is installed vertically for the first time into the payload bay of the Space Shuttle Atlantis at Launch Pad 39B on Feb. 29. Atlantis was rolled out to the pad a day previously. Already located in the payload bay was the Orbiter Docking System (ODS), to which the SPACEHAB was connected via a tunnel. During the flight of Atlantis on Mission STS-76, the ODS will be docked to the Docking Module located on the Kristall module docking port on the Russian Space Station Mir. The SPACEHAB will be filled with Russian and U.S. logisitics equipment for transfer to Mir. Also located in the mini-research laboratory is the European Space Agency's Biorack, which houses experiments to be conducted by the U.S. astronauts during the nine-day flight.

Quality. . .

(Continued from Page 1)

gested the center concentrate efforts on customer satisfaction through customer satisfaction targets and goals and through customer participation in that area. Other areas the examiners suggested focusing on are the methods of responding to individual employee improvement ideas and the linkages between process management metrics, performance targets and the strategic plan.

The ratings KSC received indicate that a well-planned, sound quality management-based system has been implemented in several areas of the organization, the report said. All organizations reveigin awards should be viewed as winners, it concluded.

Public Affairs documents available electronically

The Kennedy Space Center Public Affairs Office has introduced several innovations to give the media and others immediate access to official information.

Computer users can now call up *Spaceport News* from the KSC home page (http://www.ksc.nasa.gov/ksc.html). The page includes text versions of *Spaceport News* stories and captions beginning with the Jan. 19, 1996 edition, as well as pdf files which display entire pages including photographs.

Those with e-mail addresses can subscribe to a list server that will automatically forward to them all KSC Shuttle status reports, KSC originated press releases and other reports.

To subscribe to these status reports and press releases, send an e-mail message to domo@news.ksc.nasa.gov.

In the body of the message (not the subject line) users must type the words “subscribe shuttle-status”, or “subscribe ksc-press-release” (do not use quotation marks).

The system will reply with a confirmation via e-mail of each subscription.

To remove your name from the list, send an e-mail message to domo@news.ksc.nasa.gov. In the body of the message (not the subject line), type (no quotes) “unsubscribe shuttle-status”, or “unsubscribe ksc-press-release.”

Hubble shows Pluto surface

For the first time sincePluto's discovery 66 years ago, astronomers have at last directly seen details on the surface of the solar system's farthest known planet from pictures sent back by the European Space Agency's Faint Object Camera aboard NASA's Hubble Space Telescope.

Hubble's snapshots of nearly the entire surface of Pluto, taken as the planet rotated through a 6.4-day period, show that Pluto is a complex object, with more large-scale contrast than any planet, except Earth.

The images also reveal almost a dozen distinctive albedo features, or provinces, none of which have ever been seen before.

They include a "ragged" northern polar cap bisected by a dark strip, a bright spot seen rotating with the planet, a cluster of dark spots, and a bright linear marking that is intriguing the scientific team analyzing the images. The images confirm the presence of icy-bright polar cap features, which had been inferred from indirect evidence for surface markings in the 1980s.

This historic new look at Pluto helps pave the way for a proposed Pluto flyby mission early in the next century. Pluto is the only solar system planet not yet visited by a spacecraft.

"Hubble is providing the first, tantalizing glimpse of what Pluto will be like when we get there," said Dr. Alan Stern of Southwest Research Institute's Boulder, CO, research office.

Stern led the team who used Hubble to obtain the most detailed view yet of Pluto.

The Pluto imaging team also includes Dr. Marc Buie of Lowell Observatory, Flagstaff, AZ, and Dr. Laurence Trafton of the University of Texas, Austin.

This team of planetary scientists used the Faint Object Camera aboard the Hubble to obtain over a dozen high-quality visible and ultraviolet images of Pluto in mid-1994.

These images have now been carefully reduced and analyzed.

"These results and the maps we constructed from them are much better than I ever hoped for," said Buie. "It's fantastic."

"Hubble has brought Pluto from a fuzzy, distant dot of light, to a world which we can begin to map, and watch for surface changes. Hubble's view of the tiny, distant Pluto is reminiscent of looking at Mars through a small telescope," said Stern.

STS-76. . .

(Continued from Page 1)

ral up there," Chilton observed in a recent interview. "She's very comfortable in that environment."

Lucid already has flown on the Shuttle four times, accumulating more than 838 hours in space.

She began training in Star City, Russia, in February1995, for the trip to Mir.

Both Lucid and her fellow STS-76 crew members feel strongly that lessons learned from Norm Thagard's visit to the station last year will make her stay more comfortable.

More time is being booked for communication with family back on Earth, and greater attention given to menu selections from a cultural standpoint.

Veteran crew

Like Lucid, the rest of the STS-76 crew are spaceflight veterans.

Chilton will be embarking on his third trip into orbit, as are Mission Specialists Linda Godwin and Michael "Rich" Clifford. Pilot Richard Searfoss and Mission Specialist Ronald Sega will be flying for the second time. Chilton, Godwin and Clifford flew together on STS-59, and Searfoss and Lucid were crew mates on STS-58.

Docking with Mir is slated to occur on flight day three.

Lucid is scheduled to transfer to the station soon after the hatches between the two mated spacecraft are opened.

While this is one of the primary objectives of the third Shuttle-Mir docking, other significant tasks also are planned.

A single SPACEHAB module is flying in the aft portion of Atlantis' cargo bay carrying numerous logistical items as well as a European Space Agency Biorack research facility.

Besides transferring equipment, experiment samples and personal items to and from Mir, the U.S. astronauts also will be conducting microgravity research with the Biorack.

One of the highlights of the flight should be the extravehicular activity (EVA) that Godwin and Clifford will perform on flight day six while the Shuttle and Mir are still docked together.

With Sega overseeing the EVA from inside the orbiter, Godwin and Clifford will place four experiments on the Docking Module attached to Mir during STS-74 which was the second Shuttle-Mir docking flight.

Equipment check

The experiments are designed to collect information about the microgravity environment at the altitude and inclination at which Mir is located — the same as the International Space Station.

The two spacewalkers also will be checking out common U.S./Russian spacewalking equipment as well as assessing the challenge of maneuvering around two mated spacecraft while connected to a 50-foot-long tether.

Asked to place in historical context the significance of the third Shuttle/Mir docking, the STS-76 crew likes to compare their mission to a building block that will eventually become the International Space Station. When Lucid transfers her belongings to Mir, she begins an extended American role aboard the station.

Blaha will be followed in order by astronauts Jerry Linenger and Michael Foale, establishing a continuous American presence in space for the next two years.

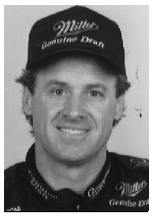
Where it should all lead is perfectly clear to at least two of the crew members.

Looking ahead

"Mars is certainly a goal for exploration that makes a great deal of sense to us in the astronaut office," Sega has observed.

Clifford couldn't agree more. "Our final goal is to put your children and my children on a trip to Mars," he noted in a recent interview.

Space Congress to feature race car driver



WALLACE

Superstar NASCAR driver Rusty Wallace will headline the 33rd Space Congress when he speaks about the benefits of space exploration during the event's annual banquet on April 23 in Cocoa Beach.

At the Daytona 500 in February, Wallace drove home the importance of space technology when he raced his Ford Thunderbird, outfitted with scrap pieces of Space Shuttle thermal protection blankets. The material helped Wallace keep his cool in the car where the temperature normally reaches 160 degrees.

In addition to the banquet, other highlights of the 33rd Space Congress will include five major panel sessions with participation from leading space experts discussing where the nation's space program is headed. A special presentation by Kent Black, the chief operating officer of United Space Alliance, will focus on the need for change in the space industry.

Technical paper presentations will center on such topics as future launch vehicles and facilities, space business aspects in a commercial market, the future of commercial satellites, the Mir space station, planetary programs and space education for tomorrow.

"It's a galaxy of information," said Forrest McCartney, general chairman of the event. "This year's participants will discover the latest developments about the dynamic changes facing the key elements of America's space program."

Along with the panel and paper presentations, the congress will feature free public events such as a student science fair and the popular "Meet the Astronauts" night chaired by Kennedy Space Center Director Jay Honeycutt. Also open to the public will be exhibit halls, featuring displays from major aerospace companies. Activities begin Tuesday, April 23, with a keynote address from Bob Davis, deputy undersecretary of defense for space. Events conclude the evening of Friday, April 26, with the Pioneer's Banquet at Patrick Air Force Base Officer's Club.

Sponsored by the Canaveral Council of Technical Societies (CCTS), Space Congress is considered the oldest and most respected forum of its kind in the world. Launched in 1964, Space Congress is intended to facilitate the exchange of space science and engineering information among the government, industry and educational communities. For more information, contact Lisa Malone at 867-2468 or Bob Tucker at 799-6847.

John F. Kennedy Space Center

Spaceport News

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