Space News NASA ROUNDUP!

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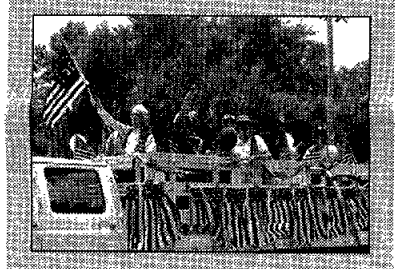


New software to help track JSC computers

JSC is in the process of activating a new software tool that will help track the estimated 10,000 desktop computers on site, but the Information Systems Directorate needs the help of all employees to make it work.

Earlier this year, the Information Systems Directorate installed the Enterprise Workstation Management System, a centerwide tool for desktop computers management. This tool uses a commercial product called the Systems Management Server and connects over the network to all JSC desktop computers.

The Systems Management Server can inventory the hardware configuration of JSC computers, install new software and facilitate remote trouble shooting of computer problems. Information gathered by the Systems Management Server may be used by the Information Systems Directorate and the Information Resource Management Steering Council to plan for future computer procurements and improve computer services across JSC.

To facilitate the information gathering process, each user at JSC will be asked to update a Management Information Form that is stored in the Systems Management Server database. The form will pop up automatically on each user's computer during the initial boot sequence, and should take only a few minutes to complete. Subsequent monthly updates will be requested automatically by the Systems Management Server. The Management Information Form data also may be modified by the user any time he or she needs to change the information by clicking on the Management Information Form icon (for detailed instructions, see the Enterprise Workstation Management System home page).

This Management Information Form records information about who uses the computer, which organization or company the user works for, the NASA Equipment Management System property tag number for the computer and monitor, and the physical location of the computer (building and room number). This information is critical to the use of the Systems Management Server, and all JSC users are asked to provide this information as accurately as possible. To date, the Systems Management Server has been installed on approximately 7,000 computers on-site, however, only 70 percent of the Systems Management Server users have filled in the Management Information

Please see **NEW**, Page 8

JSC Photo 97-09094 by Steve Candler

STS-85 Mission Specialist Mike Gernhardt signs an autograph for Kimberly Fransham. Fransham is the niece of Mission Specialist Janice Voss and daughter Vicky and Robert Fransham of Clear Lake.

STS-85 launch countdown to begin Monday

By Kyle Herring

Human-tended Earth atmospheric studies are the focus next week with the Aug. 7 liftoff of *Discovery* to begin the STS-85 commanded by veteran Curt Brown.

Discovery's six astronauts head to Florida Monday afternoon for the launch count that concludes with liftoff at 9:41 a.m., Houston time. The one hour, 39 minute launch window maintains the proper sun angles on the free-flying satellite that will study various aspects of Earth's atmosphere during its nine days of free flight.

Science instruments mounted on the a reusable structure in the payload bay include spectrometers and telescopes to measure infrared radiation emitted by the middle atmosphere. These emperiments are in support of NASA's Mission to Planet Earth program, which is a long-term, coordinated research effort to study the Earth.

Known by its acronym, CRISTA, which stands for Cryogenic Infrared Spectrometers and Telescopes, the instrument package will use three telescopes and four spectrometers to conduct the free-flying measurements. Deployed atop the Shuttle Pallet Satellite just seven hours after launch, the science investigations will be conducted for nine days to measure chemicals, constituents and ozone levels in the atmosphere.

Once deployed by Mission Specialist Jan Davis, the CRISTA-SPAS will fly free of *Discovery* and will be controlled remotely from the Kennedy Space Center, which will oversee commanding and observations by the satellite's instruments.

Following nine days of free flight, CRISTA-SPAS will be captured by the Shuttle's Remote Manipulator System and cradled in the payload bay for the return trip to Earth two days later.

"From a shirt-sleeve orbiting laboratory one month, to

Please see **CREW**, Page 8

Crew praises teamwork during science reflight

By Karen Schmidt

As *Columbia* glided to a smooth landing at the completion of STS-94, scientists around the world were tallying up the wealth of information the crew collected during the 16-day flight.

Columbia touched down at 5:47 a.m. CDT July 17 on Kennedy Space Center's Shuttle Landing Facility to cap a 6.2 million-mile mission. Commander Jim Halsell eased *Columbia*'s landing gear onto the runway to end the STS-85 mission after 15 days, 16 hours and 44 minutes.

Halsell and his crew mates—Pilot Susan Still, Payload Commander Janice Voss, Mission Specialists Don Thomas and Mike Gernhardt and Payload Specialists Roger Crouch and Greg Linteris—returned to Houston July 18 with praise for the ground support teams that supported the mission.

"This is my first chance to fly on a long

Please see **STS-94**, Page 8

Mir 24 crew to conduct internal space walk

Russian officials have delayed the internal space walk on the Russian Mir Space Station until a newly trained crew can be launch to the orbiting outpost.

Top Russian space officials comprising the State Commission of chief designers met on July 21 and officially announced that the Mir 24 crew will perform the internal space walk into the depressurized Spektr module. Commander Anatoly Solovyev and Flight Engineer Pavel Vinogradov will attempt to relocate power cables from the three remaining undamaged solar arrays to the Core module batteries through a specially-crafted hatch cover.

Solovyev and Vinogradov are scheduled to be launched on Aug. 5 from the Baikonur Cosmodrome in Kazakstan arriving two days later at the Russian station. They will replace the current Mir 23 cosmonaut crew of Vasily Tsibliev and Alexander Lazutkin, who have been aboard the orbiting Russian facility since Feb. 12. Following a one week handover between the two crews, Tsibliev and Lazutkin will return to Earth on Aug 14 after 185 days in space, and Solovyev, Vinogradov along with U.S. Astronaut Mike Foale will become responsible for station operations.

The State Commission also announced that the internal space walk into Spektr will occur no earlier than Aug 20. As part of their training for the internal space walk, the Mir 24 crew has done extensive activity in the Russian hydrolab facility. Solovyev is well prepared for the upcoming intravehicular activity, having done nine previous space walks and logging more than 90 hours of space walking experience.

Also as part of decisions made on July 21, the State Commission further announced that French cosmonaut-researcher Leopold Eyharts will not join the Mir 24 crew for his planned three-week research flight aboard Mir. Russian officials are exploring new options for Eyharts and said he may fly to the Russian outpost early next year with the Mir 25 crew.

Russia's Chief Medical Officer, Dr. Igor Goncharov, said last week that new electrocardiograph tests on Tsibliev showed no signs of heart arrhythmia. He said further medical tests would be conducted on both Mir 23 crew members as they begin to prepare for their journey home, and he emphasized that Tsibliev can safely command the Soyuz vehicle to a normal landing.

Please see **FOALE**, Page 8

Mars Pathfinder continues investigations despite obstacles

By Elizabeth Soutter

In spite of a few communications glitches, the Mars Sojourner rover has accomplished all of its primary science goals and is well on its way to completing its extended mission objectives.

A series of computer resets was the cause of several terminated downlink sessions between the rover and scientists at NASA's Jet Propulsion Laboratory during the week of July 10. The software is designed to reset itself if it fails to perform a function.

"The resets on the lander were caused by a software task that was unable to complete the task in the allotted time," said Flight Director Brian Muirhead. "We found that the task was being cut short because it had not been given a high enough priority to run through to completion."

The resets, while not harmful to the software or the rover, caused time delays.

Programmers moved to a serialized approach when transmitting commands to the rover, having the lander do only one thing at a time. A software patch was sent to the computer that provided additional programming to help the lander accomplish its directives without causing a reset.

The Pathfinder is halfway to completing the 30-day prime mission.

JPL scientists report that the Sojourner rover has performed to the highest expectations of its design. In addition to its computers and transmission antennas, the rover carries an Alpha Proton X-ray Spectrometer and an Imager for Mars Pathfinder camera.

The Alpha Proton X-ray Spectrometer has been employed to analyze the mineral content of the rocks near the Pathfinder landing site. By commanding the rover to apply the instrument to the surface of rocks, scientists on Earth are able to gain a wealth of information and clues to the ancient geologic history of Mars.

The rock Barnacle Bill—named for its pock-marked surface—has been classified an andesite. Andesite is a type of lava found in abundance in the Andes Mountains of South America. The andesite classification was derived from chemical testing performed on Barnacle Bill's surface by the Alpha X-ray Spectrometer. Barnacle Bill could be a true andesite—a uniformly volcanic rock—or it could be a mixture of granite and basalt, which would classify it as a sedimentary rock. A sedimentary rock could be formed if ancient flood waters mixed sediment particles together and wore them into a smooth rock. Sedimentary rocks also could be formed as the result of a large impact which pulverized and mixed different types of rocks in andesitic proportions. Either of these alternatives would provide clues into the geologic history of Mars.

When attempting to study the Yogi rock on July 11, the Sojourner rover began to climb the boulder before automatically stopping itself. The vehicle was able to reposition itself and apply the Alpha X-ray Spectrometer. Data from Sojourner's encounter with Yogi is still being analyzed to attempt to determine its geologic makeup. Among other named rocks to be studied are Flat Top, Half Dome, Scooby Doo, Wedge and Shark.

Mars Pathfinder Internet engineers report that worldwide interest in the mission peaked on July 8 with 46 million hits in one day. The Mars Pathfinder mission home page is at: http://mpf.www.jpl.nasa.gov

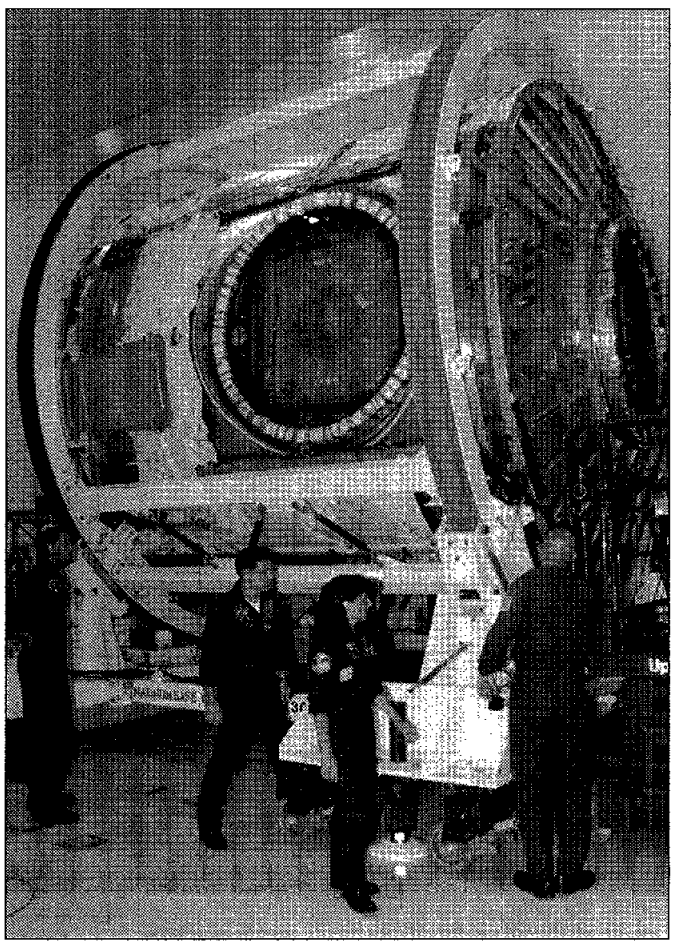
Crew checks first station element at KSC

The crew of STS-88, the first International Space Station assembly mission, traveled to the Kennedy Space Center recently to examine a connecting module called Node 1 that will be the first U.S.-built station component to be launched.

Commander Bob Cabana, Pilot Rick Sturckow and Mission Specialists Jim Newman and Nancy Currie were briefed on the prelaunch processing procedures that will be carried out before the node is installed in *Endeavour*'s cargo bay.

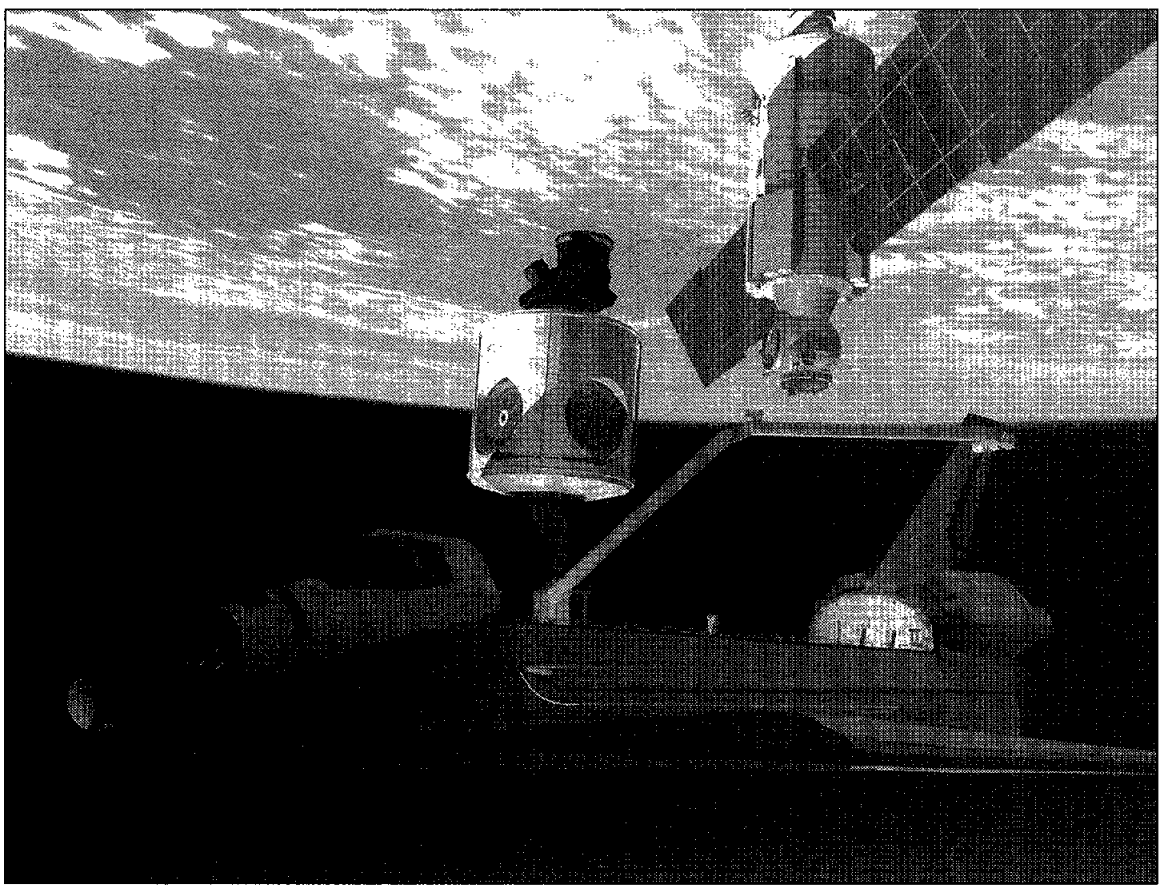
Node 1 is currently scheduled to lift off aboard *Endeavour* in July 1998, along with Pressurized Mating Adapters 1 and 2. The 18-foot-diameter, 22-foot-long aluminum module was manufactured by the Boeing Co., at the Marshall Space Flight Center's International Space Station Manufacturing Facility. It was transported to KSC this month to begin a year of launch preparations. Once in orbit, Node 1 will function as a connecting passageway to the living and working areas of the International Space Station. The six hatches on Node 1 will serve as docking ports for the U.S. laboratory module, U.S. habitation module, an airlock and other space station elements.

Cabana, Sturckow, Currie and Newman will join Jerry Ross for the seven-day STS-88 mission that will be highlighted by the mating of the node to the Functional Cargo Block which will have been launched from Russia about two weeks earlier. During the mission Currie will first use the shuttle's mechanical arm to move the node from the aft cargo bay to a docked position atop the Orbiter Docking System. Cabana will then fly *Endeavour* to a rendezvous with the Functional Cargo Block, moving to within 35 feet to allow Currie to use the arm to capture the Functional Cargo Block. Once captured, Currie will position the Functional Cargo Block into a docked position with the node's upper Pressurized Mating Adapter. During the ensuing days, Ross and Newman will perform three space walks to connect power and data cables between the node and the Functional Cargo Block.



NASA Photo KSC-97PC-942 JSC Photo 97E-02492

Above: Members of the STS-88 crew examine Node 1 of the International Space Station in the high bay of KSC's Space Station Processing Facility. From left are Mission Specialist Jim Newman, Commander Bob Cabana, Mission Specialist Nancy Currie and Pilot Rick Sturckow. The module is the first element of the station to be manufactured in the U.S. and the first scheduled to be launched on shuttle. Once in space, the Node 1 will function as a connecting passageway to the living and working areas of the station. The six hatches on the Node 1 will serve as docking ports to the U.S. laboratory module, U.S. habitation module, an airlock and other space station elements. Below: *Endeavour* prepares to capture the Functional Cargo Block using the shuttle's remote manipulator system arm in this artist's depiction of the first station assembly flight during STS-88. Once Mission Specialist Nancy Currie captures the Functional Cargo Block she will dock the module to the conical mating adapter on top of Node 1 in the shuttle's cargo bay. In ensuing days, three space walks by astronauts Jerry Ross and Jim Newman will be performed to make power, data and utility connections.



Second station part begins launch prep

The first of two Pressurized Mating Adapters for the International Space Station arrived last Friday, July 25 at the Kennedy Space Center from manufacturer McDonnell Douglas in Huntington Beach, Calif.

A pressurized mating adapter is a cone-shaped connector that will be attached to Node-1—the space station's structural building block—during ground processing in KSC's Space Station Processing Facility. Node-1 with the adapter attached will be the first element of the station to be launched aboard the shuttle in July 1998.

The mating adapter will be the connection point between Node-1 and the U.S. financed, Russian-built Functional Cargo Block, which will be launched from Russia as the first station element to be placed in orbit. The adapter will house space station computers and various electrical support equipment and eventually will serve as the passageway for astronauts between the node and the cargo block.

"PMA-1 brings with it the computers that are the intelligence for the node," said Glenn Snyder, STS-88 payload manager. "We're looking forward to testing with those computers."

For processing at KSC, the adapter will undergo initial acceptance testing. Then, in early September, it will be mated to Node-1 and a series of integrated tests will be conducted.

"We're pleased that the first mating adapter is now at Kennedy," said John Elbon, test integration leader for McDonnell Douglas. "It is the next of three elements of flight hardware necessary for the STS-88 mission."

The second adapter, the final element of STS-88, is expected to arrive at KSC this October. It will be attached to Node-1 in the processing facility. This second adapter will serve as a shuttle docking port during the construction and resupply of the space station.

The asymmetrical open-ended cone-shaped pressurized mating adapters are about seven feet long, five feet in diameter at one end and nine feet in diameter at the other. Each adapter consists of five individually machined and welded aluminum ring forgings, thermal insulation blankets and 52 fittings for electrical connections. The outer covering is a double-wall aluminum sheet to protect the adapters from strikes by space particles.

Endeavour carrying Node-1 with the two attached adapters, is targeted for launch in July 1998, approximately two weeks after the Functional Cargo Block is launched from Russia.

Explorer to study matter

NASA's Advanced Composition Explorere, or ACE, is set to launch Aug. 25 to study interstellar matter and its sources.

"The Advanced Composition Explorer observatory is designed to sample the matter that comes near the Earth from the Sun, from the apparently, but not actually, empty space between the planets and from the Milky Way beyond the solar system," said Don Margolies, ACE mission manager at Goddard Space Flight Center.

ACE has six high-resolution particle detection sensors and three monitors. It will sample low-energy particles of solar origin and high-energy partilces. The observatory will be placed into an orbit at the L1 libration point, which is almost a million miles away from Earth, about 1/100th the distance from the Earth to the Sun. ACE's instruments and experiments will work together to add to scientists' understanding of solar events and the evolution of galactic matter.

Scientist dies in Australia

Planetary scientist Eugene Shoemaker, 69, was killed in a two-car accident near Alice Springs, Australia, on the afternoon of July 18. His wife Carolyn Shoemaker suffered broken bones, and reportedly is hospitalized in stable condition.

A geologist by training, Shoemaker is best known for discovering, with his wife Carolyn and colleague David Levy, a comet near Jupiter. Comet Shoemaker-Levy 9 was broken up by tidal forces from Jupiter, and its fragments collided with the planet in July 1994.

"Gene was one of the most renowned planetary scientists in the world, and a valued member of the NASA family since the earliest days of lunar exploration," said NASA Administrator Daniel S. Goldin. "His work on the history of meteor impacts and the role that they play in the evolution of the Solar System is a fundamental milestone in the history of space science.

"Gene was an extremely articulate man who could explain the wonders of the planets in simple language that anyone could understand and get excited about," Goldin said. "Although he never realized his dream of doing field geology on the surface of the Moon, all future exploration of that rocky world owes a debt to his pioneering spirit."

Shoemaker's signature work was his research on the nature and origin of the Barringer Meteor Crater near Winslow, Ariz., which helped provide a foundation for cratering research on the Moon and planets. This work led to the establishment of a lunar chronology, allowing the dating of geological features of its surface.

Shoemaker took part in the Ranger lunar robotic missions, was principal investigator for the television experiment on the Surveyor lunar landers (1963-1968), and led the geology field investigations team for the first Apollo lunar landings.

Community News

Astronauts to sign autographs during August blood drive

By Amy Mendez

Astronauts will be signing autographs for those who give the gift of life at the next on-site blood drive.

Donors may give blood from 8:00 a.m.-noon Tuesday, Aug. 12 or 7:30 a.m. - 3:30 p.m. Wednesday Aug. 13 in Teague Auditorium. Appointments are necessary only if employees plan on donating platelets or plasma. Appointments are not necessary for whole blood donations.

In addition to astronaut autographs, donors will receive a T-shirt or an insulated mug as a "thank you" gift for their donation.

But, the biggest thank you comes from a JSC employee who is undergoing several surgeries this month.

"I've used several units last month," said Heidi Glaisyer, who suffers from a kidney illness. "It's the kindness of people at JSC that keep people like me alive. Their 15 minute effort literally means life or death to someone like me. I am so thankful for each and every one of them.

"Just think, with 15 minutes you can save a life. Isn't that amazing? I know that when I go to get my blood, it may include some from JSC—it's reassuring to know that it is there in my time of need and that JSC folks made it possible. I owe someone out there my life," Glaisyer said.

Generally, donors can give blood every eight weeks. In some cases employees may be deferred if, for example, their blood is low in iron or they are on certain medications. Employees who have questions about how a medical condition may affect their ability to give blood can call St. Luke's Blood Donor Center at 713-791-4483.

The process starts with a blood sample. Afterwards, one pint of blood is drawn. The actual collection of blood usually takes seven to 10 minutes, with the whole process taking approximately 30 to 45 minutes under normal circumstances. Donated blood undergoes several tests, including the tests for hepatitis and HIV. If there are reactive test results, donors are notified by mail. All results are kept confidential.

Usually there are no negative reactions to giving blood, but trained personnel are available in case employees become light-headed.

St. Lukes provides blood assurance coverage for all JSC personnel and their immediate families under the St. Luke's agreement with NASA and NASA contractors. Coverage includes all fees associated with blood products for blood transfused in any Houston area hospital. An immediate family member is considered to be the spouse of an employee, any dependent children, and the parents of the employee and spouse.

An employee who is a single parent receives coverage for all tax dependent children and the employees parents. Single employees who are unmarried and without children receive coverage for themselves, their parents and any tax-dependent siblings of their parents.

As an additional benefit to donors, approximately three to four weeks after each donation, St. Luke's will send a card with information about blood group, type and cholesterol level.

For more information about JSC's on-site blood drive call Amy Mendez at x32604.

Photo courtesy Johnson Engineering

Johnson Engineering is stepping up its commitment to make JSC a safer place to work with the purchase of bicycle helmets for the Flight Crew System Development Contract employees.

Johnson Engineering moves 'ahead' in safety

Flight Crew employees receive bicycle helmets

By Marilyn Tellier

Johnson Engineering is stepping up its commitment to make JSC a safer place to work.

The company recently purchased bicycle helmets for the Flight Crew System Development Contract employees who ride bicycles on-site at JSC.

Forty-two Flight Crew System Development employees—NASA, Johnson Engineering and Lockheed—frequently ride bicycles on-site from building to building.

No Texas state law exists mandating that all bicycle operators wear a helmet, but Johnson's safety-conscious President, Tom Short, was insistent that, "any employee riding a bicycle must wear a helmet."

Margaret McPhail, Johnson project engineer, has worn a bicycle helmet for more than twenty years.

"I have always been aware of the importance of wearing a bike helmet," McPhail said. "You can break almost any bone in your body and it will heal, but brain damage is not something that can easily be fixed, if at all."

Jack Rainbolt, safety director for Johnson, along with Chuck Barbour, occupational safety and health specialist, oversaw the selection and distribution of the new helmets, which are lightweight (fabricated of styrofoam with a thin plastic coating), and approved by the American National Standards Institute and the American Society for Testing and Materials.

In order to receive one of the company-supplied helmets, a mandatory bicycle safety course, taught by Barbour, must be completed. The class covers correct hand signal positions, proper cycling etiquette, rules of safe operation, Houston traffic code rules and the proper positioning and fitting of a helmet.

According to the Johns Hopkins Injury Prevention Center, over 900 bicyclists are killed in the U.S. each year, with 70 to 80 percent of these attributed to head injuries. The Journal of the American Medical Association reports that, "universal use of helmets by all bicyclists could have prevented as many as 2,500 deaths and 757,000 head injuries, i.e., one death every day and one head injury every four minutes."

An article published in the New England Journal of Medicine (May 1989) reports on a case-control study that was conducted on bicycle accident victims that had suffered head trauma. The results of this study revealed that accident victims who wore helmets had an 85 percent reduction in risk of head injuries, and an 88 percent reduction in risk of brain injury. Although these three reports have varying statistics, they all agree on one thing—wearing a bicycle helmet can save a life.

The Bicycle Helmet Safety Institute maintains that helmets, not involved in an accident, should be replaced every five years due to natural deterioration, wear and abuse. If a helmet has been involved in an accident, the Bicycle Helmet Safety Institute recommends replacement of the helmet after any crash where the helmet hit a surface. The foam part of a helmet is made for one-time use, and damage reduces protection even if it still looks intact. If there are marks or measurable foam crush, the Institute recommends replacing the helmet."

College registration under way for satellite, campus classes

JSC employees can now register for college courses for the fall semester.

Graduate courses are available via television instruction from the University of Houston Cullen College of Engineering. Employees also may attend the satellite campus of Embry-Riddle Aeronautical University that will offer courses towards a two-year bachelor of science degree.

Employees can register for the Cullen College courses by voice mail until Aug. 6 with fees due Aug. 25. Courses in computer architecture, materials handling and operational research and analysis of systems will be offered and classes will be held in Bldg. 45 via instructional television. Employees also can register for industrial and mechanical engineering courses that will be held at University of Houston Clear Lake.

For more information call the Cullen College of Engineering at 713-743-4200.

Employees may register for the first semester of the Embry-Riddle Aeronautical University satellite campus classes until Aug. 8.

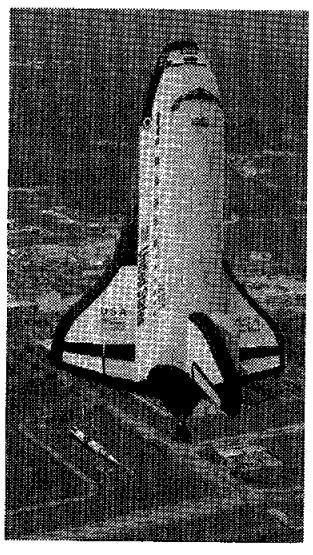
Jointly sponsored by the Human Resources Development Branch and the Aircraft Operations Division of the Flight Crew Operations Directorate, these classes apply to one of two degree programs which ERAU will offer—bachelor of science in aviation maintenance management and/or bachelor of science in professional aeronautics. Classes will begin the week of Aug. 11 and will be held at Ellington Field.

Employees can register for courses in aviation regulations, organizational behavior and business law. Employees can register by calling Larry Powers at x49456.

JSC civil service employees can submit a JSC Form 75, Application for Training, for payment of these classes. For more information on either program call Kazuko Hall-Farley at x33075.

Ballunar liftoff, open house seeking help

Coordinators for the 1997 Ballunar Liftoff Festival are seeking volunteers for a variety of activities during the three-day event.



The Ballunar Festival, held during JSC's open house, will start on Friday, Aug. 22 and run through Sunday, Aug. 24. During both events, JSC will be transformed into the Ballunar Liftoff Festival "Headquarters". The festival will feature hot air balloon competitions, evening balloon glows, skydiving exhibitions, commercial exhibits, concession booths, arts and crafts exhibits, entertainment from local performing arts groups and various aviation equipment displays around the center.

Volunteers are needed for both the Ballunar Festival and the open house. Ballunar Festival volunteers are needed for midway ticket sales, entrance gates and crowd control personnel and to staff a variety of booths including chair rental and beverage sales. Volunteers also are needed to help balloon crews and for Metro park and ride sales. Three hour shifts are available and volunteers who work more than one shift will be entered in a drawing. Individuals may volunteer until Aug. 8. For information call the Clear Lake Area Chamber of Commerce Director of Volunteers at 281-488-7676.

JSC volunteers also are needed and employees can call Kacy Carraway at x35045.

JSC Safety Alert

General fire hazard alert

What Happened

Within the past year, there have been several incidents where the potential for fire existed:

- Monitors (Sceptre and Three I, 17-inch) that began smoking while in use.
- Faulty personal electrical appliances.
- Paper or transparencies jammed in copying machines or printers.
- Commercial off-the-shelf equipment used other than for its intended purpose and without proper safety evaluations.

What You Can Do

If you have a Sceptre or a Three I, 17-inch monitor, turn off your computer and monitor:

- During extended absences from your workstation.
- During non-duty hours (nights, weekends, holidays).

If your monitor, computer, keyboard, printer (at a workstation) or plotter begins to smoke, shut it off immediately, and disconnect the power supply to your computer. Then, report the problem to the Emergency Operations Center, x33333, which will dispatch an emergency responder to your location. Call the Information Systems Directorate Center, at x34800, to report the faulty equipment.

If you notice a smoking copier or printer notify the EOC immediately. Then, immediately contact the key operator for the copier or the responsible person for the printer.

If any personal appliance or any other equipment begins smoking:

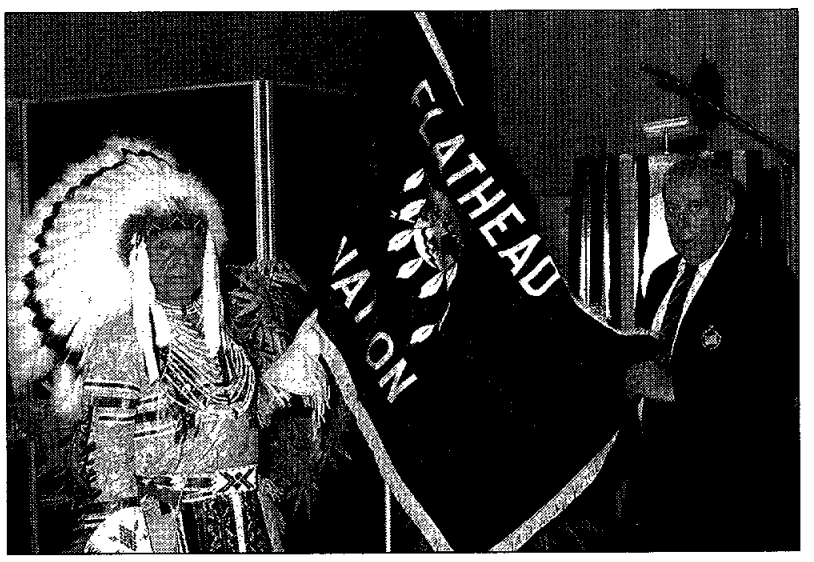
- Disconnect or remove power from defective equipment immediately.
- Notify the EOC immediately.
- Notify the person(s) responsible for the appliance or equipment as soon as possible.
- Remove ALL defective personal appliances from site.

For commercial off-the-shelf items, follow the manufacturer's recommendations for repair or the industry's standards. For modified commercial off-the-shelf equipment or JSC or NASA-approved manufactured equipment, follow established standards for repair.

American Heritage Week

American Heritage committee members entertain employees at the Gilruth Center during the grand finale. From left are June Bennett Larsen, Bonnie Kennedy, Carla Burnett, Beth Turner, Linda Kennedy and Marty Lewis. JSC celebrated its cultural diversity during the week of July 7-11 and hosted a grand finale on Monday, July 14 at the Gilruth Center.

JSC Photo 97-08756 ←



JSC Photo 97-08750

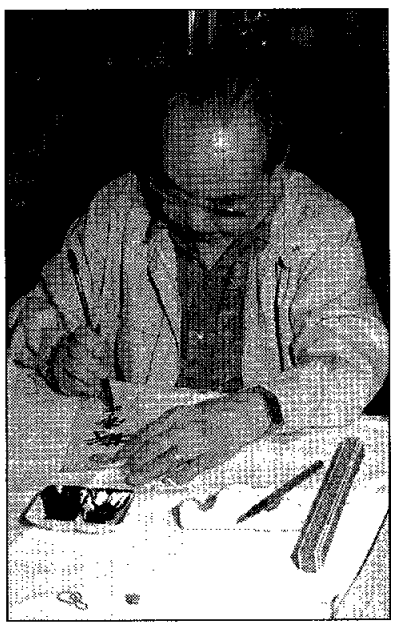
↑ JSC Director George Abbey, right, greets Native American L.L. Manshadow Waylett during the grand finale. Waylett represented S&K Electronics, the first Native American-owned company to be named as a NASA prime contractor. S&K Electronics is owned by Confederated Salish and Kootenai of the Flathead Nation. The company provides automation robotics at JSC.

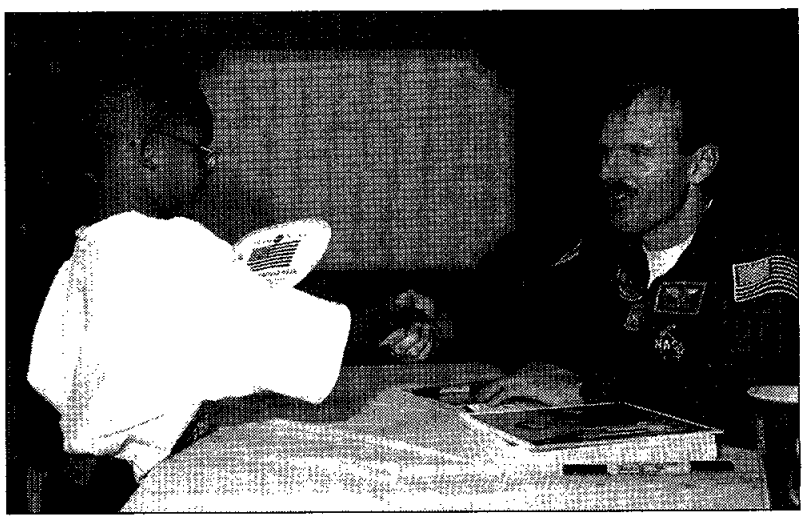
JSC Photo 97-08753

↑ Volunteer Mary Lee Meider, left, serves soft drinks during the grand finale celebration. Employees who attended the grand finale were able to select refreshments from many participating restaurants.

K.J. Tang of the Chinese Seniors Association of Houston inscribes an employee's name in traditional Chinese writing. Several cultural associations entertained employees throughout the week in the Bldg. 3 cafeteria. Entertainment ranged from cultural dancers to JSC's own Patriotic Choir.

JSC Photo 97-08759 →





JSC Photo 97-08757

↑ Astronaut Steve Smith signs autographs during American Heritage festivities. Other activities during the grand finale included folk dancing, singers and a variety of ethnic and American food.

JSC Photo 97-08754

↑ Dancers perform a Chinese ribbon dance to entertain the lunch crowd in Bldg. 3 during the week-long celebration.

JSC Photo 97-08752

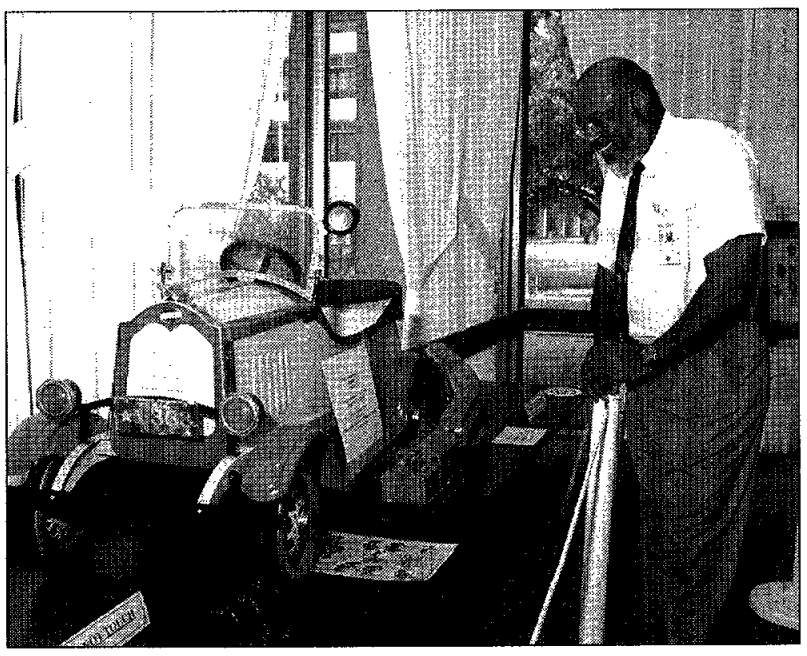
↑ Ambassadors International Spanish dancers entertain the lunch crowd in Bldg. 3 during the week-long celebration. The dancers are performing a Chotiz dance native to the state of Nuevo Leon, Mexico.

JSC Photo 97-08755

↑ American Heritage committee members herald the celebration through JSC. From left are Marty Lewis, Estella Hernandez-Gillette, Mary Lee Meider, Carla Burnett and Maureen O'Connell.

JSC Photo 97-08761

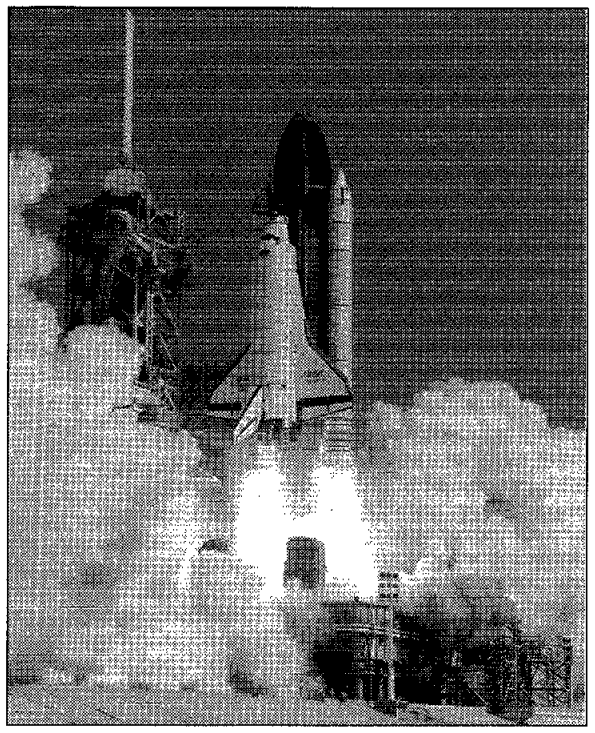
↑ From left, volunteers Ann Brown-Garison of Johnson Engineering, her son Cory and Suzy Ginn of Star Toyota prepare all-American hot dogs during the grand finale. Hot dogs were one of many cultural foods available during the celebration.



JSC Photo 97-08758

↑ Center Operations Director Jim Hickmon checks out one of the employee craft displays that were featured during American Heritage Week. Rob Way of the Facility Development Division restored the 1932 American National Packard pedal car. Way also is currently working on the restoration of a 1953 Chevy truck.

1997 Space Shuttle MANIFEST



Mission:	85	86	87
Date:	August	September	November
Orbiter:	***Discovery***	***Atlantis***	***Columbia***
Payload:	CRISTA-SPAS-02 MFD TAS-01 IEH-02 GAS(2)	S/MM-07 SPACEHAB-DM MEEP-R EDFT-06 SEEDS II, GAS(1)	USMP-04 SPTN 201-04 LHP, TGDF SOLSE, EDFT-05 OARE-10, GAS
Inclination:	57°	51.6°	28. 5°
Attitude:	160	213	160
Duration:	11	10+1	16
Crew CDR:	Curt Brown	Jim Wetherbee	Kevin Kregel
PLT:	Kent Rominger	Mike Bloomfield	Steven Lindsey
MS:	Jan Davis Bob Curbeam Stephen Robinson	Scott Parazynski Wendy Lawrence–up Jean-Loup Chrétien Vladimir Titov Mike Foale–down	Winston Scott Kalpana Chawla Takao Doi
PS:	Bjarni Tryggvason		Leonid Kadenyuk

1998 Space Shuttle MANIFEST

Mission:	89	90	91	88	93	95	96
Date:	January	April	June	July	September	October	December
Orbiter:	***Endeavour***	***Columbia***	***Discovery***	***Endeavour***	***Columbia***	***Discovery***	***Endeavour***
Payload:	S/MM-08 SPACEHAB-DM GAS(2)	NEUROLAB GAS(3)	S/MM-09 SPACEHAB-SM AMS-01	ISS-01-2A, NODE 1 PMA1 PMA2, ICBC-06 MIGHTY-SAT-01 AWCS/AMTEC, SAC-A	AXAF-1	SPACEHAB-SM HOST, TAS-02 IEH-03, PANSAT	ISS-02-2A.1 SPACEHAB-SM LOGISTICS TEEM, CAPL-03**
Inclination:	51.6°	39°	51.6°	51.6°	51.6°	39°	51.6°
Attitude:	213	150	190	190	235	250	190
Duration:	9 + 1	16	10	11	5	10	11+1
Crew CDR:	Terry Wilcutt	Rick Searfoss		Bob Cabana	5	5	5
PLT:	Joe Edwards	Scott Altman		Rick Sturckow			
MS:	Bonnie Dunbar Michael Anderson James Reilly David Wolf–up Wendy Lawrence–down	Dave Williams Kay Hire	David Wolf –down	Nancy Currie Jerry Ross Jim Newman			
PL CDR:		Rick Linnehan					
PS:		Jay Buckey James Pawelczyk					

**Payload under review for addition

1999 Space Shuttle MANIFEST

Mission:	92	97	98	99	100	101	102	103
Date:	January	March	May	June	August	September	October	December
Orbiter:	***Atlantis***	***Discovery***	***Endeavour***	***Atlantis***	***Discovery***	***Endeavour***	***Atlantis***	***Columbia***
Payload:	ISS-03-3A ITS Z1 SLP 1-01 PMA3	ISS-04-4A PV MODULE	ISS-05-5A US LAB LAB	ISS-06-6A MPLM 1(P)-01 SLP 2-01	ISS-07-7A AIRLOCK	SRTM	ISS-08-7A.1	HST SM-03
Inclination:	51.6°	51.6°	51.6°	51.6°	51.60°	57°	51.6°	28.5°
Attitude:	190	190	190	190	190	200	200	310
Duration:	9+2	8+2	9+2	11+2	11+2	11	TBD	TBD
Crew CDR:						7	5	7
PLT:								
MS:	Koichi Wakata Leroy Chiao Jeff Wisoff Michael Lopez-Alegria Bill McArthur	Joe Tanner Carlos Noregia	Mark Lee Tom Jones	Chris Hadfield Robert Curbeam	Mike Gernhardt James Reilly			
PS:								

Space Shuttle MANIFEST Glossary

AIRLOCK	Station based EVA capability
AMS	Alpha Magnetic Spectrometer
AWCS/AMTEC	Automated Wafer Cartridge System, Alkali Metal Thermal-to-Electric Converter
AXAF-I	Advanced X-Ray Astrophysics Facility-Imager
CAPL-3	Capillary Pumped Loop Flight Experiment
CRISTA-SPAS	Cryogenic Infrared Spectrometer Telescope for Atmosphere—Shuttle Pallet Satellite
EDFT	EVA Demonstration Flight Test
GAS	Get Away Special
HOST	Hubble Orbital System Test
HST SM	Hubble Space Telescope Servicing Mission
IEH	International Extreme-UV Far-UV Hitchhiker
ISS	International Space Station
ITS	Integrated Truss Structure
LAB	Laboratory Module
LHP	Loop Heat Pipe
MEEP	Mir Environmental Effects Payload
MFD	Manipulator Flight Demonstration
MIGHTY-SAT	Space Qualification and On-Orbit Validation of Advance Space Technology
MPLM	Mini Pressurized Module
OARE	Orbital Acceleration Research Experiment
NODE	Node Module
PANSAT	Petite Amateur Navy Satellite
PMA	Pressurized Mating Adapter
PV MODULE	Photovoltaic Module
S/MM	Shuttle Mir Mission
SAC-A	Satelite de Aplicaciones Cientificas-A
SEEDS	Seeds in Space II
SLP	Spacelab Pallet
SOLSE	Shuttle Ozone Limb Sounding Experiment
SPACEHAB	Commercial middeck augmentation module
SPACEHAB-DM	SPACEHAB Double Module
SPACEHAB-SM	SPACEHAB Single Module
SPTN	Shuttle Pointed Autonomous Research Tool for Astronomy or SPARTAN
SRTM	Shuttle Radar Topography Mission
TAS	Technology Applications Science
TEEM	Two Phase Extended Evaluation in Microgravity
TGDF	Transitional Gas-Jet Diffusion Flames
USMP	United States Microgravity Payload
Z1	Truss Section

Enlarge 104% to fit Franklin Planner

22 Years Ago at JSC

U.S., Russia conduct first joint meeting in space

Reprinted from the July 22, 1975 Space News Roundup.

"Contact. Capture," were the words spoken by Commander Tom Stafford as America's Apollo spacecraft linked with the Soviet Union's Soyuz. "Docking is completed," he told mission controllers at JSC.

This act, described by many as the culminating point of the mission—brought into reality the May 1972 agreement between the United States and the Soviet Union to work together toward a common docking system for future generations.

The development of compatible rendezvous and docking systems will enhance the safety of manned flights in space and will provide for opportunities for conducting joint experiments in the future

Following docking, commander Stafford and Donald K. "Deke" Slayton were the first to enter the passageway between the Apollo and Soyuz. They remained in the Soyuz spacecraft about three hours participating in such activities as an exchange of flags, signing of flight certificates, and eating the first international meal in space.

President Ford congratulated each crew member and asked them a number of questions. Leonid Brezhnev also radioed congratulations to the crews.

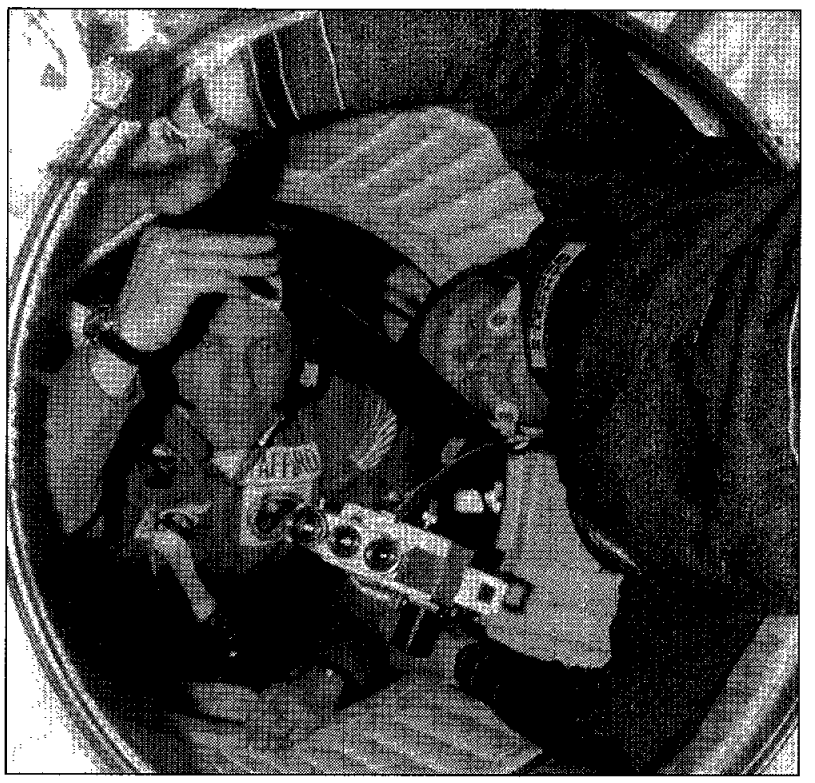
In all, four crew transfers took place and a number of joint scientific experiments and engineering investigations were performed during these transfers. The crews also shared meals. During transfers there was always at least one host crew member in each spacecraft, no more than three men were in Apollo at one time and no more than two were Soyuz.

During joint mission periods, the Apollo crew communicated with their Soviet counterparts in Russian while the cosmonauts replied in English. Crew members communicate with their respective control centers in their native language.

The two spacecraft separated for the final time Saturday morning. Soyuz is scheduled to touchdown July 21, while Apollo remains in orbit as Stafford, Slayton and Brand conduct a number of unilateral space sciences, life sciences and applications experiments.

The Apollo command module is scheduled to splashdown at 4:18 p.m. CDT July 24 in the Pacific Ocean about 345 miles west of Hawaii.

Obviously, conversations will evolve around ASTP for a long time to come. There is indeed much to be said about such a mission. As far as the successful docking is concerned, however, U.S. Program manager for the ASTP mission Chester Lee probably put it best when he said: "I believe today's activities speak for themselves."



JSC Photo AST-03-191

Apollo 18 Commander Tom Stafford and Soyuz 19 Cosmonaut Aleksei Leonov, with camera, meet in the hatchway leading from the Apollo Docking Module to the Soyuz Orbital Module during the joint Apollo Soyuz Test Project docking in space. The Apollo crew of Stafford, Docking Module Pilot Deke Slayton and Command Module Pilot Vance Brand met up with the Soyuz 19 crew members Leonov and Flight Engineer Valeri Kubasov July 17, 1975.

Gilruth Center News

Hours: The Gilruth Center will now remain open until 2 p.m. Saturday and close at 9 p.m. Friday.

Sign up policy: All classes and athletic activities are first come, first served. Sign up in person at the Gilruth Center and show a yellow Gilruth badge or weight room badge. Classes tend to fill up two weeks in advance. Payment must be made in full, in exact change or by check, at the time of registration. No registration will be taken by telephone. For more information, call x30304.

Gilruth badges: Required for use of the Gilruth Center. Employees, spouses, eligible dependents, NASA retirees and spouses may apply for photo identification badges from 7:30 a.m.-9 p.m. Monday-Friday; and 9 a.m.-2 p.m. Saturdays. Cost is $10. Dependents must be between 16 and 23 years old.

NASA Fitness Challenge: Runs through Aug. 31. Call x30301 for more information.

Hatha Yoga: A stress relieving, stretching and breathing exercise routine to unite body, mind and spirit. Classes meet from 5:30-6:30 p.m. Thursdays. Cost is $40 for eight weeks.

Nutrition intervention program: A six-week program to learn more about the role diet and nutrition play in health, including lectures, private consultations with a dietitian and blood analysis. Program is open to all employees, contractors and spouses. For more information call Tammie Shaw at x32980.

Defensive driving: One-day course is offered once a month. Pre-registration required. Cost is $25. Call for next available class.

Stamp club: Meets at 7 p.m. every second and fourth Monday in Rm. 216.

Weight safety: Required courses for employees wishing to use the weight room will be offered from 8-9:30 p.m. Next class is Aug. 14 and 28. Pre-registration is required. Cost is $5. Annual weight room use fee is $90. Additional family members are $50.

Exercise: Low-impact class meets from 5:15-6:15 p.m. Mondays and Wednesdays. Cost is $24 for eight weeks.

Aikido: Introductory martial arts class meets from 5:15-6:15 p.m. Tuesday and Wednesday. Cost is $35 per month. New classes begin the first of each month.

Aerobics: Classes meet from 5:15-6:15 p.m. Monday, Tuesdays and Thursdays. Cost is $32 for eight weeks. Kristen Maidlow, instructor.

Ballroom dancing: Beginner classes meet from 7-8:15 p.m. Thursdays. Intermediate and advanced classes meet from 8:15-9:30 p.m. Cost is $60 per couple.

Country and western dancing: Beginner class meets 7-8:30 p.m. Monday. Advanced class (must know basic steps to all dances) meets 8:30-10 p.m. Monday. Cost is $20 per couple.

Fitness program: Health Related Fitness Program includes a medical screening examination and a 12-week individually prescribed exercise program. For more information call Larry Wier at x30301.

Gilruth Home Page: Check out all activities at the Gilruth online at: http://www4.jsc.nasa.gov/ah/exceaa/Gilruth/Gilruth.htm

Ticket Window

The following discount tickets are available for purchase in the Bldg. 11 Exchange Store from 10 a.m.-2 p.m. Monday-Thursday and 9 a.m.-3 p.m. Friday and in the Bldg. 3 Exchange Store from 7 a.m.-4 p.m. Monday - Friday. For more information call x35350 or x30990.

Loving Feelings Concert: 8 p.m. Sept. 27 at the Summit. Tickets are $38.
EAA Texaribbean Cruise: Nov. 22-30. $200 deposit per person, final payment by Sept. 15.
Astroworld: $22.75. Season pass $56.75. Multi-visit $37.50.
Waterworld: $11.50.
Moody Gardens: Tickets are $9.50 for 2 of 4 events.
Space Center Houston: Adult $8.95; children (4-11) $6.40.
Seaworld: Adult $27.25; children (3-11) $18.25.
Schlitterbahn: Adult $20.25; children $17.50.
Splashtown: Adult $14.50; children (3-9) $11.50.
Movie discounts: General Cinema, $5.25; AMC Theater, $4.50; Sony Loew's Theater, $4.75.
JSC logo shirts: T-shirt, $10, Polo style, $23.
Stamps: Book of 20, $6.40.
Metro tickets: Passes, books and single tickets available.
Orbit: The book *Orbit* by Jay Apt, Mike Helfert and Justin Wilkinson is on sale for $28.

Men's softball tournament set

The Gilruth Center will host a men's open preseason softball round-robin tournament Saturday, Aug. 19 and registration is currently under way for the men's double header softball league.

The 1997 American Softball Association softball rules will apply during the tournament and first place winners will receive T-shirts. Entry fee is $125.

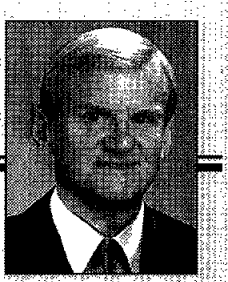
In addition, the Gilruth tournament rules also will apply. These rules require that teams use .47 Core Gilruth issued balls only; teams may start with eight players; game time is forfeit time; two home run limit; batter starts with 1-1 count; 15 run rule after three innings, 10 runs after five innings; 55 minutes or seven innings; international tie breaker will be used; no steel cleats; protests to be settled on the spot; roster forms and entry fees must be turned in prior to first game.

In addition, teams may sign up for the men's open double header softball league. Cost is $275 per team and registration will continue until enough teams register. Season length is about five to six weeks.

For additional information, call x33345.

Manager's Message

By John Casper
Director, Safety, Reliability and Quality Assurance



Casper

If Stephen King wrote that dangerous monsters roam the JSC site, weighing anywhere from a few thousand to several thousand pounds, moving swiftly on rubber-like feet, and with an aggressive, sometimes unreliable disposition, you would probably go to great lengths to stay out of their way.

Why, then, do we routinely see otherwise reasonable, intelligent people lunge fearlessly into a crosswalk, almost as a test of wills, in front of a 4,000-pound piece of machinery, looking neither left nor right, but assuming their safety to be implicit—as if protected by some impenetrable shield?

I see an unsettling number of Close Call Reports (28 in the past 6 months) that skirt the edge of disaster and have comments like these.

• "Near hit. Driver made eye contact only moments before moving through the crosswalk."

• "A streetlight was out over the walkway. A pedestrian in dark clothes literally stepped out of the dark almost in front of my car."

• "Van failed to stop. I had to jump back to avoid being hit."

• "We were two to three feet in the crosswalk. The driver never thought about stopping."

• "Right lane car stopped. Speeding left lane car slammed brakes and slid into the walkway."

• "A Metro bus driver almost hit two pedestrians at the crosswalk."

True, in many cases the driver may have been at fault, but it's a little bit like the argument about right-of-way (which on-site pedestrians have). If you have a serious collision and suffer injuries because of it, right-of-way doesn't seem nearly so important as what could have been done to avoid the end result.

Drivers may not always see the pedestrian. They may be distracted. They may be visitors from off-site and not know the rules. Or, out of rude disdain, they may speed deliberately to get by you. Regardless, the pedestrian shares responsibility for a safe crossing and should not assume that right-of-way will be observed.

My suggestion is simple. Take charge for your life. Don't leave it up to the driver to look out for you, lest you become the subject of a Close Call report, or worse—a statistic.

People on the Move

Human Resources reports the following personnel changes as of July 17:

New Management Assignments

Elmer Johnson was named chief of the Process Certification Branch in the Safety Reliability and Quality Assurance Office.

Reassignments Between Directorates

Christine Boykin moves from the Space Shuttle Program Office to the Mission Operations Directorate as a mission integration engineer.

Bobby Crow moves from the Business Management Directorate to the Center Operations Directorate as a security specialist.

Karen Clark moves from the Information Systems Directorate to the International Space Station Program Office as a computer engineer.

Suzan Voss moves from the Space Shuttle Program Office to the International Space Station Program Office as a launch package engineer.

Promotions

Scott Henricks was promoted to senior quality assurance specialist in the Safety Reliability and Quality Assurance Office.

Additions to the Workforce

Jason Kruska joins the Flight Systems Safety and Mission Assurance Division in the Safety Reliability and Quality Assurance Office as an aerospace engineer.

Reassignments to Other Centers

Jeff Hoffman of the Flight Crew Operations Directorate moves to NASA Headquarters. David Baer of the Safety Reliability and Quality Assurance Office moves to Goddard Space Flight Center.

Resignations

Deborah Kessler, James Park and Norman Reese of the Engineering Directorate. Susan Foreman of the Center Operations Directorate.

Visitor's center displays new 3-D Mars photo

Space Center Houston continues its Mars Mania attraction this month adding a 3-D image of Mars recently returned to Earth via the Mars Pathfinder mission.

A Mars meteorite, on loan to Space Center Houston, has been enhanced with a giant 3-D photo backdrop utilizing an image beamed back from the planet's surface by the Sojourner rover. 3-D glasses let visitors feel as if they have stepped onto the surface of Mars.

In addition to the 3-D photo and meteorite, kids and adults can manipulate a simulated planetary explorer in Kids Space Place and attend daily updates on the Mars expedition in the Mission Status Center.

Space Center Houston guests were recently treated to live uplinks to JSC's KC-135 where engineers in the Crew and Thermal Systems Division were testing a new space suit design that may be used to explore the red planet. Visitors were able to ask tquestions which were answered via radio by Phil West of Crew and Thermal Systems.

To complete the Mars Mania attraction, souvenirs such as Mars Bars and T-shirts also are available in the Space Traders Gift Shop.

Discount tickets for Space Center Houston that include the Mars Mania attraction can be purchased at JSC's Exchange Store in Bldg. 3 and 11. Badged civil service employees may attend the visitor center for free. For details call 244-2105.

JSC changes on-site seat belt regulations

To enhance safety for drivers and comply with a presidential order promoting the use of seat belts, JSC is changing regulations regarding use of seat belts while on site.

"The intent of the seat belt regulation is to enhance employee and visitor safety through encouraging the use of seat belts," said JSC Director George Abbey. "I strongly encourage seat belt use at JSC for personnel in their privately-owned vehicles and I am making it mandatory for drivers or operators of government-owned vehicles of all types."

To further promote seat belt use, on April 16, 1997, President Bill Clinton signed Executive Order 13043, "Increasing Seat Belt Use in the United States." This order requires seat belt use by federal government employees on government business. In addition, seat belt use in the state of Texas is mandated by the Texas Criminal and Vehicle Handbook. The current JSC Vehicle Code requires seat belt use in private and government motor vehicles while on site at JSC.

JSC security patrols will enforce rules regarding seat belt use in order to enhance the safety of all vehicle occupants while on JSC streets and roadways. Vehicles entering JSC and containing occupants not wearing seat belts will be stopped, and the officer at the gate will remind the driver and passengers of the seat belt requirement. Any privately-owned or contractor-owned vehicle observed to contain occupants not wearing seat belts may be stopped by a JSC security patrol officer and reminded of the seat belt policy. Drivers and or operators of government vehicles will be issued citations for seat belt infractions and points assessed in accordance with the JSC vehicle code.

According to the National Highway Traffic Safety Administration, an average of 115 persons die each day in motor vehicle accidents, one every 13 minutes. Each year, an estimated 10,000 lives are saved by the use of seat belts.

Brennan receives new post

Mike Brennan was recently named JSC's Transportation Officer.

Brennan

As the Installation Transportation Officer, he will oversee the required certification of hazardous materials shipments on government and commercial bills of lading. Brennan also will serve as the Installation Transportation Motor Vehicle Operations Officer.

Brennan has been with NASA for more than eight years, serving as a traffic management specialist. Currently he is chief of the Transportation Branch, in the Support Operations Division in Center Operations.

To reflect other personnel changes, Center Operations has updated the list of members to the Vehicle Inventory and Utilization Review Board. They are Joseph Fries, William Parkan, Pete Vasquez and James Stanley as a recorder and non-voting member.

Child center has openings

The JSC Child Care Center will have openings in its early pre-school program this fall.

The center currently has 62 children and 15 caregivers. The center is located in Bldg. 210. Facilities include five classrooms and three playgrounds with activities ranging from science and math, to music and art. Program hours are from 7 a.m.-5:30 p.m., Monday-Friday. Children between six weeks old and kindergarten age are eligible. Tuition is based on the child's age and class level.

This program is accredited by the National Association for the Education of Young Children and is conducted by caregivers with degrees in Early Childhood Education. JSC employees who have a three year old and would like to be part of the JSC learning family, should call x34734.

Barron earns top award

Mirella Barron in Flight Crew Operations recently received the Marilyn J. Bockting Award for secretarial excellence.

Barron was cited for her organizational skills and her initiative in exploring ways to do a job better and faster. Barron also was commended for her self discipline and her willingness to help.

Barron was recognized for her team participation in the ISO 9000 Quality Management System and the extra effort it takes to prepare and write quality procedures and instructions. She has a rare ability of performing beyond the requirements of her job description and is an enthusiastic, dedicated and dependable employee.

Barron was commended for her participation in JSC's Office Education program becoming a mentor and speaker for local schools.

JSC photo 97-09082 by Steve Candler

Mirella Barron, left, of the Aircraft Operations Division in the Flight Crew Operation Directorate receives the Marilyn J. Bockting Award for secretarial excellence from JSC Director George Abbey.

Dates & Data

Aug. 2

MAES gala: The Society of Mexican-American Engineers and Scientists will be hosting their annual scholarship banquet at 7 p.m. Aug. 2 at the University of Houston Hilton Hotel. Featured speaker is JSC Director George Abbey. For more information, call Mike Ruiz x38619.

Aug. 4

Industry presentation: Gould Instrument Systems will display products and solutions for data acquisition and recording challenges from 10:30 a.m.-4 p.m. Aug. 4 and Aug. 5 in the Bldg. 111 conference center. For more information call Beverly Anderson at x34511.

Aug. 6

Spaceland Toastmasters meet: The Spaceland Toastmasters will meet at 7 a.m. Aug. 6 at the House of Prayer Lutheran Church. For more information, call Jeannette Darcy at x45752.

Communicators meet: The Clear Lake Communicators will meet at 11:30 a.m. Aug. 6 at the Lockheed Martin, 555 Forge River Road. For more information, contact Richard Lehman at (281) 538-1854.

Spaceteam Toastmasters meet: The Spaceteam Toastmasters will meet at 11:30 a.m. Aug. 6 at United Space Alliance, 600 Gemini. For details, call Brian Collins at x35190.

Aug. 7

Warning system test: The site-wide Employee Warning System will undergo its monthly audio test at noon Aug. 7. For more information call Bob Gaffney at x34249.

Aug. 8

Astronomers meet: The JSC Astronomical Society will meet at 7:30 p.m. Aug. 8 at the Lunar and Planetary Institute, 3600 Bay Area Blvd. For more information call Chuck Shaw at x35416.

Aug. 12

JSC blood drive: Employees may give blood from 8 a.m.- noon Aug. 12 in Teague Auditorium. Donors will receive astronaut autographs and commemorative mug or T-shirt. For more information call Amy Mendez x32604.

Crew briefing: The STS-94 crew members will discuss their 16-day microgravity flight at 1:30 p.m. Aug. 12 in Teague Auditorium. For details call Helen Harris at x38413.

Aero club meets: The Bay Area Aero Club will meet at 7 p.m. Aug. 12 at the Houston Gulf Airport clubhouse at 2750 FM 1266 in League City. For more information call Larry Hendrickson at x32050.

Aug. 13

JSC blood drive: Employees may give blood from 7:30 a.m.- 3:30 p.m. Aug. 13 in Teague Auditorium. Donors will receive astronaut autographs and commemorative mug or T-shirt. For more information call Amy Mendez x32604.

Spaceland Toastmasters meet: The Spaceland Toastmasters will meet at 7 a.m. Aug. 13 at the House of Prayer Lutheran Church. For more information, call Jeannette Darcy at x45752.

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Spaceteam Toastmasters meet: The Spaceteam Toastmasters will meet at 11:30 a.m. Aug. 13 at United Space Alliance, 600 Gemini. For details, call Brian Collins at x35190.

MAES meets: The Society of Mexican American Engineers and Scientists will meet at 11:30 a.m. Aug. 13 in Bldg. 13, Rm. 156. For details call G.D. Valle at x38835.

PSI meets: The Clear Lake/NASA Area Chapter of Professional Secretaries International will meet at 5:30 p.m. Aug. 13 at the Holiday Inn, NASA Road 1. Dinner costs $15. For details call Elaine Kemp at x30556.

Financial seminar: The Texas Gulf Coast Council of the National Management Association is hosting a "Successful Money Management" seminar from 6-9 p.m. Aug. 13, 20 and 27 in the USA Bldg. auditorium. Tickets cost $60 for members and $85 for non-members. For more information, call (281)280-0444.

Aug. 14

SSQ Meets: The Houston Clear Lake chapter of the Society for Software Quality will meet at 6 p.m. at the Ramada Kings Inn on NASA Rd. 1. Georges Hostache, co-chairman of the Greater Houston Deming Association, will discuss "Introduction to Quality Management Through the Famous Deming's Red Beads Experiment." Dinner costs $10 for members, $12 for non-members. For reservations or more information, call Renne Peterson (281)335-2034.

Airplane club meets: The Radio Control Airplane Club will meet at 7:30 p.m. Aug. 14 at Clear Lake Park Community Bldg. For details call Bill Langdoc at x35970.

Aug. 16

NTA meets: The National Technical Association will meet at 10 a.m. Aug.16 at Texas Southern University, School of Technology, Rm. 316. For more information, contact Pam Denkins x35272.

Aug. 18

ISO seminar: The Victoria Group, Inc. will host a seminar on ISO 9000 at 8 a.m. Aug. 18 at the Silver Moon Café at Space Center Houston. Lee Norbraten, JSC's director of the ISO 9000 office, will discuss: "ISO 9000: Building a System for Life." For more information call 1-800-845-0567.

Aug. 20

Scuba club meets: The Lunarfins will meet at 7:30 p.m. Aug. 20 at the Redfish Restaurant under the Kemah/Seabrook bridge, Seabrook side. For more information call Fred Toole at x33201.

Aug. 21

Directors meet: The Space Family Education board of directors will meet at 11:30 a.m. Aug. 21 in Bldg. 45, Rm. 712D. For more information on this open meeting call Gretchen Thomas at x37664.

News Briefs

Correction to softball tournament date

The Gilruth Center will host a men's open preseason softball tournament Saturday, Aug. 2, not Aug. 19 as stated in the article on page 6. For details call the Gilruth at x33345.

Data recorders on display next week

Gould Instrument Systems will display products and solutions for data acquisition and recording challenges from 10:30 a.m.-4 p.m. Monday, Aug. 4 and Tuesday, Aug. 5 in the Bldg. 111 conference center. For more information call Beverly Anderson at x34511.

NASA technology may help assess bones

A portable device developed for the space program to examine how physical activity relates to bone density may someday serve as a way to assess a person's risk of osteoporosis. The device, developed by researchers in the Life Sciences Division at NASA's Ames Research Center, provides a record of the major forces people apply to their bodies throughout the day. It does this by measuring and recording the interaction between the foot and the ground during daily activity. This "loading" of the body plays an important role in maintaining muscle and bone strength in the lower limbs.

Pathfinder software wins NASA award

NASA's Inventions and Contributions Board, has selected a software program used on the Mars Pathfinder mission as the winner of the 1997 NASA Software of the Year Award. Abhinandan Jain, Guillermo Rodriguez, and Guy Man of NASA's Jet Propulsion Laboratory developed the software called DARTS: Dynamics Algorithms for Real-Time Simulation. The DARTS software can be used to generate real-time simulations to test and verify flight software and hardware for a variety of spacecraft missions.

Mars Pathfinder mission commemorated at Smithsonian

A sweeping 360-degree color panorama of the Martian landing site, taken by the camera on the Mars Pathfinder's Carl Sagan Memorial Station, will go on display at the National Air and Space Museum's Milestones of Flight Hall. The image shows features ranging from rocks near the lander to more distant objects, such as hills on the horizon.

JSC quality system review prompts changes

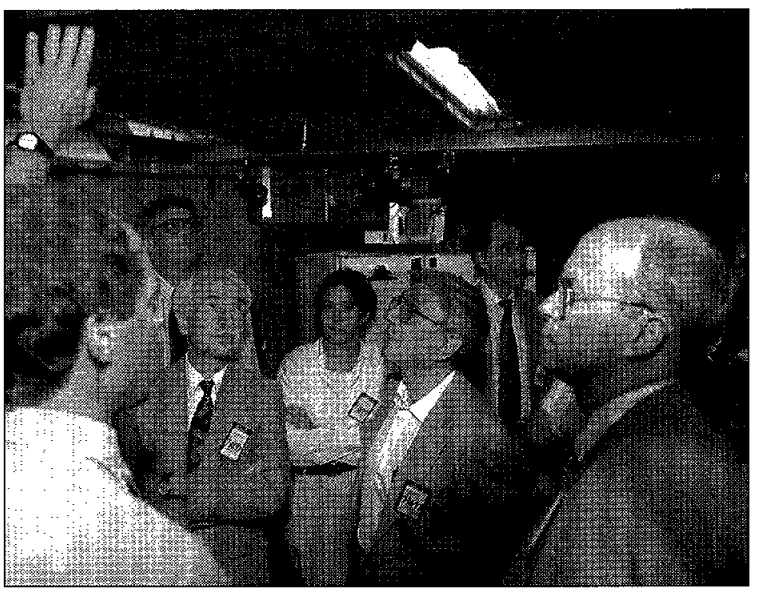
A review of JSC's Quality System has prompted some changes that will effect employees and their managers.

A pre-assessment of the system was performed by National Quality Assurance during the week of July 7. National Quality Assurance reviewed documentation and interviewed numerous JSC and contractor employees to determine to what extent the JSC Quality System is in compliance with the ISO 9001 standard. Several major problems with the quality system were identified during the pre-assessment.

JSC Director George Abbey has therefore directed the following changes to ensure that JSC will successfully pass the final certification audit in November.

- Individual Performance Plans will now include elements addressing successful quality system implementation.
- There will be a weekly status to senior staff to cover the closure of non-conformances identified during the pre-assessment.
- There will be weekly quality system implementation status meetings, attended by the deputy directors and a senior manager from each division level organization. The meeting will be chaired by the ISO 9000 Office.
- The internal audit function will be consolidated and enhanced within the ISO 9000 Office.

For more information about certification of the JSC Quality System, call Leon Blum at x33681.



JSC Photo 97-09095 by Steve Candler

SCIENCE SCOOP—Doug Ming, left, of the Advanced Life Support Office explains the workings of the air-tight chamber in Bldg. 7 and the Lunar Mars Life Support Test Project to members of the National Research Council Space Studies Board. Members of the council were at JSC recently participating in a week of meetings to better understand NASA, its laboratories and space research programs. The board received briefings on key science programs. The National Research Council was organized by the National Academy of Sciences in 1916 to associate the broad community of science and technology with the Academy's purpose of furthering knowledge and advising the government. Functioning in accordance with general policies determined by the Academy, the Council has become the principal operating agency of both the National Academy of Sciences and the National Academy of Engineering in providing services to the government, public, and the scientific and engineering communities. Members are drawn from the National Academy of Sciences, the National Academy of Engineering and the Institute of Medicine. The 25 member board is responsible for providing reports on current technology. Members are selected from a variety of sources including former Congressional members, academia, experts from the private sector and the military.

Foale plants new seeds as operations return to normal

(Continued from Page 1)

Operations aboard Mir have returned to normal since the inadvertent disconnection of a rate sensor cable to Mir's attitude control computer on July 16 which caused the station to lose its orientation to the sun and available electrical power. Following recovery procedures, automatic attitude control of the station is again being provided by the gyrodyne system and all of the available Mir batteries are fully recharged.

Foale's current science activities have included planting a new crop of the Brassica Rapa seeds that are being grown in a continuing study of the effects of microgravity on a plant's life cycle.

Foale is now more than 10 weeks into his flight. He is scheduled to be replaced by astronaut Wendy Lawrence in September following the docking of the shuttle *Atlantis*.

STS-94 crew to discuss science during briefing

(Continued from Page 1)

duration flight," Voss said. "I was a little nervous going into it because I had never flown that long before and yet it was a piece of cake. We had a great mission. The ground team put it all together for us and made sure all of it ran smoothly. Without all the help from the people on the ground we would not have done nearly as well as we did."

STS-94 completed more than 30 science investigations interrupted in April by *Columbia*'s early return on STS-83. That flight was shortened due to a possible problem with one of *Columbia*'s electricity-producing fuel cells.

"To have the opportunity to refly a mission is a once-in-a-career opportunity," Hasell said. "To all the people in training and all the people on the flight control team who are a big part of this eventual success for NASA we want to express our sincere thanks."

Linteris said the chance to fly twice was a bonus he was not expecting and thoroughly enjoyed since most payload specialists usually have only one opportunity to fly in space.

"We were ready to go the first time because of the fantastic training you gave us," Linteris said. "We were even more ready to go the second time. We had 16 days, four times as much time on this mission but it was a heck of a lot more than four times as much fun."

Gernhardt reflected that this mission was harbinger to future missions, with numerous events taking place at the same time.

"It was a great mission and an interesting time to be in space with all the things going on with Mir and the Pathfinder," Gernhardt said. "It was kind of a glimpse into the future and what spaceflight will be like right around the corner with space station. It really makes you appreciate just how special what we are doing is and the large majority of it is due to all the great folks at NASA here on the ground."

While the crew returned to normal duties at JSC, scientists around the world continue to tally the mission's research accomplishments—often surpassing expectations.

"We've done better than anybody expected," said Mission Scientist Michael Robinson, looking back at the wealth of science information collected during the course of this 16-day mission. "A highlight of the mission is that everything worked so well. All orbiter, Spacelab and payload systems performed superbly."

This mission provided new knowledge in the principal scientific fields of materials processing, combustion and biotechnology.

More than 200 fire tests were conducted during the 16-day flight, surpassing the 144 experiments that were planned.

From one of the experiments, said Lead Investigator and Alternate Payload Specialist Paul Ronney of the University of Southern California in Los Angeles, "we can learn the burning limits of fuel mixtures. It gives us an idea of just how lean a fuel can be—and still burn. It may lead to better gas mileage and less auto emissions."

Studies conducted in the Middeck Glovebox have demonstrated its value in supporting a variety of experiments. Experiments in the areas of liquid and bubble behavior, solid-liquid mixtures and fluids-based heat transfer devices tested the glovebox's usefulness. The crew performed more than 100 test runs, doubling what had been scheduled.

Robinson said real progress was made in learning how to control and position liquid drops. Experiments demonstrated that the control of the rotation and quiescent positioning of a liquid drop can be achieved using acoustic levitation in microgravity. The investigation provided information on the dependence of acoustic pressure and torque in a liquid. This study is allowing researchers to assess potential mixing methods, which could lead to improvements in petroleum technology, chemical manufacturing and the cosmetics and food industries.

Other samples were processed in the Large Isothermal Furnace during the mission and focused on the diffusion of impurities in melted germanium—an element used as a semiconductor and alloying agent. Findings may have applications for improving electronic components.

Scientists found that liquids change to solids faster in space than on Earth when the crew conducted experiments in the Physics of Hard Sphere experiment. This knowledge could improve the design and processes of metallic alloys.

Early results of the plant growth experiments on STS-94 show that plants grown in microgravity require less metabolic energy to produce lignin, permitting greater production of secondary metabolites—a source of many medicinal drugs.

A gauge to the amount of science research conducted aboard *Columbia* during STS-94 is the record number of commands sent from Marshall to experiments. The more than 35,000 commands sent broke the previous record of 25,837 set in 1994.

The STS-94 crew members will reflect on the success of their mission and receive their space flight medals during a crew briefing for employees and the public at 1:30 p.m. Aug. 12 in Teague Auditorium.

Crew to check out station arm

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the study of Earth's atmosphere and future flight demonstrations to support the International Space Station the next, the diversity of the space shuttle system is once again ready to be demonstrated with STS-85," JSC Director George Abbey said following last week's Flight Readiness Review from KSC.

During the CRISTA-SPAS mission, Brown, Pilot Kent Rominger, Mission Specialists Davis, Robert Curbeam and Steve Robinson and Canadian Payload Specialist Bjarni Tryggvason will conduct investigations into fluid and heat transport in space, cell growth, protein crystal growth and combustion.

In addition, the crew will devote a significant portion of the flight to the on-orbit evaluation and demonstration of a small robotic arm that will be located outside the Japanese Experiment Module of the International Space Station. The unique arm will be used to move experiments around the exposed platform of the module.

The Manipulator Flight Demonstration is a self-contained attached payload that will demonstrate the operational capability of the Japanese Experiment Module Remote Manipulator System.

While the Manipulator Flight Demonstration focuses on future systems that will be located at the station, the crew also will continue the series of studies called Risk Mitigation Experiments that utilize shuttle flights to test systems and procedures that will be used on the station. This allows engineers and designers the opportunity to test hardware in the space environment.

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New program helps maintain, upgrade employee computers

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Form data (approximately 5,000 Systems Management Server users total).

Also, many of the Macintosh computers on site do not have the Systems Management Server beacuse it does not install automatically as on PCs. Selecting the Systems Management Server is a simple process that most "MAC" users can do themselves. Extensive instructions are available on the EWMS Information Home Page. As with the Management Information Form data, it is critical for JSC's future support of desktop computers that the capability for the Systems Management Server be installed (under user control) on all desktop systems.

The Information Systems Directorate and the Information Resource Management Steering Council are using the information gathered by Systems Management Server to help develop the list of CPU's, CRT's and stand-alone printers that need hardware maintenance during FY98. Items not registered by Aug. 15 may not be maintained properly during the next fiscal year.

If employees need instructions on how to complete the Management Information Form data, they can refer to the Enterprise Workstation Management System Information Home page at http://www.jsc.nasa.gov/infosys/ewms/ or call the Help Desk at x34800 or contact their Information Systems Directorate Customer Services Agent.

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