

**NEAR liftoff**  
 The first Discovery mission lifted off last Friday on its three-year mission. Photo on Page 4.

# Space News Roundup

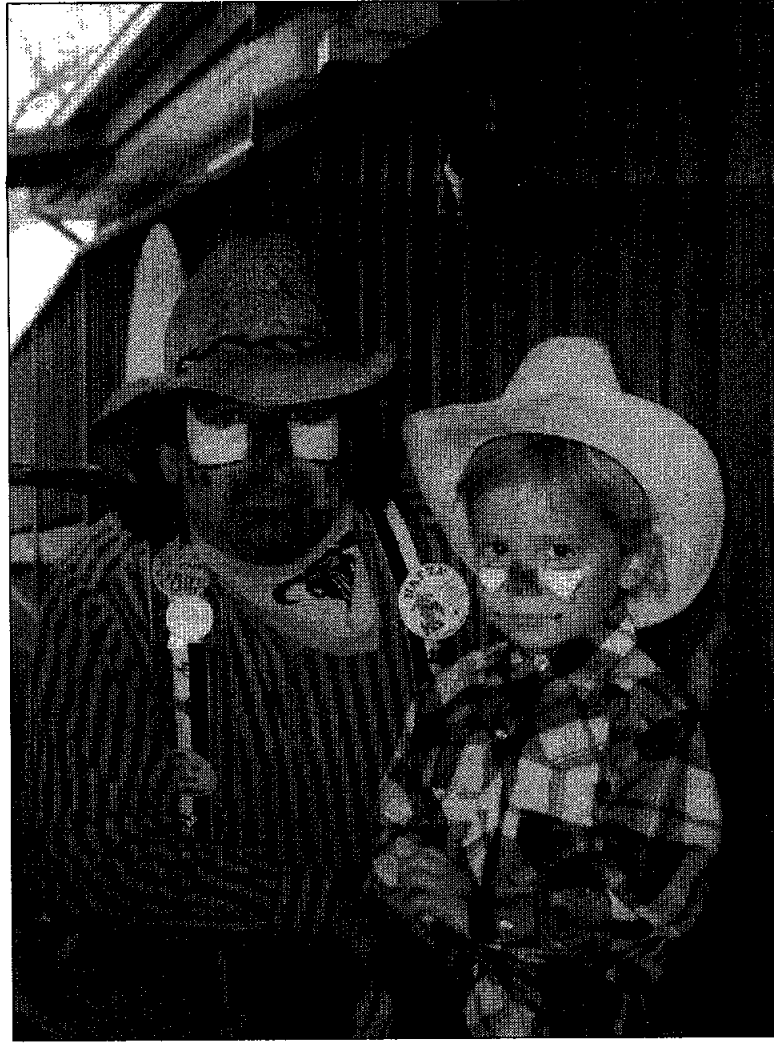
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**RODEO DAYS**—The first JSC trial ride brings out several horse-riding employees lead by a traditional covered wagon, above. Right: Rodeo Clown Mike McBride gives Sean Fitzpatrick, son of Bonnie Fitzpatrick of Pioneer a traditional rodeo clown face. Last Friday's 'Go Western' days featured face artist Sean Collins painting children's faces and Leslie Maxwell bringing small animals for children to handle at the JSC Child Care Center. Bldg. 3 Cafeteria rodeo events included cutting horse techniques; saddle and roping demonstrations; line dancing instruction and a best western outfit contest. First-place female winner was Teena Still of Kelsey-Sebold; First-place male was Frank Newman of Flight Crew Operations. Capping off events was the Rodeo Lift-off Party featuring the Original River Road Boys providing country and western music.



JSC photos by Karen Schmidt and Fran Brockington

## Columbia crew reels out tether this Saturday

**By James Hartsfield**  
 Even the weather forecast was perfect as the countdown for *Columbia's* launch on STS-75 ticked down smoothly Wednesday toward a 2:18 p.m. CST Thursday launch. As of mid-week, Air Force weather forecasters predicted a rare 100 percent probability of acceptable weather for an on-time liftoff of STS-75, which carries the reflight of the Tethered Satellite System and the third of the United States Microgravity Payload. *Columbia's* crew—Commander Andy Allen; Pilot Scott Horowitz; Mission Specialists Jeff Hoffman, Maurizio Cheli, Claude Nicollier and Franklin Chang-Diaz; and Payload Specialist Umberto Guidoni from the Italian Space Agency—traveled to KSC Monday.

As *Columbia* and the satellite orbit, experiments will focus on using the tether as an electricity generator, predicted to produce as much as one kilowatt of power. The environment around *Columbia* and the satellite also will be a subject of study during the almost two days the satellite is deployed before the tether is rewound back into the cargo bay.

Following the TSS-1R operations, USMP-3 will take center stage, performing nine days of studies involving the use of weightlessness to create new crystals and materials that are hoped to revolutionize the construction of semiconductors and computer chips. Highlights of the flight, given an on-time launch Thursday, include: deploy of TSS-1R from *Columbia* at about 2:37 p.m. CST Saturday;



For the 14-day mission, the first five of which will be devoted to TSS-1R operations and the last nine devoted to USMP-3 work, the crew will be on-duty 24 hours a day, split into three teams. Allen and Hoffman comprise the White Team; Nicollier and Chang-Diaz are the Blue Team; and Horowitz, Cheli and Guidoni are designated the Red Team. The TSS-1R will explore the dynamics and potential of using tethers in orbit. The satellite is to be deployed from *Columbia* to a distance of almost 13 miles, yet still attached to the cargo bay by a tether.

retrieval at about 12:45 p.m. Monday; a crew press conference at 6:03 a.m. March 5; and a KSC landing at 6:32 a.m. on March 7.

In addition to TSS-1R and USMP-3, *Columbia* also carries several secondary experiments, including the Middeck Glove Box which will be used for studies involving combustion in weightlessness and the Commercial Protein Crystal Growth, which will grow crystals that will be used to create new drugs for Chagas disease, among others, a dangerous Latin American, insect-borne illness.

## NASA Shuttle Web offers STS-75 crew's-eye view

The NASA Shuttle Web will offer an astronaut's perspective on orbital tracking on the STS-75 home page as it brings views of on-board laptop computer displays to the Internet. The new feature is a regularly updated snapshot of graphics from the WORLDMAP program that astronauts use on their laptop Payload and General Support Computer. The display pinpoints the shuttle's exact location to help the astronauts with their situational awareness and to provide information for documenting their Earth

observations with cameras. The program—developed by the Space Operations Computing (SpOC) Team—is the same that the crew is using on board. Both the flight version and the ground version access the orbiter state vector information via the shuttle's pulse code master modulation unit. The PCMMU, pronounced "puckamoo," data stream is read into another commercially available program called PCDeCOM, which extracts specified data parameters and feeds

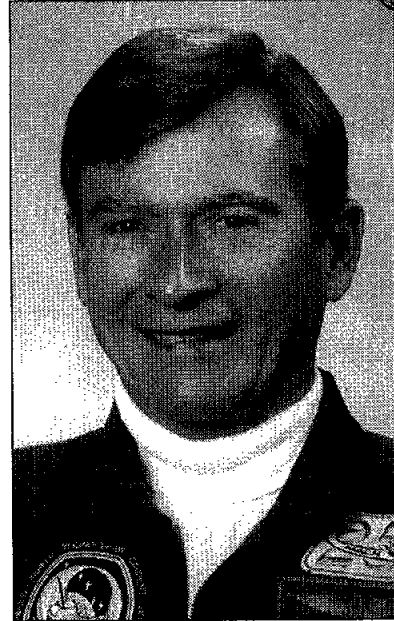
Please see **NEW**, Page 4

## New computer virus type spreads through E-mail

JSC's computer security experts are keeping a close eye on the advent of a new type of virus that is spreading through electronic mail. The viruses, called "macro viruses" are embedded in E-mail attachments and activated when the recipient opens the attached file. "In the old days we talked in a more theoretical sense about viruses coming in by E-mail. It's always been technically possible, just in practice it didn't happen," said JSC Computer Security Manager Lee Snapp. "Now we're seeing the complexion of this thing change as our technology steps up and the virus writers step up to abusing the new technology," Snapp said.

At the end of 1995, a Word macro virus spread throughout the JSC community, causing headaches but little lasting damage. Although none has been detected at a NASA installation yet, newer versions carried by common Microsoft Word or Excel files can cause serious damage. A macro is a set of commands that you give your computer simply by clicking on an icon. Macros can be embedded in documents. When you open the document, you run all the embedded programs that are there too. "If one of those imbedded programs is to put an obscene picture

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John Young

## Young becomes JSC associate director

JSC Director George Abbey has appointed veteran astronaut John Young associate director of the center, effective immediately. Young will be responsible for technical, operational safety and oversight of all programs and activities at JSC. He will be supported by representatives from Mission Operations, Flight Crew Operations, Engineering, Space and Life Sciences and the Safety, Reliability and Quality Assurance Directorates. Young was selected as an astronaut in September 1962. He is the first person to fly in space six times. His first flight was Gemini 3, the first manned Gemini mission, in March

1965. As commander of Gemini 10 in 1966, Young completed a dual rendezvous with two separate Agena target vehicles. On his third flight in May 1969, Young was Apollo 10 pilot. His fourth space flight, Apollo 16 in 1972, was a lunar mission, with Young as commander. The crew collected almost 200 pounds of lunar samples and drove more than 16 miles in the lunar rover on three separate geology traverses. Young's fifth flight was as commander of STS-1, the first flight of the shuttle in April 1981, with Bob Crippen as pilot. His sixth flight as commander of STS-9, was the first Spacelab mission in 1983.

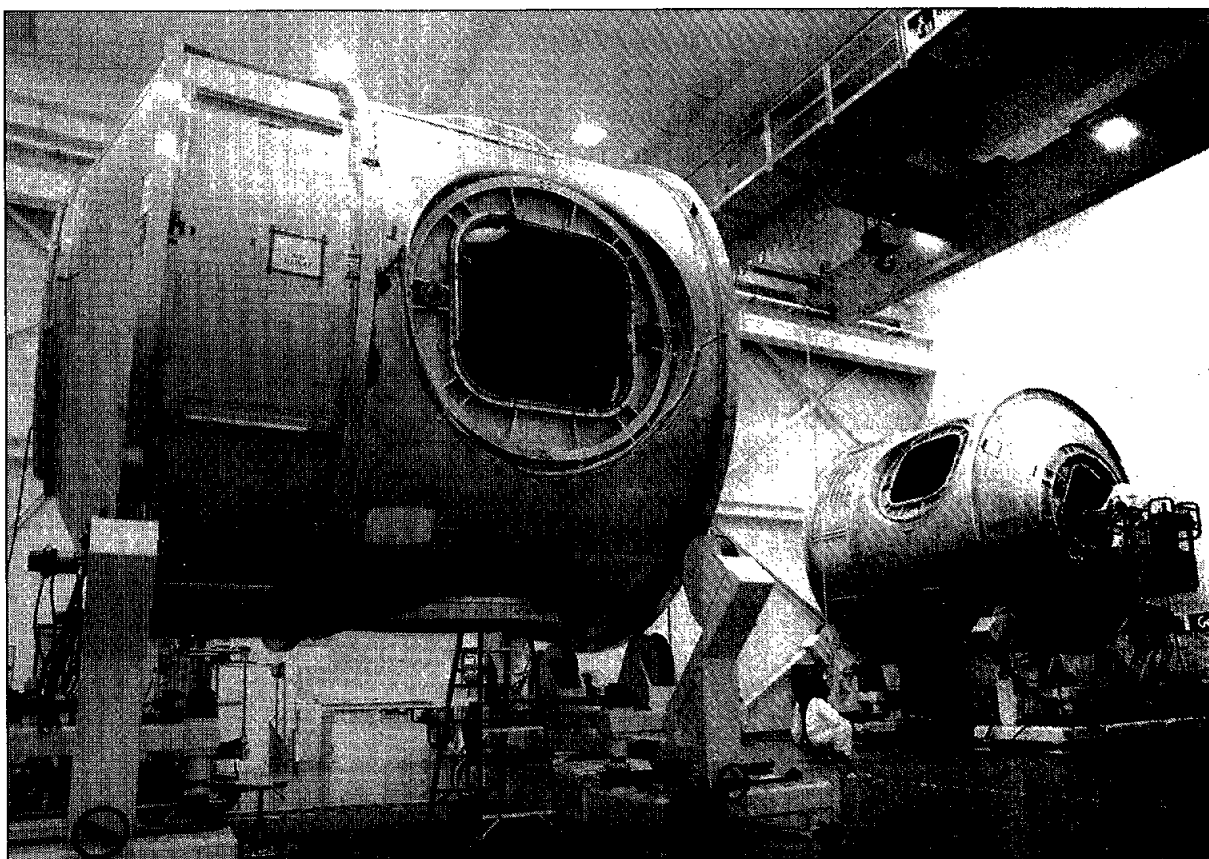






# Station Assembly

## Work is progressing to launch space station modules, nodes to orbit



The launch of the first module for the International Space Station is less than 20 months away and work to prepare for this historic mission is progressing smoothly.

Engineers at Boeing Defense and Space Group, the prime contractor for the station, have completed the final welds on nodes that will connect station sections that are being developed by the U. S. and its international partners. Node-1 will be docked to the Russian-built core module, or FGB, is set to fly in December 1997 and is currently undergoing stress tests. Both nodes will serve as connecting passageways linking other station modules.

Welds also have been completed on the laboratory module—where astronauts will perform continuous scientific experiments. The lab module was moved to the boring mill in November where its surfaces will be machined for various functions. It will later be covered with a debris-shield blanket, made of material similar to that used in bullet-proof vests. The outer layer will be a thin aluminum debris shield that will give the module added protection against space debris.

With welding complete on the nodes and laboratory modules, the Boeing technicians will now begin welding the habitat module.

The habitat module will serve the astronauts as "home away from home," where the crew will eat and sleep. It will be the same size as the laboratory module, but will have two windows, that promise to be popular off-duty areas for astronauts during their three-month stay aboard the station.

The assembly and welding processes was documented photographically by Boeing and the Space Station Program Office.

Top to bottom, left to right:

1) Workers prepare Node-1, right, and Node-2 for stress tests. The nodes will serve as connecting joints for the station. Each node is 18 feet long and 14 feet wide. The six hatches serve as docking ports for the other modules.

2) The main structure of the U. S. laboratory module—the centerpiece of the many modules and structures the U. S. is building for the station—has been successfully completed by Boeing technicians in Huntsville, Ala. The pressure hull for the laboratory is 28 feet long and 14 feet wide. The lab's exterior waffle pattern strengthens the hull against the harsh environment of space. It is scheduled to be launched November 1998.

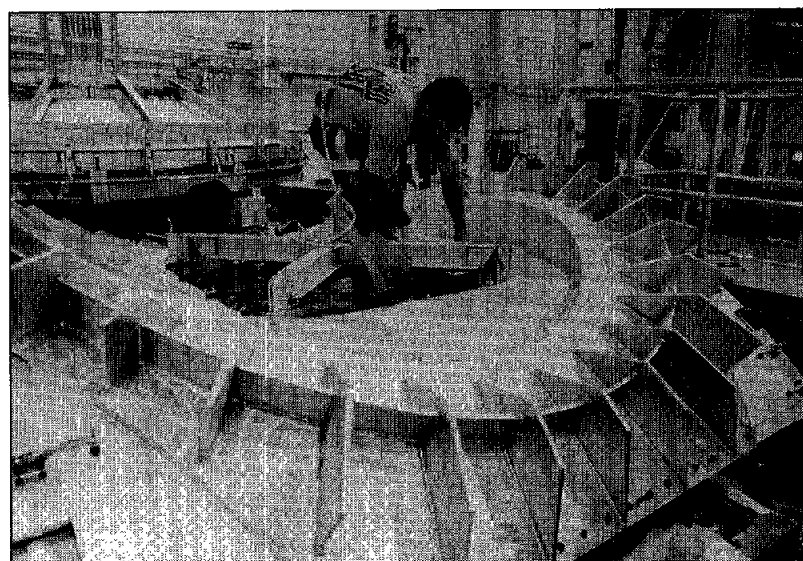
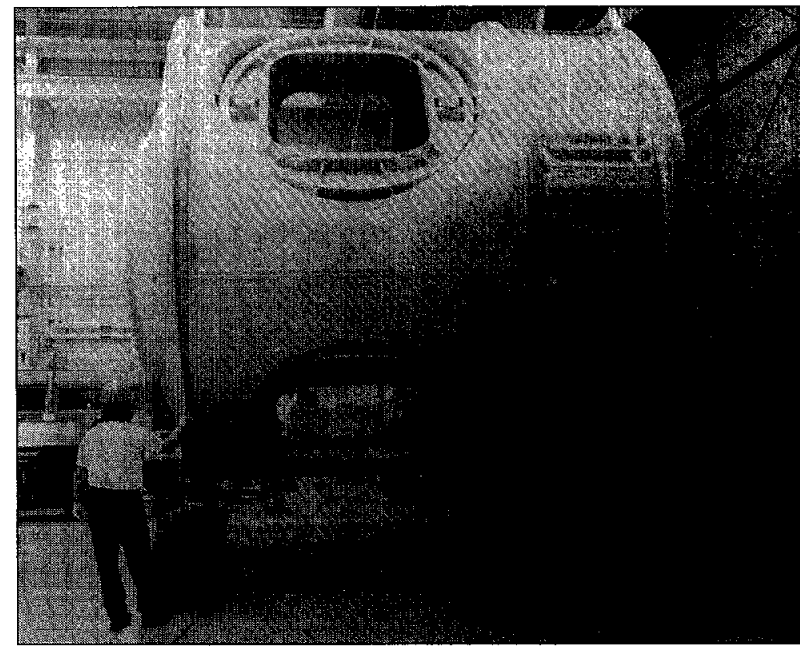
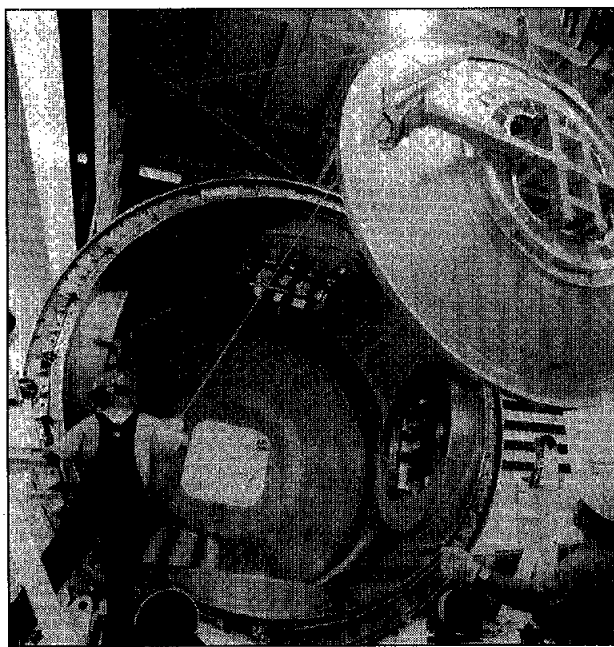
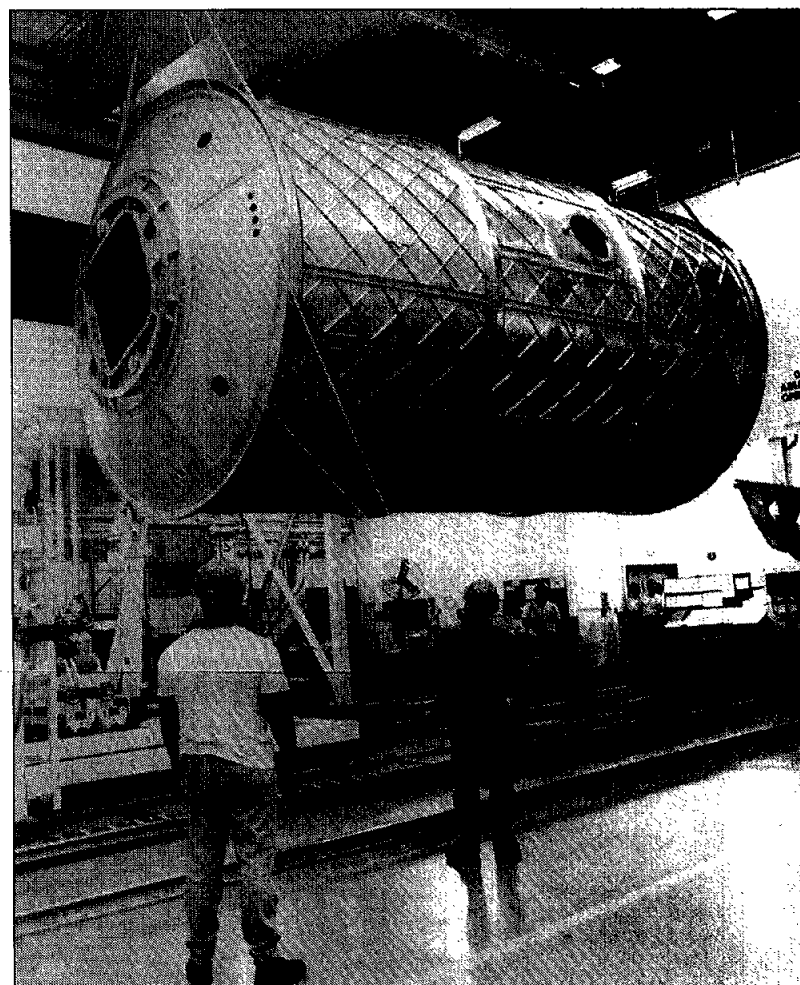
3) Welders use precise instruments to ensure the integrity of the node's welds.

4) A bulkhead is lowered to the end of one of the node modules. Once in position, the bulkhead was welded together.

5) A station node awaits stress testing.

6) A Boeing technician aligns the docking plate to the radial docking port skin that will be part of the node.

7) Boeing's internal outfitting team inspects a station standoff. There are four stand-off areas in the station nodes and they provide electrical connections, data management systems, cabling for computers, air conditioning ducts and thermal control tubes. □



Photos courtesy of Boeing

# NASA awards grant for Smithsonian global change exhibit

NASA's Mission to Planet Earth program has awarded a \$500,000 grant to the Smithsonian Institution's National Museum of Natural History to support planning for a new museum exhibition hall titled "Forces of Change."

"Forces of Change" will feature a series of regional case studies demonstrating the ways in which the Earth's environment is changing and how humans affect or are affected by these processes. Initial case studies on the Antarctic polar region, the Hawaiian islands, the Chesapeake Bay estuary and the Great Plains grasslands will offer museum visitors interactive, state-of-the-art displays on how natural forces influence their daily lives.

"NASA is excited to have the opportunity to work with the Museum of Natural History in communicating the results of the most recent studies of the global environment through an inventive forum that blends scientific research and educational outreach," said Robert Harriss, science division director for Mission to Planet Earth.

Additional programming in the form of books, film and lecture series, CD-ROM packages and classroom materials will be developed in conjunction with each case study. The exhibition will continually challenge visitors to learn more about the world in which they live and to think about their roles in shaping that world, according to

Acting Museum Director Donald Ortner.

"This generous grant from NASA enables the National Museum of Natural History to advance a ground-breaking exhibition which fully realizes our charter mission to be 'dedicated to understanding the natural world and our place in it,'" Ortner said. "We plan to create an exciting exhibition series to help visitors better understand the interdependencies between humans and the environment."

The "Forces of Change" project is being developed with extensive consultation among scientists, anthropologists and educators at the museum. Many other experts from outside the museum, including artists, photographers, environmental engineers and maritime histori-

ans, will also be involved in the project to ensure a thorough and balanced discussion of the topic, Ortner said. A date for the anticipated opening of the hall will be announced after the completion of the planning process.

NASA's Mission to Planet Earth is a comprehensive science research enterprise designed to observe the Earth's land, atmosphere and oceans from a global perspective using satellites, aircraft and ground-based measurements. Such studies will yield improved weather forecasts, better tools for managing agriculture and forests, information for ocean-related industries and coastal planners, and, eventually, an ability to predict how the Earth's climate will change in the future.

## MCC open for STS-75 viewing

The Mission Control Center viewing room will be open to JSC and contractor badged employees and their families during portions of the STS-75 mission.

Employees will be allowed to visit the MCC from 1-5 p.m. Saturday and 11:30 a.m.-2:30 p.m. Wednesday.

Employees must wear their badges and escort family members through the lobby of Bldg. 30 South. Children under five will not be permitted. No flash photography or loud talking will be permitted at any time. Because of the dynamic nature of shuttle mission, viewing hours may be changed or canceled without notice.

For the latest information on the schedule, call the Employee Information Service at x36765.

## New features enhance NASA Shuttle Web

(Continued from Page 1)

them to the WORLDMAP program.

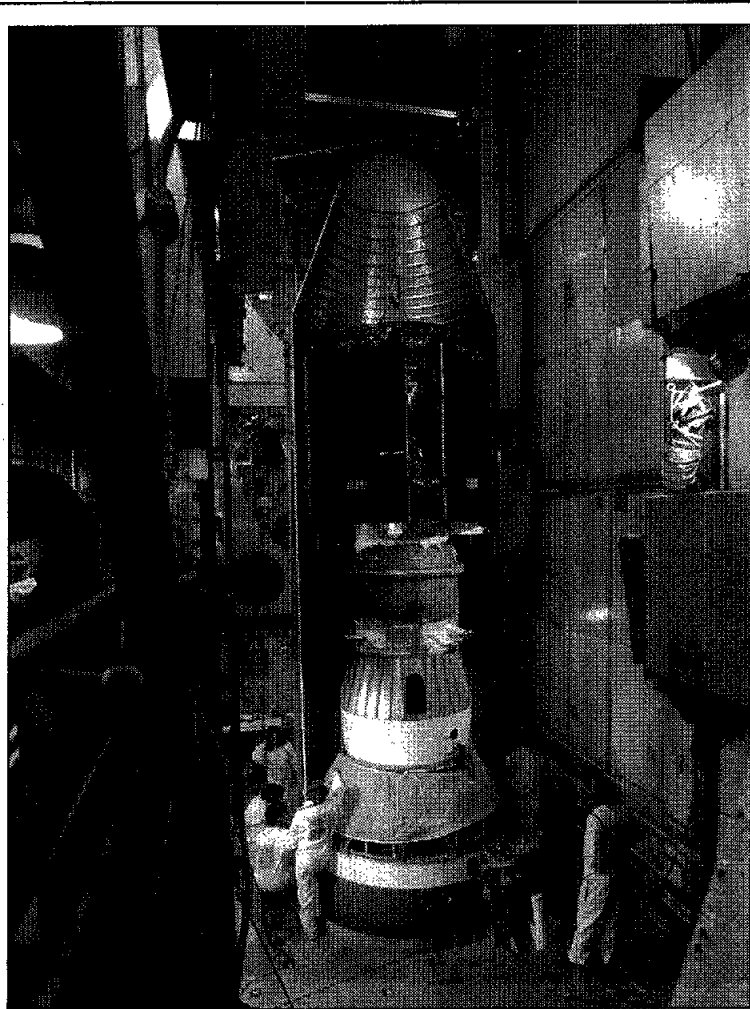
"WORLDMAP is running on a laptop, and sending a snapshot of its screen to a Mission Operations. We're just allowing the shuttle home page curator to link to that server," said Neil Woodbury, group leader for portable on-board computing and tools. "If users are running Netscape or Internet Explorer, the server will automatically update the shuttle's position every 60 seconds."

A small window in the lower left portion of the image shows the overall world view. The largest part of the image shows the Earth below from the same vantage, but magnified eight times. The application's title bar includes the current Greenwich Mean Time, Mission Elapsed Time, latitude, longitude and altitude. The map title bar displays the name of the country the shuttle is flying over. The timer window provides a variety of information, including the next S-band and Ku-band acquisition and loss of signal through the Tracking and Data Relay Satellite System, and 45 minute sunrise and sunset times on orbit.

Sometimes, areas will be outlined in red and red numerals will be displayed in the large map. These are upcoming Earth observations photography opportunities. The crew on board can click on these red areas and get additional information about the site and the best lenses and film speeds to use when photographing the area.

The new display is available alongside the existing Distributed Earth Modeling and Shuttle display. To access it, visit the NASA Shuttle Web at <http://shuttle.nasa.gov> and click on the "Tracking" button.

Other new features on the NASA Shuttle Web include, crew seating assignments during ascent and reentry; a cross-indexed alphabetical subject list, archives that contain facts on every shuttle mission ever flown, and a daily update page to highlight the most interesting shuttle happenings of the coming day.



NASA photo  
**NEAR LIFTOFF—Engineers at Cape Canaveral Air Station prepare the Near Earth Asteroid Rendezvous spacecraft for its three-year mission to rendezvous with the asteroid, 433 Eros. The installation of protective faring is one of the final preflight activities before liftoff. The NEAR mission began at 2:43 p.m. CST last Friday from Launch Complex 17 and rendezvous is expected in 1999.**

## Space station operations, utilization teams consolidated

By Linda Copley

The Operations and the Utilization Offices within the Space Station Program Office have consolidated in a move to streamline program management and improve efficiency and redesign costs.

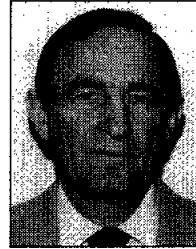
Former Operations Office Manager Chiroid Epp was named acting manager of the team, with William Bennett as acting deputy manager. Maurice Kennedy was named assistant manager for O&U integration and will provide the technical integration required by this consolidated effort.

"The structure is a realignment of the operations and utilization functions," Epp said, "and clearly defines program versus center responsibilities. This office will be responsible for program-level requirements, policies, integration, budgets and schedules. This includes oversight of all the station operations and utilization

activities and at the institutions. The institutions will implement all the functions such as cargo integration, facilities development flight planning and crew training."

The new team includes the O&U

Mission Management and Planning Integrated Planning Team with Susan Creasy as acting manager; O&U Manifesting and International Partner Coordination IPT with Kimberly Doering as acting manager; Ernest Smith as acting manager of the Space Station Operations IPT; Payload and Cargo Integration IPT



Epp

with Gary Johnson as acting manager; and Research Accommodations and Customer Integration IPT with Anil Singhal as acting manager. Anthony Butina will serve as acting manager of Logistics and Maintenance IPT and Mary Mechelay has been named as acting manager of the Sustaining Engineering IPT.

## Career Plus+ briefings in Bldg. 30

Human Resources will present details of JSC's new retirement transition program, "Careers Plus+," in the Bldg. 30 Auditorium today and Wednesday.

Detailed information about the three options available will be presented at 9 a.m. today, and 2 p.m. Wednesday. Handouts from these briefings will also be posted on the

Human Resources Office Home Page, which can be accessed on the following Internet address: <http://hro.jsc.nasa.gov/hro/> Employees with specific questions involving personal retirement options should call or visit Employee Services in Bldg. 45, Rm. 140, x32681. The staff can provide detailed retirement calculations and individual counseling.

## Computer users need to report virus; vaccine available

(Continued from Page 1)

on your screen and erase your hard disk, you will execute that program without knowing it. You don't necessarily know what is in that macro - that's where the danger is," Snapp said.

The Microsoft Office products widely used at JSC all use a program language called Visual Basic. Macros run Visual Basic commands, and will work on either Windows or Macintosh platforms.

Even though early viruses didn't intentionally cause damage, they were not benign, said Frank Martin,

JSC deputy security manager.

"Even if we say they're not intentionally damaging, they will cause headaches because they make machines not work well," Martin added.

What is the best way to protect against contracting one of these viruses?

"Don't open any Word document until you have the latest tools designed to find and remove the virus," Snapp said. In particular, he said, fight the urge to click on attachments sent to you by E-mail, especially if they are coming from

someone outside the NASA family.

The newer viruses can reformat hard drives, delete open documents, change colors of the users display screen. None of these have yet been reported at a NASA site, but it is probably only a matter of time, they said.

At JSC, 50 to 60 virus instances are reported each month, but Snapp and Martin say the tracking process probably does not capture the breadth of the macro virus spread.

Word viruses are going very much underreported, Martin said. The reason is that the program that

fixes the problem has been widely distributed to users and they have not always reported acquiring the virus because they have been able to clear it up themselves. Microsoft is expected to make available new tools that will combat the destructive macro viruses and JSC is seeking to distribute them, as well.

Users can get the latest "vaccine" from their computer security officers or their computer service technicians. But Snapp and Martin ask that users report any infestation to the ISD Help Desk, x34800, so that they can track the spread.

## Space Center Houston offers membership

Space Center Houston membership passes offer visitors a host of benefits not included in regular ticket prices and are available now for JSC employees who want to enjoy spring activities.

For \$29.95, members receive a pass that allows unlimited admission to all attractions for one full year, free parking, express check-in and a 10 percent discount in the Space Trader Gift Shop and Zero-G Diner.

Members also are invited to "members only" previews of exhibits and events, are given advance notice of post-flight astronaut briefings and receive a bimonthly newsletter. Membership privileges include a 10 percent discount and early registration for all educational programs including the spring break, summer day camps and overnight camp-ins.

SCH offers an annual family pass for \$59.95 that includes all the benefits of a single member pass plus private screenings of new IMAX films.

On-going activities at SCH include the display of a Russian Vostok capsule—the same type used to launch the first man into space.

One new feature for visitors to enjoy is "Close Encounters." Every Tuesday morning at 10:30 a.m.

through May, JSC scientists and engineers will give special presentations and bring visitors closer to space in the Mission Status Center. Visitors also can learn more about how lasers and holograms are being used in today's industry, medicine, space travel, communications and entertainment in the "Lasers and Holograms: Discovering the Splendid Light," display.

Spring Break Camps are on the agenda for '96. Day Camps will feature Rocket "Engine"-uity, Shuttle Orientation, Lego Exploration and If It Suits You activities for children of all ages. This year the program has expanded in conjunction with the University of Houston-Clear Lake to conduct camps at local libraries. In addition, special programs have been created for children ages five to seven. Day camps will be held from March 11-15 and March 18-22.

Summer activities will feature hot air balloon workshops specifically designed for children. Activities include the history of hot air balloons and their role in aviation, the mysteries of air and launch of a small-scale hot air balloon.

For more information on memberships or upcoming attractions call SCH at 244-2105.



## Wild Life presentation set at Gilruth

The Total Health program will host "Wildlife of the JSC Area," at 4:30 p.m. Thursday at the Gilruth Center.

Texas Game Warden Paul Muller will be on hand and provide information via slides and video about wildlife around JSC. Also live animals will be on hand including snakes, eaymen and several other creatures. Employees with questions concerning snakes, deer, armadillos and other animals seen around the center are encouraged to attend and have their questions answered by the game warden.

For more information call Larry Wier at x30301.