

Spaceport News

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John F. Kennedy Space Center



With the Spacelab long tunnel removed, workers in Orbiter Processing Facility Bay 1 continue servicing Columbia for its reflight on STS-94 in July.

STS-94

Columbia (23rd flight)
85th Shuttle flight
Target launch date: July 1
Pad: 39A
Mission: Microgravity Science Laboratory-1
Milestones: Rollover to the VAB, target date June 4.
Rollout to Pad 39A, target date June 11.



Cryogenic Infrared Spectrometers and Telescopes for the Atmosphere-Shuttle Pallet Satellite (CRISTA-SPAS), shown here undergoing integration in KSC's Multi-Payload Processing Facility (MPPF), flew in space once before on STS-66 in 1994.

STS-85

Discovery (23rd flight)
86th Shuttle flight
Target launch date: Aug. 7
Pad: 39A

Bridges sees Mars and much more in KSC's future

By Dian Hardison

Two months after assuming the top position at KSC, Roy Bridges addressed the NASA Kennedy Management Association (NKMA) May 9 on the issues of where KSC is headed, why, and what we can do to help. The timing was fortuitous, as he had just returned from a Headquarters strategic planning session on opening the space frontier.

Bridges made it clear that he had never considered the Space Shuttle to be an end in itself, but a necessary step in learning to live and work in space for the long term. He is already looking beyond the space station to Mars: a 180-day trip each way, with an 18-month to 2-year stay on the planet. He spoke of using the station for testing countermeasures against the difficulties of living in microgravity and

(See BRIDGES, Page 8)

USA transition nears Phase II

With more than 9,000 Shuttle workers now wearing the United Space Alliance (USA) badge in Florida and Texas, Phase I of the Space Flight Operations Contract (SFOC) transition is well under way and Phase II could possibly begin around Oct. 1.

While the signs of change are not radical, they are clear-cut. USA recently took charge for the first time of an orbiter rollover from the Orbiter Processing Facility to the Vehicle Assembly

(See USA, Page 4)



THE Space Shuttle Atlantis turns night into day as it lifts off on May 15 at 4:07:48 a.m. EDT from Launch Pad 39A on the STS-84 mission. The fourth Shuttle mission of 1997 will be the sixth docking of the Space Shuttle with the Russian Space Station Mir. The commander is Charles Precourt. The pilot is Eileen Collins. The five mission specialists are Michael Foale, Carlos Noriega, Edward Lu, Jean-Francois Clervoy of the European Space Agency and Elena Kondakova of the Russian Space Agency. The planned nine-day mission will include the exchange of Foale for U.S. astronaut and Mir 23 crew member Jerry Linenger, who has been on Mir since Jan. 15. Foale is slated to remain on Mir for about four months until he is replaced in September by STS-86 Mission Specialist Wendy Lawrence.

Sons Day set for June 5

KSC is planning the annual *Take Our Sons To Work Day* on June 5. This day targets 9- to 15-year old youths, and exposes young men to the many choices for careers in the work place. It also enables parents, grandparents and close acquaintances to share a work day, and to encourage the boys to seek an exciting and interesting career.

Sponsors may bring more than one child, but all children must be at least 9 years old.

The career choices at KSC offer a challenge to the imagination and give sponsors an opportunity to show the young men what they do and encourage them to stay in school, study hard, and develop their abilities.

Due to limited seating space, only NASA sponsors and their

children may participate in the following program:

7:30 – 8:00 a.m. Seating in IMAX II at the KSC Visitor Center.

8:00 a.m. – 9:30 a.m. Program for NASA children:

- Program on model and prototype building, featuring the USA First National Competition by Raoul Caimi and Eduardo Lopez del Castillo, NASA Engineers.

- Tom Brubaker from I-NET will explain Shuttle processing and show slides.

- Randy Baker from Nickelodeon will discuss careers in the film industry.

Several contractor organizations have programs, and for

(See SONS, Page 6)



EQUAL Opportunity Program Office Director Jay Diggs (left) McNair Middle School Principal Dunn Neely (second from right) and KSC Director Roy Bridges (right) recognized Carol Cowen as the Mentor of the Year.

KSC SEARCH crew wraps up another successful year

The KSC Science, Engineering and Research Career Help (SEARCH) Crew program wrapped up its sixth year with a May 12 reception hosted by Center Director Roy Bridges.

Carol Cowen, chief of the Acquisition Management Office, Procurement Office, was honored as the *Mentor of the Year*.

Although she is only in her second year as a mentor, Cowen has embraced the challenge of guiding her two young charges.

One student was frequently being suspended from school. Under Cowen's tutelage, the girl has greatly improved her attendance record and was recently honored as the most improved student in the program.

"It's rewarding to feel I've had an impact on their lives," Cowen observed, adding that she plans to see both students over the summer and continue

to participate in SEARCH Crew in the future.

The SEARCH crew was established to provide interested employees with a way to interact with local area minority and female students to encourage, assist and motivate them to pursue secondary and collegiate courses which will lead to careers in science and technology.

This year 39 mentors representing NASA and KSC contractors worked with 74 students from McNair Magnet Middle School and other local area schools.

For more information about becoming a SEARCH Crew mentor, contact the KSC Equal Opportunity Program Office at 867-2307.



STUDENT/MENTOR activities included several field trips. In February, the students visited the solid rocket booster retrieval ships and toured the KSC fire stations (above). In April (below), students and mentors visited the Merritt Island National Wildlife Refuge, toured the new Apollo/Saturn V Facility, and were then treated to a pizza lunch at KARS II. Oscar Gamboa of NASA (center) visits with students David Lopez and Erwin Lopez, who are mentored by Felix Soto-Toro.



National Seashore initiates user fees

The Canaveral National Seashore is participating in a national effort to make more funds available to improve U.S. parks and the services they offer.

Under the guidelines of recent congressional legislation, approximately 80 percent of the revenues collected at the Seashore will be returned to the Seashore for improved services.

The fee structure is as follows:

- Annual park pass – \$20
- Walk-in – \$1
- Bicycle – \$1
- Private vehicle – \$5
- Senior citizen (62 years and older) annual pass – \$10
- Senior citizen daily use – \$2
- Commercial van (8-16 passengers) – \$20
- Bus (40 passengers and up) – \$40

Entrance stations are located in the South District of the seashore eight miles east of Titusville on State Road 402, the other in the North District 14 miles south of New Smyrna Beach on A1A. The stations will keep the same hours as the Seashore.

Restrictions apply to Golden Access Passes, Golden Age Passes and Golden Eagle Passes. Call the Seashore Headquarters in Titusville, 407 267-1110, for more information.

Space Club to hold golf tournament

The National Space Club-Florida Committee is sponsoring a benefit golf tournament June 14 at the LaCita Country Club in Titusville.

Funds raised from the tournament go to scholarships for local students, but the event also offers the opportunity to meet community leaders, Tournament Chair Roger Elliott said.

Prizes will be awarded to the top finishers. Cost is \$75 per player or \$300 per team. Contact Roger Elliott at 867-9693 for entry information.

Electrical extension cords discouraged at KSC

KSC has a clear safety policy regarding the use of electrical extension cords and Temporary Power Taps (TPTs). A TPT is a flat panel that provides additional electrical outlets, and must have built-in over-current protection, an easily accessible on/off switch and reset capability.

Employees should note that:

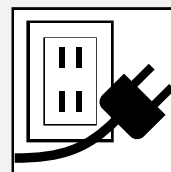
- Lights and appliances should be plugged directly into permanent outlets. Computer

systems and similar electronic equipment are the exception, but must be plugged into a Surge Suppressor that is plugged directly into a permanent outlet. Only Ground-Fault Circuit Interruption (GFCI) cords can be used outside.

- No more than one extension cord can be used between an appliance and the permanent outlet;
- Extension cords can't block egress routes, or pose a tripping

hazard, nor can they be placed through doorways, windows or through holes in walls, ceilings or floors;

• Two-wire zipper-type cords, such as those found on lamps, coffee-makers and other appliances, must be connected directly to the wall outlet and not to an extension cord. They also cannot be used as extension cords.



New Hubble images demonstrate success of second servicing

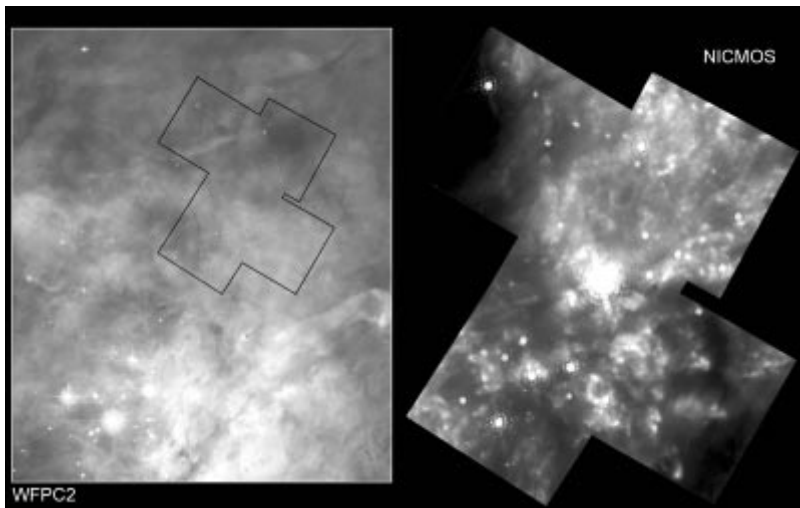
New images from the Hubble Space Telescope confirm the success of the second servicing mission earlier this year.

The image below right was captured with one of the new instruments, the Near Infrared Camera and Multi-Object Spectrometer (NICMOS). It is a detailed portrait of the heart of the Egg Nebula, located 3,000 light years away. The Egg Nebula is an expanding cloud of gas and dust ejected by a dying sun-like star that has burned most of its fuel. Studying the death of sun-like stars is crucial for understanding how two of the elements critical for human life — carbon and nitrogen — are expelled into the interstellar medium.

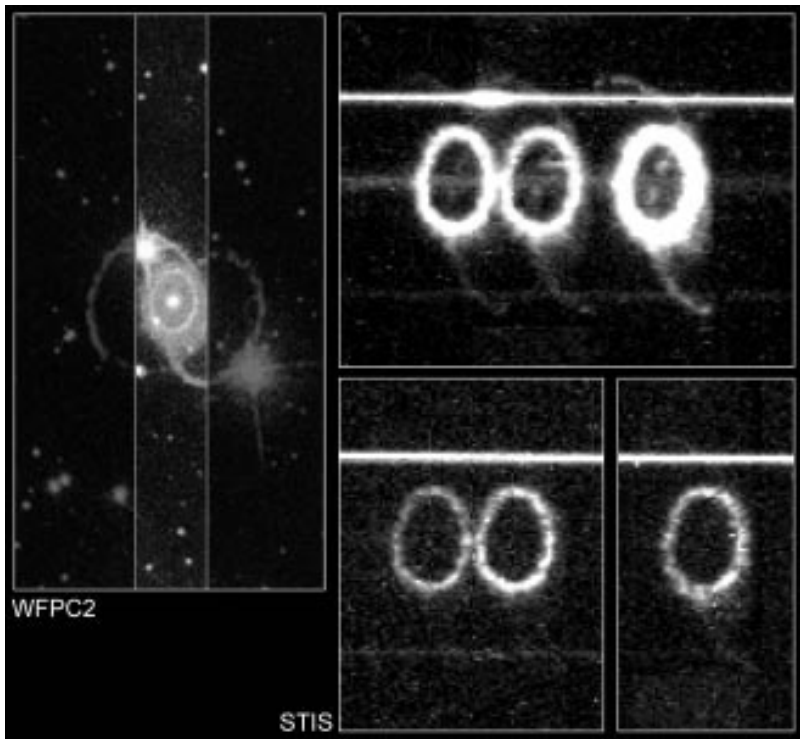
The images at lower left show

a chemical analysis from the Space Telescope Imaging Spectrograph (STIS) of the light-year-wide ring of glowing gas around a supernova, which is an exploding star. The triple ring image indicates hydrogen; the double-ring image, sulfur; and the single-ring image, oxygen. By dismantling the ring into its component elements, astronomers hope to assemble a picture of the processes which created the ring 30,000 years before the star exploded.

The image at upper right also was taken by NICMOS and is a dramatic new look at the Orion Nebula, a region where massive stars are born. NICMOS has penetrated the cloud of dust to reveal an active stellar nursery filled with complex structures.



WFPC2 image of Orion Nebula at left in visible light; NICMOS infrared image of part of the region is in image at right.



WFPC2 image at left shows Supernova 1987A in visible light; images at right are detailed images of the ring of glowing gas surrounding the supernova.

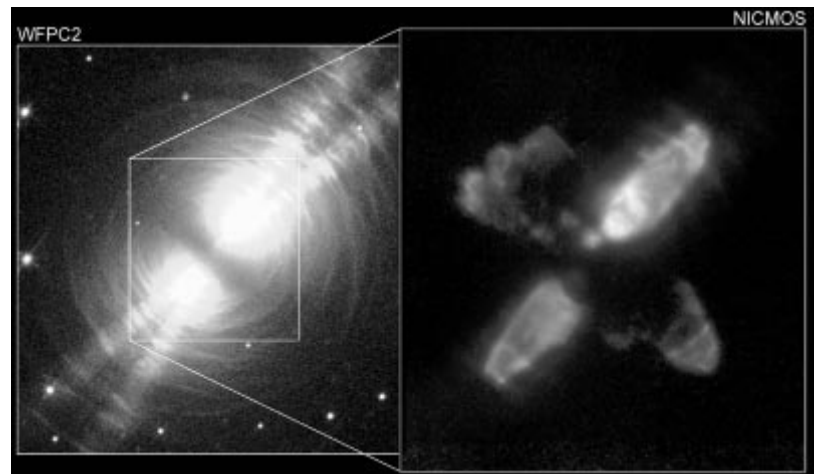


Image of Egg Nebula at left in visible light, taken with Wide Field Planetary Camera 2 (WFPC) and at right as it appears in infrared light with new NICMOS infrared instrument.

Cassini high-gain antenna installed

ONE of the largest, heaviest and most complex interplanetary spacecraft ever built continues to take shape as workers in the Payload Hazardous Servicing Facility (PHSF) install the high-gain antenna on the Cassini orbiter. Provided by the Italian Space Agency, the antenna is about 13 feet in diameter. When Cassini is at Saturn, it will be between 8.2 and 10.2 astronomical units (AUs) from Earth. An AU is the distance from the Earth to the sun, 93 million miles. The vast distance means that it will take 84 minutes for signals to travel between the spacecraft and Earth. The time lag will present a challenge for ground controllers, for it means real-time commands to the spacecraft won't be possible, even in the case of an unexpected event or anomaly. Cassini is scheduled for liftoff on a Titan IV/Centaur expendable launch vehicle in October. The international mission managed by the Jet Propulsion Laboratory also includes the European Space Agency, which is providing the Huygens probe that will study the Saturnian moon Titan.



USA . . .

(Continued from Page 1)

Building. The solid rocket booster retrieval ships are slated to take on the additional task of external tank delivery, and USA personnel are now active participants in all Shuttle Processing Milestone Reviews.

"There are three things happening simultaneously that make the transition a tremendous challenge," said Shuttle Ground Operations Manager and Associate Program Manager Mike McCulley in a recent interview with *Spaceport*



McCulley

News. "First, there is a NASA transition occurring from oversight to insight. Bob Sieck and I co-chair a committee called the Transition Management Review Team to oversee every task to be transitioned.

"Second, USA is a new company, a hybrid of Lockheed Martin, Rockwell and Boeing North American," McCulley continued. "It's a new experience for all of us.

"Third, it's a new contract. The sports analogy might be that you have all the players on the field, the game is under way, and the rules change."

McCulley's assessment of the magnitude of the consolidation effort was echoed by USA Program Manager Glynn Lunney at a USA press briefing



Lunney

May 14. "It's like trying to catch a fast-moving train," Lunney observed.

Consolidation and streamlining continue

Phase I primarily has been a consolidation of major contracts at KSC and Johnson Space Center in Houston, bringing together the former Shuttle Processing Contract activities of Lockheed Martin at KSC with

SFOC Chronology

- **August 1995** – Rockwell and Lockheed Martin agree to form USA
- **November 1995** – NASA announces it will pursue an agreement with USA to become single prime contractor for Shuttle operations
- **April 1996** – Management responsibility for Rockwell's Space Operations Contract (SOC) and Lockheed Martin's Shuttle Processing Contract (SPC) is transferred to USA
- **June 1996** – Two thirds of Lockheed Martin's work force in Florida and all of Rockwell's employees in Houston transition to USA
- **July 1996** – Remaining SPC employees transfer to USA
- **September 1996** – USA and NASA sign the SFOC contract
- **October 1996** – SFOC becomes effective; Rockwell employees at the NASA Shuttle Logistics Depot transfer into USA

Space Flight Operations in Houston formerly run by Rockwell. The majority of USA employees are at KSC, a little more than 6,000 people.

USA Florida includes all former Shuttle Processing Contractor employees, Thiokol and Grumman workers originally supporting the SPC at KSC, and former Rockwell employees at the NASA Shuttle Logistics Depot (NSLD) in Cape Canaveral. Consolidation of SPC and NSLD administrative functions such as finance and public affairs is complete.

Assessments are under way to determine how to best manage several offsite facilities in Florida, ranging from the NSLD to former Lockheed Martin buildings in Titusville. Building 1 of the Lockheed Titusville complex has been sold to the City of Titusville and should be vacated this summer.

USA also is looking at how best to manage multiple Shuttle logistics operations in Florida, Houston and at the Palmdale plant in California. "We think quite a bit can be saved by taking a big-picture look at all these logistics operations," McCulley said.

Management of flight hardware also is changing. For example, Marshall Space Flight Center formerly managed on a

subcontract basis the transportation of the external tank from the Michoud plant in New Orleans to KSC. USA now is in charge of that activity, McCulley said. This summer, modifications will be made to the two Shuttle solid rocket booster retrieval ships to allow them to transport the tanks, achieving a cost savings by eliminating the subcontract, McCulley said.

Proactive focus

In the launch operations world, McCulley said USA is striving for a more proactive stance. In the future, the company hopes to avoid launch delays such as the one-day slip that occurred prior to STS-83, when additional thermal insulation had to be added to a water coolant line in the orbiter's payload bay.

Proactive also is the word in

flight hardware maintenance. A standard management technique called Reliability-Centered Maintenance (RCM) is being applied to such activities as the Orbiter Maintenance Down Period (OMDP) routinely performed on each orbiter every three years. Data gathered during past OMDPs suggests the checkup of the vehicle could possibly be performed every four years.

"RCM takes the data up front to determine when something needs to be done," McCulley said. "These are tools that allow you to make better decisions."

The site for future OMDPs — California versus Florida — was raised at the May 14 press briefing. "The decision won't be based on cost alone," said Deputy Program Manager Howard DeCastro. It's a complex issue, he emphasized, in which other issues such as preserving or-



USA already has assumed responsibility for managing the transfer of the external tank by barge from the Michoud plant in New Orleans to KSC.

biter manufacturing capability or meeting the manifest must be considered. A decision is expected in July on the OMDP site for Columbia (OV-102).



DeCastro

McCulley also noted that:

- His final Shuttle mission as a KSC-based USA manager will be STS-94, after which he returns to Houston to work with Lunney and DeCastro. Acknowledging that he has mixed feelings about leaving Florida, the former Shuttle pilot added, "I'll look forward to bringing some KSC experience to Houston."

- Attrition and other factors have led to a larger-than-expected decline in the USA Florida work force, so it's hoped any near-term layoffs will be small. Program Manager Lunney said at the press briefing that the target reduction number is 150 positions total for Houston and KSC. These are duplicate functions resulting from the horizontal integration of previous contracts. Given a healthy number of voluntary separations, McCulley said that at most about 20 involuntary separations would occur in Florida. Officials at the briefing reiterated the company's commitment to finding jobs for former Shuttle workers elsewhere in the space program.

- USA is actively participating in the Shuttle upgrades effort, with people supporting Associate Director for Safety and Shuttle Upgrades JoAnn Morgan on the KSC end and others involved with the effort spearheaded by former astronaut Bill Readdy out west. USA employees also are supporting development of the Checkout and Launch Control System (CLCS), the successor to the current Launch Processing System.

Phase II goals

As far as transitioning NASA functions to USA — a key element of the Shuttle prime concept — McCulley said the Tran-



USA recently was in charge for the first time of a major move: the rolover of Atlantis to the Vehicle Assembly Building in preparation for STS-84. NASA will continue to transition to the Space Flight Operations Contractor similar responsibilities. This view shows the rolover of Columbia on March 5 prior to STS-83.

sition Management Review Team he co-chairs with NASA Shuttle Processing Director Robert Sieck identified about 700 such tasks. These were consolidated to about 400, and then divided based on complexity and risk level.

The low-complexity tasks have all been transitioned to USA. Turnover of the moderate- and high-complexity functions will take longer. "We're deliberately doing it slowly," McCulley observed. An example of a moderate-complexity task would be major moves of flight hardware. USA performed this function for



the first time without NASA management with the rolover of Atlantis to the Vehicle Assembly Building in preparation for STS-84.

A high-complexity task would be something such as hypergol loading at the pad, McCulley said. USA and NASA hope to transition many of these moderate- and high-complexity jobs to USA in the next year.

Lunney and USA Chief Operating Officer James Adamson were both upbeat and visionary in discussing Phase II. When it

is complete, contracts for all other major Shuttle elements will be transitioned to USA management.

For example, while Thiokol will continue to manufacture the redesigned solid rocket motor at its Utah plant, management of that activity will be assumed by USA, freeing NASA to take on other projects. The same would hold true for the external tank and main engine contracts, as well as miscellaneous activities



Adamson

at JSC.

Also among Lunney and Adamson's observations:

- Given its unsuitability for deploying International Space Station elements due to its weight, the orbiter Columbia could become a testbed in the future for demonstrating Shuttle upgrades and transitioning the Space Shuttle to a more commercial orientation.

- Flight rates of 9-10 Shuttle flights per year are clearly in the scope of things, Adamson said, and might even reach 10-12 per year.

- The future of the Space Shuttle could range from the

orbiter serving as a supply vehicle for the International Space Station to resuming its role as a launcher of commercial satellites. Anything is possible, Lunney and Adamson said.

- The SFOC is a six-year, \$7-billion contract, and savings to be realized from implementing it should be considered over the long-term rather than the short, Lunney said. He is convinced that by the time the contract is complete, USA will under-run the cost of the contract, not by a little but by a lot. "It will be more than pocket change," Lunney said.

"These are tremendous challenges," McCulley observed. "But having said that, I can also add that folks here are working tremendously hard to fly safely and on time, but at the same time more efficiently."

"KSC enjoys a reputation of

having a strong government contractor team," observed NASA Shuttle Processing Director Robert Sieck. "When this transition is complete, the team will look different, but the reputation should be the same."



Sieck

Sons . . .

(Continued from Page 1)

information on those, please contact your public affairs office. EG&G will hold its annual *Take Our Children To Work Day* on the same day.

Following the program for NASA children, all contractor and NASA employees are invited to bring their children to:

- **9:30 a.m.** Robotics Demonstration by Steve Van Meter, NASA hazardous duty robotics specialist. This demonstration will take place between the Galaxy Center (IMAX building) and the pond by the Astronauts Memorial.

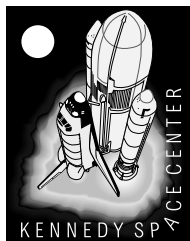
- The KSC Visitor Center **Spaceman** will be available in the same location for a photo opportunity.

- **K-9** demonstration by Sgt. J.J. Curtis, EG&G Security, also is planned.

- All NASA and contractor employees may take advantage of a trip to the new **Saturn V Facility** with their children. Tickets must be purchased in person on June 2, 3, or 4, at Group Sales (adjacent to Charter Bus Parking, 449-4400), on those dates between 9 a.m. and 5 p.m. The adult price is \$8 and special ticket price for children is \$3.

This opportunity is for bus transportation only — absolutely no vehicles may go to the facility.

Sponsors may take as many children as they bring with them; however, do not send children unaccompanied on this tour. This is a great opportunity to see the new facility, and the bus will take you out there, allowing you to stay as long as you wish. Return buses are available every 15 minutes throughout the day.



TAKE OUR SONS TO WORK DAY

JUNE 5, 1997

controlled access area which requires a controlled access badge. Personnel working in those areas (VAB, O&C high bay,

OPF's, etc.) may arrange for another badged individual to take their child to an approved area. Please remember that this is *Take Our Sons to Work Day*, not a KSC Open House.

- Badges will be honored at all KSC gates and at Gate 1 on Cape Canaveral Air Station.

BADGING

Participating contractors will be distributing badges through their own representatives.

NASA personnel may pick

Quilt of many patches

NASA retiree Faye Nick began making this quilt six years ago. It features mission patches from the first 71 Space Shuttle launches. Nick, who worked at the space center from 1965 to 1982, comes back as a volunteer to support NASA Public Affairs during launches. She says the quilt is almost completely filled now with the patches.



up badges on June 2, 3, or 4 between 10 a.m. and 2 p.m. in Headquarters, Room 2331.

- Children must wear their badge and be with a badged employee at all times while on the Center.

- No child under 9 years of age may participate.

- The sponsor is responsible for the children they bring — they may go with another person to another work site, but ultimate responsibility remains with the sponsor.

- Children may not enter any

SHINING BRIGHTLY

THE Fresnel lens that shone in the historic Cape Canaveral lighthouse since 1868 has found a permanent new home at Ponce Inlet. The First-Order Fresnel lens was the largest of such lenses, designed by French civil engineer Augustin Jean Fresnel.

It stands more than 16 feet tall and is 70 inches in diameter. Including its pedestal, the lens weighs nearly 13,000 pounds. Its light was visible for 22 nautical miles. Removed from the Cape lighthouse in 1993, the lens is now housed in a specially designed building at the Ponce Inlet lighthouse site north of KSC, and is cared for by the Ponce de Leon Lighthouse Preservation Association.



Florida Women in Government group plans May 27 meeting

The Space Coast Chapter of Florida Women in Government (FWIG) is meeting May 27 at 6 p.m. in the Cocoa Civic Center, Cocoa Village.

The keynote speaker will be from Serene Harbor, a Brevard County domestic violence shelter. FWIG began contributing to domestic violence shelters around the state in 1995, and the Space Coast Chapter makes donations to Serene Harbor.

FWIG is an organization dedicated to professional development of government employees and their supporters. It was formed in 1964, while the Space

Coast Chapter formed in 1991. Name to the contrary, FWIG is open to any government employee in federal, state or local government. FWIG currently has more than 400 members.

FWIG sponsors an annual educational conference, funds scholarships for members and their immediate families and promotes local chapters.

For more information about FWIG, contact Christy Fischer, 407 952-3426.

There also is an FWIG Web site: <http://www.bitmark.com/fwig>



Correction

In the article about the Voided Drawing team on p. 6 of the May 9 *Spaceport News*, the number of microforms being stored in the Film Storage Facility is incorrectly stated as 2.6 instead of 2.6 million microforms.



MEMBERS of the Shuttle Processing Support and Ground Support Equipment team of United Space Alliance pose with Acting Operations Director Ann Montgomery.

“Top Guns” of Logistics bag SFA award

An 11-member United Space Alliance (USA) team known as the “Top Guns” of the Logistics world were recently honored for their part in automating the orbiter Ground Support Equipment (GSE) tracking system.

Team members are stationed throughout KSC at Logistics Material Service Centers. Each area supports Shuttle processing by providing needed GSE to perform required work.

The original system for keeping track of the GSE dated back to the pre-computer age of index cards and a central file system in the Orbiter Processing Facility Materials Service Center. The manually maintained system depended on personnel sup-

plying information about changes to the location and status of a particular piece of hardware.

The Shuttle Processing Support and Ground Support Equipment team brought the cumbersome system out of the Dark Ages. An automated database that taps into the existing KSC Shuttle Processing and Data Management System (SPDMS) was established.

The system was loaded with each Program Model Number (PMN) of all orbiter support GSE and KSC.

As a result, the location of any piece of GSE can now be easily determined and maintained simply by logging into the SPDMS.



NASA Alumni League seeks new members

The Florida Chapter of the NASA Alumni League is eager to gain new members.

The chapter is engaged in a number of volunteer activities, said President Norris Gray. Many former KSC employees return to the center to support NASA Public Affairs prior to Shuttle launches, conducting tours, staffing the guest center and escorting news media at the



Press Site for tours and press camera operations.

The organization is also looking into providing volunteer support at the Orlando Science Center as well as the Apollo/Saturn V Center here on KSC. The alumni league also sponsors fun events like a Fantasy Cruise in April and is active in promoting discounts for such attractions as Disney and travel bargains.

Interested retired NASA employees can call Norris Gray at 407 254-2161 for information.

Employees of the Month



HONORED in May: Seated in front are (from left), Delia Boughner (Safety and Mission Assurance); Saul Barton (Administration Office); Joy Jones (Chief Financial Officer Office); and Bob Cunningham (Logistics Operations). Behind them are (from left) Linda Burse (Installation Operations); Karin Biega (Shuttle Processing); Jennifer Starkey (Payload Processing); Lorenzo Chance (Procurement Office); Pat Hatch (Engineering Development); and Penny Myers (Launch Integration Office). Not shown is Gennaro Caliendo (Space Station Hardware Integration Office).

UCF again offering master's in engineering management program

The University of Central Florida will again offer on-center its Master of Science Program in Engineering Management.

The fall semester will begin Aug. 25. The application deadline is July 25, and information sessions will be held on KSC June 4 and June 25, at 4 p.m., at the NASA Training Center, Room 107H. The facility is located at B and Second Streets in the KSC Industrial Area.

Applicants are notified of their admission status on a rolling basis.

The master's program is open to all KSC employees (both civil service and contractor) as well as all Cape Canaveral Air Station employees, with more than 250 KSC employees to date successfully completing the two-year curriculum. The master's degree is intended to provide graduates with the skills and analytical tools for managing people and resources in an engineering and technology based project environment.

To qualify, applicants should have a bachelor's degree in engineering, science or mathematics. Admission requirements are a 3.0 GPA in the last two years of undergraduate work or a score of 1000 (verbal and quantitative) on the GRE. Students must have completed mathematics through calculus III prior to graduation.

Cost per semester is \$1,250, exclusive of books, and includes a deferred payment plan for students awaiting tuition reimbursement by their employers. A \$50 discount is provided for those who pay at the beginning of the semester.

The program runs for six semesters (including summers) and includes two courses each semester. The 12 courses cover people, financial and systems aspects of project management.

For a program brochure or more information or an application packet, contact the UCF Center for Outreach Credit, 407 823-6227, or Dr. Charles Reilly, program director, 407 823-5306.

Bridges...

(Continued from Page 1)

high-radiation environments, and a lunar base as a proving ground for new power and production plants and robot sample collectors.

Bridges envisions the Mars missions as consisting of habitation and manufacturing modules sent ahead on efficient propulsion such as solar-electric or nuclear, followed by a crew of three to six people on a fast trajectory to minimize radiation exposure. Once there, the crew would set up a semi-permanent camp for the next arrivals, producing their own propellant from native materials for the return trip.



Bridges

And he sees Mars as only another steppingstone, believing strongly that our mission is to keep on going outward to discover all the limitless things there are to find. "The more we learn," he says firmly, "the more we realize how little we know, and how much we need to know." His response to the question of why spend money on space instead of helping the needy on Earth is that that's "flat-Earth thinking." Resources on Earth are limited, he points out, and people don't want to be limited: We have the power as well as the desire to use all the resources available to maintain the highest standard of living for all.

Bridges maintains that we were chosen, in this time in history, to be the vanguard in opening the new frontier.

Bridges remembers the highest achievement of this century — landing on the moon — and he predicts that the high point of the next will be the discovery that life is not limited to Earth. He assured the audience that, just as they remember where they were the day the Eagle landed, they'll remember all their lives what they were doing when the announcement

comes that "today, we have found conclusive proof that there is life on another body in the solar system."

Having set an upbeat mood, Bridges went on to lay out in no uncertain terms what needs to be done to fulfill those goals. First, he says, keep your eyes on the ball. Keep doing the things we need to do, and do them safely, predictably, and reliably. Quit worrying about a RIF, because everything possible is being done to prevent it. Start planning now for the contributions we can make when humans step off Earth. He suggests, for example, that as the experts at ground processing here on Earth, who is better suited than the KSC team to work ground ops on Mars? Focus on the overall picture of how to integrate without duplication: The essence of the Strategic Plan is that government and contractors should not be repeating the same actions, but that "letting go" does not mean the service goes away. Look at what things we must do, and which we must stop doing in order to free up needed resources. Spend less attention on fighting fires, and more on looking for new ideas above and beyond the day-to-day crises. New technologies, such as the liquid fly-back booster, will have to be developed to meet the demands of efficiency and increased flight rates, he said.

Change, he repeats, is necessary and inevitable. Work with the changes, don't fight them; otherwise you're part of the problem and not the solution.

Above all, he emphasizes, build trust and rely on each other. We don't need to be creating enemies within our own ranks. NASA, Bridges reminds us, was not created to do what private industry can do, but to be a learning organization, where new technologies and methodologies are developed.

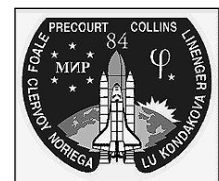
When asked about the proposed timeline for going to Mars, Bridges responded with a resounding, "As soon as possible!" He looks to KSC to be the leaders into the next millennium.



A LATE-night arrival for the STS-84 astronauts helped keep them on their altered schedule in preparation for their rendezvous with Mir. Gathered at the Shuttle Landing Facility May 11 are (from left) Mission Specialist Carlos Noriega; Pilot Eileen Collins; Mission Specialists Michael Foale and Elena Kondakova; Commander Charles Precourt; Mission Specialist Jean-Francois Clervoy and Edward Lu. In photo at right, Foale (left) and Kondakova are shown during Terminal Countdown Demonstration Test (TCDT) training at the pad. Below right, Eileen Collins dons her launch/entry suit prior to launch with help from JSC suit technician Ray Villalobos. Below, Precourt prepares to enter the orbiter with help from white room closeout crew members Danny Wyatt (#6), Al Rochford and Chris Meinert (#4).



STS-84



John F. Kennedy Space Center

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