

Mission Update

STS-91



STS-91 CEIT: Above, STS-91 Mission Specialist Janet Kavandi (from left); Pilot Dominic Gorie; Mission Specialist Franklin Chang-Diaz; Commander Charles Precourt; Russian interpreter Olga Belozerova; and Mission Specialist Valery Ryumin of the Russian Space Agency participate in a Crew Equipment Interface Test (CEIT) at the SPACEHAB Payload Processing Facility at Port Canaveral March 26. The Russian flag they are looking at has flown on the SPACEHAB module used in the Shuttle-Mir dockings and is one of the items they will carry with them on the final docking flight, targeted for liftoff May 28 at 8:05 p.m. EDT. Below, the crew returned to KSC April 10 for another CEIT, this time in the payload bay of the orbiter at Orbiter Processing Facility 2.



STS-97



STS-97 Long Spacer: The Long Spacer for the International Space Station is moved to a test stand in the Space Station Processing Facility. Scheduled to be launched on STS-92 in April 1999, the spacer will provide structural support for the outboard Photovoltaic Modules that supply power to the station.

Spaceport News

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

John F. Kennedy Space Center

KSC serving as resource for Sea Launch effort

Officials from the new commercial launch effort called Sea Launch participated in STS-90 pre- and post-launch activities at KSC. This was the second time personnel from the U.S./international enterprise have visited the center to benefit from KSC's expertise in launch processing.

Sea Launch is a partnership between Boeing Commercial Space Co., Norwegian firm Kvaerner Maritime a.s. Oslo, Russian company RSC-Energia and Ukrainian company KB Yuzhnoyev/PO Yuzmash. It features the two-stage Zenit rocket launched from a mobile, sea-based platform. First launch is targeted for this fall.

(See SEA LAUNCH, Page 8)

'98 Debus Award goes to Morgan

JoAnn Morgan, KSC associate director for Advanced Development and Shuttle Upgrades, has been named



Morgan

this year's recipient of the prestigious Kurt H. Debus Award by the National Space Club.

The honor will be officially presented to her at the annual Debus Dinner, to be held May 15 at the Radisson Resort Convention Center in Cape Canaveral.

(See MORGAN, Page 8)

A beautiful day



THE 16-day STS-90 mission to study the human nervous system begins with a 2:19 p.m. liftoff April 17 of the Space Shuttle Columbia from Pad 39B. On board are a crew of seven and a menagerie of animals that will be the subject of 26 research investigations. Landing currently is scheduled for May 3 at 12:09 p.m.

All-American Picnic promises fun and good food for all

By Susan Maurer

The 1998 All-American Picnic is only one month away! This year's picnic is scheduled for Saturday, May 16, at KARS Park I from 10 a.m. to 4 p.m.

The event promises to be one of the best yet, featuring the first Kids' Fishing Tournament and coloring contest. Olympic and sporting events are planned, along with a non-traditional chowder cook-off, children's carnival, ethnic food booths, and plenty of entertainment.

Kids of all ages will enjoy the children's carnival, featuring astronaut appearances, an authentic 1938 fire truck complete with a Dalmation dog, pony rides

and an Animal Educational Exhibit featuring Thunderhawk and Friends

Wildlife Encounter with large exotic cats and birds of prey.

Deadline for entries in the coloring contest was

April 24, and the art work will be displayed at the picnic. The winners will be announced at 2 p.m. in the children's carnival area. You do not need to be present to win.

The Kids Fishing Tournament is a timed event and is strictly a "catch and release" tournament. The purpose of the tournament is for each child to have fun with his or her parent/coach at the picnic in a friendly competition. All supplies will

(See PICNIC, Page 8)



Boeing streamlining operations, facilities in Florida

Boeing is consolidating and streamlining its vast holdings throughout the United States and Canada.



Melnick has been named senior site executive for the Florida operations of the world's largest aerospace company.

Boeing Florida Operations are part of Boeing's Space Operations and Utilization Support business segment. Headquarters for the unit are in Titusville. Boeing facilities in Cocoa Beach are being discontinued.

Services provided by Boeing in Florida include engineering, facilities and maintenance support to NASA and the Defense Department for the Space Shuttle, International Space Station and Delta rocket

programs. "These business units will retain operational ties to their organizational parents while sharing support services and benefits of the unified Florida operations," Melnick noted.

Melnick will report to Bob Minor, vice president and general manager of Boeing Space Operations and Utilization Support, Houston. The purpose of this newly formed organization is to consolidate selected activities

at each of the company's major locations at KSC, Cape Canaveral, Huntsville and Houston.

Boeing has begun a massive streamlining effort with the goal of reducing its facilities in the United States and Canada by 15 percent and reducing its workforce by about 8,200 people by the end of 2000. The bulk of job losses will occur in California. Employment levels in Florida are not projected to change in the near future.

Spaceflight veteran Solid retires

Space program veteran Lee Solid retired April 17,



Solid

wrapping up a career that spanned every U.S. human spaceflight endeavour, from Mercury through to the Space Shuttle.

Saturn program. He also completed assignments at the Canoga Park and Huntsville facilities in California and Alabama, respectively. In 1979, he returned to Florida, assuming positions of increasing responsibility. He was named vice president and general manager of Reusable Space Systems, now part of Boeing Florida Operations, in 1990.

Solid joined Rockwell in 1959. Part of his 39-year tenure was spent with Rocketdyne operations. He began work on Cape Canaveral in 1960 as a field engineer for the new Atlas launch vehicle, and progressed to site manager for the Apollo-

His dedication to the human spaceflight program was recognized in 1996, when he received the National Space Club's Debus award. Originally from South Dakota, Solid has a degree in mechanical engineering.

Excellence acknowledged

HARRY Silipo (right), 1997 KSC Combined Federal Campaign chairman, accepts a plaque on behalf of the center from KSC Director Roy Bridges that recognizes KSC's record-setting contribution to the fund drive last year. The plaque was presented to KSC by the United Way of Brevard County.

Space Congress set for April 28 – May 1

The 35th Space Congress begins April 28, kicking off four days of panel sessions, exhibits, banquets, receptions and a golf tournament.

This year's general chairman is Bruce Melnick and the theme is *Horizons Unlimited*.

"We are truly at the beginning of a new era of space exploration, exploitation and discovery with our horizons limited only by our imaginations," Melnick noted in the 35th Space Congress brochure. Among the featured

speakers, topics and exhibits this year:



- *Scientific Enlightenment*, panel session chair, Roy Tharpe, manager, Launch Site Management Office, Boeing;
- *DOD — Exploiting Space for World Peace*, panel chair, Gen. Howell Estes III, USAF CINCNOAD, U.S. Space Command, and Commander, Air Force Space Command;
- *Current and Future Launch Capabilities*, session chair, Jean-Michel Desobeau,

director of Engineering, Arianespace, Inc.

- A scale mockup of the laboratory and habitation module for the International Space Station will be displayed by prime contractor Boeing.

Sponsored by the Canaveral Council of Technical Societies, the Space Congress is being held in several locations:

- Exhibit halls are located in the Cocoa Beach Hilton as well as the Comfort Inn & Suite Resort.
- Space Congress Reception on April 30 will be held on the

Holiday Inn Observation Deck.

- Registration, panels (including the popular *Meet the Astronauts* session) and paper sessions are being held at the Howard Johnson Plaza (called the DoubleTree in Space Congress literature). Space Congress Headquarters are located here as well.
- The Missile Space & Range Pioneers annual banquet will be held at the Officers' Club, Patrick Air Force Base. The Space Congress Golf Tournament is held here also.





Caretakers of Planet Earth:

KSC and the Environment

Message from the Editor:

This special insert of *Spaceport News* focuses on the role of Kennedy Space Center in protecting the environment in which we work.

Co-located with one of the finest wildlife refuges in this country, KSC is a strong advocate of preserving the natural environment and an innovator of effective measures to minimize the center's impact on it. Since 1994, KSC has reduced its hazardous waste generation by 57 percent, decreased toxic chemical usage by 45 percent, and improved facility energy efficiency by 6 percent.

Recent successes and information on what employees can do to help are provided on these four pages. Alice Smith, KSC Environmental Program Office, coordinated production of much of the material, and individual KSC contractors wrote the articles, as indicated.



Water conservation taken seriously on space center

By Gene Harm, USBI

Looking down on the Earth from orbit, astronauts have remarked on the Earth's fragility. They also have noted the abundance of water covering the surface. Truth is, of all the planet's water, only 1 percent is available for human use, and many of those remaining sources of usable water are in jeopardy.

The value of water is well understood on KSC, which is responsible for overseeing the hardware systems that generate this resource on-orbit during Shuttle flights.



WHEN first constructed in the 1960s, Launch Complex 34 on Cape Canaveral was the largest facility of its kind in the world.

The center also has taken measures to ensure that the waters surrounding industrialized areas are not adversely impacted by human activity, and that water is not wasted in center operations. Two recent notable achievements follow.

New groundwater cleanup technique being tested

By Susan Maurer, Sherikon

The KSC Environmental Program Office is working with the University of Central Florida's colleges of engineering and chemistry to test a new technique for the cleanup of groundwater contaminated with trichloroethylene (TCE). Two U.S. patents are pending on processes involved with the new cleanup technique.

The demonstration project is being conducted near Cape Canaveral Air Station's Launch Complex 34, formerly used for Saturn 1B missions in the 1960s. During this time, material washing and engine flushing resulted in the release of TCE into the ground at Complex 34.

Trichloroethylene, a toxic solvent and the most common chlorinated contaminant, has

been found at hundreds of sites around the country.

The University of Central Florida submitted a proposal to KSC's Biomedical Office to try a new technique which introduces iron shavings into the ground to render the trichloroethylene non-toxic. Ultrasound is used below the ground's surface to cleanse the iron shavings, which corrode naturally and lose their effectiveness. This technique is called "sonication." Last year, the space center joined with the university to test these underground "iron walls" at Complex 34. Both organizations submitted the "sonication" technique along with the entire construction process for U.S. patent approval last year.

According to Jackie Quinn, NASA's environmental engineer on the project, "using ultrasound underground within a permeable treatment wall of iron has never been done before and has far-reaching applications to other decontamination projects using such walls in the United States."

The process being tested at Complex 34 has advantages over other cleanup techniques.

(See WATER, Page 4)

Federal government big user of materials made from recycling

By Phil Graves, EG&G

As the nation's largest single consumer, the federal government plays a significant role in creating a demand for recycled products. Federal agencies are required to establish programs for buying items that the Environmental Protection Agency (EPA) determines are or can be made with recovered materials (EPA-designated items).

These requirements stem from the need to create a demand for recycled materials and the recognition that the federal government's purchasing power can be used to expand markets for recycled products. In 1995, EPA published guidelines for procurement of products containing recovered materials.

When purchasing such items, NASA and its contractors specify the level of recovered materials content, along with other applicable standards, based on EPA's recommendations. NASA organizations and contractors are strongly encouraged to consider existing federal supply sources like the General Services Administration (GSA), Defense Logistics Agency (DLA), and Government Printing Office (GPO) when purchasing EPA-designated items because of the following advantages:

- Products have been competitively bid;
- Products meet or exceed established federal performance standards (recycled-content products must meet the same performance standards as those established for non-recycled products);
- Products meet or exceed recommended recycled content levels for EPA-designated items;
- EPA-designated items purchased through GSA or DLA do not have to be tracked by NASA (GSA and DLA provide agency totals for affirmative procurement reporting purposes); and
- Federal supply sources provide independent estimation, certification, and verification of recovered content for EPA-designated items, thereby eliminating the need for procurement originators to track and monitor vendor compliance with affirmative procurement requirements.

KSC hosts Space Coast Clean Cities Coalition



SETTING AN EXAMPLE — KSC played host recently to members of the Space Coast Clean Cities Coalition. Sponsored by the Energy Department, the Clean Cities effort promotes the use of alternative fuels by government and industry. KSC, supported by the General Services Administration (GSA), operates a fleet of more than 150 alternatively fueled vehicles (AFVs) that operate on compressed natural gas. The center also initiated a development/demonstration program to use a mixture of hydrogen and compressed natural gas in a vehicle. Here, Rod Stillwell of GSA demonstrates how to refuel an AFV. The Clean Cities Web site is www.fsec.ucf.edu/~fscities. Monthly meetings of the organization are held at the Florida Solar Energy Center adjacent to Brevard Community College in Cocoa.

Center's aggressive energy-saving pays off

By Dave Koval, EG&G

The space center has achieved great success in conserving energy usage:

- An Executive Order 12902 requires energy consumption reduction from a fiscal year 1985 baseline, equaling 20 percent by the end of FY 2000 and 30 percent by the end of FY 2005. KSC's Fiscal Year (FY) 1997 consumption was 22.2 percent below the FY 1985 baseline. That means KSC currently is 2.2 percent better than the upcoming FY 2000 requirement. Certain KSC buildings are exempt from the Executive Order requirement, but subject to a NASA-internal goal of 10-percent reduction from the FY 1985 baseline by the end of FY 2000. In these buildings, KSC's FY 1997 consumption was reduced to 0.8 percent above the FY 1985 baseline. This is a decrease of 11.1 percent from a FY 1991 peak, but must improve an additional 10.8 percent to reach the FY 2000 goal.

- KSC is the first NASA installation to participate in the Department of Energy (DOE) Super Energy Savings Performance Contracting (ESPC) program. The Super ESPC program enables federal installations to utilize DOE-contracted energy service companies to perform energy efficiency projects funded from the resulting energy bill savings.

- KSC has earned nearly \$1 million in utility rebates from Florida Power and Light since the first one in FY 1994.

Water ...

(Continued from Page 1)

It does not create worker exposure to hazardous waste, there is no need for disposal of hazardous waste to other landfill areas, and it keeps costs down since the treatment uses natural groundwater flow to "push" the contaminated water.

Reducing water usage in parachute refurbishment

By Gene Harm, USBI

NASA and USBI have worked together to reduce water usage at USBI's Parachute Refurbishment Facility Wash Water System. After solid rocket booster (SRB) separation, a series of parachutes are deployed to slow the velocity of the boosters as they descend toward the ocean. The parachutes are washed at the Parachute Refurbishment Facility (PRF) with water to remove the salt from the ocean water. Failure to remove the salt would result in damage to the parachutes as the fabric could be lacerated by the salt crystals.

The PRF wash system was refined with a reuse treatment system employing ozone and particulate filters. Water use/disposal has been reduced from more than 400,000 gallons per flight to just 35,000 gallons. This is a nearly 90 percent reduction in water discharge. More than 365,000 gallons is recirculated, treated and then reused. Currently NASA has a project in place with USBI to send this washwater to a nearby cooling tower. This would eliminate the need for treatment, thereby saving energy yet still providing a beneficial reuse of the washwater.

Saving water through these improved efficiencies will lessen the need to withdraw ground or surface water supplies for KSC's demands. Efficient water use has also meant a reduction in the amount of energy needed to treat washwater, resulting in less energy demand and therefore fewer by-products from nearby power plants.

"Not only have we reduced our water consumption and waste, the treated water used for processing the parachutes is of better quality than the original water supply," said J. C. Young, supervisor of parachute operations.

"We have learned to do our job better," he added. "Less water has resulted in less slip hazards, thereby increasing worker safety. The system has worked successfully for over 20 flights, millions of gallons of water have been saved and the parachutes are as clean, if not cleaner, by using water from the treatment system."



The United States consumes about 17 million barrels of oil per day. Fossil fuels are being depleted at a rate 100,000 times faster than they are formed.

New treatments help reduce hazardous wastewater and cut costs

By George Kosar and Dan Tierney

KSC engineers George Kosar and Dan Tierney have discovered "better, cheaper, faster" at KSC and its name is RAYOX.

RAYOX is a hypergolic propellant wastewater treatment application that has demonstrated significant results at KSC. Kosar calls it a breakthrough environmental technology that is better, has achieved dramatic reductions in required processing time which makes it faster, and greatly minimizes cost expenditures, which makes it cheaper.

RAYOX is an advanced oxidation process originally developed by Solarchem of Toronto, Canada, for the treatment of complex hazardous wastewater. The process was subsequently optimized and enhanced by NASA, EG&G-Florida, and Solarchem for the on-center treatment of monomethylhydrazine (MMH) wastewaters that are generated by orbiter and payload opera-

tions as well as hypergolic fuel transfer activities.

The RAYOX process uses high-intensity, wide-spectrum ultra-violet light sources, a 35-percent hydrogen peroxide solution as an oxidant, and several specialized dissolved iron catalysts to rapidly and efficiently destroy the MMH contained in the wastewater. The treated wastewater is analyzed and then discharged to KSC's Sewage Treatment Plant No. 1.

"Prior to the activation of the RAYOX process at KSC, we were paying between \$3.50 and \$4.00 per gallon for the off-center disposal of the MMH wastewater as a regulated hazardous waste," said Kosar, a chemical engineer with NASA Environmental Operations. "After the process enhancements and various upgrades were completed, the resultant operational cost for the RAYOX process, on average, is only 28 cents per gallon... which represents a repeatable 92 percent reduction in operational cost," he added.

"We still are in awe of the incredible destructive power of the enhanced RAYOX process," added Tierney, a principal design engineer with EG&G.

"I can clearly remember working 12-to-18-hour-long processing operations before we modified the equipment... furthermore, the utilization of the specialized iron catalysts has reduced the processing time from 12 hours down to 30 or 40 minutes," Tierney noted.



THE RAYOX wastewater treatment system is located in the Industrial Area. The wastewater storage tank is at right, the three photoreactors through which the wastewater is circulated are at left.

10 reasons to be proud you recycle

1. Recycling saves trees.
2. Recycling protects wildlife habitat and diversity.
3. Recycling lowers the use of toxic materials.
4. Recycling helps curb global warming.
5. Recycling stems the flow of water pollution.
6. Recycling reduces the need for landfills.
7. Recycling reduces the need for incinerators.
8. Recycling creates jobs and promotes economic development.
9. Cities can profit by selling recyclables.
10. Buying recycled products contributes to the demand for more recycled products.



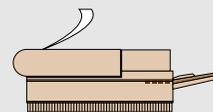
— Natural Resources Defense Council

Toner cartridges from Lanier copiers can be recycled

KSC has implemented a Toner Cartridge Recycle Program for all NASA, Base Operations Contractor (BOC), and Payload Ground Operations Contractor (PGOC) employees using Lanier copier machines.

To recycle the toner cartridge, employees are required to do the following during changeout of an empty cartridge:

- Remove the prepaid, preaddressed UPS Authorized Return Service Label from a new toner cartridge



carton.

- Print your name, company, mail code, office address, city, state, (KSC, FL), and zip code (32899) on the label.

- Affix the label to the carton.
- Place the empty toner cartridge in the carton.
- Seal the carton with strapping or Nylon tape.
- Place the carton in your office mail out box for pick-up by **KSC ATS mail personnel**. Questions can be addressed to Ann Gary, tel. 867-4540.

USA active in conservation

By Denise Black, USA

Space Flight Operations Contractor United Space Alliance (USA) is conserving resources and saving money at KSC. The Shuttle prime contractor has implemented several environmental projects and programs to meet NASA's environmental goals, including bringing Shuttle processing operations into compliance with all environmental regulations, making progress towards waste minimization, preventing pollution, and reusing or recycling wastestreams and wastewater. The result: Cost avoidances of approximately \$2,350,000 per year. Among the most notable achievements:

- **91 percent industrial wastewater reuse.** Accomplished through implementation of a dual environmental control system/heating, ventilation and air-conditioning (HVAC) cooling tower water closed-loop recycling systems at Launch Pads A and B. As a result, three million gallons less water is being discharged annually to the

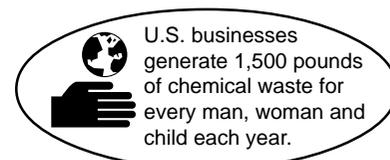
environment. Cost avoidance: \$600,000 per year.

- **Waste segregation.** By limiting contamination of non-hazardous waste by hazardous waste, an overall reduction of 12 percent hazardous waste generation was achieved. Cost avoidance: \$400,000 per year.



- **CFC elimination program.** Since 1991, USA has reduced chlorofluorocarbon (CFC) consumption by 92 percent through better leak repairing and recycling. Cost avoidance: \$278,000.

- **Solvent wiper reuse.** Originally, 21,400 pounds of contaminated wiper material were being produced per year. Implementation of a wiper reuse program has reduced the waste stream by 99 percent. Cost avoidance: \$315,000 per year.





Disposal Instructions for Nonhazardous Solid Wastes



Disposal Mechanism

Material	Disposal Mechanism				Conditions	Contact for More Information*
	Government Dumpster (1)	Subcontract or Dumpster (2)	KSC Landfill	Other		
Asbestos				X (3)		tel. 867-3275
Asphalt			X			tel. 867-4541
Batteries — Lead-acid; silver-zinc Batteries — Carbon-zinc; alkaline; manganese dioxide		X		X (3)		tel. 867-7790 tel. 867-8642
Blasting media			X		PWQ required	tel. 867-4541
Cardboard — Non-recyclable Cardboard — Recyclable	X		X X (4)			tel. 867-4541 tel. 867-2642
Carpeting	X		X			tel. 867-4541
Construction/demolition debris Construction/demolition debris — Painted materials			X		Excludes painted materials	tel. 867-4541
				X	Call for further information	tel. 867-4541
Cured, non-hazardous abrasives; adhesives; paints and related debris		X				tel. 867-8642
Empty Containers		X (6)				tel. 867-8642
Fiberglass	X		X			tel. 867-4541
Food wastes		X				tel. 867-4541
Furniture				X (11)		tel. 867-2642
Glass	X		X (7)		Excludes incandescent lamps, fluorescent tubes, etc.	tel. 867-4541
Nonhazardous gas detection tubes		X				tel. 867-8642
Painted materials		X		X (12)	Painted metal materials — See scrap metal	tel. 867-4541
Paper — Non-recyclable Paper — Recyclable	X	X (4)	X			tel. 867-4541 tel. 867-2642
Pallets — Wood and plastics				X		Call 867-3503 for removal.
Plastic	X		X			tel. 867-4541
Scrap Metal				X (8)(11)	Includes punctured aerosol cans	tel. 867-7790
Toner cartridges — Copy machines Toner cartridges — Fax machines; printers		X		X (9) X (10)	Empty only Empty only	See below. See below.
Yard waste — Vegetation			X			tel. 867-4541

* Phone Numbers: EGG-K810, 867-3275, 867-4541; Property Disposal Officer, 867-7790; Recycling Coordinator, 867-2642, EGG-K120, 867-8642

NOTES:

- (1) Items in this column may also be delivered directly to the KSC landfill in bulk loads.
- (2) Unless otherwise noted, items in this column must be placed in dumpsters which are dispositioned off-site through subcontractor services (i.e. Harris Sanitation, Western Waste, etc.)
- (3) Asbestos is currently disposed of in Brevard County Landfill.
- (4) Recyclable cardboard (corrugated) and recyclable paper must be placed in dumpsters, bins, or other containers specifically marked for such materials.
- (5) Lead-acid and silver-zinc batteries must be sent to the excess property storage facility located on Ransom Road for recycling.
- (6) Empty metal containers (55-gal. drums, etc.) must be managed as scrap metal.
- (7) Submit PWQs for disposal of incandescent, fluorescent, and high intensity discharge (HID) lamps.
- (8) Scrap metal must be sent to the excess property storage facility located on Ransom Road and may be collected in dumpsters or other containers specifically marked for scrap metal.
- (9) Some copier toner cartridges are recyclable. Contact Environmental Coordinators for more information. See page 5 for details on recycling Lanier toner cartridges.
- (10) Printer and fax machine toner cartridges are recyclable. Contact Environmental Coordinators for more information.
- (11) Proper NASA Form 7-49 and wait for pick-up.
- (12) Painted materials are currently being disposed of in Brevard County Landfill.

Former KSC workers remembered

Several former KSC employees passed away recently and were remembered by their coworkers:

- **Homer Brown** — Brown, 61 years old, died March 22 in Asheville, N.C. Originally from Selma, N.C., Brown returned to the state in 1996 following his retirement from NASA after 31 years of service.
- **Ted Hershey** — Hershey died March 17. He joined NASA in the 1960s after active service in the Army, eventually

being named head of the Telemetry Branch in the Central Instrumentation Facility.

- **Vincent Rapetti** — Rapetti died March 18 at the age of 72 years. He was the chief librarian at KSC before retiring in 1988. Rapetti lived in Altamonte Springs.
- **John Zeman** — Zeman, who ran the Mission Director's Center for expendable vehicles, passed away in late February.

UCF offers summer session

The University of Central Florida (UCF) is offering graduate engineering and undergraduate engineering technology courses this summer. The classes are presented as videotapes via the Florida Engineering Education Delivery System (FEEDS) on Cape Canaveral Air Station (CCAS). Summer term begins May 12.

In addition to FEEDS, UCF is a participant in the Florida Space Institute (FSI), which is a consortium of community colleges and universities that offer undergraduate level

space/engineering-related curricula. Current members include UCF, Embry-Riddle Aeronautical University, Florida Institute of Technology and Brevard Community College. FSI classes also are given at Cape Canaveral and will be offered during the fall term this year.

All FEEDS and FSI classes are accredited and open to employees of KSC and CCAS. For more information about FSI, contact Candace Wilson, tel. 853-4962. For information about UCF FEEDS, contact Cassie Spears, tel. 853-4956.



SHUTTLE Landing Facility (SLF) team and the SLF Centerline Lighting team (not shown) were recognized for their work on the new runway centerline lights that began service early last year.

SFA awards honor employee efforts

Silver Snoopys and Space Flight Awareness (SFA) awards were presented to a number of individuals and groups last month.

Astronauts Heide Piper and Pat Forrester presented the Silver Snoopy award to seven KSC employees: Lu Richards, NASA; Jim England, United Space Alliance; David Williams, Wang; and Keith Finch, Steven Gordon, Scott Morgan and Gail Morris, all of USBI.

SFA team awards were presented to the following:

- **Sustaining Engineering Design team** — This EG&G Florida group was recognized for its speedy efforts to renovate and remodel the KSC Headquarters cafeteria. Working on a compressed timeline, the design team began design work in October, 1996, released the design package in early December, began the remodeling over the Christmas holidays and had the cafeteria re-opened by the end of January 1997.

The finished cafeteria offers

an improved flow of customers through service lines, streamlines the number of personnel required to operate the facility, features an emergency egress and upgraded fire alarm

equipment as well as fire-rated materials throughout, and is easily accessible to those who are physically challenged.

- **Shuttle Landing Facility team and SLF Centerline Lighting team**

— These two teams were honored for their work on the new centerline runway lights at the SLF that have greatly improved nighttime and dawn landing conditions for returning Shuttle crews and other pilots flying into the landing strip. Installation of the lights was completed two weeks ahead of schedule and under budget.

The SFA team award is given to a group of employees who have demonstrated exemplary teamwork in accomplishing a task or goal in support of the human spaceflight.



April employees of the month



HONORED in April: From left are Frank Kapr, Checkout and Launch Control System; Henry Collier, Chief Financial Officer's Office; Pam DeLoach, Logistics Operations; Dennis Armstrong, Public Affairs; Jacqueline Simon, Procurement Office; David Flowers, Space Station Hardware Integration Office; Sharon Sowash, Shuttle Processing; and Brian Taylor, Engineering Development. Not shown are JoAnn Leotta, Payload Processing; Jeannette Boogaerts, Safety and Mission Assurance; Michael Canicatti, Installation Operations; Frank Nesbit, Administration Office; and Dr. George Martin, Biomedical Operations.

SUSTAINING Engineering Design team was commended for their involvement with the remodeling of the Headquarters cafeteria on a tight schedule.



Morgan ...

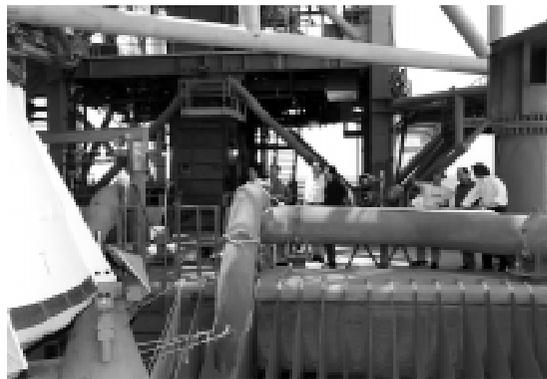
(Continued from Page 1)

"...The Debus Award is one of the most prestigious honors bestowed by the Florida aerospace community upon those whose leadership and contributions have advanced America's space program," National Space Club Board Chairman Dick Jolley told Morgan.

Named after KSC's first director, the Debus Award also has been bestowed on former Center Director Forrest McCartney, former KSC Deputy Director George Page, and former contractor executive George Faenza of McDonnell Douglas. Morgan is

the first woman to be honored.

Morgan's tenure with the U.S. space program began in 1958, when she entered the federal workforce as a University of Florida student trainee with the Army Ballistic Missile Agency. After joining NASA, she participated in every U.S. human spaceflight endeavour, beginning with the Mercury Project and continuing today with the Space Shuttle. She was the first woman executive at KSC, taking on positions of increasing responsibility that culminated in 1997 with her being named as one of three senior managers directly supporting Center Director Roy Bridges.



NASA Test Director Jeff Spaulding gave the Sea Launch group a walkdown of the Mobile Launcher Platform at Pad 39B on April 13, the same day the launch countdown had begun. The visitors also toured the booster retrieval ships to learn more about recovery operations at sea.

Sea Launch ...

(Continued from Page 1)

"Part of NASA's mission is to help U.S. industry," said Larry Schultz, project manager for KSC's support of the effort, established under a Space Act Agreement between NASA and Boeing.

There is a strong similarity between the Earth-bound Mobile Launcher Platform (MLP) used for assembly and launch of the Space Shuttle and the sea-based platform being designed for the Zenit, observed Schultz.

Although the Sea Launch concept is totally new, much of the hardware involved is not. The Zenit has already flown 24 times and its Block DM-SL upper stage has 167 successful flights under its belt. Much of the required ground support equipment is already established, requiring only modifications to accommodate a maritime environment.

NASA Test Director Jeff Spaulding helped develop the curriculum for the week-long

training session. A 10-year NASA veteran with a master's degree in space technology, Spaulding is intrigued by the Sea Launch concept. "Launching from a moving platform is a major challenge," he observed.

The six-member international group spent the week learning more about pad and MLP hardware, procedures and associated equipment and was present for Columbia's launch April 17.

Schultz has recommended that KSC participate in the first Sea Launch liftoff. "I'm very optimistic about the eventual success of the Sea Launch program," Schultz said, noting that a number of former KSC workers are now supporting the effort.

Spaulding hopes he'll be there for the first launch. "It would be like being part of history again," he said. "I think it's great that other programs are recognizing our expertise in processing and launches and are coming to us as a resource."

Picnic ...

(Continued from Page 1)

be provided, and prizes will be awarded for the biggest fish, the most fish caught, and the longest fish. The grand prize will be two Disney tickets for each first place winner!

Another Olympic event is the Golf "Closest to the Pin" Contest. There will be a round bucket with a 10-foot circle around it, and players get five chances to hit balls at the bucket, receiving two points for landing in the bucket, and one point for landing in the circle. The player with the most points wins, and prizes will be awarded. Equipment will be provided, but players may supply their own clubs if they prefer.

There will also be a Basketball Free Throw Contest with prizes for the most free throws and/or three-point shots made.

A Horseshoe Tournament will be held, with a winning team trophy and runner-up awards given. Volleyball and Bingo will round out the day, and bingo cards will be free of charge.

A Seafood Cookoff is being held for the first time this year. Chowder, gumbo, or any kind of seafood stew is okay, and participants are encouraged to be creative.

Originality of both the recipe and presentation (storefronts) will add to the flavor of the event. For more information, contact Cook-Off Chairman Rick English at 867-4345.

The Opening Ceremony will be at 10:15 a.m. On the entertainment list are musical groups of many types, from concert bands to jazz to Latino to gospel.

Ethnic events will include a booth sponsored by the Native American Intertribal Council, which will include a demonstration on flute making. Additional ethnic booth space is still available; for more information, call Maria Smith at 867-3625.

Picnic volunteers are still needed. If you can help, call Diane Welford at 867-2552.

Picnic tickets are now on sale in all KSC Exchange retail stores. They also can be purchased from: Barbara Naylor, O&C Building, Room 3150, 867-2213; Jeri Huneycutt, HQ Building, Room 1404, 867-4786; Debbie Billias, HQ Building, Room 2206, 867-3917; Tiffany Nail, E&O Building (CCAS), Room 200, 853-5081; Diane Vess, Logistics Building (VAB Area), Room 3730, 861-5367.

Visit the KSC All-American Picnic home page at: <http://www.ksc.nasa.gov/events/1998/picnic>



John F. Kennedy Space Center

Spaceport News

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