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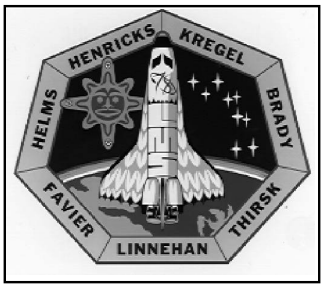
Spaceport News

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

John F. Kennedy Space Center

Mission update



Mission: STS-78 on Columbia.

Launch date, time: June 20, 10:49 a.m. from Launch Pad 39B.

Primary Payload: Life and Microgravity Spacelab (LMS).

Mission Synopsis: During the nearly 16-day-long mission, the seven-member crew will conduct microgravity research experiments in the Life and Microgravity Spacelab module mounted in the payload bay. The majority of the life sciences experiments will be devoted to the study of the effects of microgravity on human physiology. The investigations will include specific studies on bone tissue loss, muscle performance and adaptation, caloric intake and energy expenditure, pulmonary function, neuro-vestibular adjustment and general studies on the effects of space flight on human performance and on daily sleep and biological (circadian) rhythms.

Landing date, time: July 6, 8:46 a.m. at the Shuttle Landing Facility.

Mission: STS-79 on Atlantis.

Launch date, time: July 31, 11:42 p.m. from Launch Pad 39A.

Primary Payload: 4th Mir docking, SPACEHAB.

Landing date, time: Aug. 9, 8:17 p.m. at the Shuttle Landing Facility.

Rising with the sun

A FLAWLESS countdown culminates with an on-time liftoff as the Space Shuttle Endeavour lights up the morning sky May 19. Endeavour was launched on Mission STS-77 from Pad 39B at 6:30 a.m. EDT. The fourth Shuttle mission of 1996 is devoted to help open the commercial space frontier. During a post-launch press conference, Launch Integration Manager Loren Shriver commented on the "beautiful ascent" highlighted by the early morning lighting effects. STS-77 is scheduled to land at Kennedy Space Center's Shuttle Landing Facility on May 29 a little after 7 a.m. EDT.

Banquet celebrates Americans' 35 years in space

Thirty five years of human space flight were celebrated May 13 as hundreds of space supporters enjoyed a rare opportunity to see three of the original Mercury 7 astronauts together again.

Alan Shepard, Gordon Cooper and Scott Carpenter were the featured guests at a celebratory banquet sponsored by the Canaveral Press Club Veterans and the NASA/KSC Joint Industry Council.

Shepard led off the country's

(See 35th, Page 8)

MERCURY ASTRONAUTS, from the left, Gordon Cooper, Alan Shepard, and Scott Carpenter, were the featured guests at the banquet.

Long, Hoffler honored at Aerospace Medical Association meeting

Dr. Irene Long and Dr. Wyck Hoffler, director and deputy director, KSC Biomedical Operations Office, were honored at the 67th Annual Scientific Meeting of the Aerospace Medical Association held in Atlanta recently.

Long was elected as the second vice president of the affiliated Society of NASA Flight Surgeons (SNFS) and will serve as the organization's president in 1998.

Hoffler received the SNFS President's award from this year's president, KSC's Dr. David Tipton, and was cited for his contribution to the ideals and goals of the society.

Hoffler also serves as the organization's historian.

Employees of the month

HONORED IN MAY, from the left are Lorene Williams, Shuttle Processing Directorate; Susan Sharp, Space Shuttle Program Office; Thomas Rucci, Payload Processing Directorate; Sharon White, Procurement Office; Armando Oliu, Logistics Operations Directorate; Phyllis Onken, Office of the Chief Finanical Officer; Gerald Schumann, Safety and Mission Assurance Directorate; and Jeanine Hoyle, Administration Office. Not pictured is Joanne Maceo, Engineering Development Directorate.

Tiny sea animals help NASA, CSA answer big questions

NASA and the Canadian Space Agency (CSA) are taking life science research to new heights. CSA's Aquatic Research Facility (ARF) or Space Aquarium launched with the Space Shuttle Endeavour on May 19.

One thousand mussel larvae, 32,000 sea urchin eggs and 6,000 starfish embryos were stowed aboard Canada's first life science payload in space. This zoo of marine life is the focus of three studies that will address world-wide concerns ranging from birth defects to dwindling fish stocks in our oceans.

Housed in what looks like a suitcase carrying two carousels from a compact disc player, the aquatic specimens are being observed by two tiny videocameras in two separate environments. Kennedy Space Center (KSC) life science personnel will take part in the monitoring and maintenance of the experiments in-flight.

One carousel spins, imitating the Earth's gravity and the other provides a gravity-free environment so scientists can compare the two conditions side by side. A third set of specimens is being watched at KSC to insure that gravity is the only varying factor in the experiment.

Dr. Heide Schatten, a professor of zoology at the University of Wisconsin-Madison, is the principal investigator on the U.S. portion of the experiment. It began three hours after launch when astronauts injected a sperm concentrate into a container full of sea urchin eggs using a unique KSC developed syringe.

The new syringe, made from off-the-shelf materials, allows very small, exact injections of fluid. It protects the user from needle injury and has a triple containment feature that prevents fluid from leaking in the near-zero gravity environment of space.

Dr. Schatten will observe the effects of spaceflight on the early stages of embryo development. The study will provide insight into the causes and cures of both osteoporosis and muscular dystrophy.

One of the two CSA experiments focuses on the calcium formation of a mussel's shell and the development of its feeding mechanism. Dr. Ron O'Dor, a professor at Dalhousie University in Nova Scotia, hopes his investigation will shed some light on the causes of calcium depletion experienced by humans in space.

Today's astronauts take daily, three-hour exercise breaks to maintain healthy bones and muscles in space. The results from this experiment apply directly to the planned long term stays on the International Space Station.

Another CSA experiment looks at the effects of zero gravity on the starfish embryo.

Both CSA experiments will help researchers understand how these small sea creatures contribute to the removal of greenhouse gases in the atmosphere.

COMETARY KNOTS

THESE giganitc, tadpole-shaped objects are probably the result of a dying star's last gasps. Dubbed "cometary knots" because their glowing heads and gossamer tails rememble comets, the gaseous objects probably were formed during a star's final stages of life. Hubble astronomer Robert O'Dell and graduate student Kerry Handron of Rice University in Houston, Texas, discovered thousands of these knots while exploring the Helix nebula, the closest nebula to Earth at 450 light-years away in the constellation Aquarius. Although ground-based telescopes have revealed such objects, astronomers have never seen so many of them.

Supersonic cleaning system offers uses beyond Space Shuttle

By Chuck Weirauch

A new supersonic cleaning system that does not damage surfaces has been developed by Kennedy Space Center engineers and may soon be used to remove contaminants from Space Shuttle hardware and other sensitive structures.

Because the Supersonic Gas-Liquid Cleaning System is so unique in its design and potential effectiveness, separate patent license agreements have been developed between KSC and two independent companies for commercial applications.

The companies are Precision Fabricating and Cleaning Co. of Cocoa, FL, and Va-tran Systems, Inc., of Chula Vista, CA. The agreement is a means for NASA to effectively transfer technology initially developed for the space program to companies that may derive innovative commercial uses from it.

One of the many advantages of the Supersonic Gas-Liquid Cleaning System over other pressurized cleaning methods is that it does not abrade the surface of the hardware being cleaned.

It requires much lower levels of pressure while using very little water.

I-NET, Inc. technician Chris Fogerty cleans a stainless steel gaseous oxygen valve with the Supersonic Gas-Liquid Cleaning System in the Engineering Support Building at Complex 34 on Cape Canaveral Air Station. The minute amounts of water used by the system are captured in the cleaning hood of the unit for analysis.

These features allow the system to be used for cleaning anything from small electronic circuit boards to much larger historic monuments and buildings.

"We don't need to use as high a pressure as in some cleaning systems," said Eric Thaxton, one of the system designers at KSC, "because the energy is provided by the nozzle's supersonic design."

The system works by mixing air and water from separate pressurized tanks and ejecting this mixture at supersonic speeds from a series of nozzles at the end of a hand-held wand, explained NASA lead project engineer Raoul Caimi.

At these speeds, the water droplets have the kinetic energy to forcibly remove the contaminant material.

This technology also is environmentally friendly. It was developed as an alternative to chlorofluorocarbon (CFC)-based solvents.

"During our testing programs," Caimi said, "we found that the gas-liquid supersonic system actually does a better job of cleaning than the system that uses CFCs."

Also, the relatively low volume of water required, less than 100 milliliters per minute, means there is less fluid left after cleaning that must be handled as contaminated industrial or hazardous waste.

Va-tran Systems director of engineering Jeffrey Sloan feels that the Kennedy invention will add an exciting technology to the company's current precision cleaning capabilities.

"We anticipate greatly expanded markets as we begin to serve automotive, aerospace, heavy manufacturing and other industries," he said.

Bill Sheehan, chief of KSC's Technology Programs and Commercialization Office, said, "This is an innovative system that is recognized by industry to have many potential uses in the commercial market. We feel that it serves as a good example of how technology developed for use in the space program can benefit the country's industry and the public."

KSC employees judge state science fair at UCF

MORE THAN 15 NASA employees went back to school last month to serve as judges for the state Science and Engineering Fair held at the University of Central Florida April 11 and 12. Pictured at left are judges, front row from left, Brian Graf, Cindy Martin, Sharon Walchessen, Carrie Cunningham, Lori Cernell, Tony Killiri, Eva Farley, and Shirish Patel. Standing, from left, are Matt Galloway, Ron Milligan, John Godbold, Andy Wheeler, Doug Willard, and Bob Turner. In the photo at right, displays are seen from overhead. Students participated in the junior (grades 6-8) or senior (grades 9-12) divisions. NASA gave five award certificates in each division.

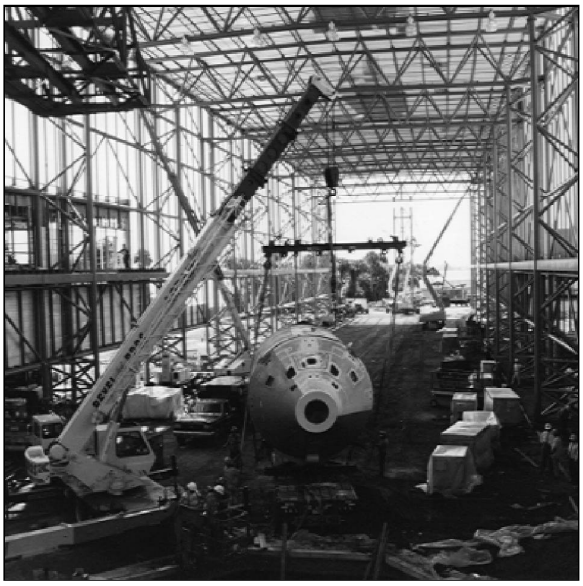
Apollo/Saturn V Center puts national treasure on global stage

EFFORTS began last month to relocate the freshly painted Saturn V launch vehicle and Apollo spacecraft to their new home near Banana Creek. The 363-foot (111-meter) tall rocket has been on display south of the Vehicle Assembly Building since the 1976 U.S. Bicentennial Exposition. The rocket's third stage is being moved in the photo above.

THE S-II second stage of the Saturn V rocket is moved May 4. The 81-foot (25-meter) long stage was built by North American Rockwell. It was powered by five J-2 engines that generated a thrust of more than 1.135 million pounds (514,836 kilograms). The purpose of the stage was to loft the vehicle almost to Earth orbit.

THE LAST element of the Apollo/Saturn V launch vehicle -- the huge first stage -- is moved May 11. Contractor Thomarios Painting Co., Norton, Ohio, carried out the refurbishment and repainting of the launch vehicle prior to the transfer. The first stage, designated as S-IC, was the largest of the stages at 133 feet (41 meters) in length and 33 feet (10 meters) in width.

THE Apollo/Saturn V's command service module is moved to its new location.



THE INTERIOR of the new facility takes shape as elements of the Apollo/Saturn V are brought into the glass-enclosed room where they will be displayed. The 99,000 square foot center will be a world-class interpretive center and hub for KSC tours, highlighting the achievements of the Apollo program.

ALL ELEMENTS of the launch vehicle have completed their journey in this photo taken May 13. In addition to the Apollo/Saturn V launch vehicle and spacecraft, the center will house a Lunar lander, elements of an Apollo pad launch umbilical tower and an authentic representation of a firing room.

A TEAM from the U.S. Army Explosive Ordnance Disposal Unit at Cape Canaveral Air Station sets six charges to be detonated by remote control on the Ocean Test Fixture (OTF). The Liberty Star, which towed the OTF to sea, is in the background.

SECOND LIEUTENANT Christine Burkel and Staff Sergeant Timothy Holland set the explosive charges on the OTF. The plaque honors Tom Hart, an SRB recovery diver who recently passed away. The reef will be named after Hart.

THE CHARGES detonate on the OTF, sinking it in 122 feet of water 22 miles southeast of Port Canaveral.

SRB TRAINER NOW SERVING THE SEA

by Chuck Weirauch

With an ear-splitting blast similar to a Space Shuttle sonic boom, explosive charges sent an obsolete Shuttle solid rocket booster (SRB) recovery training device to the bottom of the Atlantic Ocean recently to become part of the Port Canaveral reef.

The Liberty Star, one of NASA's two SRB recovery ships, towed the 132-foot-long SRB simulator, known as the Ocean Training Fixture (OTF), to the reef location 22 miles southeast of Port Canaveral on April 11.

Once the OTF was in the proper north-south orientation, a team from the U.S. Army Explosive Ordnance Disposal unit at Cape Canaveral Air Station set off six shaped charges to sink the device in 122 feet of water.

However, the OTF did not become a denizen of the deep without some struggle. At first, the 182,000-pound device began to sink horizontally as planned as water rushed into the six gaping holes blown in its sides. Then, capriciously, it went down rapidly by its aft skirt to rest vertically on the bottom. The ten-foot section left protruding from the surface seemed to taunt the crews of the Liberty Star and its sister ship, the Freedom Star.

After rocking back and forth for about 20 minutes in this defiant posture, the aft skirt finally succumbed to the pressures of the swift ocean current and collapsed.

"The OTF is now a major part of an artificial reef that provides an environment to encourage the propagation of marine life," said C. Wayne Ranow, NASA SRB retrieval and disassembly manager. "The state of Florida supports the development of such reefs to improve ocean conditions and provide more habitats for marine organisms."

Ranow coordinated the NASA effort with the Canaveral Port Authority, which had previously sunk four railroad cars to begin the reef in 1994. More outdated space hardware, some from the Apollo program, may soon be added to the Port Canaveral artificial reef project.

The OTF portion of the Cape Canaveral reef is located at a latitude of 28 degrees, 19 minutes north and a longitude of 80 degrees, 12.24 minutes west.

It will appear on navigational charts as the Thomas William Hart Reef, named in honor of an SRB recovery team diver who passed away this year.

A plaque at the front of the OTF serves as a memorial. Several Lockheed Martin Space Operation Company divers who worked with Hart, including David Winston, Jim Saxenmeyer and Greg Fischer, first proposed that the reef be named in his honor and volunteered their time to make the plaque and attach it to the OTF.

The reef will be used by recreational divers and fishermen. It will take about four months for marine life to become established, Ranow said.

"This is a fitting end for the OTF," said Gary Rohrkaste, a Lockheed Martin engineer who originally designed the training device.

"The OTF served as a very valuable tool as an SRB simulator for diver training for many years beyond its original design life of three years. I am happy to see that will serve a useful purpose for recreation and the marine environment."

Emergency egress

Simulation keeps team on top of procedures

By Barb Compton

The scene was familiar to workers in the Launch Control Center watching remote camera footage of the evening's pre-launch activities. The astronauts had completed their 195-foot ascent up the Fixed Service Structure at Pad 39B and were entering the White Room where closeout crew members were waiting to assist them into the orbiter. That's where any semblance of routine ended. The video images that followed were illuminated by the haze of water being sprayed from the pad's Firex system. Masked figures staggered out of the White Room and toward the slidewire baskets poised at the opposite end of the FSS. Closeout crew members assisted the astronauts with Emergency Life Support Aparatus (ELSA), and helped carry them to the baskets. Moments after the baskets were filled the water stopped. The astronauts and closeout crew climbed out and congratulated each other on their acting ability. And the NASA test directors in the LCC began preparing for the next phase of the Emergency egress exercise.

"ASTRONAUT" MARK ADAMS, an employee of the Vehicle Integration Test Team Office, moves toward the wire baskets on Launch Pad 39-B shortly after the "emergency" is announced.

John Stealey spent several months firming up the details for the April 4 simulation. As the NASA test director managing the activity, he was responsible for coordinating the efforts of dozens of participants and ensuring the success of the exercise.

He also developed the emergency scenario that would send the pseudo-astronauts and the real-life closeout crew scrambling for their lives. Stealey said he was perusing an emergency procedures book searching for ideas when he was struck by the potential calamity that could be caused by an inadvertant Ground Umbilical Carrier Plate (GUCP) disconnect. The bolts securing the GUCP line are usually released by pyrotechnics at the T-0 mark in the count. The situation Stealey developed involved a leaking line which would blow up after being blown free from the orbiter. Shrapnel would strike the white room, threatening the astronauts and closeout crew. The egress sprinklers would spit into action and, to further complicate matters, it would be getting dark. Would the procedures, written in manuals but rarely tested hands-on, work in such trying conditions?

"The answer was, they were pretty close," Stealey said. Although there were some problems with communications between the LCC and the fire-rescue crew on its way to the pad, all participants were successfully placed in the wire baskets and, once the simulation started up again near the bunker area below, safely transported from the bunker, via M113 Armored Personnel Carriers to the outside pad perimeter. There, six helicopters -- three from the Department of Defense, two from NASA and one from a private medical transport company, First Flight -- transported the injured to three area hospitals.

More than a dozen organizations participated in the simulation, including Johnson Space Center ,which supplied two astronaut suits that participants were warned not to rip in their zeal for authenticity. The simulation was unique in that the crash-out gate from the pad was utilized for the first time in a simulation, and re-eneactment was carried through to the hospitals.

Stealey said simulations would continue to be held about once a year; however, they will be on a smaller scale.

Closeout crew members wearing Emergency Life Support Apparatus (ELSA) carry an "injured" astronaut to a wire basket. Note the Chem-lite tube attached to the sleeve of Closeout Crew member No. 3. The chemical inside the tube aids in locating crew members under adverse conditions.

The wire baskets were restaged in the bunker area below the lighted pad, seen in the background.

M-113 tank No. 2 makes its way over the crashout gate to the north of Launch Pad 39-B. From there the astronauts were transferred to helicopters and transported to area hospitals.

Hurricane Zelda puts emergency planners to the test

by George Diller

Zelda may have been a simulated hurricane but it generated some real training for the emergency preparedness team at Kennedy Space Center.

KSC recently joined 12 military installations and 65 counties in the statewide preparedness exercise, sponsored by the Florida Department of Emergency Preparedness.

The KSC Hurricane Center was activated and the management team for the ride-out crew was called in to participate so that response and recovery procedures in the KSC Hurricane Plan could be tested.

Zelda proved to be a Category III hurricane as it crossed the state from the Gulf of Mexico, exiting into the Atlantic Ocean over Merritt Island and Cape Canaveral.

Special KSC-specific threats, ranging from alligators, rodents and snakes to facility flooding, road debris, malfunctioning radio and telephone systems, and fouled sewage and water treatment facilities. were added to the exercise by BOC Emergency Preparedness Coordinator John Karas.

Wayne Kee, NASA emergency preparedness planning officer, and EG&G's Roger Scheidt, KSC hurricane coordinator, joined managers from around the center in the exercise.

The before-the-fact thinking gave the hurricane response team the advantage of pre-planning during a period of tranquil weather instead of having to react unrehearsed during a storm emergency.

"It's important that everyone think now about what supplies they'll need for their area and request them right away," said Scheidt. "It's impossible to deliver 2,000 sand bags, for example, after a hurricane condition has been declared."

Each division at KSC is encouraged to review its own hurricane plan, which may also be part of the KSC Comprehensive Emergency Preparedness Plan (KHB 1040.1F).

Emergency preparedness personnel will be in the lobby of the KSC Headquarters building on May 31 between 11 a.m. and 1 p.m. with displays, surge maps, hurricane readiness check sheets and other handouts that will also be useful in being prepared for a hurricane at home.

DC-XA completes first of five planned flight tests at White Sands

The Delta Clipper-Experimental Advanced (DC-XA), a single stage rocket developed by NASA and McDonnell Douglas Aerospace, recently completed the first of five flight tests at the U.S. Army White Sands Missile Range, New Mexico.

The vertical takeoff/vertical landing experimental vehicle reached an altitude of 800 feet, moving 350 feet laterally up range, during the May 18 test. After briefly hovering over the landing pad, the rocket throttled its four main engines to descend and brake for a landing. Landing gear was extended as the cone-shaped rocket neared the ground. The flight duration was one minute.

On landing, fire flared along the base and side of the aeroshell of the technology demonstration vehicle and was extinguished. Initial inspections showed that the vehicle is in good shape, structurally sound, with only superficial damage.

"We successfully completed our flight objectives," said Dan Dumbacher, NASA's DC-XA program manager at the Marshall Space Flight Center, Huntsville, AL. Marshall is the host center for NASA's Reusable Launch Vehicle Technology Program. "Damage was confined to one of the flaps of the DC-XA. The vehicle will fly again soon."

The second test is currently scheduled for June 7.

"Flight testing the DC-XA will provide information about the performance of composite materials and other advanced technologies in the launch vehicle as it encounters the conditions of flight, such as temperature, pressure and noise. This information will be very valuable for the X-33 technology demonstrator NASA and an industry partner will develop in the future," Dumbacher said. The U.S. Air Force's Phillips Laboratory at Kirtland Air Force Base, New Mexico, will manage flight test operations.

The DC-XA evolved from the DC-X, which the U.S. Air Force flew eight times between August 1993 and July 1995.

The 43-foot-high airframe was extensively modified by replacing existing systems with a composite hydrogen tank; a Russian-built aluminum-lithium alloy liquid oxygen tank; a composite intertank to connect the hydrogen and oxygen tanks; and an auxiliary propulsion system which includes a composite liquid hydrogen feedline, a composite liquid hydrogen valve, a liquid-to-gas conversion system reaction control system, and a Russian auxiliary power unit providing redundant hydraulic power for flight control.

"When DC-XA lifts off from its launch stand, it will be the first time a rocket has flown with a composite hydrogen tank. This innovation and the many other technology enhancements included in the vehicle will make its flight testing very challenging," said Dumbacher.

Ground testing of the DC-XA exercised all of the vehicle subsystems and showed the vehicle is ready for flight, Dumbacher said. It included three firings of DC-XA's main propulsion system, between three and 20 seconds in duration, at up to 95 percent thrust level.

McDonnell Douglas is supported in the preparation of DC-XA for flight by Aerojet, prime developer of the auxiliary propulsion system; Lockheed Martin Corporation, developer of the ground propellant system, and by Rockwell International, which provided an acoustic structural health monitoring system for the hydrogen tank. The DC-XA, X-34 and X-33, and related long term technology development efforts, comprise NASA's Reusable Launch Vehicle Technology Program, a partnership among NASA, the Air Force and private industry to develop a new generation of single-stage-to-orbit launch vehicles. The X-34, a small technology demonstrator, will undergo test flight in 1998 while the X-33 large technology demonstrator is planned for test flight in 1999. Success of the X-33 could lead to a national, industry-led decision to develop a commercial reusable launch vehicle early next century. Such a vehicle could dramatically reduce the cost of launching payloads into space.

Correction

A listing of winners of NASA's Exceptional Achievement Medal, published in the May 10 edition of *Spaceport News*, inadvertantly left out the name of Brenda Webb. Webb was cited for outstanding professionalism, unfailing dedication and significant contributions to the success of the Vehicle Engineering Directorate and the Shuttle program.

HUGH HARRIS, director of Public Affairs, is presented with a proclamation for his humanitarian efforts by Insurance Commissioner Bill Nelson.

35th. . .

(Continued from Page 1)

successful record of human space exploration when he was launched aboard a Mercury Redstone on the suborbital Freedom 7 mission on May 5, 1961.

Carpenter was launched on the second orbital manned flight, Aurora 7 on a Mercury Atlas May 24, 1962. Cooper piloted the fourth orbital manned flight, the Faith 7 mission aboard a Mercury Atlas, which was launched May 15, 1963. He also served as commander for Gemini 5 which launched Aug. 21, 1965.

The astronauts and other well-known space supporters, including Florida Insurance Commissioner and former Congressman Bill Nelson, shared the spotlight with members of the media who spent the majority of their careers informing the public about America's achievements in human space flight.

A "roll of honor" of communicators, no longer active, who spent significant portions of their careers telling the world of humanity's leap into space, was read. The names will be part of a plaque for permanent display at the KSC news center.

Hugh Harris, director of Public Affairs, was honored with a proclamation read by Nelson which cited his years of dedicated service in supplying information about the nation's space program to the public, including the commentary for more than 100 Space Shuttle and other launches.

Harris was also cited for his humanitarian efforts which resulted in the opening of one of the first free medical clinics in the country.

In addition to the proclamation signed by Florida Governor Lawton Chiles,

Harris was presented with a photo montage representing the space programs he has worked with and a flag that was flown on Apollo 17.

NASA Administrator Dan Goldin, who was unable to attend the event, said in a letter commemorating the occasion: "This celebration . . . reminds us of how far we have come since that historical suborbital flight of 15 minutes and 22 seconds, as we recognize Dr. Shannon Lucid's 53rd day in space of a 140-plus-day mission aboard the Mir in low Earth orbit.

As explorers, pioneers and innovators, we look to the future with great expectation, awaiting the first element launch of the International Space Station in November 1997 and wonder what discoveries will be honored 35 years from now at the 70th anniversary of Americans in space." Proceeds from the banquet benefit the Astronaut Scholarship Fund.

Taking daughters to work

MORE THAN 1,500 daughters of Kennedy Space Center employees got an inside look at how their parents make the center run during Take Our Daughters to Work Day April 18. The purpose of the event was to give the girls a realistic view of day-to-day work, said Barbara Powell, the event's organizer. In the photo above, Diane Alvarado, a Bionetics employee, shows her daughter Meghan, 11, an Audobon Elementary School fourth grader, the process of placing photo captions on prints in the Bionetics photo lab. Below, one of the event's featured speakers, Vicki VanMeter, poses in front of the Explorer orbiter at the KSC Visitor Center. In 1993 Vicki became the youngest person to pilot a single engine airplane from east to west across the United States. A year later she became the youngest person to perform a solo transatlantic flight. Vicki and Libby Massey, who worked in KSC's Equal Opportunity and Public Affairs Offices before transferring to NASA Headquarters and ultimately retiring, spoke to the girls about setting and achieving their goals.

John F. Kennedy Space Center

Spaceport News

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