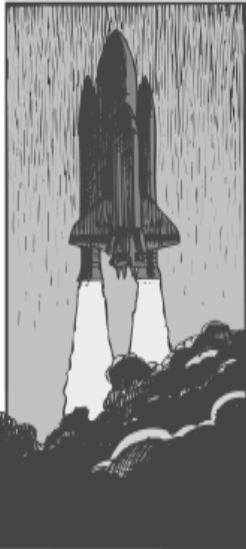




Shuttle update



## STS-99

**Orbiter:** Endeavour  
**Mission:** Shuttle Radar Topography Mission  
**Launch:** Sept. 16, 8:47 a.m.  
**Landing:** Sept. 27, 12:52 p.m.  
**Mission Duration:** 11 days, 4 hours, 5 min.

## STS-103

**Orbiter:** Discovery  
**Mission:** Hubble Space Telescope servicing mission  
**Launch:** Oct. 14, 5:42 a.m.  
**Landing:** Oct. 23, 3:09 a.m.  
**Mission Duration:** 8 days, 21 hours, 27 min.

# 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

## Vision, Progress and Challenges: On the road to the Spaceport Technology Center

On July 27, Center Director Roy Bridges talked to employees about KSC's vision of becoming a Spaceport Technology Center, current progress on that road and future challenges.

"The Spaceport Technology Center really hinges on our knowing our customers," Bridges said, "having our highly trained workforce constantly retrained to gain new experiences; focussing our resources on the right facilities, tools and processes; and overall — all of us providing leadership at every level to make this change."

Acknowledging a positive problem of the space center, Bridges noted that KSC's biggest difficulty is an overabundance of work.

"We have more business than we have people," he pointed out, "and so we have to make good choices about which things we're going to bid on for the future."

To solve this dilemma, Bridges emphasized the need to adhere to KSC's four guiding principles and focus on our strategic goals. It is within this framework that he fashioned his message on KSC's progress over the past year and its direction for the future.

### Guiding Principles

#### *Safety and Health First*

KSC's second annual Super Safety and Health Day was a huge success, he said, with more than 15,000 people participating across KSC, Cape Canaveral Air Station and Patrick Air Force Base — the three sites of the Joint Base Operations and Support Contract, or J-BOSC.

A new Agency Safety Initiative (ASI) emphasizing a hierarchy of safety must be embraced "with great passion and great integrity," Bridges said, to protect the public, our astronauts and pilots, the NASA workforce, and high value equipment and property.

KSC's focus on these areas is "generally good" in each of these areas, but there will be additional focus as part of an upcoming initiative to apply for the Occupational Safety and Health Administration's voluntary protections program, he noted.

Bridges added that KSC recently renovated the Operations and Checkout Building's exercise facility, and, as a result of a suggestion from the first Super Safety Day, KSC instituted a voluntary cardiopulmonary resuscitation training program, which has trained more than 200 people.

(See Vision, Page 2)

## Liberty Bell 7 surfaces after 38 years



Underwater salvage expert Curt Newport (pointing) led an expedition to recover a lost piece of American space history. See story, page 7.

## Mark your calendars!

**What:** The annual KSC Open House — "Space Partners Opening the Gateway to the Future"  
**Where:** KSC, CCAS and Patrick Air Force Base  
**When:** Saturday, Sept. 25, 9 a.m. to 3 p.m.  
**Who:** Open to all NASA and contractor employees at KSC, CCAS and Patrick Air Force Base. Plans this year call for expanded access to landmarks such as the lighthouse, Complex 34 and early missile launch complexes. More details will appear in *Spaceport News* and *Countdown*.

## Vision ...

(Continued from Page 1)

### *Reliance and Teamwork Everywhere*

Bridges noted outstanding progress in the area of reliance and teamwork. "We built a new cryogenics test area," he said. "We leveraged a bit of NASA money with some State of Florida money to modernize that facility. We worked with Spaceport Florida and the Shuttle Program to build a new facility on the tow-way that we're calling the Reusable Launch Vehicle Hangar. That helped us attract the X-34 program to Florida and gives us a place to park our Shuttle convoy equipment and an office building."

Bridges added that KSC has worked with Florida Power & Light to finance (off budget) a complete upgrade to the Launch Complex 39 Emergency Power House. "We went from five to 10 megawatts," he noted, "which gives us much more capability for emergency power."

He added that KSC has designed, tested and delivered a lot of equipment for the X-33 and other X-vehicle programs.

Bridges said, too, that he has handed out more than 300 Gold Dollar awards since he started the program in 1997. The award is for model behavior — either intervening to stop an unsafe condition or satisfying the customer. He pointed out that a lot of the awards have gone to teams.

### *Satisfying our customers needs — anytime, anywhere*

Bridges stated that last fall, the management team identified this as one of eight focus areas for continual improvement over 1999. "We established a customer advocacy team," he said, "and they have been working on a set of processes and tools to deploy at KSC."

The team suggested hiring J.D. Power & Associates, a world-renowned group of consultants, to baseline a survey with our customers. Together with the 45th Space Wing, Lockheed Martin, Boeing and Enterprise Florida, KSC recently did this and discovered that our customers "respect our knowledge and our experience," although they cited that it is a complex environment in which to work.

### *Environmental Leadership*

"We've had a good year," said Bridges, addressing the fourth guiding principle. "We've been meeting our goals in terms of reducing environmental and hazardous waste, reducing our energy and maintaining our relationships with our regulators."

KSC patented some techniques for cleaning up groundwater, he pointed out, "and this year, we signed a very innovative agreement with the Air Force, the Department of Energy and the Environmental Protection Agency to try out four new technologies in the LC 34 complex to get all of the trichloroethylene out of the ground."

## Strategic Goals

### *Assure safe, sound, efficient practices in place*

"This is really the heart of our business today," Bridges said, focusing on KSC's three primary programs — The Shuttle, the International Space Station (ISS), and the Expendable Launch Vehicle (ELV) programs.

Noting that KSC has had five historic missions since he delivered a state-of-the-center address to employees last year, Bridges said that "before STS-93, our launch success rate after tanking was 95 percent over the last three years." After the two last-minute STS-93 scrubs, that dropped to 88 percent, but Bridges noted that he was "very proud of what people did in those launch counts. I thought we had a very competent and professional team, and they did exactly what they should have done."

Another one of eight focus areas this year is to try to do a better job of guaranteeing the quality of the Shuttle. Bridges said that there is a Shuttle Program prototype called 'World Class Surveillance' and "the essence of it is an interdependent team of people doing insight and oversight using prescribed processes and a lot of discipline."

"We want to be the world's best at this because our customers need it," he said, "and the Agency needs us to have extraordinarily reliable products even though they're very complex."

In the ISS Program, he added, it's been a historic year, highlighting the STS-88 mission to get the Unity node into orbit and join it with the Russian Zarya module. He also praised the KSC team that designed and implemented the Multi-Element Integration Test (MEIT), which KSC designed and sold to the ISS Program. The most recent test involved hooking up all electrical and fluid connections on the next three elements, including the U.S. Laboratory module, Destiny, to verify how they work together — qualifying ISS hardware and software on the ground.

Speaking about the ELV Program, Bridges said that as KSC's only major lead center program, it is an "important strategic responsibility for this center" and that "the ELV team did an absolutely superb job in their first year."

### *Increase the use of KSC's operational expertise to contribute to the design and development of new payloads and launch vehicles and*

### *Utilize KSC operational expertise in partnership with other entities to develop new technologies*

These two goals were designed to help KSC move beyond the programs of today and get ready for putting NASA and KSC back on the cutting edge of technology development, Bridges told his audience.

He cited the possibilities of space tourism and rush delivery services using the sub-orbital mode for space vehicles as examples of stretching the envelope in thinking of new and exciting ways the spaceport could and may be used.

"We need new technology — how to turn around the vehicles and how to handle all the ground infrastructure and ground support equipment that we use today," he said. "This is KSC's role."

Praising the center's operational knowledge about spacecraft processing, testing and launching, he stated that KSC needs to focus more on the future in order to drive space-related technologies that will support our role as a Spaceport Technology Center.

"Space transportation systems are at the heart of our Spaceport Technology Center," he said. "This is where we're going to be focusing our new laboratories, our new skills, our new tools in the future and where we will be working to win proposals and money."

Development initiatives where we're already doing great work, he pointed out, include Command, Control and Monitor Systems; Materials Evaluation; Range Systems (x range); Fluids and Fluid Systems; and Process Engineering.

In the latter area, KSC implemented three collaborative engineering environment rooms, where there are demonstrations of advanced models of Shuttle payloads, ISS and Shuttle processing. "These systems allow us to collaborate on very difficult engineering problems with other centers or industry," Bridges said.

The bottom line, he noted, is that KSC today is doing a lot of technology design, development, test and application, "but we've never really focussed on it and thought of it as our primary product line and that's where we need to go in the future. That's what this vision is all about."

Bridges also noted that a little-known fact of technology development is that last year "KSC was number two in the Agency — out of 10 centers — in terms of space technology awards." This includes grants for developing technologies or getting patents and licensing technologies.

### *Continually enhance core capabilities*

In 1998, KSC awarded J-BOSC, consolidating 18 contracts into one to save \$557 million over 10 years. NASA's share of the savings will be reinvested back into the center, and this reinvention of a costly way of doing business earned KSC the prestigious Hammer Award from Vice President Al Gore.

Additionally, KSC maintained ISO 9001 certification through two recertification audits, the last of which was perfect and the first only revealed one minor non-conformity.

Also, KSC has started a Project Resource Management System, Bridges said, which is a set of software tools to help project managers.

Praising all KSC employees for a great year, Bridges added in summary, "We've got a great future."

# 1998 Kennedy Space Center Honor Awards

The Kennedy Space Center Honor Awards Ceremony was held Aug. 5 in the Visitor Complex Imax II Theater. More than 200 employees were recognized for their efforts in 1998 that contributed significantly to helping achieve the center's mission. Among the honors presented were the KSC Director's Award, the Equal Opportunity Award and Medal, two Presidential Rank Awards, the Secretary of the Year Award, Outstanding Leadership Medals, and four Service Awards. Individual and group awards also recognized contributions centerwide.

## KSC Director's Award

The Director's Award is the highest award that the center confers upon an employee. The award honors an employee who has exemplified through personal effort and innovation the highest standards and commitment to the

application of continual improvement principles and practices or for the accomplishment of a job-related task of such magnitude and merit as to deserve special center recognition.

This year, Michael Sumner,

deputy director of the Joint Performance Management Office, was presented with the Director's Award in recognition of outstanding commitment to the future of NASA and the U.S. Air Force through visionary leadership, change management, and implementation of pioneering concepts resulting in significant improvements for safe, cost-effective and reliable access to space.



Michael Sumner

## KSC Distinguished Service Medal

The Distinguished Service Medal is awarded to any person in the federal service who, by distinguished service, ability or courage, has personally made a contribution representing substantial progress to the NASA mission.

The contribution must be so extraordinary that other forms of recognition by NASA would be inadequate. This is the highest honor that NASA confers.

Due to his retirement in January, the medal was already presented to Bob Sieck, the former director of

Shuttle Processing, for his distinguished service as KSC launch director and director of Shuttle Processing, sustained outstanding leadership and total dedication to the success of the Space Shuttle program.

Also honored is Thomas Breakfield III, former director of



Bob Sieck



Thomas Breakfield III

Safety and Mission Assurance. Breakfield received this award in recognition of outstanding leadership, contributions, and innovative initiatives to KSC's Safety and Mission Assurance programs. Breakfield retired in March.



Space Shuttle Columbia surged skyward from Launch Pad 39B at 2:19 p.m. EDT Apr. 17, 1998, to begin the nearly 17-day STS-90 Neurolab mission.

### Distinguished Executive Award

The Distinguished Executive Award is granted by the United States president to career members of the Senior Executive Service whose performance has been exceptional for at least three years. The award recognizes sustained superior accomplishment in the management of programs of the United States government and for noteworthy achievement of quality and efficiency in public service.

The Distinguished Executive Award is the nation's highest civil service award and is presented to fewer than one percent of career Senior Executive Staff members.

Associate Director for Advanced Development and Shuttle Upgrades JoAnn Morgan was recognized as a Distinguished Executive by Vice President Al Gore on Apr. 29 at the Presidential Distinguished Rank Awards Ceremony in Washington, D.C.



JoAnn Morgan

### Secretary of the year

This award is granted to a KSC secretary who has demonstrated exemplary performance over time, characterized by a high degree of personal integrity, judgment and responsibility.

Sue Gross demonstrated outstanding performance, professionalism and untiring dedication to the mission of the Shuttle Processing Directorate.



Sue Gross

### Strategic Leadership Award

Miguel Rodriguez

### Equal Opportunity Award

This award is granted for outstanding achievement and material contribution to the goals of NASA's Equal Employment Opportunity programs either within government or within community organizations or groups.

John Knight Sr. received the award in recognition of outstanding dedication and mentoring toward the goal of equal opportunity for minorities and women at KSC.

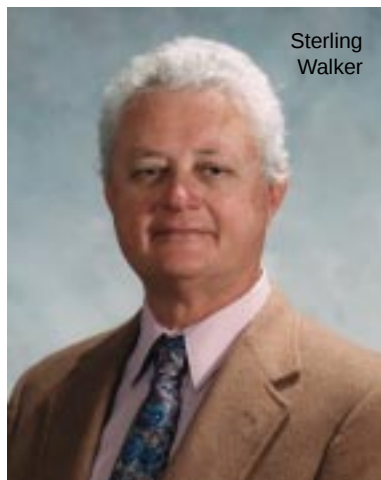
Sterling Walker received the award for exceptional leadership and successful achievement of numerous accommodations, as well as for his vision and work as co-chair of the Disabilities Awareness Action Working Group, which has significantly influenced the center's capabilities.

Leon Wichmann received the award for leadership, support and extensive involvement as co-chair

of KSC's Disabilities Awareness Action Working Group and for successful accomplishments that have significantly influenced the center's direction.



John Knight Sr.



Sterling Walker



Leon Wichmann

### Forty year service awards

This award is given in grateful recognition of 40 years of faithful service to NASA and the U.S. government. Photos were not available for James Deming and Robert Dorian.



Jimmy Celsor



Stanley Young

### Exceptional Service Medal

The Exceptional Service Medal is awarded for significant performance characterized by unusual initiative or creative ability that clearly demonstrates substantial improvements

or contributions in engineering, aeronautics, space flight, administration, support or space-related endeavors that contribute to the mission of NASA.

David Alonso  
David Dickinson  
H.T. Everett Jr.  
J. Chris Fairey  
James Fesmire  
Jack Fox  
A. Earl Gilbert

Tracy Gill  
Edmond Gormel  
Roselle Hanson  
George Hurt  
Glenn Otto  
Janice Robertson

**Outstanding Leadership Medal**

The NASA Outstanding Leadership Medal is awarded for notably outstanding leadership that has had a pronounced effect upon the technical or administrative programs of NASA.

The award may be given for an act of leadership or for sustained contributions based on an individual's effectiveness as a leader, the productivity of an individual's program or demonstrated ability to develop the administrative or technical talents of other employees.

Bobby Bruckner received the award for outstanding leadership in the development and transition of the lead center for the acquisition and management of expendable launch vehicle launch services to Kennedy Space Center.

Stephen Francois was given the award in recognition of exceptional service and dedication in leading the capability development for and launch site processing of Space Shuttle payloads and International Space Station elements.

James Hattaway Jr. was given the award in recognition of the



Bobby Bruckner



Stephen Francois



Marvin Jones

significant contributions made to NASA and the center in providing expert guidance and management to the Procurement Office ensuring KSC's success.

Marvin Jones received the award in recognition of outstanding leadership, support and dedication to KSC, NASA and the nation's space program.

Ramon Lugo was given the award for exceptional management and leadership performed during the transfer of acquisition and management of expendable launch vehicle launch services to KSC.



James Hattaway



Ramon "Ray" Lugo

**Group Achievement Award**

The Group Achievement Award is given in recognition of an outstanding accomplishment made through the coordination of many individual efforts that has contributed substantially to NASA's mission. This award recognizes the accomplishments of either a group comprised of all government employees or a group of both government and non-government personnel.

Helium Acquisition Team  
Integrated Vehicle Health Management Team  
KSC Speakers Bureau  
KSC Super Safety Day  
Operations Control Room 1  
Small Expendable Launch Vehicle Services Source Evaluation Board  
STS-90/Neurolab Payload Processing Team  
Transition Working Group

**Johnson Space Center Group Achievement Award**

Fiber Optic Flight Experiment (FOFE) Team

**Public Service Group Achievement Award**

Boeing Integrated Power System Test Preparation Team  
Kennedy Inventory Management System Migration Team  
KSC Waste Management Guidelines Team  
Low Voltage Electrical Preventative Maintenance Team  
Personnel Access Security Requirements & System Definition Team  
USA Occupational Safety & Health Administration  
Voluntary Protection Program Application Team  
USA Safety and Mission Assurance  
Corrective Action Engineering Team

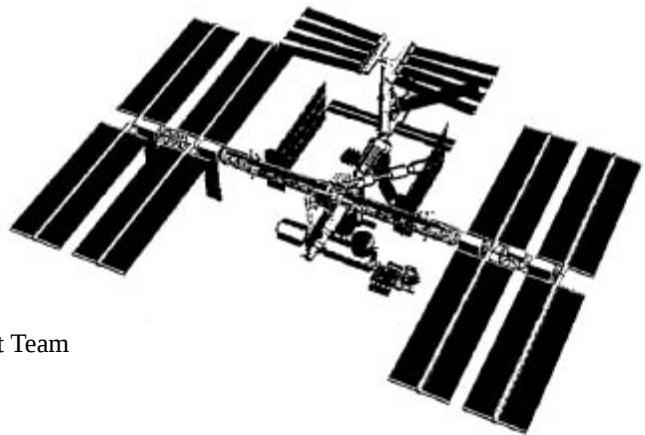
**Exceptional Achievement Medal**

The Exceptional Achievement Medal is awarded for a specific accomplishment or contribution clearly characterized by a substantial and significant improvement in operations, efficiency, service, financial savings, science or technology that contributes to NASA's mission.

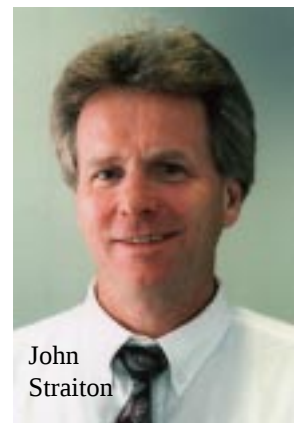
|                     |                 |                          |
|---------------------|-----------------|--------------------------|
| Elisa Artusa        | Dale Lueck*     |                          |
| Christopher Carlson | Roslyn McKinney | * <i>Exceptional</i>     |
| William Cilento     | Jeanne O'Bryan  | <i>Engineering</i>       |
|                     | Vanessa Stromer | <i>Achievement Medal</i> |

### ISS Group Achievement Award

Beluga Offload Team  
 Engineering Support Room Development Team  
 Huntsville 5A Hardware/Software Integration Team  
 International Space Station Element 5A Hardware Integration Team  
 International Space Station Flight Element 3A/4A Hardware Integration Team  
 International Space Station Processing Safety Requirements Team  
 KSC ISS Ammonia Operations Team  
 Multi-Element Integrated Test I Requirement Development & Implementation Planning and Replanning Team  
 Multi-Purpose Logistics Module Access Certification Equipment Development Team  
 Multi-Purpose Logistics Module Transportation Team  
 Node Emulator Integrated Product Team  
 Payload Data Library Team  
 Space Station and Payload Quality Team  
 Space Station and Shuttle Payload Quality Team  
 Space Station and Shuttle Payloads Resources Management Office  
 Space Station Integration Office Development Team  
 Space Station Mission 2A Processing Team  
 Space Station Support Equipment Electrical and Instrumentation Sub-Integrated Product Team  
 Space Station Support Equipment Fluids/Servicing Support Equipment Sub-Integrated Product Team  
 Test, Control and Monitor System Team



### ISS Outstanding Leadership Medal



John  
Straiton

### ISS Exceptional Achievement Medal

|                       |                 |
|-----------------------|-----------------|
| Kathryn Aglitz        | K. Bruce Morris |
| William Dowdell       | Jimmie Rogers   |
| Robert Hill           | Dawn Schiable   |
| S. Elliot Kicklighter | Mark Terrone    |
| Cheryl McPhillips     | Mark Woloshin   |

### ISS Exceptional Service Medal

|                   |                  |
|-------------------|------------------|
| Craig Baker       | Paul Kirkpatrick |
| E. Scott Chandler | Tommy Mack Jr.   |
| Jon Cowart        | Lester McGonigal |
| John Dollberg     | Joseph Porta     |
| James England     | Danny Welford    |
| Laura Govan       |                  |

### Certificate of Commendation

This award recognizes exceptional individual accomplishments or outstanding management of a program that affects the entire center or contributes significantly to the center's mission.

|                    |                                |
|--------------------|--------------------------------|
| John Apfelbaum     | Robert Franco                  |
| Robert Ashley      | Tracey Fredrickson             |
| Tamara Belk        | John Giles                     |
| Michael Benik      | Malcolm Glenn                  |
| Seth Berkowitz     | Michael Haddad                 |
| Sandra Bodiford    | John Halsema                   |
| Frances Brauer     | Wanda Harding                  |
| Steven Brisbin     | Edrick Jackson                 |
| Brenda Brooks      | Gary Jerome                    |
| Karen Bruning      | Lori Jones                     |
| Mario Busacca      | Janet Keith                    |
| Carol Cavanaugh    | Dean Kunz                      |
| Dale Ceballos      | Catherine Lewandowski-Scoggins |
| Glenn Chin         | Steven Lewis                   |
| Barbara Cox        | Alan Littlefield               |
| Danny Culbertson   | Barbara Lockley                |
| Suzanne Cunningham | James Lunceford                |
| Bhupendra Deliwala | Barbara McCoy                  |
| Debbie Folmar      | Donald McMahon                 |
| Lisa Fowler        | Jack Massey                    |
|                    | Johnny Mathis                  |
|                    | Gregory Melton                 |
|                    | Ralph Mikulas                  |
|                    | Amanda Mitskevich              |
|                    | Robert Mueller                 |
|                    | Ann Nelson                     |
|                    | James Norman                   |
|                    | Danny Oakland                  |

Bradley Poffenberger  
 James Pope  
 Rose Rayfield  
 Gary Reuterskiold  
 B. Clay Robertson  
 Jill Rock  
 Terence Ross  
 Rosaly Santo-Ebaugh  
 Loraine Schafer  
 Henry Schwarz  
 Luther Setzer  
 Jeffrey Spaulding  
 Welmon Speed  
 Priscilla Stanley

Todd Steinrock  
 Michael Stelzer  
 Mike Steven  
 Richard Sweet  
 Steven Swichkow  
 Wayne Thalasinis  
 Emilio Valencia  
 John Van Hooser Jr.  
 Gary Wentz  
 Adam West  
 Connie Wilcox  
 Brenda Willis  
 Maria Wilson  
 Scott Wilson

### Public Service Medal

This award is granted for exceptional contributions to the mission of NASA. The award may be given to any individual who was not a government employee during the period in which the service was performed.

Steven Bailey  
 Wendy Dankovichik  
 Dr. C. Ross Hinkle  
 Ronald Lang  
 Paul Snyder

# Liberty Bell 7 liberated from the depths of the Atlantic

Almost 38 years to the day it was submerged in the Atlantic Ocean, Liberty Bell 7 emerged from its ocean bed in remarkably good condition.

The 7.5-foot aluminum and titanium capsule sank after splashdown on July 21, 1961, when its hatch blew open prematurely, and the spacecraft filled with water.

According to NASA records, Virgil Ivan "Gus" Grissom began final preparations for egress after splashdown. He notified the recovery helicopter, code named "Hunt Club," that he would need a few more minutes to mark all of the switch positions on the capsule's instrument panel.

Grissom's final transmission was to the helicopter.

"As soon as I had finished looking things over, I told Hunt Club that I was ready," he said. "According to the plan, the pilot was to inform me as soon as he had lifted me up a bit so that the capsule would not ship water when the hatch blew. Then I would remove my helmet, blow the hatch and get out."

Grissom was lying in his couch, waiting to receive final confirmation that it was time for him to blow the hatch and exit the spacecraft "when suddenly, the hatch blew off with a dull thud."

Water flooded the cabin.

Grissom automatically threw off his helmet, grabbed the sill of the hatch, hauled himself out of the sinking capsule and swam furiously to get away from the spacecraft.

The capsule had been equipped



Reporters surround the Mercury capsule immediately after its ocean retrieval.

with a special dye marker package which would spew out its bright green contents in order to help recovery vehicles locate the spacecraft once it splashed down. The package was attached to the capsule by a set of lines.

Once he was in the water, Grissom got tangled up in those lines and remained attached to the sinking spacecraft.

He finally managed to extricate himself and to swim away from the capsule.

When the recovery chopper finally hooked on to the spacecraft, Grissom figured that both he and Liberty Bell 7 were home free.

The helicopter made a valiant effort to recover the spacecraft, but with the added weight of the water which had flooded it, the capsule proved to be too heavy a load.

Red warning lights flashed on

the control panel, signifying that the extra weight was putting too much strain on the chopper and that an engine failure was imminent.

The recovery team had no choice but to cut the spacecraft loose. Grissom watched helplessly as Liberty Bell sank from sight.

With the spacecraft went several souvenirs that Grissom carried with



Above are two of the dimes retrieved from the Liberty Bell 7 capsule after it was raised from the Atlantic Ocean July 20.

him on the flight.

"I had brought along two rolls of 50 dimes each for the children of friends, three one dollar bills, some small models of the capsule and two sets of pilot's wings," he recalled.

The dimes (see photo above) were recovered recently when the capsule was lifted out of the water on July 20, 1999.

A helicopter arrived and hoisted Grissom out of the ocean. Once he was on board the carrier, Grissom received a telephone call from then President John F. Kennedy.

The President expressed relief that Gus was safe, but his words offered little consolation to the pilot who had flown a perfect flight but

came back without his spacecraft.

"It was especially hard for me, as a professional pilot," Grissom said. "In all of my years of flying — including combat in Korea — this was the first time that my aircraft and I had not come back together. In my entire career as a pilot, Liberty Bell was the first thing I had ever lost."

The capsule had lain on the ocean floor — three miles down, even deeper than the Titanic — ever since that hot summer day in 1961.

It was recovered just one day shy of the 38th anniversary of the 15-minute suborbital flight that made Grissom the second American in space, and exactly 30 years to the day that humans first landed on the moon.

Upon recovery, the capsule was quickly placed in a specially designed container filled with sea water to prevent corrosion, and then it was carried by ship to Cape Canaveral on July 21.

The Kansas Cosmosphere and Space Center will disassemble and clean the capsule.

Then the Discovery Channel, which financed the expedition to retrieve the capsule, will take it on a three-year tour before returning it to the Kansas museum for display.

Grissom, who had been part of the U.S. manned space program since it began in 1959, was selected as one of NASA's Original Seven Mercury astronauts. His second space flight on Gemini III earned him the distinction of being the first man to fly in space twice.

## Arbuthnot named director, Administration Office

Richard Arbuthnot has been named director, Administration Office, at Kennedy Space Center.

He was appointed to this career Senior Executive Service position, effective July 18.

Prior to the appointment, Arbuthnot served as acting director of the Administration Office at KSC.

In this position, he provides executive leadership and centralized management of civil service human resources programs, workforce management and planning and industry relations.

Arbuthnot came to KSC in February 1999 from the John C. Stennis Space Center, in Pearl River, Miss., where he served as director, Human Resources and Management Services.

Since joining NASA in 1985, he has served in several positions across the Agency.

He worked at Johnson Space Center as a Human Resources personnel management specialist until 1989 and then as special assistant, Legislative Affairs, to the Comptroller until 1990.

From 1990 to 1991, he was the

NASA liaison to the chairman of the U.S. Senate Appropriations Committee.

From 1991 to 1993, he was executive officer to the NASA associate administrator for Human Resources and Education. He joined the John C. Stennis Space Center in 1993.

Arbuthnot earned a bachelor of science degree from Wayne State College, Wayne, Nebraska, in 1981 and a master of public administration degree from Kansas State University, Manhattan, Kansas, in 1985.

### Be Property Aware

Property Awareness Week is Aug. 9-13.

The intent is to make all KSC personnel more receptive to property management issues and concerns and to offer visibility to property custodian functions and user responsibilities.

# STS-93 — reaching new heights for women and for X-ray astronomy



Flames shoot from the two solid rocket boosters on Space Shuttle Columbia as it roars into the night sky. After two unsuccessful attempts on previous nights, liftoff of STS-93 occurred at 12:31 a.m. EDT on July 23. STS-93 was a five-day mission primarily to release the Chandra X-ray Observatory, which will study the invisible, and often violent, mysteries of X-ray astronomy.



STS-93 Commander Eileen Collins (above) aimed a camera through the overhead windows of the Space Shuttle Columbia on July 24. Collins, who is the first female commander of a Space Shuttle, and her crew earlier had released the Chandra X-ray Observatory into space. Below, STS-93 Mission Specialist Catherine “Cady” Coleman moved through the passageway between Columbia’s middeck and flight deck. Both pictures were taken with an electronic still camera. During the five-day mission, Collins, Pilot Jeff Ashby and Mission Specialists Coleman, Steve Hawley and Michel Tognini completed work with the Southwest Ultraviolet Imaging System, a telescopic instrument mounted on the side hatch window in the middeck which collected ultraviolet data on the moon, Jupiter and Venus. Additional experiments were conducted to study the reaction of biological samples and plant growth to the absence of gravity.



Columbia touched down on runway 33 at the Shuttle Landing Facility after a successful mission of nearly five days and 1.8 million miles. Main gear touchdown was at 11:20 p.m. EDT on July 27. This was the 95th flight in the Space Shuttle program and the 26th for Columbia. The landing was the 19th consecutive Shuttle landing in Florida and the 12th night landing in Shuttle program history. Aboard were the STS-93 crew members Commander Eileen Collins, Pilot Jeffrey Ashby, and Mission Specialists Stephen Hawley, Catherine Coleman and Michel Tognini of France, with the Centre National d'Etudes Spatiales. The mission's primary objective was to deploy the Chandra X-ray Observatory — one of NASA's great observatories. In energy sensing range it falls between the Hubble Space Telescope and the Gamma Ray Observatory. The observatory will be available to scientists in the United States and to the international astronomical community over an anticipated mission lifetime of at least five years.



John F. Kennedy Space Center

Spaceport News

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