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, 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.
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 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 money to modernize that facility. We worked with Florida Power & Light to finance (off budget) a cryogenics test area, “and they have been working on a set of hardware and software on the ground. The team identified this as 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 us,” 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.”

“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.

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 Safety and Mission Assurance. Sieck received this award in recognition of outstanding leadership, contributions, and innovative initiatives to KSC’s Safety and Mission Assurance programs. Sieck 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.

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.

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.

Strategic Leadership Award

Miguel Rodriguez

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.

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 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.

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
Christopher Carlson
William Cilento
Dale Lueck*
Roslyn McKinney
Jeanne O’ Bryan
Vanessa Stromer
* Exceptional Engineering Achievement Medal
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 Exceptional Achievement Medal

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

ISS Exceptional Service Medal

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

ISS Outstanding Leadership Medal

John Straiton

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 Ashley
Tamara Belk
Michael Benik
Seth Berkowitz
Sandra Bodiford
Frances Brauer
Steven Brisbin
Brenda Brooks
Karen Bruning
Mario Busacca
Carol Cavanaugh
Dale Ceballos
Glenn Chin
Barbara Cox
Danny Culbertson
Suzanne Cunningham
Bhupendra Deliwala
Debbie Folmar
Lisa Fowler
Robert Franco
Tracey Fredrickson
John Giles
Malcolm Glenn
Michael Haddad
John Halsema
Wanda Harding
Edrick Jackson
Gary Jerome
Lori Jones
Janet Keith
Dean Kunz
Catherine Lewandowski-Scoggins
Steven Lewis
Alan Littlefield
Barbara Lockley
James Lunceford
Barbara McCoy
Donald McMahon
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 Reuterkiold
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 Thalasinos
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 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 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.
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.

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.