



Spaceport News

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

<http://www-pao.ksc.nasa.gov/kscpao/snews/snewstoc.htm>

John F. Kennedy Space Center

Bridges accepts new post at Langley

Kennedy Space Center Director Roy D. Bridges has been named Center Director for the agency's Langley Research Center in Hampton, Va. Bridges, a retired U.S. Air Force major general and former Space Shuttle pilot, will assume his new duties Aug. 10.

"My six-plus years with the KSC Team are the highlight of my career," said Bridges. "The people here have such a passion for the mission and produce amazing results. Clearly, there is no finer team on the planet, and I feel very privileged to have had the opportunity to serve here for so long."

Bridges was named KSC Director in March 1997. His responsibilities has included managing all of the Center's facilities and activities related to the processing and launch of the Space Shuttle and expendable launch vehicles, as well as final tests, preparations and processing of experiments and segments of the International Space Station.

He also worked to develop the



Roy D. Bridges

spaceport and range technologies to improve safety and reduce the cost of access to space.

As a NASA astronaut, Bridges piloted the Space Shuttle Challenger on mission STS-51F in July 1985. He has held many key aerospace positions during his career. Prior to his last Air Force assignment at Wright-Patterson Air Force Base, Ohio, he was commander of the Air Force Flight Test Center, Edwards Air Force Base in California. He also was

commander of the Eastern Space and Missile Center, Patrick Air Force Base; and commander,

"The people here have such a passion for the mission and produce amazing results. Clearly, there is no finer team on the planet."

Roy D. Bridges

412th Test Wing, Edwards Air Force Base.

"As I explained in my statement that I asked Jim Kennedy to read to you last Friday (June 13) when this announcement was made, we all must answer the call of duty as best we can at this critical time for the Agency," said Bridges. "The Administrator believes that my service is needed as the Langley Center Director now. I will try to bring some of the incredible talent at Langley to bear on our Return to Flight challenges as well as on other important Agency initiatives."

Langley was established as the

nation's first civilian aeronautics laboratory. The Center is a recognized leader in aviation safety initiatives, quiet aircraft technology, small aircraft transportation and aerospace vehicles system technology. It supports NASA space programs with atmospheric research and technology testing and development.

"General Bridges' distinguished military service and flight experience as both a pilot and astronaut are vital to the continued success of Langley and its many cutting-edge aerospace and advanced technology programs," said NASA Administrator Sean O'Keefe.

Bridges is a distinguished graduate of the U.S. Air Force Academy, where he earned a bachelor's degree in engineering science. He received his master's degree in astronautics from Purdue University, and in May 2001 he received an honorary doctorate of engineering degree from Purdue.

Inside

Page 2 - Two International Space Station components arrive

Page 3 - Mars support teams spread NASA goals in Africa

Pages 4-5 - Air traffic controllers respond to airborne security



Page 7 - Brevard is Lightning Alley

Page 8 - One NASA comes together through business program

Spirit begins seven-month trip to Mars

The first Mars Exploration Rover (MER-A), named Spirit, began its seven-month journey to Mars at 1:58 p.m. June 10 when its Delta II vehicle launched from Cape Canaveral Air Force Station. The spacecraft, first of a twin pair in NASA's MER project, separated successfully from the Delta's third stage 36 minutes after launch while over the Indian Ocean. At press time, all systems were operating as expected.

Spirit will roam a landing area on Mars that bears evidence of a wet history. The rover will examine rocks and soil for clues to whether the site may have been a hospitable place for life. Spirit's twin, Opportunity, which is being prepared for launch no earlier than June 28 at 11:56 p.m. at press time, will be targeted to a separate site with different signs of a watery past.

"We have plenty of challenges ahead, but this launch went so well, we're delighted," said JPL's Pete Theisinger, project manager for the Mars Exploration Rover missions.



The spacecraft's schedule before arriving at Mars Jan. 4, 2004, includes six opportunities for maneuvers to adjust its trajectory. Visit www.mars.jpl.nasa.gov/mer for information.

Space Station components officially signed over to NASA

The next major International Space Station (ISS) module, the European-built Node 2, was officially transferred to NASA, and Node 2 and the Japanese-built Pressurized Module (PM), which is part of the Japanese Experiment Module (JEM) element known as Kibo (meaning 'hope'), were officially welcomed during a ceremony at the Space Station Processing Facility, June 18.

Kennedy Space Center Director Roy Bridges Jr., NASA Deputy Associate Administrator for ISS and Space Shuttle Programs Maj. Gen. Michael Kostelnik and NASA's ISS Program Manager William Gerstenmaier welcomed members of the Japanese and European Space Agencies as well as representatives from the Canadian, Russian, Italian and Brazilian Space Agencies.

The Node 2 arrived at KSC June 1 aboard the Airbus Beluga aircraft. The PM was shipped by container transport ship and arrived at KSC, May 30. Both were transported to the SSPF for integrated testing and prelaunch processing for future Space Shuttle missions.

"We'll put these modules through their paces here on the ground and help the ISS achieve its destiny," said Bridges. "We'll build friendships and make our partnerships stronger in the process."

When NASA's Node 2 is installed on the Station it will signify the completion of the U.S. stage of assembly and increase the



Center Director Roy Bridges Jr. speaks to guests gathered in the Space Station Processing Facility for a ceremony to highlight the arrival of two major components of the International Space Station. Emceed by Lisa Malone (left), deputy director of External Relations and Business Development at KSC, the ceremony also included (from left behind Bridges): NASA's Michael C. Kostelnik, deputy associate administrator for International Space Station and Shuttle Programs; William Gerstenmaier, International Space Station Program manager; Alan Thirkettle, International Space Station Program manager for Node 2, ESA; and Kuniaki Shiraki, JEM Project manager, National Aerospace and Development Agency of Japan.

living and working space inside the Station.

Node 2 will provide passage-way to the U.S. Destiny Lab, the JEM, the European Columbus Laboratory and the Centrifuge Accommodation Module. It will also provide connecting ports for Multi-Purpose Logistics Modules, the Japanese H-IIA Transfer Vehicles and the Pressurized Mating Adapter 2.

The module was built by Alenia Spazio in Turin, Italy under contract to the Italian Space Agency and led by a consortium of European subcontractors.

"What we are doing today is a demonstration of the call for further growth and expanded capacity on the ISS," said General Kostelnik.

Gerstenmaier said, "The strength of the ISS is its partners coming together to solve problems, each in their own way. Both of these modules have been designed for the ISS, though they look a little different, and each meet the specifications required."

Andrea Lorenzoni, ISS program manager for Agenzia Spaziale italiana, commented, "Today is the 40 year anniversary

of the Italian Space Agency working with NASA. It is a key milestone from our first satellite launch to our partnership with JPL for the Cassini launch to signing the cooperative agreement in 1991 to provide the three Multi-Purpose Logistics Modules, which have flown on five missions to date."

"Kibo will be attached to Node 2 on the ISS," said Kuniaki Shiraki, Space Station program manager for the National Space Development Agency of Japan (NASDA).

"It is an important element. It is quite amazing the events that have led to the arrival of the JEM Kibo (pressurized) module to KSC." Expressing his thanks and cooperation Shiraki added, "We have a unique future."

Japan's first human rated element will be used for space medicine, biology, Earth observations, material production, biotechnology and communications research.

Kibo comprises six components: two research facilities, the PM, Exposed Facility (from which flight crews will conduct micro-gravity experiments), two logistics modules, a Remote Manipulator System and an Inter-Orbit Communication System unit.

These components will be assembled in space over the course of three Space Shuttle missions starting in 2006.

The NASDA manages the development of the JEM element at the Tsukuba Space Center near Tokyo.

Debris reconstruction hangar walk-through days scheduled

Kennedy Space Center workers and their families will be able to view collected debris during the Columbia Reconstruction Hangar Walk-Through, July 7-12. The event schedule is designed to accommodate workers during the first three days and workers who wish to bring their families to the hangar the latter three days.

NASA buses will shuttle KSC workers from designated locations in the Launch Complex 39 and Industrial Areas and the NSLD facility to the hangar Monday, July 7 through Wednesday, July 9 from

1:30-6:30 p.m. Third shift employees will be accommodated July 10 from 9:30 to 11:30 p.m.

KSC employee and family days are Thursday, July 10 and Friday, July 11 from 3 to 8 p.m. and Saturday, July 12 from 9 a.m. to 6 p.m. A designated number of placards for each of the family days will be distributed on a first-come, first-serve basis at various KSC locations the week prior.

Badged employees with a placard will be required to park at the KSC Visitor Complex, lot number 7, and board a KSC bus

with up to four family members that are at least 12 years old. Children younger than 12 will not be allowed on KSC for the tour due to previously established age restrictions in Center facilities.

The Columbia Reconstruction Hangar Walk-Through is being held to educate and inform, give us a new respect for space exploration and those who serve, and allow closure to this tragedy in some ways. The Walk-Through must be done on workers' own time.

During the week, NASA,

United Space Alliance and Boeing reconstruction team members will be at the hangar during tour hours to answer questions and explain the debris and the processes used to help identify and place crucial pieces on the grid.

Employee Assistance Counselors will also be on-site during Columbia Hangar Walk-Through hours.

Please note that no cameras or video cameras will be allowed. The Walk-Through will be wheelchair accessible. Employees may not drive their cars to the Hangar.

Mars launch teams spread NASA's goals

It's vital that Spaceport employees not only produce successful missions, but also educate the young around the world who may continue this legacy. An Air Force tracking group supporting the Mars Exploration Rover-A (MER) mission recently volunteered to help ensure these outreach aspirations are met.

Not all of NASA's Expendable Launch Vehicle (ELV) fleet utilizes the Tracking and Data Relay Satellite System. While this poses a challenge for telemetry monitoring, the need to travel offered an educational opportunity.

In these cases, a deployable Air Force telemetry team frequently supports the Launch Service Program's (LSP) global telemetry requirements. Groups like the Air Force Space and Missile Systems Center, Detachment 12, Deployables Team support missions from remote locations that don't have ground stations to capture powered ELV flight events. So far these Air Force teams provided tracking support from Johnston Atoll, Kenya, Australia and French Polynesia.

Most recently, they assisted NASA with the MER-A mission, which launched June 10 from Cape Canaveral Air Force Station. Two Air Force teams were required for MER-A.

One utilized deployable equipment on the ship referred to as Ocean Going Transportable Test and Evaluation Resource (OTTR). OTTR was located off the West coast of Angola, Africa.

Despite original problems getting country access clearances, the other team, ZBRA, worked in Shakawe, Botswana, Africa. In addition to sleeping in tents and accomplishing their mission objectives, this team selflessly worked to develop a true relationship between NASA and the community.

"I was excited to hear that NASA's LSP had an opportunity to support outreach to schools at all grade levels in Botswana," said Martha Vreeland, launch services support specialist. "The MER Spirit mission sparked a great interest in the space program for these students. It was a wonderful feeling to be a part of their excitement in learning.

Some of the outreach items

Services Program sent were MER Spirit (A) and Opportunity (B) fact sheets, decals, patches, lapel pins, and for first, second, and third graders, MER tattoos.

Included in the outreach package was information on the upcoming Space Infrared Telescope Facility launch and the ELV fact sheet.

According to Cheryl Malloy, NASA's coordinator for the effort, this deployment was special because, while in Botswana, this team volunteered to bring the MER-A mission and NASA to life for four different schools and to the public via two public radio station appearances, and were invited by the Botswana Ambassador to be a launch day commentator.

"We had the 'anytime, anywhere' philosophy applied to NASA by another world class



The OTTR Team includes the following personnel, from left: Staff Sgt Brian Little, Lt. Jon Seal, Staff Sgt. Robert Nickles, Lockheed Martin contractors Pat Reeves and Virgil (Mike) Griffin, and Staff Sgt Travis Chenard

organization, and I've got to tell you, it felt pretty good," said Malloy.

Maj. Ross Romer, the ZBRA team Officer in Charge, sent word that "the kids asked really great questions and the topic was very timely as the students were studying science and specifically space."

Visit www.ksc.nasa.gov/elvnew/elv.htm for further ELV information, including details on the MER-B mission scheduled to launch no earlier than June 26.

Students and faculty prepare for successful summer programs

At the beginning of June, Kennedy Space Center Director Roy Bridges Jr. welcomed more than 100 students, ranging from high school to graduate level, and faculty from across the U.S. who will participate in the summer intern program. He talked about the current Mars exploration missions and the Columbia tragedy, then told the group how KSC is a family of pioneers.

"You will be stimulated by this experience as only NASA can," said Bridges. "We can learn a lot from you."

During the summer months, KSC is home for students and faculty from varied backgrounds and cultures. The group spent the morning learning about the services of the Workforce Diversity and Management Office; the Equal Opportunity Office, including the Special Emphasis Groups inviting participants to



their meetings and activities; Safety, Health, and Security; Commercialization and Intellectual Properties; and Export Control.

At the orientation, University Programs Manager Dr. Gregg Buckingham introduced the Student/Faculty Team and their area of responsibility - Cassandra Black, programs for undergraduate students and for individuals with disabilities; Laurel Lichtenberger,

KSC Director of External Relations and Business Development JoAnn Morgan talks to a group of students about their plans for the summer at the student/faculty orientation.

programs for undergraduate students including the Space and Life Sciences Training program; Karroll Purer, programs for undergraduate and high school students; and Eduardo Lopez Del Castillo, programs for graduate and post-doctorate students, faculty and research apprenticeships.

The students and faculty will work with a KSC mentor in a business area or a science,

technology, engineering or mathematics discipline during the summer. The students/faculty learned about enrichment activities they are encouraged to participate in such as presentations by KSC personnel, workshops and networking seminars.

Following the orientation, students broke out into their respective programs, had a lunch break, then returned to their office and met their mentors.

Current mentors, administrative officers and supervisors attended the first annual NASA/contractor Mentor Seminar, "Setting the Groundwork for a Successful Summer Program at KSC," presented by Kimberly Geddings from Harmony Works May 28 at the Training Auditorium.

Geddings discussed relationship dynamics between mentors and partners and challenges in relationships.

Air traffic controllers at Shuttle Landing Facility



Above: An overview of the Shuttle Landing Facility

Top left: Shuttle Landing Facility (SLF) Lead Controller Ron Feile listens to air traffic while he monitors the runway.



Left: Various radar, communication and navigational tools help the 11 air traffic controllers at the Shuttle Landing Facility monitor all air traffic.

Security surrounding government areas has changed drastically since Sept. 11, 2001, and this is especially evident at the Shuttle Landing Facility (SLF).

The 11 air traffic controllers were originally contracted to monitor KSC's airspace from 6 a.m. to 10:30 p.m. in two shifts a day, but that has now turned into around-the-clock coverage.

"This is the active airspace now," explains SLF Lead Controller Ron Feile as he points at a 15-mile wide, 18-mile long section on the facility's radar. "Before Sept. 11, it used to be just this little block of air space that covered all the launch pads. This is

Complex 17 and 37, this line is the skid strip runway on the Cape side, and then the Titan complex and the new Atlas V pad is here.

"The two Shuttle launch pads are here. The Shuttle Landing Facility runway sits right outside that air space. So that was all we had prior to Sept. 11, surface to 5,000 feet, but now we've more than doubled all of our restricted air space here, to the west and to the north.

"We're controlling all those both from the control tower here and with the Military Radar Unit (MRU) on the Eastern Range. The Eastern Range is responsible for requesting whatever pieces of air space they need for a specific

mission," said Feile.

Besides the 40-mile restricted area, the controllers are now responsible for all air traffic up to 13,999 feet, instead of 5,000, to provide an element of additional security and intruder detection. The group added three new controllers after Sept. 11, but lost one to active military duty since then.

Along with the increased airspace security, the group had the responsibility to determine if intruders were hostile or not to evacuate the launch pads for safety sake.

Should a controller determine an airplane may be a threat, it has a regular intruder detection form to

go through. They go through a list to see what assets, such as helicopters or jets, it can throw at the intruder to intercept it.

Once they notify the assets available, the controllers notify KSC security and SLF Operations Officer Ed Taff to tell them who is authorized or not. They then go to the adjacent air traffic control facilities in Daytona, Miami, Orlando and Jacksonville to see if there is background information of the plane's origin.

Those other air traffic control facilities are the first line of defense because if they have anything that is heading toward KSC that is not approved, they can give a notice that the target is

respond to airborne security threats



Top right: These NASA G-2 Shuttle training aircraft help pilots train for landings at KSC.

Right: Inside a G-2 Shuttle Training Aircraft cockpit. The modified jet features a Rotational Hand Controller (RHC), or joystick, used to simulate flying a Space Shuttle.



heading this way.

There are many examples of how the group deals with potential airborne intruders.

Feile was working one night when the tower in Daytona notified him there was an aircraft heading toward KSC that the FBI was trailing. He notified everybody on his list, including the Patrick Air Force Base command post, not knowing what the pilot's intentions were.

The pilot ended up flying through 'nice and quiet,' but Feile and security didn't know what he was doing.

"In another instance we had one foreign student who flew up the Banana River and into the Cape

areas before turning away to avoid bad weather. When the FAA (Federal Aviation Administration) finally contacted him, they directed him to land at Space Coast Regional, but because of the weather ran him into Melbourne.

"The FBI met him there because they weren't sure of his intentions, including photographic work for reconnaissance. They met him and checked the aircraft for photographic equipment and other contraband that may be in the aircraft. Those things are going on all the time."

Port Canaveral is another area the controllers help monitor because their protected space

runs right through it. Because of the nuclear submarine basin and the commercial cruise ships, the area attracts banner towers, the media and others who want to take pictures in an area the controllers are trying to protect.

"When they get in the area, you don't know what they're going to do, so you put security on alert," said Feile. "The troops in the field then start to watch them and give us reports. It's a team effort."

The air controllers also see an increase in activity as a Shuttle launch approaches. The flight crew arrives 3-4 days prior to launch and begin to fly Shuttle training approaches to prepare for the

mission landing at KSC. Air traffic increases because of the support astronauts that arrive in T-38 jets as well as the mission managers who arrive in G-2s and G-3s.

"The day of the launch we're working with Air Force helicopters that provide the search and rescue function," said Feile, who coordinates all efforts with Space Gateway Support Airfield Services Manager Bob Bryan.

"We also deploy the fire department rescue forces in case the orbiter has to come back here. The rest of our business is centered around the NASA T-38 and G-2 weather assessment flights, finding out if the weather is compatible for the mission."

Grand reopening and inductions highlight Hall of Fame Weekend

A ribbon cutting ceremony celebrating the grand reopening and the induction of four Space Shuttle astronauts highlighted Astronaut Hall of Fame Induction Weekend June 20-21.

The festivities got underway Friday at the Astronaut Hall of Fame when 17 former astronauts helped KSC Director Roy Bridges Jr. cut the ribbon to signify the Hall as part of the Visitor Complex. "The Right Stuff" gala was held afterward at the Debus Conference Facility celebrating the weekend and to recognize the 20th anniversary of the movie.

In rainy weather that would have delayed a launch, four Space Shuttle astronauts were inducted into the Astronaut Hall of Fame in a ceremony held at the Visitor Complex. Story Musgrave, Sally Ride, Daniel Brandenstein and Robert 'Hoot' Gibson were added to the current class of 48 others enshrined in the Hall of Fame since 1990.

The standing room only crowd was treated to a stirring rendition of "America the Beautiful" and the "National Anthem" by the 100-member Philadelphia Boys Choir to open the ceremony. Actor Lance Henriksen, who portrayed astronaut Wally Schirra in "The Right Stuff," served as master of ceremonies for the event and introduced KSC Deputy Director James Kennedy for welcoming remarks.

"Kennedy Space Center is part of the team of Centers across the nation that make up NASA, whose mission is to explore the unknown while improving life here on Earth," said Kennedy. "It is also to inspire the next generation of explorers and I can't think of a better way to do that by introducing them to these brave men, and now woman, who are honored here today."



Above: KSC Director Roy Bridges Jr. (second from left) and 17 astronauts cut the ribbon for the Astronaut Hall of Fame Grand Reopening June 20. Right: Apollo 13 Cmdr. and Astronaut Scholarship Foundation chairman Jim Lovell (left) welcomes Story Musgrave into the Astronaut Hall of Fame.

Below: Jim Lovell applauds as Sally Ride is introduced to the crowd at the June 21 Astronaut Hall of Fame Induction Ceremony. Bottom right: Daniel Brandenstein (center) and Robert "Hoot" Gibson are welcomed to the Astronaut Hall of Fame by member Robert Crippen.



Current members of the Astronaut Hall of Fame were then introduced, including John Glenn, Scott Carpenter, Gordon Cooper, John Young, Buzz Aldrin, Walt Cunningham, Fred Haise, Edgar Mitchell, Al Worden, Owen Garriott, Ed Gibson, Bob Crippen and Rick Hauck. Astronaut and current chairman of the Astronaut Scholarship Foundation Jim Lovell then explained how the four inductees were selected from a list of 25 names.

The Foundation was responsible for overseeing the selection process. Lovell described the Foundation's purpose and recognized more than 30 past and present scholarship winners.

The new class was then introduced in the order in which they flew Shuttle missions.

Astronaut Owen Garriott presented Story Musgrave for induction. Musgrave served as a Mission Specialist on six Shuttle flights, including the first Shuttle space walk in 1983.

Next, astronaut Bob Crippen introduced Sally Ride, the first woman sent to space. Ride was sent into orbit aboard the Shuttle Challenger in 1983, and then sent back in space 18 months later aboard Challenger.

The third inductee, astronaut Daniel Brandenstein, was introduced by astronaut Rick Hauck. Brandenstein's first flight was in 1983 on the Shuttle's first night launching, and he later commanded three other Shuttle missions.

Astronaut Robert Gibson was the last inductee and was introduced by John Glenn. Gibson commanded four of his five Shuttle missions, including Atlantis when it docked with Russia's Mir space station.



Brevard is part of Lightning Alley

The third annual national Lightning Safety Awareness Week is June 22-28. But here in central Florida, we've already entered our lightning season - now is the time to refresh your knowledge of lightning safety. Our lightning season typically ramps up the second half of May and declines the first half of September.

Lightning is the leading source of weather deaths in Florida, killing more than hurricanes, tornadoes and all other weather combined. Learn more about Lightning Safety Awareness Week at www.lightningsafety.noaa.gov.

Florida is the thunderstorm capital of the U.S.; no other state has nearly as much lightning. Most of the electrical discharges are in Central Florida from Tampa to Titusville in an area often called Lightning Alley. Florida also leads the nation in lightning deaths and injuries.

Lightning inflicts life-long debilitating injuries on many more than it kills. Is it worth destroying your career and devastating your life and the lives of your family just to save a few minutes by dashing across the parking lot during a thunderstorm?

Fortunately, most lightning casualties can be easily avoided. While guaranteed lightning safety is not possible, following a few simple guidelines will give you a high degree of safety. Remember, no place outside is safe near a thunderstorm - proper lightning safety is a multi-level process.

LEVEL-1: The first and best level of lightning safety is to avoid the threat in the first place. Use



Following a few simple guidelines will give you a high degree of lightning safety. No place outside is safe near a thunderstorm - proper lightning safety is a multi-level process.

the local weather forecast and know your local weather patterns to schedule your outdoor activities away from the thunderstorms. For KSC, use the 45th Weather Squadron's forecasts (www.patrick.af.mil/45og/45ws).

For outside of KSC, the National Weather Service in Melbourne provides excellent forecasts, including a new graphical depiction of when and where thunderstorms are most likely to occur (www.srh.noaa.gov/mlb).

LEVEL-2: If you have to be outside, use the '30-30 Rule.' If there is *30 seconds* or less between lightning and its thunder, go inside. Stay inside for 30 minutes or more after hearing the last thunder. The safest place from lightning is inside a large fully enclosed building with wiring and plumbing, such as a typical house.

Once inside, don't use a corded telephone, keep away from electrical appliances and wiring, and don't use plumbing. Don't watch lightning from windows, doorways or breezeways.

In a large building, inner rooms are generally safer. If you can't get to a good building, a vehicle with a metal roof and metal sides offers some lightning protection.

LEVEL-3: If you have to be outside with thunderstorms in the areas, avoid the locations and activities that are most dangerous. Avoid high elevations and open areas, like sports fields or beaches.

Avoid water-related activities like swimming, boating and fishing. Do not go under a tree to keep dry. Avoid heavy equipment and farm equipment with open cockpits.

LEVEL-4: If you find yourself

outside in a dangerous location away from shelter with thunderstorms threatening, you can reduce your risk. It is much better to have planned ahead or stayed tuned to the forecast and moved to shelter sooner. Use the following as a desperate last resort only.

Proceed to the safest spot possible and get off elevated locations or open areas. Avoid tall isolated objects like trees and get away from water.

While moving to the safest spot, watch for the signs that lightning may strike in a few seconds. The hair might start standing up or your skin might start tingling, or light metal objects might start vibrating.

If you see any of those signs and you're in a group, spread out with several body lengths between each person. Then use the 'lightning crouch.' Put your feet together, squat low, tuck your head and cover your ears. After a brief wait, slowly stand-up, watching for the signs that lightning may still strike, then continue toward the safest spot. No place outside is safe near a thunderstorm.

LEVEL-5: First aid - all lightning deaths are from cardiac arrest, or stopped breathing from cardiac arrest. Simple CPR or rescue breathing is the recommended first aid.

Florida has more than its share of lightning threat. While no guidelines can guarantee safety against lightning, following a simple set of rules will help you avoid the vast majority of lightning casualties. Lightning kills. Play it safe!

NASA exercises base support option

NASA's Kennedy Space Center (KSC) will extend its Joint Base Operations Support Contract (J-BOSC) for one year to Space Gateway Support (SGS).

The contract includes a modification to provide calibration services to the eastern range precision measurement equipment laboratory on Cape Canaveral Air Force Station (CCAFS) and transient alert aerospace ground

equipment maintenance services at Patrick Air Force Base (PAFB).

The contract extension/modification, valued at approximately \$287.7 million, covers October 1, 2003, through September 30, 2004. The total contract value, including exercised options, is more than \$1.5 billion.

The J-BOSC is a performance-based, cost-plus award fee contract to provide base operation

and support services at KSC, CCAFS and PAFB. Under the contract, SGS provides facility and infrastructure operations and maintenance; fire protection, security services, transportation support, grounds maintenance and other base support services.

SGS is a joint venture of Northrop Grumman Technical Services, Inc., Herndon, Va.; Shaw Infrastructure, Inc., San Diego; and Wackenhut Services, Inc., Palm Beach Gardens, Fla.

FSA chooses director

The Florida Space Authority Board recently selected former NASA astronaut Captain Winston Scott to be its new executive director.

Since his retirement from the astronaut corps in 1999, Scott has served as a senior level administrator at Florida State University, first serving as vice president for student affairs and currently as associate dean of the FAMU-FSU College of Engineering.

