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Astronaut shines as JAXA's first to live in space

NASA/Kim Shiflett

STS-119 Mission Specialist Koichi Wakata is seated in space shuttle Discovery during the Terminal Countdown Demonstration Test in January at Kennedy Space Center.

By Linda Herridge
Spaceport News

Excitement is building for the upcoming STS-119 mission to the International Space Station, especially within Japan Aerospace Exploration Agency, or JAXA. The S6 truss and solar arrays will be delivered, as well as Koichi Wakata, JAXA's first astronaut to live and work on the orbiting laboratory.

"This is a very big milestone for Japan's government, as well as for the Japanese people," Hiroki Furihata, deputy director of the JAXA liaison office at Kennedy Space Center said. "The JAXA engineers working on the Kibo elements for a future mission are excited, as well."

During the STS-119 mission, Wakata will transfer to the station and replace NASA astronaut Sandra Magnus as Expedition 18 flight engineer. Magnus will return to Earth aboard Discovery.

Wakata will spend about three months on the station. During the mission he will operate the station's robotic arm to help install the S6 truss and solar arrays to the S5 truss already on the station. These fourth and final set of solar array wings will complete the station's truss, or backbone, and provide enough electricity to fully power science experiments in the Columbus and Japanese Kibo laboratories.

Furihata said he has known Wakata for several years and had the opportunity to work with him during design and testing of the Kibo Pressurized Module and Japanese Experiment Module.

Minako Holdrum, an assistant to Furihata, said she feels honored to witness Wakata's launch aboard Discovery.

"I think I'm the only JAXA worker who's been here to see all the Japanese astronauts launch from Kennedy," Holdrum said. "Wakata and I are close in age, so it feels very much like one of my classmates is achieving this 'first' for the Japanese people and the country."

Wakata is no stranger to spaceflight. He flew as the first Japanese mission specialist on Endeavour's STS-72 mission in January 1996. The six-member crew retrieved the Space Flyer Unit that launched from Japan 10 months earlier, deployed and retrieved the OAST-Flyer, and conducted two spacewalks to demonstrate and evaluate techniques to be used in the assembly of the International Space Station.

Wakata also was the first Japanese astronaut to work on space station assembly during Discovery's STS-92 mission in October 2000. During the 13-day mission, the seven-member crew attached the Z1 truss and Pressurized Mating Adapter 3 to the station using Discovery's robotic arm and performed four spacewalks to configure those elements. That expansion opened the door for future assembly missions and prepared the station for its first resident crew.

Wakata is not the first Japanese person to fly aboard a space shuttle. Though not an astronaut, Dr. Mamoru Mohri flew aboard Endeavour as a payload specialist on mission STS-47 in September 1992.

The first-ever Japanese person to fly in space was a journalist, Toyohiro Akiyama, on a Soyuz spacecraft to the Russian Mir Space Station in December 1990.

The first Japanese astronaut to conduct a spacewalk was Dr. Takao Doi, on Columbia's STS-87 mission in November 1997.

To help Wakata feel at home on Discovery and the space station, JAXA will provide Japanese meals and snacks, such as ramen noodles, egg drop soup and oolong and green teas.

"I am very fortunate. I feel just lucky to be able to serve as a crew member to complete the assembly of the International Space Station. When I became an astronaut 16 years ago, I always dreamed of working on the assembly of the Kibo module and staying aboard the International Space Station. So, for me, this is really a dream come true," Wakata said.

As of print time, launch of Discovery was targeted for Feb. 19 at 4:41 a.m.

Inside this issue . . .

NASA/Dimitri Gerondidakis

Representatives from NASA, Lockheed Martin Space Systems Co., Space Florida and the state of Florida participated in a ceremony Jan. 26 to mark the completion of renovations on the historic Operations and Checkout Building high bay for the Constellation Program. Orion, America's future human spaceflight vehicle, will be capable of transporting four crew members to the moon and later will support crew transfers to Mars. The Orion spacecraft also will take astronauts to the International Space Station after space shuttles are retired in 2010. The first operational launch of Orion atop an Ares I rocket is planned for 2015.

O&C high bay ready for Orion processing

By Linda Herridge
Spaceport News

NASA's Constellation Program took another giant step forward as representatives from NASA, Lockheed Martin Space Systems Co., Space Florida and the state of Florida helped mark the completion of renovations to the historic Operations and Checkout Building, or O&C, high bay at Kennedy Space Center on Jan. 26.

Kennedy Director Bob Cabana welcomed participants to the event and thanked the state of Florida for their $35 million commitment toward the high bay renovations.

"This is a real program and we have real hardware here," Cabana said. "We're ready for Orion; we're ready to go back to the moon."

Cabana said the new facility will create about 400 jobs, which is important at this time.

"We need to focus on our future," Cabana said. "With change comes opportunity."

"The place where mankind literally reaches for the stars is from right here in Florida," said Lt. Gov. Jeff Kottkamp. "We're proud of that history. We embrace that history, and it's something we believe everyday we should work hard to build on."

Kottkamp said that he and the governor recognize Florida's invaluable pool of talented work force in place at Kennedy.

"We are determined to do all we can to keep those men and women right here in the sunshine state working at NASA, as well as our fast-emerging commercial aerospace industries," Kottkamp said.

U.S. Rep. Suzanne Kosmas, D-Fla., said the reopening of the facility is not only symbolic of our ability to move forward into the future, but also is very tangible evidence of what is being done at Kennedy, and the innovation and partnerships that are taking place.

"I'm thrilled to be part of this movement as we go forward into this next phase," Kosmas said.

Richard Harris, Orion deputy program manager for Production Operations with Lockheed Martin, said the state's investment is a win-win situation.

"The vision is being realized at KSC," Harris said. "Today we celebrate our first goal -- facility project completed on schedule and under budget."

The facility, once used to process space vehicles in the Apollo era, will serve as the final assembly and checkout facility for the Orion crew exploration vehicles, which includes the crew and service modules. Initial Orion production processing will begin with vehicle mock-ups later this year.

Construction contractor Hansel Phelps Construction Co. of Orlando, Fla., was awarded the contract by Lockheed Martin in June 2007.

Workers replaced everything in the 70,000-square-foot high bay and the 20,000-square-foot basement, except the basic structure.

A tour of the facility revealed new walls, ceilings, paint, air conditioning, wiring, a new state-of-the-art heavy lift crane and specially-designed epoxy flooring. Participants also were able to view mock-ups of the Orion capsule and a heat shield. Total renovation costs were about $55 million.

U.S. Rep. Bill Posey, R-Fla., said that one of the things this country is universally, undeniably respected for around the world is the nation's space program.

"A big part of my job is to continue to work with our governor, our legislature, our colleagues in Congress, our county officials, NASA, the Air Force and Space Florida to absolutely guarantee that we're going to remain No. 1 in space," Posey said.

NOAA-N 'Prime-time' weather watcher

When severe weather approaches, we turn to our local meteorologists and in-home weather radios for up-to-date information. But without space-based detection, such as geostationary and polar-orbiting satellites, life-threatening weather could strike without warning.

The newest polar-orbiting satellite is NOAA-N Prime, set to launch atop a Delta II rocket from Vandenberg Air Force Base in California on Feb. 4.

Just as we turn to experts to keep us safe, the National Oceanic and Atmospheric Administration, or NOAA, turns to the experts to safely design and launch its satellites.

"The launch of another government agency's satellite is a prime example of synergies that have evolved over time," NASA Launch Director Omar Baez said. "NOAA is the prime disseminator of valuable weather, atmospheric and oceanic data. It recognizes Goddard Space Flight Center's expertise of procuring and designing satellites, which in turn recognizes NASA's Launch Services Program as the expert at getting those satellites into orbit."

As it orbits Earth's poles, NOAA-N Prime will collect information about the atmosphere, cloud cover and sea surface temperature, which helps weather experts predict and monitor hurricanes, thunderstorms and frontal boundaries.

"Predicting the weather is like a three-legged stool," John Madura, manager of the NASA Weather Office said. "To provide accurate, high-quality forecasts, we need models that describe the physical processes of the atmosphere, atmospheric data to feed the models and computers big enough to run the models. Polar-orbiting weather satellites are a prime source of that data."

Madura also said with new satellites, such as NOAA-N Prime, forecasters can rely less on assumptions and more on models.

"Our goal is to be able to say exactly where and at what time a thunderstorm will pop up," Madura said. "For the contractor who can't pour concrete in the rain, these satellites increase their economic value."

The economic values and life-saving capabilities don't stop there.

"The spacecraft carries a Search and Rescue Antenna, which, along with the previous NOAA satellites, will continue the partnership with the international satellite-aided search and rescue mission," NASA Mission Manager David Breedlove said. "This technology has been credited with saving more than 24,000 lives since 1982."

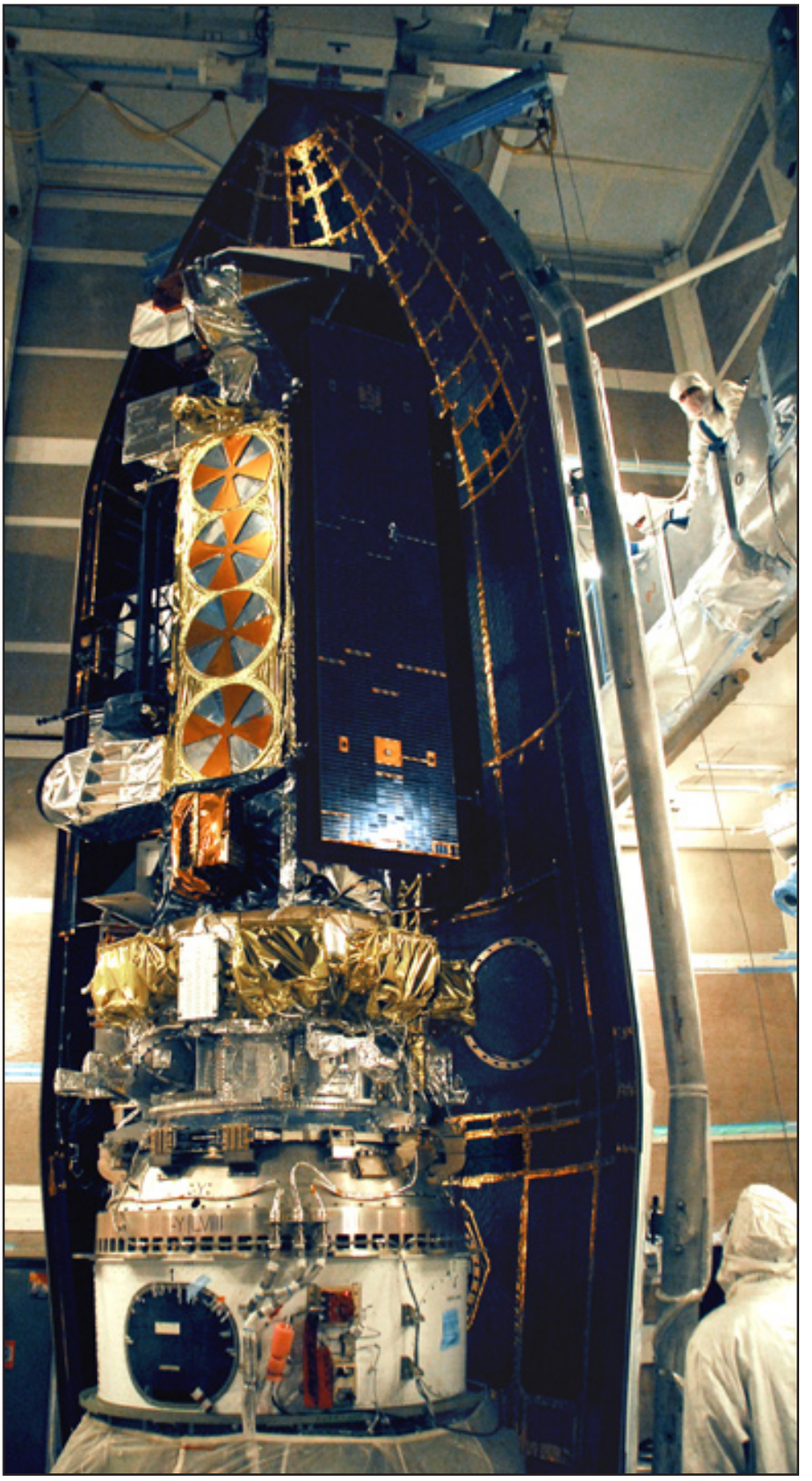
Breedlove said processing of the Delta II and NOAA spacecraft was progressing on-schedule.

Something else to note, which is two-fold for this mission, weather satellites in orbit will keep an eye on Vandenberg on launch day, to help the Launch Management Team.

Twenty-one days after NOAA-N Prime launches, NASA will transfer operational control of the satellite to NOAA.

Editor's note

As of press time, the launch of a Delta II carrying the NOAA-N Prime satellite was scheduled for Feb. 4. For complete coverage and photos, go to: **www.nasa.gov**.



NASA

The first half of the fairing is moved into place around the NOAA-N Prime spacecraft in the launch service tower on Space Launch Complex-2 at Vandenberg Air Force Base in California. The fairing is a molded structure that fits flush with the outside surface of the rocket and forms an aerodynamically smooth nose cone, protecting the spacecraft during launch and ascent. NOAA-N Prime is the latest polar-orbiting weather satellite developed by NASA for the National Oceanic and Atmospheric Administration. Launch of NOAA-N Prime aboard a Delta II rocket was scheduled for Feb. 4.

Scenes Around Kennedy Space Center

NASA/Kim Shiflett

Kennedy Space Center Director Bob Cabana, left, takes part in a wreath-laying ceremony paying tribute to the crews of Apollo 1 and space shuttles Challenger and Columbia, as well as other NASA colleagues who lost their lives while furthering the cause of exploration and discovery, during NASA's Day of Remembrance observance at the Kennedy Space Center Visitor Complex. At right, is Mark Nappi, United Space Alliance vice president of Launch and Recovery Systems and Florida Site Executive.

NASA/Dimitri Gerondidakis

Kennedy Space Center Director Bob Cabana holds the "Big Ticket," commemorating the 30th Annual KSC All-American Picnic scheduled for Saturday, March 7, at KARS Park I, from 10 a.m. to 4 p.m. There will be classic children's games, a fishing tournament, car show, a variety of musical presentations and much more. Sonny's Real Pit Bar-B-Q will provide the food. A vegetarian meal also will be provided. Tickets are $7, $4 for children 11 and younger. Day-of admission is $10 for adults and $6 for children. For more information, go to: http://kscpicnic.ksc.nasa.gov.

NASA/Tim Jacobs

Workers in the Vehicle Assembly Building's extended duration orbiter lab, or EDO, remove the shipping cover from the fifth segment simulator of the Ares I-X. Ares I-X is the test vehicle for the Ares I, which is part of the Constellation Program. Ares I is part of the new rocket system that will carry astronauts to the International Space Station, back to the moon and on to Mars. Ares I-X is targeted for launch in July.

NASA/Jack Pfaller

The newly arrived simulator crew module for the Ares I-X rocket is lowered onto a work stand in High Bay 4 of the Vehicle Assembly Building at Kennedy Space Center. The launch of the 321-foot-tall, full-scale Ares I-X, targeted for July, will be the first in a series of rocket launches from Kennedy. When fully developed, the 16-foot diameter crew module will furnish living space and re-entry protection for astronauts.

***Spaceport News* has a place for your photos**

Send photos of yourself and/or your co-workers in action for possible publication. Photos should include a short caption describing what's going on, with names and job titles, from left to right.

KSC-Spaceport-News@mail.nasa.gov.

NASA/Jim Grossmann

The Kennedy Space Center Black Employee Strategy Team, or BEST, hosted an Inaugural Observance in honor of the first African-American Commander-in-Chief of the United States on Jan. 20 in the Operations and Checkout Building. Workers watched as then-President Elect Barack Obama took the oath of office.

Nighttime twisters can be a nightmare

By 45th Weather Squadron
For Spaceport News

Things that go bump in the night aren't always tricks of the mind. In fact, they can be dangerous and even deadly.

While overall deaths from tornadoes have decreased in the U.S., twisters between midnight and dawn are 2.5 times more likely to kill, according to a new study from Northern Illinois University. It's important for Space Coast residents to take that statistic seriously because the mid-south is the most vulnerable to nighttime twisters.

February through April is the severe winter-weather season for east-central Florida, and tornados are notorious for touching down during strong cold fronts moving into the area. The stronger the cold front, the higher the chance intense tornadoes will spawn. Because these cold fronts are fairly easy to predict, the potential for these tornadoes usually can be forecasted a day or more in advance; but it's always best to be prepared.

Tornado safety is an easy two-step process.

Step No. 1, Have A Plan: Identify the safest room in your building and ensure everyone knows where it is located. The safest rooms are on the lowest floor, away from windows, farther inside and smaller with solid construction, such as restrooms, closets and basements.

A strong table and thick pads can protect against falling debris and motorcycle, bicycle and skateboard helmets can prevent head injuries.

People in mobile homes or other weak portable buildings should seek proper shelter elsewhere. Also, a common myth is to open windows and let the building "breathe." Houses do not explode from decompression in a tornado and opening a window actually increases the danger.

More online

Weather safety training is available from the 45th Weather Squadron by calling **321-494-7426** or e-mail **45wscc@patrick.af.mil**.

Step No. 2, Stay Informed: The 45th Weather Squadron signals the potential for severe weather at Kennedy Space Center and Cape Canaveral Air Force Station in their daily 24-hour and weekly planning forecasts, which are available at: www.patrick.af.mil.

If a threat continues, the squadron issues a severe-weather watch with a desired lead time of four hours. If tornadoes are imminent or observed, the squadron issues a tornado warning with a desired lead time of five minutes. If you receive a warning, follow local adverse weather procedures.

At home, purchase a NOAA All Hazards Radio, formerly known as a NOAA Weather Radio. One of the main reasons late night tornadoes are so dangerous is that people are sleeping and not aware of weather warnings. However, a NOAA All Hazards Radio will sound an alarm if the National Weather Service issues a weather warning for your area.

This is essential if you live in an area where there is no tornado siren. Even if you live near a siren, it may not be loud enough to wake you inside your house.

NOAA radios also provide alternatives for the hearing and visually impaired.

Be aware that NOAA radios don't cover 2 percent of the country, so test the reception of new radios to be sure you're covered.

The National Weather Service in Melbourne gives the potential for severe weather in their general forecasts, issues a tornado watch when conditions are likely to produce tornadoes, and issues a tornado warning when one has been detected.

If severe weather is likely, review your safety plan, include your family and remind everyone where the safe room is located. If there is time before the high winds start, store loose outside materials and close protective shutters.

If a tornado or severe weather watch is issued, listen for weather warnings and be ready to act.

Always go to your safe room if threatening weather approaches -- there may not be time for an official warning.

Courtesy of Embry-Riddle Aeronautical University for NASA

A winter tornado ripped through Embry-Riddle Aeronautical University in Daytona Beach, Fla., on Christmas Day in 2006. The National Weather Service confirmed an F2 tornado, with winds around 120 mph, damaged buildings and aircraft and destroyed a hangar.

Remembering Our Heritage

First KSC shuttle landing 25 years ago

By Kay Grinter
Reference Librarian

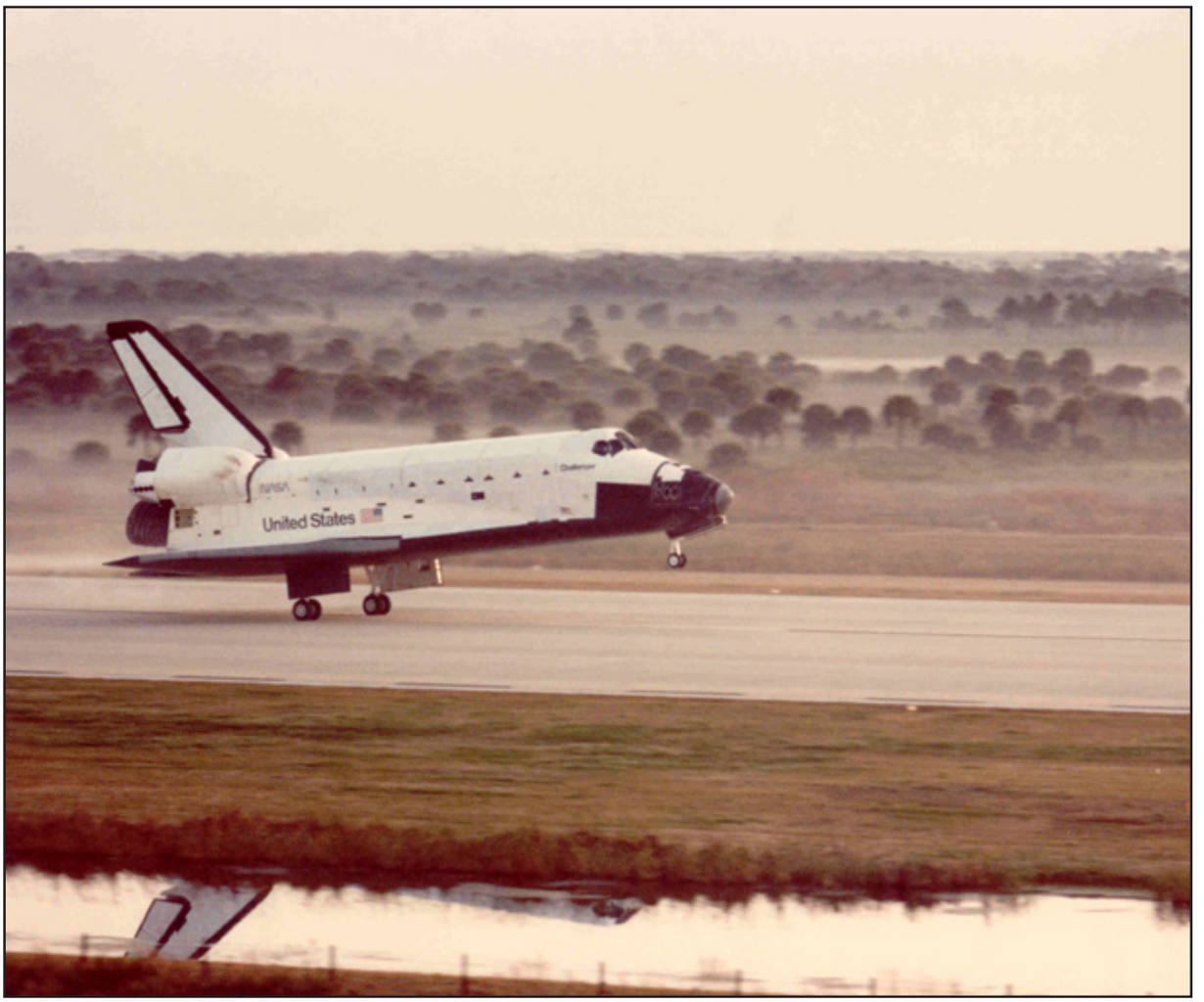
A major milestone in the Space Shuttle Program was met Feb. 11, 1984, as Challenger smoothly set down on Runway 15 at Kennedy Space Center's Shuttle Landing Facility, or SLF, becoming the first spacecraft in NASA history to land at the same site from which it launched. Touchdown came early that Saturday morning at 7:15 a.m. EST.

Challenger and its crew made the first landing on a runway specially designed to serve the space shuttle through its operational era, concluding the almost eight-day STS 41-B mission. All previous shuttle missions had ended at Edwards Air Force Base in California or, when weather was unacceptable on both the east and west coasts, Northrup Strip at White Sands Space Harbor in New Mexico.

A decision by Mission Control at the Johnson Space Center in Houston on which landing site would be used for STS 41-B kept spectators in suspense until just about the end of the flight.

Ron Feile, lead air traffic controller for the SLF and the Eastern Range today, was part of the operations team that made sure runway readiness was complete.

"We had been monitoring the weather overnight, and NASA had a strong history of being afraid of the dark already," Feile said. "We had just gone through this with STS-7 when the weather was marginal. The complications are less with night landings though. The winds die down, the sun angle is not a factor, and there are fewer birds near the runway."



NASA file/1984

Space shuttle Challenger makes the first landing on Kennedy Space Center's Shuttle Landing Facility on Feb. 11, 1984. All previous shuttle missions ended at Edwards Air Force Base in California or Northrup Strip at White Sands Space Harbor in New Mexico.

The weather was dicey for hours before time for the deorbit burn, but then relented. Crew members Vance Brand, Hoot Gibson, Ronald McNair, Bruce McCandless and Robert Stewart walked across a specially prepared red carpet to greet the jubilant crowd on hand for the historic event.

STS-7, rather than STS 41-B, had been the first mission scheduled to land at Kennedy. The STS-7 crew missed the chance to take the first stroll down that red carpet when their landing was diverted to Edwards in June 1983 because of heavy cloud cover near the SLF. The dignitaries who had turned out to welcome Sally Ride, America's first female astronaut, back to Earth were disappointed.

Capcom Bryan O'Connor, an astronaut himself, tried to make light of the unavoidable change of plans as he said from his console in Mission Control:

"A great looking landing and from the entry team, got some good news. The good news is that the beer is very, very cool this morning; the bad news is that it's 3,000 miles away."

The first official landing at the SLF was not of a shuttle at all, but of NASA-6 on May 21, 1976, with then-Kennedy Director Lee Scherer at the controls. At that time, the landing facility was called the Orbiter Landing Facility, or OLF.

"The name was changed to 'Shuttle Landing Facility' after shuttle launches began," Feile said. "Some of the signs on the gates on the west side of the runway, out of sight of most employees and spectators, are still marked with the old name to this day."

Scherer, a veteran naval aviator, made two "touch-and-go" landings in the twin-engine Beechcraft airplane.

The landings tested the approach-and-landing techniques designed for use that summer by aircraft flying onto the center to support the U.S. Bicentennial Exposition on Science and Technology, Third Century America.

Since 1984, there have been 67 end-of-mission shuttle landings at Kennedy, including three landings originally scheduled for Edwards that were diverted to Florida by uncooperative weather in California.

NASA Employees of the Month: February

NASA/Tony Gray

Employees of the month for February are, from left: Joy Batterson, Information Technology & Communication Services; Gerald Green, Center Operations; Derek Petrek, Engineering Directorate; Paul Brod, Chief Financial Office; Peter Aragona, Engineering Directorate; Douglas Lesho, Safety & Mission Assurance Directorate; Chad Brown, Constellation Project Office; and Lisa Brawn, Launch Services Program. Not pictured are: Susan Barth, Launch Integration Office; and Tina Crass, Launch Vehicle Processing Directorate.

Make plans for annual AAHM Luncheon

February is National African-American History Month, or AAHM, and Kennedy Space Center is celebrating the outstanding achievements and contributions made by African-Americans. The annual African-American History Month Luncheon will be Feb. 19 from 11 a.m. to 1 p.m. in the Debus Center at the Kennedy Space Center Visitor Complex. Christyl Johnson, assistant associate administrator with the Office of the NASA Administrator, will be the guest speaker. Tickets are $20 and can be purchased at various locations around Kennedy.

Looking up and ahead

Scheduled for Feb. 4	Launch/VAFB: Delta II, NOAA-N Prime; 5:22 a.m. EST
Target Feb. 12	Launch/KSC: Discovery, STS-119; 7:32 a.m.
Target Feb. 23	Launch/VAFB: Taurus XL, OCO; 4:50 a.m.
Scheduled for March 5	Launch/CCAFS: Delta II, Kepler; 10:48 p.m. EST
March 7	KSC All-American Picnic, KARS Park I
April 24	Launch/CCAFS: Atlas V, LRO/LCROSS; TBD
No earlier than April 28	Launch/CCAFS: Delta IV, GOES-O; TBD
No earlier than May 5	Launch/VAFB: Delta II, STSS-ATRR; TBD
Target May 12	Launch/KSC: Atlantis, STS-125; 1:11 p.m.
Target May 15	Launch/KSC: Endeavour, STS-127; 4:52 p.m.
Target July 11	Launch/KSC: Ares I-X test flight/Launch Pad 39B; TBD
Target Aug. 6	Launch/KSC: Atlantis, STS-128; TBD
No earlier than Oct. 1	Launch/VAFB: Taurus, Glory; TBD
No earlier than Oct. 8	Launch/CCAFS: Atlas V, SDO; TBD
Target Nov. 12	Launch/KSC: Discovery, STS-129; TBD
Target Dec. 10	Launch/KSC: Endeavour, STS-130; TBD
Target Feb. 11, 2010	Launch/KSC: Atlantis, STS-131; TBD
Target April 8, 2010	Launch/KSC: Discovery, STS-132; TBD
Target May 31, 2010	Launch/KSC: Endeavour, STS-133; TBD

WORD ON THE STREET

With the STS-119 mission taking up the final solar arrays to the International Space Station, what would you use solar power for, if you could?

"Heat and cool my house. In fact, we're in Florida . . . we already should have them."

Teresa Parham, with NASA

"Vehicles. I'd put solar panels on the hood as an alternate to today's engines."

Missi Rocha, with ASRC Aerospace Corp.

"I'd take advantage of it at home . . . especially if a storm knocks out power . . . you have a backup."

Robert Cannon, intern with VisTech Corp.

"Everything . . . heating, cooling . . . that would be the best way to go and stay 'green.'"

Helen Kane, with NASA

"I'd heat and cool my house and probably even run the heat pump on my pool."

Hortense Burt, with NASA

John F. Kennedy Space Center

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