



### JOHN F. KENNEDY SPACE CENTER

---

September 23, 1999

KSC Contact: Joel Wells

KSC Release No. 74-99

#### **COLUMBIA SCHEDULED TO DEPART KSC FOR MAJOR MODIFICATIONS IN PALMDALE, CA.**

The orbiter Columbia, veteran of 26 Space Shuttle flights, is slated to depart Kennedy Space Center, FL, on Friday, Sept. 24, headed for Palmdale, CA. The oldest of four orbiters in NASA's fleet will undergo extensive inspections and modifications in Boeing's Orbiter Assembly Facility during a nine-month orbiter maintenance down period (OMDP).

This is Columbia's second OMDP, an action that periodically removes each of NASA's orbiters from flight operations. Though Columbia has undergone other major modifications in Palmdale, CA, its first OMDP was in 1994.

While in California, workers will perform more than 100 modifications on the vehicle. Columbia will be the second orbiter outfitted with the multi-functional electronic display system (MEDS) or "glass cockpit". Last year, Shuttle Atlantis had the full-color, flat-panel displays installed on its flight deck during an OMDP. The new system improves crew interaction with the orbiter during flight and reduces the high cost of maintaining the outdated electromechanical cockpit displays currently onboard.

While her sister ships are being outfitted with external airlocks in support of the International Space Station assembly, Columbia's internal airlock will not be removed during this OMDP. Thus, Columbia will continue to be able to accommodate payloads requiring the orbiter's 60-foot long cargo bay. Though not currently slated to dock with the International Space Station, Columbia will be given additional wire harnesses and connectors while at Palmdale to allow installation of the Orbiter Docking System at Kennedy Space Center. This prepares Columbia for docking operations with the space station if plans change.

While at Palmdale, Columbia's 100 miles of wiring will be given a thorough inspection. This is part of NASA's fleet wide wiring inspection. The wiring problem was first identified on Columbia as a result of the STS-93 mission.

Preparation work for an enhanced Global Positioning Satellite system capability will also be performed on Columbia. When installed, the new system will more accurately pinpoint the orbiter's location in flight. A space-to-space orbiter radio and wireless

video modification will increase communication capabilities for Columbia's future crew members and space walkers. In addition to scheduled weight saving modifications, Columbia's radiators or coolant lines will be enhanced for protection from orbital debris.

Columbia was rolled out of KSC's Orbiter Processing Facility bay 3 today, bound for the Shuttle Landing Facility's Mate-Demate Device. Later today, the orbiter will be mated, in "piggy-back" fashion, to the Boeing 747 Shuttle Carrier Aircraft (SCA). Ferry flight departure may occur as early as 7 a.m. Friday, Sept. 24.

The coupled orbiter and SCA are expected to make a one-day cross-country flight to California, with a planned refueling stop at the Naval Air Station in Fort Worth, Texas. All ferry flight plans are subject to weather restrictions and alternate landing sites may be selected en route if necessary. The original ferry flight plan included an overnight stop at Luke Air Force Base in Arizona for refueling and to accommodate several Air Force public affairs events. Following the crash of an F-16 at Luke on Monday and an expected one-day slip in Columbia's arrival in Arizona, Luke officials expressed Shuttle support concerns and agreed to cancel the visit.

Ferry flight rules state the orbiter/SCA cannot fly through precipitation, thick clouds or high turbulence. There are also wind and temperature restrictions. Following the modification period, Columbia is expected to return to KSC in July of 2000.

###

**NOTE TO EDITORS:** News media interested in viewing the orbiter/SCA departure from KSC must be at the KSC press site by 6 a.m. Friday for transport to the Shuttle Landing Facility. Media should call the KSC Press Site before close of business today to confirm the departure time.

---

*For [automatic e-mail subscriptions](#) to this [daily Shuttle status report](#) or [KSC-originated press releases](#), send an Internet electronic mail message to [domo@news.ksc.nasa.gov](mailto:domo@news.ksc.nasa.gov). In the body of the message (not the subject line) type the words "subscribe shuttle-status", or "subscribe ksc-press-release" (do not use quotation marks). The system will reply with a confirmation via e-mail of each subscription.*

---

[KSC Home](#) | [Search](#) | [News](#) | [KSC Press Releases](#) | [Media Resources](#)

---



**February 22, 2001**

**Joel Wells/Bruce Buckingham**  
**Kennedy Space Center, Fla.**  
**(Phone: 321/867-2468)**

**KSC Release No. 22-01**

## **SHUTTLE COLUMBIA TO RETURN TO KSC FOLLOWING EXTENSIVE MODIFICATIONS**

After spending the last 17 months in California, Space Shuttle Columbia is scheduled to return to Kennedy Space Center Sunday, Feb. 25, mounted on the back of NASA's modified 747 Shuttle Carrier Aircraft (SCA). Columbia's current flight plan, weather permitting, includes a flyover of Florida's capital city Sunday morning.

Final preparations for Columbia's departure and the flight plan are contingent upon weather conditions in California and its cross-country route to Florida. Stringent flight rules may cause changes to the flight path or cancellation of planned flyovers. Flight rules state that the orbiter/SCA cannot fly at night, through precipitation, thick clouds or high turbulence. There are also wind and temperature restrictions.

Columbia is scheduled to roll out of the Boeing Orbiter Assembly Facility in Palmdale, Calif., Feb. 23 and be mated to NASA's SCA No. 905. Then Columbia, atop the SCA, will depart California Saturday morning, Feb. 24. Preliminary plans call for an overnight stay at Ellington Field in Houston, Texas, before returning to KSC the morning of Feb. 25. An on-time departure from Houston may allow a flyover of Tallahassee's downtown Capitol area at about 10:30 a.m. Arrival at KSC is targeted for about 12:30 p.m. Feb. 25.

While in California, Columbia underwent extensive maintenance, inspections and enhancements. More than 100 upgrades make Columbia safer and more reliable than ever before. A new "glass cockpit" was installed, replacing mechanical instruments with flat computer screens. Other improvements include an orbiter weight reduction of more than 1,000 pounds; increased protection from space debris; improved wiring protection; enhanced heat protection for wing leading edges; and preliminary docking system wiring work that could allow Columbia to make future International Space Station flights if required.

Columbia has completed 26 flights into space and is nearing the 20th anniversary of its maiden voyage as America's first Space Shuttle. STS-1 was launched April 12, 1981. The next flight of Columbia is planned for later this fall.

-- end --

*For automatic e-mail subscriptions to this daily Shuttle status report or KSC-originated press releases, send an Internet electronic mail message to [domo@news.ksc.nasa.gov](mailto:domo@news.ksc.nasa.gov). In the body of the message (not the subject line) type the words "subscribe shuttle-status", or "subscribe ksc-press-release" (do not use quotation marks). The system will reply with a confirmation via e-mail of each subscription.*



**Bruce Buckingham**  
Kennedy Space Center  
321/867-2468

**Jan. 29, 2002**

**KSC Release No. 03-02**

## **SHUTTLE COLUMBIA ROLLS TO THE LAUNCH PAD FOR THE HUBBLE SPACE TELESCOPE SERVICING MISSION**

Shuttle Columbia returned to the launch pad yesterday after undergoing 2½ years of comprehensive maintenance, modification and processing operations that have made the senior member of the orbiter fleet safer and more versatile than ever.

Columbia remains on schedule for the Feb. 28 launch of STS-109, the fourth mission to retrieve and service the Hubble Space Telescope (HST). The orbiter rolled out from high bay 3 of the Vehicle Assembly Building (VAB) 23 minutes early at 6:37 a.m. after several delays last week caused by a requirement to adjust the steering linkage of the crawler-transporter. The Shuttle was locked down on Launch Pad 39A at 1:03 p.m., after covering the three-mile trip at a speed of .9 mph.

Following its last mission -- the STS-93 flight that deployed the Chandra X-Ray Observatory in July 1999 -- Columbia underwent more than 100 improvements during its scheduled Orbiter Maintenance and Modification Period. More than 215 miles of wiring were inspected and repaired, and a substantial weight reduction was achieved by removing more than 1,000 pounds of development flight instrumentation wiring which was no longer needed.

Columbia is the second orbiter to be equipped with the Multifunctional Electronic Display Subsystem (MEDS), or "glass cockpit," which replaces the 32 analog gauges and four cathode ray tube monitors in the old cockpit with 11 state-of-the-art, full-color flat panel displays to reduce the pilot's workload during critical periods. The first glass cockpit was installed in Shuttle Atlantis in 2000.

Five spacewalks will be conducted during the STS-109 mission to install an advanced new camera system on Hubble, attempt to reactivate its existing infrared instrumentation system, and install new solar arrays and a new power controller to extend the telescope's lifetime and capabilities.

The seven-person crew is commanded by Scott Altman, a veteran of two previous Shuttle flights, with Duane Carey as pilot; John Grunsfeld as payload commander; and Mission Specialists Nancy Currie, James Newman, Richard Linnehan and Michael Massimino.

The STS-109 crew is scheduled to arrive at KSC today to participate in the Terminal Countdown Demonstration Test, a dress rehearsal for launch, which will culminate with a simulated countdown late this week.

-- end --

The Kennedy Space Center (KSC) Newsroom offers an electronic subscription service for status reports and news releases issued from KSC. There are two possible ways to subscribe. You may send a blank e-mail message to [ksc-](mailto:ksc-)



**Kyle Herring**  
Headquarters, Washington D.C.  
(Phone: 202/358-4504)

**Feb. 14, 2002**

**George Diller**  
Kennedy Space Center, Fla.  
(Phone: 321/867-2468)

**James Hartsfield**  
Johnson Space Center, Houston  
(Phone: 281/483-5111)

**KSC Release No. 09-02**

## **COLUMBIA TO BEGIN THIRD DECADE IN SPACE WITH FEB. 28 LIFTOFF**

America's first Space Shuttle, Columbia, will return to orbit fresh from two years of work that have left it safer and more capable than ever before.

Columbia is set to launch no earlier than Feb. 28 at 6:48 a.m. EST on mission STS-109, pending review of data on the Space Shuttle's hydraulic pump attach bolts. The mission is dedicated to maintaining and enhancing the Hubble Space Telescope, the fourth such flight since its launch in 1990.

"This year will be as challenging, complex and exciting as any we have ever had," said Space Shuttle Program Manager Ron Dittmore. "We have more spacewalks planned in the next 12 months than we have ever done in a single year. We are going to fly diverse missions, dedicated to satellite maintenance, research and Space Station assembly, showcasing capabilities unique in the world. The shuttle team has done a great job in preparing for this mission. Returning Columbia to orbit to improve the Hubble Space Telescope is a fitting start to what will be a busy and vital year in space."

A maintenance and upgrade period completed last year installed a new "glass cockpit" in Columbia, increased its cargo capacity, strengthened its crew cabin and enhanced the protection of its cooling system from orbital debris. Columbia's new cockpit replaced mechanical instruments with 11 full-color, flat-panel displays. The new cockpit is lighter, uses less electricity and sets the stage for the next generation of improvements -- a "smart cockpit" under development that will make the cabin even more user-friendly. Columbia is the second of NASA's four Space Shuttles to be fitted with the new "glass cockpit." Technicians also performed comprehensive inspections of Columbia's more than 200 miles of electrical wiring, installing protection to prevent future damage in high-traffic areas. Intensive structural inspection of Columbia also was performed as well as 133 modifications and upgrades.

Columbia will fly under the command of Scott Altman (Cmdr., USN). Duane Carey (Lt. Col., USAF) will serve as pilot. Mission specialists will be John Grunsfeld, Nancy Currie (Lt. Col., USA), Richard Linnehan, James Newman and Michael Massimino. Grunsfeld, Linnehan, Newman and Massimino will work in alternating teams of two to perform the five planned spacewalks.

Columbia's flight is scheduled to end with landing back at the Kennedy Space Center on March 11. STS-109 marks the 27th mission for Columbia and the 108th in Shuttle program history.

-- end --

The Kennedy Space Center (KSC) Newsroom offers an electronic subscription service for status reports and news releases issued from KSC. There are two possible ways to subscribe. You may send a blank e-mail message to [ksc-news\\_release-subscribe@kscnews.ksc.nasa.gov](mailto:ksc-news_release-subscribe@kscnews.ksc.nasa.gov) or follow the instruction on the Web site at <http://kscnews.ksc.nasa.gov>. The system will confirm the request via e-mail.

---

[KSC Home](#) | [Search](#) | [News](#) | [KSC Press Releases](#) | [Media Resources](#)

---



**Bruce Buckingham**  
Kennedy Space Center, Fla.  
(321) 867-2468

**Feb. 25, 2002**

**Jack King**  
United Space Alliance  
(321) 861-4358

**KSC Release No. 14-02**

## **NASA'S SHUTTLE ORBITER COLUMBIA READY FOR NEXT HISTORIC MISSION**

NASA's Shuttle orbiter Columbia is poised for its return to flight on the STS-109 mission after undergoing 2½ years of comprehensive maintenance, modification and processing operations that have made the senior partner in the Shuttle fleet young again and more versatile and safer than ever.

And thanks to the latest streamlining, Columbia for the first time has the capability to perform limited missions to the International Space Station (ISS) that were not possible before because of the orbiter's excess weight. After the upcoming Hubble servicing mission and the Freestar research flight in July, Columbia will undergo additional modifications before making its first flight to the ISS on the STS-118 mission in October 2003, carrying a Spacehab module and a replacement astronaut resident crew.

Although it looks about the same, today's Columbia is a far cry from the original model that carried John Young and Bob Crippen to orbit on the historic first Shuttle flight on April 12, 1981. Records show that since 1988 more than 1,540 modification packages have been completed and, thanks to advances in thermal protection technology over the years, Columbia now flies with 5,550 less tiles than were carried on STS-1.

During its latest Orbiter Major Modification (OMM) period, Columbia underwent a substantial weight reduction with the removal of more than 1,000 pounds of Development Flight Instrumentation wiring and hardware no longer required.

"Columbia is new again after undergoing more than 100 upgrades and improvements during its OMM at the Boeing plant in Palmdale, California and follow-on processing operations by United Space Alliance (USA) at KSC," said Bill Pickavance, USA vice president and deputy program manager for Florida Operations. "At USA, safety is our top priority, and we have every confidence that we have an orbiter that is more capable and safer than ever thanks to an outstanding effort by the KSC team."

NASA KSC Launch Manager, Ed Mango agrees, "This joint NASA/USA team has worked intensely to bring Columbia back to a safe, ready for flight state. The team's dedication to excellence is evident by the pride and enthusiasm put forth throughout the entire processing flow. The spaceship Columbia has been upgraded, inspected, tested and serviced to once again fly right in America's Shuttle fleet."

The modifications include installation of the new "glass cockpit," replacing the outmoded analog gauges on board with the latest state-of-the-art flat panel technology to reduce the

astronauts' workloads during critical periods. The Multifunctional Electronic Display System (MEDS) was first installed in orbiter Atlantis two years ago.

Other significant changes include a series of safety modifications and the most intensive wiring inspection and repair operation in the history of the Space Shuttle program. Because of wiring concerns throughout the Shuttle fleet, 95 percent of Columbia's more than 215 miles of wiring were inspected and corrective action was taken to prevent the possibility of short circuits throughout the system.

During the months of structural inspections, technicians scoured Columbia from stem to stern, using the latest technology to search for possible fatigue points, corrosion and defective welds and rivets.

After returning to KSC in March 2001, Columbia still had standard post-OMM work ahead of it before the Hubble mission processing flow could begin. A newly assembled USA processing team, headed by USA Flow Director Doug Perdomo and Vehicle Operations Chief Bill Carr, was assigned the job of preparing Columbia for launch.

"The team dynamics came together right from the start and we pulled it off smoothly despite the major workload we faced," Perdomo said. "For months, at varying times, we had more than 250 engineers, technicians and safety and quality people involved in performing the work that had to be accomplished before we could start the routine processing operations."

That work included long hours involved in removing the orbiter nose cap to make repairs, realigning the Orbiter Maneuvering System (OMS) attach point bolt holes, changing out the vehicle cold plates in the aft, re-welding the OMS cross-feed lines, dismantling and reworking the cockpit Heads-Up Displays and carefully painting the mid-body area to meet stringent "clean room" requirements.

"We had some surprises along the way, but each time the team responded and didn't miss a beat - - the result is one of the 'cleanest' vehicles you'll ever see," Perdomo said.

-- end --

Visit <http://www.ksc.nasa.gov/> for more information on Mission STS-109.

The Kennedy Space Center (KSC) Newsroom offers an electronic subscription service for status reports and news releases issued from KSC. There are two possible ways to subscribe. You may send a blank e-mail message to [ksc-news\\_release-subscribe@kscnews.ksc.nasa.gov](mailto:ksc-news_release-subscribe@kscnews.ksc.nasa.gov) or follow the instruction on the Web site at <http://kscnews.ksc.nasa.gov>. The system will confirm the request via e-mail.

---

[KSC Home](#) | [Search](#) | [News](#) | [KSC Press Releases](#) | [Media Resources](#)

---



**George Diller**  
Kennedy Space Center, Fla.  
(321) 867-2468

**Feb. 27, 2002**

**KSC Release No. 15-02**

## **LAUNCH OF SPACE SHUTTLE COLUMBIA POSTPONED 24 HOURS DUE TO LOW TEMPERATURE FORECAST**

The launch of Space Shuttle Columbia on STS-109 has been postponed 24 hours to Friday, March 1. NASA managers decided after reviewing the launch weather forecast that the projected temperature at the launch pad of 38 degrees was at the margin of the acceptable limit in combination with the predicted wind speed and relative humidity. The forecast for a launch attempt on Friday calls for a temperature approximately 10 degrees warmer. Waiting an additional 24 hours protects the option for two possible back-to-back launch opportunities for the launch team.

The launch window on Friday is 6:22 - 7:24 a.m. EST.

-- end --

Visit <http://www.ksc.nasa.gov/> for more information on Mission STS-109.

The Kennedy Space Center (KSC) Newsroom offers an electronic subscription service for status reports and news releases issued from KSC. There are two possible ways to subscribe. You may send a blank e-mail message to [ksc-news\\_release-subscribe@kscnews.ksc.nasa.gov](mailto:ksc-news_release-subscribe@kscnews.ksc.nasa.gov) or follow the instruction on the Web site at <http://kscnews.ksc.nasa.gov>.

The system will confirm the request via e-mail.

---

[KSC Home](#) | [Search](#) | [News](#) | [KSC Press Releases](#) | [Media Resources](#)

---



**Bruce Buckingham**  
Kennedy Space Center, Fla.  
(321) 867-2468

**March 11, 2002**

**KSC Release No. 19-02**

**Note to Editors:**

## **COLUMBIA SCHEDULED TO LAND AT KSC MARCH 12**

The orbiter Columbia is scheduled to land at Kennedy Space Center (KSC) Tuesday, March 12, at about 4:32 a.m. EST completing the nearly 11-day STS-109 mission to service the Hubble Space Telescope that launched from KSC March 1, 2002.

Landing at KSC's Shuttle Landing Facility (SLF) is slated to occur on orbit 165 at mission elapsed time 10 days, 22 hours, 10 minutes. The deorbit burn will occur at about 3:22 a.m. EST. The first two KSC landing opportunities on March 12 are at 4:32 a.m. EST and at 6:13 a.m. EST.

If managers must keep Columbia in orbit an additional day, two landing opportunities are available on Wednesday, March 13, at KSC at 2:40 a.m. EST and at 4:21 a.m. EST. Two landing opportunities also exist at the back-up landing location at Edwards Air Force Base (EAFB), Calif., on Wednesday, at 4:12 a.m. EST and at 5:52 a.m. EST.

If landing occurs as scheduled, it will be the 58th landing at KSC in the history of the Shuttle program. Following landing, Columbia will be towed to the Orbiter Processing Facility for post-mission servicing.

After touchdown, the crew will be taken to crew quarters in the O&C Building, meet with their families and undergo physical examinations. A post-mission press conference with select members of the STS-109 crew is scheduled to occur at the KSC News Center about seven hours after touchdown. The Shuttle crew is scheduled to depart for Johnson Space Center the day following landing.

If Columbia lands at Edwards, an augmented KSC convoy team will be on-site to safe the vehicle, disembark the crew and move the orbiter to the Mate/Demate Device. The turnaround team will be deployed to Edwards by charter aircraft on landing day.

-- end of general release --

### **SLF and KSC Ground Operations**

The Shuttle Landing Facility was built in 1975. It is 300 feet wide and 15,000 feet long with 1,000-foot overruns at each end. The strip runs northwest to southeast and is located about three miles northwest of the 525-foot tall Vehicle Assembly Building.

Once the orbiter is on the ground, safing operations will commence and the flight crew will prepare the vehicle for post-landing operations. The Crew Transport Vehicle (CTV) will be used to assist the crew, allowing them to leave the vehicle and remove their launch and re-entry suits easier and quicker.

The CTV and other KSC landing convoy operations have been "on-call" since the launch of Columbia. The primary functions of the Space Shuttle recovery convoy are to provide immediate service to the orbiter after landing, assist crew egress, and prepare the orbiter for towing to the Orbiter Processing Facility about three hours following touchdown.

Convoy vehicles are stationed at the SLF's mid-point. About two hours prior to landing, convoy personnel don SCAPE suits, or Self-Contained Atmospheric Protective Ensemble, and communications checks are made. A warming-up of coolant and purge equipment is conducted and nearly two-dozen convoy vehicles are positioned to move onto the runway as quickly and as safely as possible once the orbiter coasts to a stop. When the vehicle is deemed safe of all potential explosive hazards and toxic gases, the purge and coolant umbilical access vehicles move into position at the rear of the orbiter.

Following purge and coolant operations, flight crew egress preparations will begin and the CTV will be moved into position at the crew access hatch located on the orbiter's port side. A physician will board the Shuttle and conduct a brief preliminary examination of the astronauts. The crew will then make preparations to leave the vehicle.

-- end --

**NOTICE TO EDITORS:** The KSC press site will open for landing activities at 1 a.m. Tuesday, March 12. Accredited news media wishing to view Columbia's landing should be at the KSC News Center by 3 a.m. for transport to the SLF.

STS-109 launch/landing badging requirements and security restrictions for the media remain in effect. Media parking will be at Gate 2 on SR 3. Additional information regarding accreditation, transportation to the KSC Press Site, landing photo opportunities, post-landing press conferences with the STS-109 crew, and News Center operational hours is available by calling the KSC News Center at 321-867-2468.

The Kennedy Space Center (KSC) Newsroom offers an electronic subscription service for status reports and news releases issued from KSC. There are two possible ways to subscribe. You may send a blank e-mail message to [ksc-news\\_release-subscribe@kscnews.ksc.nasa.gov](mailto:ksc-news_release-subscribe@kscnews.ksc.nasa.gov) or follow the instruction on the Web site at <http://kscnews.ksc.nasa.gov>. The system will confirm the request via e-mail.

---

[KSC Home](#) | [Search](#) | [News](#) | [KSC Press Releases](#) | [Media Resources](#)

---



**Kyle Herring**  
Headquarters, Washington  
(Phone: 202/358-1874)

**January 9, 2003**

**George Diller**  
Kennedy Space Center, Florida  
(Phone: 321/867-2468)

**James Hartsfield**  
Johnson Space Center, Houston  
(Phone: 281/483-5111)

**KSC Release No. FRR - 03**

## **COLUMBIA TO LAUNCH JAN. 16 ON INTERNATIONAL RESEARCH FLIGHT**

At the conclusion of the STS-107 Flight Readiness Review today at the Kennedy Space Center, managers targeted Space Shuttle Columbia for launch Jan. 16 on an international mission devoted to space research, the first dedicated research mission to be flown by the shuttle in almost three years.

Pending resolution of continuing engineering analysis of support assemblies in the shuttle propellant lines, Columbia will launch between 10 a.m. and 2 p.m. EST on the 16-day flight. A precise launch time will be announced about 24 hours before liftoff. The engineering analysis of ball strut tie rod assemblies, resulting from a crack found in an assembly on Discovery, is expected to be completed early next week.

"Many people worldwide have worked long and hard to prepare for this mission," Space Shuttle Program Manager Ron Dittmore said. "This flight will again showcase the versatility of the space shuttle as an orbiting research platform, returning the orbiter to a role it knows well, but has not played in some time."

Columbia will carry in its payload bay the first SPACEHAB Research Double Module, a pressurized environment accessible to the crew. The module and the shuttle's middeck will hold most of the mission's more than 80 experiments - involving more than 70 scientists worldwide - that will investigate space, life and physical sciences.

Rick Husband (Col., USAF) will command Columbia. William McCool (Cmdr., USN) will serve as pilot. Payload commander will be Michael Anderson (Lt. Col., USAF). Mission specialists will include David Brown, M.D. (Capt., USN), Kalpana Chawla (Ph.D.) and Laurel Clark, M.D. (Cmdr., USN). Payload specialist Ilan Ramon (Col., Israel Air Force), the first Israeli astronaut, will complete the crew. The 24-hour science operations will be divided into two alternating shifts. Husband, Chawla, Clark and Ramon form the Red Team, while McCool, Brown and Anderson are the Blue Team.

Columbia is scheduled to land at Kennedy Space Center, Fla., Feb. 1. STS-107 will be the 28th flight for Columbia and the 113th in shuttle history.

-- end --



**Bruce Buckingham**  
Kennedy Space Center, Fla.  
(321) 867-2468

**January 30, 2003**

**KSC Release No. 14 - 03**

**Note to Editors:**  
**COLUMBIA SCHEDULED TO LAND AT KSC FEB. 1**

The orbiter Columbia is scheduled to land at Kennedy Space Center (KSC) Saturday, Feb. 1, at about 9:16 a.m. EST completing the 16-day STS-107 international microgravity research mission. Columbia launched from KSC on Jan. 16, 2003, at 10:39 a.m. EST.

Landing at KSC's Shuttle Landing Facility (SLF) is slated to occur on orbit 255 at mission elapsed time 15 days, 22 hours, 37 minutes. The deorbit burn will occur at about 8:15 a.m. EST. A second KSC landing opportunity is also available on Feb. 1 at 10:50 a.m. EST with a deorbit burn coming at 9:50 a.m. EST.

If managers must keep Columbia in orbit beyond Saturday, two landing opportunities are available at KSC on Sunday, Feb. 2, at 7:38 a.m. EST and at 9:12 a.m. EST. Two additional times are also available at KSC on Monday, Feb. 3.

No landing opportunities are planned for the back-up landing location at Edwards Air Force Base (EAFB), Calif., on Saturday or Sunday.

If landing occurs as scheduled, it will be the 62nd landing at KSC in the history of the Shuttle program. Following landing, Columbia will be serviced and prepared for its next mission, STS-118, targeted to launch in November 2003.

After touchdown, the STS-107 crew will be taken to their KSC quarters to meet with their families and undergo initial physical examinations. A post-mission press conference with select members of the STS-107 crew is scheduled to occur at the KSC News Center at about 6 p.m. EST. Media should check with the KSC Press Site for details.

**SLF and KSC Ground Operations**

The Shuttle Landing Facility was built in 1975. It is 300 feet wide and 15,000 feet long with 1,000-foot overruns at each end. The strip runs northwest to southeast and is located about three miles northwest of the 525-foot tall Vehicle Assembly Building.

Once the orbiter is on the ground, safing operations will commence and the flight crew will prepare the vehicle for post-landing operations. The Crew Transport Vehicle (CTV) will be used to assist the crew, allowing them to leave the vehicle and remove their launch and re-entry suits easier and quicker.

The CTV and other KSC landing convoy operations have been "on-call" since the launch of Columbia. The primary functions of the Space Shuttle recovery convoy are to provide immediate service to the orbiter after landing, assist crew egress, and prepare the orbiter for towing to the processing facility a few hours following touchdown.

Convoy vehicles are stationed at the SLF's mid-point. About two hours prior to landing, convoy personnel don SCAPE suits, or Self-Contained Atmospheric Protective Ensemble,

and communications checks are made. A warming-up of coolant and purge equipment is conducted and nearly two-dozen convoy vehicles are positioned to move onto the runway as quickly and as safely as possible once the orbiter coasts to a stop. When the vehicle is deemed safe of all potential explosive hazards and toxic gases, the purge and coolant umbilical access vehicles move into position at the rear of the orbiter.

Following purge and coolant operations, flight crew egress preparations will begin and the CTV will be moved into position at the crew access hatch located on the orbiter's port side. A physician will board the Shuttle and conduct a brief preliminary examination of the astronauts. The crew will then make preparations to leave the vehicle.

**NOTICE TO EDITORS:** The KSC press site will open for landing activities at 5 a.m. Saturday, Feb. 1. Accredited news media wishing to view Columbia's landing should be at the KSC News Center no later than 7:45 a.m. for transport to the SLF. STS-107 launch badging requirements and security restrictions for the media remain in effect. Media parking will be at Gate 3 on S.R. 405. Additional information regarding accreditation, transportation to the KSC Press Site, landing photo opportunities, post-landing press conferences with the STS-107 crew, and News Center operational hours is available by calling the KSC News Center at (321) 867-2468.

-- end --

For the landing weather forecast visit <http://www-pao.ksc.nasa.gov/kscpao/status/weatstat/forecast.htm>. For the latest Shuttle status on the web visit <http://www-pao.ksc.nasa.gov/kscpao/status/stsstat/current.htm>. Visit <http://www-pao.ksc.nasa.gov/kscpao/schedule/schedule.htm> on the KSC Home Page for the latest schedule of future Shuttle missions. KSC press releases can be found at <http://www-pao.ksc.nasa.gov/kscpao/release/release.htm>. The KSC home page can be found at <http://www.ksc.nasa.gov/>.

The Kennedy Space Center (KSC) Newsroom offers an electronic subscription service for status reports and news releases issued from KSC. There are two possible ways to subscribe. You may send a blank e-mail message to [ksc-news\\_release-subscribe@kscnews.ksc.nasa.gov](mailto:ksc-news_release-subscribe@kscnews.ksc.nasa.gov) or follow the instruction on the Web site at <http://kscnews.ksc.nasa.gov>. The system will confirm the request via e-mail.

---

[KSC Home](#) | [Search](#) | [News](#) | [KSC Press Releases](#) | [Media Resources](#)

---