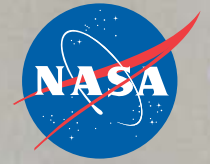


National Aeronautics and Space Administration



# 25th Anniversary United States Space Shuttle Firsts



# Foreword

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This summary of the United States Space Shuttle Program firsts was compiled from various reference publications available in the Kennedy Space Center Library Archives.

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# Space Shuttle Events

06/18/1977

## Enterprise

- First 747/cARRIER flight of the Space Shuttle orbiter.

08/12/1977

## Enterprise

CREW:

F. Haise Jr., G. Fullerton

- First crew assisted free flight of a Space Shuttle.



*Fred Haise and Gordon Fullerton the crew of the flight.*  
[NASA/JSC Digital]

12/05-16/1977

## N/A

- First reported successful conclusion for the open sea test on shuttle retrieval performed at Port Everglades, Florida.



*Shuttle orbiter Enterprise Rollout to Complex 39*  
[NASA/KSC Digital - Archives]

05/01/1979

## Enterprise

- First time the complete Space Shuttle configuration was assembled in the VAB and transported to Launch Complex 39A.

02/20/1981

## STS-1 (Columbia)

- First Flight Readiness Firing (FRF) of shuttle main engines.



*STS-1 Static Firing of the Space Shuttle's three main engines overall view at Complex 39A* [NASA/KSC Digital - Archives]

# Space Shuttle Events

04/12/1981

## STS-1 (Columbia)

CREW:

J. Young, R. Crippen

- First flight of Space Transportation System (STS) reusable space vehicle which provided the first successful retrieval of the Solid Rocket Boosters (SRB).
- First airplane-like landing of a craft returning from orbit.
- First time solid-propellant rockets were used to launch a crewed spacecraft.



*View of the UTC Freedom returning to Port Canaveral with the solid rocket boosters (SRB).* [NASA/KSC Digital - Archives]

11/12/1981

## STS-2 (Columbia)

CREW:

J. Engle, R. Truly

- First re-use of a crew assisted space vehicle.



*Launch view of Columbia for the STS-1 mission, April 12, 1981* [NASA/KSC Digital - Archives]



*STS-2 liftoff from Complex 39A with astronauts Joe Engle and Richard Truly aboard orbiter Columbia.* [NASA/KSC Digital - Archives]

# Space Shuttle Events

03/22/1982

## STS-3 (Columbia)

CREW:

J. Lousma, G. Fullerton

- First Space Shuttle landing at White Sands.

06/27/1982

## STS-4 (Columbia)

CREW:

T. Mattingly, H. Hartsfield Jr.

- First Getaway Specials aboard a shuttle mission.

11/11/1982

## STS-5 (Columbia)

CREW:

V. Brand, R. Overmyer, J. Allen, W. Lenoir

- First operational STS mission.
- First deployment of two commercial communications satellites.
- First flight of mission specialist astronauts.
- First spacecraft crew of four.

04/04/1983

## STS-6 (Challenger)

CREW:

P. Weitz, K. Bobko, D. Peterson, S. Musgrave

- First flight of the orbiter Challenger.
- First Tracking and Data Relay Satellite successfully deployed.
- First Space Walk of Shuttle program (D. Peterson & S. Musgrave).



Columbia is shown seconds from touchdown with two T-38 chase planes following it in to the landing strip. [NASA Digital]



First Getaway Special payload. [NASA/KSC Digital - Archives]



Wide-angle view of Launch pad 39A during Space Shuttle Challenger's first launch. [NASA Digital]

# Space Shuttle Events

06/18/1983

## STS-7 (Challenger)

CREW:

R. Crippen, F. Hauck, J. Fabian  
S. Ride, N. Thagard

- First flight by an American woman astronaut (S. Ride).

08/30/1983

## STS-8 (Challenger)

CREW:

R. Truly, D. Brandenstein, D. Gardner  
G. Bluford, W. Thornton

- First night launch and landing of a Space Shuttle.
- First space flight by an African American (G. Bluford).
- First night landing at Edwards Air Force Base.

11/28/1983

## STS-9 (Columbia)

CREW:

J. Young, B. Shaw Jr., O. Garriott, R. Parker  
B. Lichtenberg, U. Merbold

- First Spacelab mission.
- First rollback of orbiter from Launch Complex 39A to Vehicle Assembly Building.
- First flight with six crew members in single spacecraft.
- First European Space Agency (ESA) astronaut representative (U. Merbold).
- First flight of payload specialist (B. Lichtenberg).
- First mission of a reusable scientific research facility (Spacelab-1).



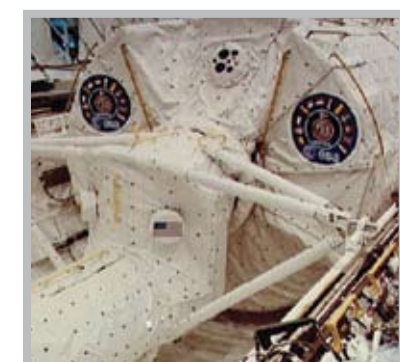
Portrait view of Astronaut Sally K. Ride, mission specialist for STS-7, standing outside of the Shuttle Mission Simulator (SMS). [NASA Digital]



Shuttle Challenger prepares to touch down on a lighted Runway 22 at Edwards Air Force Base in California. This landing represented the first night touchdown for the Space Transportation System. [NASA/JSC Digital]



View taken through aft window on the flight deck of the Spacelab module in the payload bay of the Columbia during STS-9. [NASA/JSC Digital]



Technicians inspect the European made Spacelab installed in the cargo bay of the Space Shuttle orbiter Columbia before Spacelab's first flight. [NASA/JSC Digital]

# Space Shuttle Events

02/03/1984

## STS-41B (Challenger)

### CREW:

V. Brand, R. Gibson, B. McCandless II  
R. McNair, R. Stewart

- First untethered space walks performed in space (B. McCandless & R. Stewart).
- First use of the Manned Maneuvering Unit (MMU).
- First satellite refurbished & flown again (SPAS).
- First shuttle landing at KSC (Challenger).
- First woman test conductor during U.S. space launch.



*Manned Maneuvering Unit [MMU]. Frontal view of Astronaut Robert L. Stewart, mission specialist, as he participates in a extravehicular activity (EVA).*

[NASA/KSC Digital - Archives]

04/06/1984

## STS-41C (Challenger)

### CREW:

R. Crippen, F. Scobee, G. Nelson  
J. Van Hoften, T. Hart

- First in-flight capture, repair and redeployment of an orbiting satellite (SMM and LDEF).
- First direct ascent trajectory during Space Shuttle launch.



*View of the launch of the shuttle Discovery and the 51D mission. [NASA/JSC Digital]*

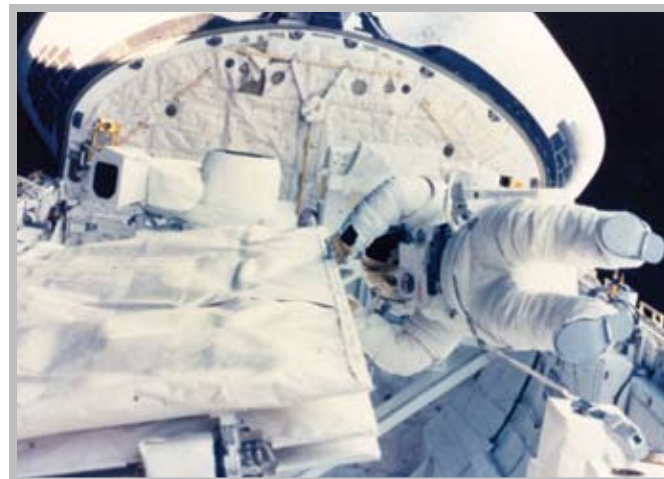
08/30/1984

## STS-41D (Discovery)

### CREW:

H. Hartsfield Jr., M. Coats, J. Resnik  
R. Mullaine, S. Hawley, C. Walker

- First flight of orbiter Discovery.
- First pad abort at T-4 seconds.
- First deployment of three satellites on single mission.
- First flight to include a non-astronaut crewman (C. Walker).
- First industrial payload specialist (C. Walker).



*Astronaut Kathryn Sullivan checks the latch of the SIR-B antenna in the Challenger's open cargo bay during her extravehicular activity (EVA). [NASA/KSC Digital - Archives]*

10/05/1984

## STS-41G (Challenger)

### CREW:

R. Crippen, J. McBride, D. Leestma, S. Ride  
K. Sullivan, P. Scully-Power, M. Garneau

- First space flight to include two women (S. Ride & K. Sullivan).
- First American woman to walk in space (K. Sullivan).
- First Canadian payload specialist to fly in space (M. Garneau).
- First oceanographer in space and the first oceanographer to observe the oceans from space (P. Scully-Power).

# Space Shuttle Events

11/08/1984

## STS-51A (Discovery)

### CREW:

F. Hauck, D. Walker, A. Fisher,  
D. Gardner, J. Allen

- First retrieval and return of satellites from Earth orbit.
- First astronaut to capture a satellite (Palapa) by using the MMU (J. Allen).



*Astronaut Dale A. Gardner, having just completed the major portion of his second extravehicular activity (EVA) period in three days, holds up a "for sale" sign. Astronaut Joseph P. Allen IV, who also participated in the two EVA's, is reflected in Gardner's helmet visor. A portion of each of two recovered satellites is in the lower right corner, with Westar nearer Discovery's aft. [NASA/JSC Digital]*

01/24/1985

## STS-51C (Discovery)

### CREW:

T. Mattingly, L. Shriver, J. Buchli,  
E. Onizuka, G. Payton

- First mission totally dedicated to Department Of Defense (DOD).

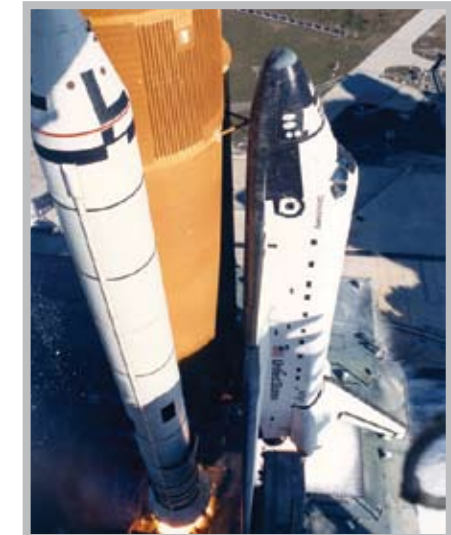
04/12/1985

## STS-51D (Discovery)

### CREW:

K. Bobko, D. Williams, R. Seddon, D. Griggs  
J. Hoffman, C. Walker, J. Garn

- First Congressional observer to make a space flight (U. S. Sen. E. J. "Jake" Garn [R-Utah]).
- First "toys in space" experiment for informal study of the behavior of simple toys in weightless environment.
- First time a tire was blown during landing (KSC) which prompted future landings at Edwards until implementation of nose wheel steering.



*Launch of Shuttle Discovery and the STS-51D mission. [NASA/KSC Digital - Archives]*



*Official portrait Senator E. J. "Jake" Garn STS 51D payload specialist. Senator Garn is wearing the blue shuttle flight suit. [NASA/KSC Digital - Archives]*

# Space Shuttle Events

## 04/29/1985 STS-51B (Challenger)

**CREW:**  
R. Overmyer, F. Gregory, D. Lind  
N. Thagard, W. Thornton, L. van den Berg, T. Wang

- First operational flight for the European Space Agency Spacelab 3.
- First flight of animals with Shuttle flight crew - two monkeys and 24 rodents.
- First flight in space after a 19 year wait after appointment in 1966 (D. Lind).
- First Dutch astronaut to fly in space (L. van den Berg).



*A squirrel monkey similar to those selected to fly aboard the science module of Spacelab 3 in Challenger's cargo bay for STS-51B. [NASA/JSC Digital]*

## 06/17/1985 STS-51G (Discovery)

**CREW:**  
D. Brandenstein, J. Creighton, S. Lucid  
S. Nagel, J. Fabian, P. Baudry, S. Al-Saud

- First Arabian to fly in space aboard a Space Shuttle (S. Al-Saud).



*First launch of the shuttle orbiter Atlantis. This close-up view of the orbiter just leaving the pad was taken from a camera at the base of the launch complex. The shuttle rocket boosters can be seen fully ignited. [NASA/KSC Digital - Archives]*

## 10/03/1985 STS-51J (Atlantis)

**CREW:**  
K. Bobko, R. Grabe, R. Stewart  
D. Hilmers, W. Pailes

- First flight of orbiter Atlantis.

## 10/30/1985 STS-61A (Challenger)

**CREW:**  
B. Shaw Jr., B. O'Connor, M. Cleave  
S. Spring, J. Ross, R. Vela, C. Walker

- First dedicated German Spacelab mission.
- First mission to carry eight crew members.
- First mission in which payload activities were controlled from outside the United States.



*Crewmembers in Spacelab D-1 science module. Mission specialist Guion S. Bluford prepares to perform a physics experiment. In the background, European payload specialists busy themselves with experiments. [NASA/KSC Digital - Archives]*

# Space Shuttle Events

## 11/26/1985 STS-61B (Atlantis)

**CREW:**  
B. Shaw, B. O'Connor, M. Cleave, S. Spring  
J. Ross, R. Neri-Vela, C. Walker

- First astronaut from Mexico to fly in space (R. Neri-Vela).
- First non-NASA astronaut to make three flights and hold the record for most frequent flights in a 15 month period (C. Walker).



*Official portrait of Charles D. Walker, Payload Specialist. [NASA/KSC Digital - Archives]*

## 01/12/1986 STS-61C (Columbia)

**CREW:**  
R. Gibson, C. Bolden Jr., F. Chang-Diaz  
S. Hawley, G. Nelson, R. Cenker, B. Nelson  
(Congressman)

- First flight of Columbia after major modifications.
- First Hispanic astronaut to fly in space (F. R. Chang-Diaz).



*Official portrait of Franklin R. Chang-Diaz, Mission Specialist, who was born in San Jose, Costa Rica and was selected as an astronaut candidate by NASA in May 1980. [NASA/KSC Digital - Archives]*

## 01/28/1986 STS 51L (Challenger)

**CREW:**  
F. Scobee, M. Smith, J. Resnik  
E. Onizuka, R. McNair, S. McAuliffe, G. Jarvis

- First in-flight accident involving a Space Shuttle.
- First teacher in space (McAuliffe).
- First Shuttle launch from LC 39B.
- First woman astronaut to die during space flight (Resnik).



*Official portrait of the STS 51-L crewmembers. [NASA/JSC Digital]*

# Space Shuttle Events

## 09/29/1988 STS-26 (Discovery) – Return to Flight

**CREW:**  
F. Hauck, R. Covey, J. Lounge  
D. Hilmers, G. Nelson

- First flight of Space Shuttle since Challenger accident.
- First flight for an all-seasoned (no rookies) crew returned to space.

## 05/04/1989 STS-30 (Atlantis)

**CREW:**  
D. Walker, R. Grabe, N. Thagard, M. Cleave, M. Lee

- First U.S. planetary mission in 11 years and the ....
- First deep space probe on a Space Shuttle mission (Magellan).
- First time a general purpose computer was switched on orbit.

## 11/22/1989 STS-33 (Discovery)

**CREW:**  
F. Gregory, J. Blaha, S. Musgrave  
K. Thornton, M. Carter Jr.

- First night launch since Return to Flight.
- First African-American to command a space mission (F. Gregory).

## 02/28/1990 STS-36 (Atlantis)

**CREW:**  
J. Creighton, J. Casper, R. Mullane  
D. Hilmers, P. Thuot

- First Shuttle flight delay due to crew member's illness (J. Creighton).



*Discovery lifts off from Launch Complex 39B on a Return to Flight mission. [NASA/KSC Digital – Archives]*



*Inertial upper stage (IUS) with Magellan spacecraft is deployed from the payload bay (PLB) of Atlantis, Orbiter Vehicle (OV) 104, during STS-30. [NASA/JSC Digital]*



*STS-33 Discovery, Orbiter Vehicle (OV) 103, lifts off from Kennedy Space Center (KSC) Launch Complex (LC) Pad 39B at 7:23:29:989 am Eastern Standard Time (EST). [NASA/JSC Digital]*

# Space Shuttle Events

## 04/24/1990 STS-31 (Discovery)

**CREW:**  
L. Shriver, C. Bolden, S. Hawley  
B. McCandless, K. Sullivan

- First use of carbon brakes at landing. Landed on 4/29/90 at Edwards Air Force Base.

## 04/28/1991 STS-39 (Discovery)

**CREW:**  
M. Coats, L. Hammond, G. Bluford  
G. Harbaugh, R. Hieb, D. McMonagle, C. Veach

- First unclassified Department of Defense (DOD) payload.

## 08/02/1991 STS-43 (Atlantis)

**CREW:**  
J. Blaha, M. Baker, J. Adamson  
G. D. Low, S. Lucid

- First scheduled landing at Kennedy Space Center since 1986. Landed on Runway 15.

## 03/24/1992 STS-45 (Atlantis)

**CREW:**  
C. Bolden, B. Duffy, K. Sullivan, D. Leestma, M. Foale  
D. Frimout, B. Lichtenberg

- First flight of the Atmospheric Laboratory for Applications and Science-1 (ATLAS-1).
- First Belgian astronaut to fly in space (D. Frimout).



*Atlantis lands on KSC's Shuttle Landing Facility Runway 15 for successful end of mission. [NASA/KSC Digital – Archives]*



*ATLAS-1 in space inside cargo bay of Atlantis. Also visible is a single Get Away Special and the Shuttle Solar Backscatter Ultraviolet/S. [NASA/KSC Digital – Archives]*

# Space Shuttle Events

05/07/1992

## STS-49 (Endeavour)

### CREW:

D. Brandenstein, K. Chilton, B. Melnick  
T. Akers, R. Hieb, K. Thornton, P. Thuot

- First flight of orbiter Endeavour.
- First use of drag chute during landing; deployed after nose gear touchdown for data collection only.
- First time astronauts attached live rocket motor to orbiting satellite.
- First U.S. orbital flight to feature four EVAs two were longest in U.S. history to date – 8 hours 29 minutes (Thuot/Akers/Thornton/Hieb).
- First space flight to involve three crew members simultaneously working outside spacecraft.



STS-49 Endeavour, Orbiter Vehicle (OV) 105, lands on concrete runway 22 at Edwards Air Force Base (EAFB), California. [NASA/JSC Digital]

06/25/1992

## STS-50 (Columbia)

### CREW:

R. Richards, K. Bowersox, B. Dunbar  
C. Meade, E. Baker, L. DeLucas, E. Trinh

- First Extended Duration Orbiter mission.
- First flight for the U. S. Microgravity Laboratory-1 (USML-1).
- First flight for orbiter after extensive modification at Rockwell in California.
- First landing for Columbia at Kennedy Space Center (KSC).
- First landing with new synthetic tread tires.



Clean-suited crewmembers and technicians examine and test USML-1 spacelab (SL) module systems during preflight procedures in Operations and Checkout (O&C) Building. [NASA/JSC Digital]

07/31/1992

## STS-46 (Atlantis)

### CREW:

L. Shriver, A. Allen, J. Hoffman  
F. Chang-Diaz, M. Ivins, C. Nicollier, F. Malerba

- First deployment of a satellite on a long tether in space (TSS-1).
- First Italian citizen to fly in space (F. Malerba).



Onboard view of the early operations with the Tethered Satellite System [TSS-1]. The sphere will move away from the ring structure on the boom device. [NASA/KSC Digital – Archives]

# Space Shuttle Events

09/12/1992

## STS-47 (Endeavour)

### CREW:

R. Gibson, C. Brown Jr., M. Lee, J. Davis  
M. Jemison, M. Mohri

- First time drag chute deployed in operational mode before nose gear touchdown.
- First African-American woman to fly in space (M. Jemison).
- First married couple to fly in space (M. Lee & J. Davis).
- First on-time Shuttle launch since STS-61B in November 1985.
- First Japanese astronaut to fly aboard a Shuttle (M. Mohri).



Official portrait includes the seven crew members wearing launch and entry suits. [NASA/JSC Digital]

01/13/1993

## STS-54 (Endeavour)

### CREW:

J. Casper, D. McMonagle, M. Runco  
G. Harbaugh, S. Helms

- First U. S. Military woman to fly in space (S. Helms).



Official portrait of Susan J. Helms, Mission Specialist. [NASA/KSC Digital – Archives]



Official portrait of Dr. Ellen Ochoa, Payload Commander. [NASA/KSC Digital – Archives]

04/08/1993

## STS-56 (Discovery)

### CREW:

K. Cameron, S. Oswald, K. Cockrell  
M. Foale, E. Ochoa

- First Hispanic female astronaut to fly in space (E. Ochoa).

06/21/1993

## STS-57 (Endeavour)

### CREW:

R. Grabe, B. Duffy, G. D. Low, N. Sherlock  
J. Voss, P. Wisoff

- First flight of commercially-developed SPACEHAB module.



STS-57 SPACEHAB-01 module inside cargo bay of Endeavor while in space. [NASA/JSC Digital]



# Space Shuttle Events

09/12/1993

## STS-51 (Discovery)

**CREW:**

F. Culbertson Jr., W. Readdy, J. Newman  
D. Bursch, C. Walz

- First Kennedy Space Center night landing.



*Discovery nears the completion of a ten-day mission on the Shuttle Landing Facility at the Kennedy Space Center (KSC).  
[NASA/KSC Digital - Archives]*

12/02/1993

## STS-61 (Endeavour)

**CREW:**

R. Covey, K. Bowersox, S. Musgrave, J. Hoffman  
K. Thornton, T. Akers, C. Nicollier

- First Hubble Space Telescope Servicing mission.



*First Hubble Space Telescope Servicing mission.  
[NASA/KSC Digital - Archives]*

02/03/1994

## STS-60 (Discovery)

**CREW:**

C. Bolden Jr., K. Reightler Jr., F. Chang-Diaz  
J. Davis, R. Sega, S. Krikalev

- First flight of a Russian Cosmonaut aboard Space Shuttle (S. Krikalev).
- First flight of the Wake Shield Facility-1.



*Official portrait of Cosmonaut Sergei Krikalev.  
[NASA/KSC Digital - Archives]*

# Space Shuttle Events

04/09/1994

## STS-59 (Endeavour)

**CREW:**

S. Gutierrez, K. Chilton, L. Godwin, J. Apt  
M. Clifford, T. Jones

- First flight of Toughened Uni-Piece Fibrous Insulation, known as TUF1, an improved thermal protection tile.
- First Hispanic Shuttle Commander (Gutierrez).



*Official portrait of Sidney M. Gutierrez.  
[NASA/KSC Digital - Archives]*

07/08/1994

## STS-65 (Columbia)

**CREW:**

R. Cabana, J. Halsell, R. Hieb, D. Thomas  
C. Walz, L. Chiao, C. Naito-Mukai

- First Japanese woman to fly in space (C. Naito-Mukai) – she also set a record for longestflight to day by a female astronaut.
- First time liftoff and re-entry as experienced from crew cabin was captured on tape.



*Official portrait of Eileen M. Collins, first female Shuttle pilot.  
[NASA/KSC Digital - Archives]*

09/20/1994

## STS-64 (Discovery)

**CREW:**

R. Richards, B. Hammond Jr., S. Helms  
C. Meade, M. Lee, J. Linenger

- First untethered U.S. space walk in 10 years (M. Lee, C. Meade).
- First flight of Lidar In-space Technology Experiment (LITE).

02/03/1995

## STS-63 (Discovery)

**CREW:**

J. Wetherbee, E. Collins, B. Harris Jr., M. Foale  
J. Voss, V. Titov

- First female Shuttle pilot (Collins).
- First approach / fly around with Mir.
- Discovery became the first orbiter in the fleet to complete 20 missions.
- First African-American to walk in space (B. Harris).
- First Space Shuttle biological experiment ever to be proposed, developed, processed for flight and conducted completely by KSC employees.



*Space Station Mir as seen from Discovery during fly around.  
[NASA/KSC Digital]*

# Space Shuttle Events

03/18/1995

## STS-67 (Endeavour)

CREW:

S. Oswald, W. Gregory, T. Jernigan  
W. Lawrence, J. Grunsfeld, S. Durrance, R. Parise

- First advertised Space Shuttle mission connected to an Internet linkup.

06/27/1995

## STS-71 (Atlantis)

CREW:

R. Gibson, C. Precourt, E. Baker  
G. Harbaugh, B. Dunbar

- First docking of a Space Shuttle to Mir space station.
- First on-orbit changeout of Shuttle crew.

07/13/1995

## STS-70 (Discovery)

CREW:

T. Henricks, K. Kregel, N. Currie, D. Thomas, M. Weber

- First use of the newly opened Mission Control Center at Johnson Space Center.

09/07/1995

## STS-69 (Endeavour)

CREW:

D. Walker, K. Cockrell, J. Voss, M. Gernhardt, J. Newman

- First time two different payloads were retrieved and deployed during same mission. (Spartan 201-03 and Wake Shield Facility-2).

11/12/1995

## STS-74 (Atlantis)

CREW:

K. Cameron, J. Halsell, C. Hadfield, J. Ross, W. McArthur

- First Canadian mission specialist/first Canadian to operate the Canadarm in orbit, and the only Canadian to ever be aboard Mir (C. Hadfield).
- First time astronauts from the European Space Agency, Canada, Russia and the U. S. will be in space on the same complex at one time.



*This view of the Space Shuttle Atlantis still connected to Russia's Mir Space Station was photographed by the Mir-19 crew on July 4, 1995. [NASA/GRIN Photo Gallery]*



*U.S. astronaut Shannon Lucid, surrounded by family, answers questions about her record-setting stay aboard the Russian Space Station Mir. [NASA/KSC Digital]*

# Space Shuttle Events

06/20/1996

## STS-78 (Columbia)

CREW:

T. Hendricks, K. Kregel, S. Helms, R. Linnehan  
C. Brady, J. Favier, R. Thirsk

- First occurrence of combustion product penetration into the J-joint of redesigned solid rocket motor (RSRM).
- First live downlink video during orbiter's descent.

09/16/1996

## STS-79 (Atlantis)

CREW:

W. Readdy, T. Wilcutt, T. Akers, J. Apt, C. Walz

- First U.S. crew exchange aboard Russian Space Station Mir
- First U.S. and world human spaceflight record set (S. Lucid). Lucid's long duration spaceflight set new U. S. record as well as world record for a woman in space.
- First flight of the Spacehab Double Module.

11/19/1996

## STS-80 (Columbia)

CREW:

K. Cockrell, K. Rominger, T. Jernigan,  
T. Jones, S. Musgrave

- First time two free-flying research spacecraft deployed and retrieved (ORFEUS-SPAS II and Wake Shield Facility-3).

1/12/1997

## STS-81 (Atlantis)

CREW:

M. Baker, B. Jett Jr., P. Wisoff, J. Grunsfeld, M. Ivins

- First plants to complete a life cycle in space – a crop of wheat grown from seed to seed.
- First American to conduct a spacewalk from a foreign space station and in a non-American made space suit (J. Linenger).
- First American to undock from a space station aboard two different spacecraft – U. S. Space Shuttle/Russian Soyuz (J. Linenger).



*In NASA's Building AE on Cape Canaveral Air Station, the Wake Shield Facility-3 (WSF-3) is just about ready for flight. [NASA/KSC Digital]*



*In the Multi-Payload Processing Facility, the Orbiting and Retrievable Far and Extreme Ultraviolet Spectrograph-Shuttle Pallet Satellite (ORFEUS-SPAS) is just about ready for flight. [NASA/KSC Digital]*



*Space Shuttle Columbia soars from Launch Pad 39A at 2:02 p.m. EDT July 1 to begin the 16-day STS-94 Microgravity Science Laboratory-1 (MSL-1) mission. [NASA/KSC Digital - Archives]*

# Space Shuttle Events

7/01/1997

## STS-94 (Columbia)

### CREW:

J. Halsell Jr., S. Still, J. Voss, M. Gernhardt  
D. Thomas, R. Crouch, G. Linteris

- First re-flight of same vehicle, crew and payloads.

09/25/1997

## STS-86 (Atlantis)

### CREW:

J. Wetherbee, M. Bloomfield, J. Chretien  
D. Wolf, S. Parazynski, V. Titov

- First U. S. – Russian extravehicular activity during Shuttle mission (V. Titov/S. Parazynski).

11/19/1997

## STS-87 (Columbia)

### CREW:

K. Kregel, S. Lindsey, W. Scott  
K. Chawla, T. Doi, L. Kadenyuk

- First Heads-Up ascent during first stage of liftoff.
- First East Indian-born woman to fly in space (K. Chawla).
- First Ukrainian to fly in space (L. Kadenyuk).
- First Japanese citizen to walk in space (T. Doi).

01/22/1998

## STS-89 (Endeavour)

### CREW:

T. Wilcutt, J. Edwards Jr., B. Dunbar, M. Anderson  
J. Reilly II, S. Sharipov, A. Thomas

- First flight Space Shuttle Main Engine Block IIA.



Crew at breakfast, from left to right: Winston Scott, Takao Doi, Kevin Kregel, Leonid Kadenyuk, Kalpana Chawla, and Steven Lindsey. [NASA/KSC Digital]



STS-90 Mission Specialist Kathryn (Kay) Hire prepares for launch during suitup activities. [NASA/KSC Digital]



Preliminary reports indicate the Space Shuttle's first super lightweight external tank (SLWT) is in excellent condition following the completion of a tanking test yesterday. [NASA/JSC Digital]

# Space Shuttle Events

04/17/1998

## STS-90 (Columbia)

### CREW:

R. Searfoss, S. Altman, R. Linnehan, D. Williams  
K. Hire, J. Buckley, J. Pawelczyk

- First Kennedy Space Center employee to be chosen as an astronaut and to fly on Space Shuttle mission. (K. Hire)

06/02/1998

## STS-91 (Discovery)

### CREW:

C. Precourt, D. Gorie, F. Chang-Diaz,  
J. Kavandi/V. Ryumin

- First flight of the Super Lightweight External Tank.
- First docking mission for Discovery. Orbiter docked with the Mir space station in the final Shuttle-Mir docking mission.

10/29/1998

## STS-95 (Discovery)

### CREW:

C. Brown, S. Lindsey, S. Parazynski, S. Robinson  
P. Duque, C. Mukai, J. Glenn

- First Mercury astronaut to fly in Space Shuttle (J. Glenn).
- First Space Shuttle launch attended by a U.S. President (Clinton).
- First Astronaut from Spain to fly in space (P. Duque).
- First Japanese astronaut to fly in space twice (C. Mukai).

12/04/1998

## STS-88 (Endeavour)

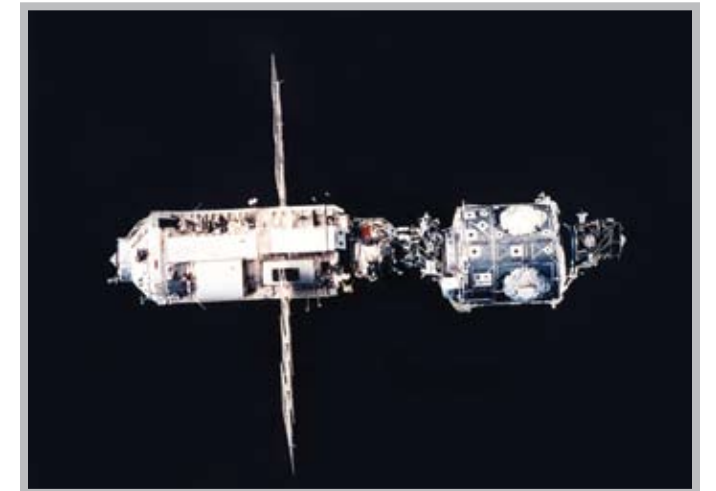
### CREW:

R. Cabana, F. Sturckow, N. Currie, J. Ross  
J. Newman, S. Krikalev

- First U.S. assembly flight of International Space Station.



U.S. Sen. John H. Glenn Jr. (D.-Ohio) is assisted in suiting up for a training exercise. [NASA/JSC Digital]



The mated Russian-built Zarya (left) and U.S.-built Unity modules are backdropped against the blackness of space. [NASA/JSC Digital]



Astronaut Eileen M. Collins, mission commander, enters notes on a log at the commander's station on Columbia's flight deck. [NASA/JSC Digital]

# Space Shuttle Events

07/23/1999

## STS-93 (Columbia)

CREW:

E. Collins, J. Ashby, S. Hawley  
C. Coleman, M. Tognini

- First flight with female mission commander (E. Collins).

12/19/1999

## STS-103 (Discovery)

CREW:

C. Brown, S. Kelly, S. Smith, M. Goale, J. Grunsfeld  
C. Nicollier, J. Clervoy

- First Space Shuttle crew to spend Christmas in Space (Hubble Space Telescope was released on Christmas day from Discovery's cargo bay after the third servicing).

05/19/2000

## STS-101 (Atlantis)

CREW:

J. Halsell Jr., S. Horowitz, M. Weber, J. Williams  
J. Voss, S. Helms, Y. Usachev

- First flight of the glass cockpit (Atlantis).

10/11/2000

## STS-92 (Discovery)

CREW:

B. Duffy, P. Melroy, K. Wakata, L. Chiao, P. Wisoff  
M. Lopez-Alegria, W. McArthur

- First California landing in three years.
- STS-92 marked the 100th Space Shuttle mission and included the 100th spacewalk in the U. S. space program.



Astronaut Steven L. Smith, payload commander, prepares to use a 35mm camera during the final space walk of the STS-103 mission. [NASA/JSC Digital]



This image illustrates NASA's Multifunction Electronic Display Subsystem (MEDS), otherwise known as "glass cockpit." [NASA/JSC Digital]



The drag chute on the Space Shuttle Discovery begins to unfurl as the vehicle rolls toward mission completion at Edwards Air Force Base. [NASA/JSC Digital]



Astronauts Peter J.K. (Jeff) Wisoff and Michael Lopez-Alegria on final of four STS-92 space walks. [NASA/JSC Digital]

# Space Shuttle Events

03/05/2001

## Atlantis to SLF and Columbia to CCAFS

- First time two Shuttles have been ferried simultaneously (Atlantis returning from Edwards Air Force Base and Columbia returning from Palmdale after modifications).

12/05/2001

## STS-108 (Endeavour)

CREW:

D. Gorie, M. Kelly, L. Godwin, D. Tani  
ISS Up: Y. Onufrienko, D. Bursch, C. Walz  
ISS Down: F. Culbertson, V. Dezhurov, M. Tyurin

- First Space Station utilization flight (UF-1).
- First Latin America Get Away Special canister to fly aboard a Space Shuttle.

04/08/2002

## STS-110 (Atlantis)

CREW:

M. Bloomfield, S. Frick, J. Ross, S. Smith  
E. Ochoa, L. Morin, R. Walheim

- First human to be launched into space seven times, and holds the current record of the most U.S. spacewalks (nine) and spacewalking time (58 hours and 18 minutes) (J. Ross).
- First mission in the final phase of the ISS assembly.

11/23/2002

## STS-113 (Endeavour)

CREW:

J. Wetherbee, P. Lockhart, M. Lopez-Alegria  
J. Herrington  
ISS Up: K. Bowersox, N. Budarin, D. Pettit  
ISS Down: V. Korzun, P. Whitson, S. Treschev

- First tribal registered Native American astronaut to fly in space (J. B. Herrington).
- First Native American astronaut to walk in space. (J. B. Herrington)
- First combined crew exchange and major assembly mission to visit the Space Station.



Last check of payloads before the closure of payload bay doors of Endeavour. [NASA/KSC digital]



Official portrait of Jerry L. Ross. In front of him are all his mission patches. [NASA/JSC digital]



Official portrait of John B. Herrington, first Native American to fly and walk in Space. [NASA/JSC digital]

# Space Shuttle Events

01/16/2003

## STS-107 (Columbia)

### CREW:

R. Husband/W. McCool/M. Anderson/  
K. Chawla/D. Brown/L. Clark/I. Ramon

- First Israeli astronaut to fly in space (I. Ramon).
- First re-entry accident involving a Space Shuttle. (02/01/2003)



*The official crew portrait of the STS-107 crew: left to right: David Brown, Rick Husband, Laura Clark, Kalpana Chawla, Mike Anderson, William McCool and Ilan Ramon. [NASA/KSC digital]*

07/26/2005

## STS-114 (Discovery)

### CREW:

E. Collins/J. Kelly/S. Noguchi/S. Robinson/  
A. Thomas/W. Lawrence/C. Camarda

- First time an astronaut has ridden the robotic arm to inspect the underside of the Space Shuttle (S. Robinson).
- First time phone calls were made to astronauts from two world leaders (President of the United States and the Japanese Prime Minister).
- First use of the new Orbiter Boom Sensor System.
- First-ever "rendezvous pitch maneuver" when Discovery was guided into a slow-motion back flip in order to be photographed by astronauts on board the International Space Station (ISS) (E. Collins).
- First-ever demonstration of repair techniques on the Shuttle's protective tiles (Thermal Protection System) during an EVA (S. Robinson/S. Noguchi).
- First-ever on-orbit repair of the Shuttle heat shield by removing two gap fillers during an EVA (S. Robinson).
- First transmission of a pod-cast from space. (S. Robinson)



*A camera attached to the space shuttle Discovery's robotic arm shows astronaut Steve Robinson going under the underside of the Discovery to remove gap fillers in this view from television Wednesday, Aug. 3, 2005. This is the first time in spacewalking history that an astronaut has ventured under the belly of a space shuttle and performed repairs. [NASA/KSC Digital]*

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NP-2006-04-016-KSC