

# NASA JOHNSON SPACE CENTER ORAL HISTORY PROJECT

## BIOGRAPHICAL DATA SHEET

**NAME:** Steven A. Hawley

**ORAL HISTORY:** 4 December 2002  
17 December 2002  
14 January 2002

### **EDUCATIONAL BACKGROUND:**

B.S. in Astronomy and Physics, University of Kansas, Lawrence, KS, 1973

Ph.D. in Astronomy and Astrophysics, University of California at Santa Cruz, Santa Cruz, CA, 1977

### **PRE-NASA EXPERIENCE:**

University of Kansas, Lawrence, KS (1969-1973)

- Teaching Assistant, Department of Physics and Astronomy
- Researcher, College of Liberal Arts and Sciences (1971)

United States Naval Observatory, Washington, D.C. (Summer 1972)

- Research Assistant

National Radio Astronomy Observatory, Green Bank, WV (1973-1974)

- Research Assistant

Lick Observatory, University of California at Santa Cruz, Santa Cruz, CA (graduate school)

- Research Assistant

Cerro Tololo Intern-American Observatory, Ls Serena, Chile (1977-1978)

- Postdoctoral Research Associate

### **NASA EXPERIENCE:**

NASA Lyndon B. Johnson Space Center, Houston, TX (1978-1990)

- Astronaut, Astronaut Office, Flight Crew Operations Directorate (1978-2002)
- Technical Assistant to the Director, Flight Crew Operations Directorate (1984-1985)
- Deputy Chief, Astronaut Office, Flight Crew Operations Directorate (1987-1990)

NASA Ames Research Center, Moffett Field, CA (1990-1992)

- Associate Director, Office of the Director

NASA Lyndon B. Johnson Space Center, Houston, TX (1992-2002)

- Astronaut, Astronaut Office, Flight Crew Operations Directorate (1978-2002)
- Deputy Director, Flight Crew Operations, Center Operations Directorate (1992-2001)
- Director, Flight Crew Operations, Center Operations Directorate (2001-Present)

### **MISSIONS:**

STS 41-D (*Discovery*)

- Crew: Commander Henry W. Hartsfield, Pilot Michael L Coats, Mission Specialist 1 Judith A. Resnik, Mission Specialist 2 Steven A. Hawley, Mission Specialist 3 Richard M. “Mike” Mullane, Payload Specialist 1 Charles D. Walker
- Launched: 30 August 1984 at 8:41:50 A.M. EDT from Kennedy Space Center, FL
- Duration: 6 days, 0 hours, 56 minutes, 4 seconds
- Landed: 5 September 1984 at 8:37:54 A.M. PDT, Edwards AFB, California
- Mission Highlights: STS 41-D marked the maiden voyage for the orbiter *Discovery*, the first commercially-sponsored payload specialist (Walker), and Hawley’s first space flight. *Discovery*’s launch was postponed four times before launching successfully. The crew deployed three communications satellites: SBS-D, Telstar 3-C, and SYNCOM IV-2 (also known as LEASAT-2). The payload also included the OAST-1 solar array, the Continuous Flow Electrophoresis System (CFES) experiment, a student experiment to study crystal growth in microgravity, and an IMAX camera.

#### STS 61-C (*Columbia*)

- Crew: Commander Robert L. “Hoot” Gibson, Pilot Charles F. Bolden, Jr., Mission Specialist 1 Franklin R. Chang-Diaz, Mission Specialist 2 Steven A. Hawley, Mission Specialist 3 George D. “Pinky” Nelson, Payload Specialist 1 Robert J. Cenker, Payload Specialist 2 Congressman C. William Nelson
- Launched: 12 January 1986 6:55:00 A.M. EST from Kennedy Space Center, FL
- Duration: 6 days, 2 hours, 3 minutes, 51 seconds
- Landed: 18 January 1986 at 5:58:51 A.M. PST, Edwards AFB, California
- Mission Highlights: Astronauts deployed the geosynchronous SATCOM KU-I (RCA Americom) satellite by using the Payload Assist Module-D2 (PAM-D2) motor. The orbiter carried 13 Get Away Special (GAS) canisters, which included experiments analyzing the effects of microgravity on materials processing, seed germination, and chemical reactions. Other activities included three Shuttle Student Involvement Program (SSIP) experiments, the Hitchhiker G-1 particle experiments, and Materials Science Laboratory-2 (MSL-2) liquid experiments. As a result of battery problems, attempts to film Comet Halley with a 35mm camera, the Comet Halley Active Monitoring Program (CHAMP), failed. The crew also completed the Infrared Imaging Experiment (IR-IE), the Initial Blood Storage Experiment (IBSE), and the Hand-held Protein Crystal Growth (HPCG) experiment.

#### STS-31 (*Discovery*)

- Crew: Commander Loren J. Shriver, Pilot Charles F. Bolden, Jr., Mission Specialist 1 Steven A. Hawley, Mission Specialist 2 Bruce McCandless II, Mission Specialist 3 Kathryn D. Sullivan
- Launched: 24 April 1990 at 8:33:51 A.M. EDT from Kennedy Space Center, FL
- Duration: 5 days, 1 hour, 16 minutes, 6 seconds
- Landed: 29 April 1990 at 6:49:57 A.M. PDT, Edwards AFB, California
- Mission Highlights: STS-31 marked the deployment of the Hubble Space Telescope (HST), captured by the IMAX Cargo Bay Camera (ICBC) and hand-held IMAX camera inside the crew cabin. Hawley released the HST using the Remote

Manipulator System (RMS). Secondary mission objectives included the Ascent Particle Monitor (APM), the Protein Crystal Growth (PPG) experiment, the Radiation Monitoring Equipment III (RME III), Investigations into Polymer Membrane Processing (IPMP), a Shuttle Student Involvement Program (SSIP) experiment to study electrical arc in microgravity, and an Air Force Maui Optical Site (AMOS) experiment.

#### STS-82 (*Discovery*)

- Crew: Commander Kenneth D. Bowersox, Pilot Scott J. Horowitz, Mission Specialist 1 Mark C. Lee, Mission Specialist 2 Steven A. Hawley, Mission Specialist 3 Gregory J. Harbaugh, Mission Specialist 4 Steven L. Smith, Mission Specialist 5 Joseph R. Tanner
- Launched: 11 February 1997 at 3:55:17 A.M. EST from Kennedy Space Center, FL
- Duration: 9 days, 23 hours, 38 minutes, 9 seconds
- Landed: 21 February 1997 at 3:32 A.M. EST at Kennedy Space Center, FL
- Mission Highlights: STS-82 marked the second servicing mission for the Hubble Space Telescope (HST). Hawley captured the HST with the Remote Manipulator System (RMS). Over four spacewalks Lee, Smith, Harbaugh, and Tanner replaced or installed the Goddard High Resolution Spectrograph, the Space Telescope Imaging Spectrograph (STIS), the Near Infrared Camera and Multi-Object Spectrometer (NICMOS), the State Interface Unit, four Reaction Wheel Assembly units, a Science Tape Recorder, the Fine Guidance Sensor, the Optical Control Electronics Enhancement Kit, and a Solar Array Drive Electronics package. Lee and Smith performed an unscheduled fifth spacewalk to repair a tear in the telescope's insulation. Hawley redeployed the HST using the RMS.

#### STS-93 (*Columbia*)

- Crew: Commander Eileen M. Collins, Pilot Jeffrey S. Ashby, Mission Specialist 1 Steven A. Hawley, Mission Specialist 2 Catherine G. Coleman, Mission Specialist 3 Michel Tognini
- Launched: 23 July 1999 at 12:31 A.M. EDT from Kennedy Space Center, FL
- Duration: 4 days, 22 hours, 50 minutes, 18 seconds
- Landed: 27 July 1999 at 11:20 P.M. EDT at Kennedy Space Center, FL
- Mission Highlights: STS-93 featured the first female commander, Eileen Collins and the deployment of the Advanced X-ray Astrophysics Facility, known as the Chandra X-Ray Observatory. In addition to these, the *Columbia* crew conducted the Midcourse Space Experiment (MSX), the Shuttle Ionospheric Modification with Pulsed Local Exhaust (SIMPLEX) experiment, the Gelation of Sols: Applied Microgravity Research (GASMAR) experiment, the Space Tissue Loss –B (STL-B) experiments, the Shuttle Amateur Radio Experiment (SAREX-II), the EarthKAM, the Plant Growth Investigations in Microgravity (PGIM) experiment, and the Biological Research in Canisters (BRIC) experiments. The crew also operated the Micro-Electrical Mechanical System (MEMS), the Light Weight Flexible Solar Array Hinge (LFSAH), the Southwest Ultraviolet Imaging System (SWUIS), the Commercial Generic Bioprocessing Apparatus (CGBA) hardware, the Generic Bioprocessing

Apparatus Isothermal Containment Module (GBA-ICM), and the Cell Culture Module (CCM).

**AWARDS & CITATIONS:**

- Evans Foundation Scholarship, 1970
- University of Kansas Honor Scholarship, 1970
- Summerfeld Scholarship, 1970-1973
- Veta B. Lear Award, 1970
- Undergraduate Research Grant, 1971
- Stranathan Award, 1972
- Outstanding Physics Major Award, 1973
- University of California Regents Fellowship, 1974
- NASA Group Achievement Award, 1981, 1982, 1987, 1994, 1995, 1997
- NASA Outstanding Performance Award, 1981
- NASA Superior Performance Award, 1981
- NASA Quality Increase Award, 1982
- NASA Space Flight Medal , 1984, 1986, 1990, 1997, 1999
- NASA Exceptional Service Medal, 1988, 1991
- NASA Special Achievement Award, 1988, 1988, 1990
- NASA Outstanding Leadership Medal, 1990
- Haley Flight Achievement Award, 1991
- Kansan of the Year Award, 1992
- Presidential Rank Award, 1994, 1999
- Kansas Aviation Hall of Fame, 1997
- Kansas University Distinguished Service Citation, 1998
- NASA Distinguished Service Medal, 1998, 2000
- Aviation Week and Space Technology Laurel Citation for Space, 1998
- V.M. Komarov Diploma from the Federation Aeronautique Internationale, 1998, 2000

**SELECT PUBLICATIONS & PATENTS:**

Steven A. Hawley, "The Chemical Composition of Galactic and Extragalactic H II Regions," (Ph.D diss. University of California, Santa Cruz, 1977).

**REFERENCES:**

Michael Cassutt, Who's Who in Space: The International Space Station Edition (New York: Macmillan Library Reference USA, 1999), 145-146.

Steven A. Hawley Biographical Data Sheet (January 2002), NASA Johnson Space Center Homepage, Online, <http://www.jsc.nasa.gov/Bios/htmlbios/Hawley.html> (Last Updated n.d; Accessed 3 May 2002).

Steven A. Hawley, interview by Rob Coyle, 18 February 2000, tape, transcript, donated to the NASA Johnson Space Center Oral History Project, History Collection, Scientific and Technical Information Center, Lyndon B. Johnson Space Center, Houston, TX.

Douglas B. Hawthorne, Men and Women of Space (San Diego: Univelt, 1992), 314-316.

“Five Space Walks Update Observatory,” Space News Roundup (NASA Lyndon B. Johnson Space Center) 21 February 1997, 1, 4.

“Mission Summary, STS 41-D,” NASA Spacelink Homepage, Online, <http://spacelink.nasa.gov/NASA.Projects/Human.Exploration.and.Development.of.Space/Human.Space.Flight/Shuttle/Shuttle.Missions/Flight.012.STS-41-D/Mission.Summary> (Last Updated n.d; Accessed 25 June 2002).

“Mission Summary, STS 61-C,” NASA Spacelink Homepage, Online, <http://spacelink.nasa.gov/NASA.Projects/Human/Exploration.and.Development.of.Space./Human.Space.Flight/Shuttle/Shuttle.Missions/Flight.024.STS-61-c/Mission.Summary> (Last Updated n.d.; Accessed 23 May 2002).

“STS-31,” Kennedy Space Center Homepage, Online, <http://science.ksc.nasa.gov/shuttle/missions/sts-31/mission-sts-31.html> (Last Updated 29 June 2001; Accessed 19 June 2002).

“STS 41-D,” Kennedy Space Center Homepage, Online, <http://science.ksc.nasa.gov/shuttle/missions/41-d/mission-41-d.html> (Last Updated 29 June 2001; Accessed 28 May 2002).

“STS 61-C,” Kennedy Space Center Homepage, Online, <http://science.ksc.nasa.gov/shuttle/missions/61-c/mission-61-c.html> (Last Updated 29 June 2001; Accessed 24 May 2001).

“STS-82,” Kennedy Space Center Homepage, Online, <http://science.ksc.nasa.gov/shuttle/missions/sts-82/mission-sts-82.html> (Last Updated 29 June 2001; Accessed 19 June 2002).

“STS-93,” NASA Kennedy Space Center Homepage, Online, <http://science.ksc.nasa.gov/shuttle/missions/sts-93/mission-sts-93.html> (Last Updated 29 June 2001; Accessed 19 June 2002).

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