

NASA JOHNSON SPACE CENTER ORAL HISTORY PROJECT

BIOGRAPHICAL DATA SHEET

NAME: George D. "Pinky" Nelson, Ph.D.

ORAL HISTORY: 6 May 2004

EDUCATIONAL BACKGROUND:

B.S. in Physics, Harvey Mudd College, Claremont, CA, 1972

M.S. in Astronomy, University of Washington, Seattle, WA, 1974

Ph.D. in Astronomy, University of Washington, Seattle, WA, 1978

PRE-NASA EXPERIENCE:

Sacramento Peak Solar Observatory, Sunspot, NM (1975-1976)

- Researcher in solar physics

Astronomical Institute, Utrecht, Netherlands (1976-1977)

- Astronomer

University of Gottingen Observatory, Gottingen, West Germany (1976-1977)

- Astronomer

University of Colorado Joint Institute for Laboratory Astrophysics, Boulder, CO (1978)

- Postdoctoral research associate

NASA EXPERIENCE:

NASA Johnson Space Center, Houston, TX (1978-1989)

- Astronaut, Astronaut Office, Flight Crew Operations Directorate (1978-1989)

NASA Space Station Freedom Operations Task Force (1992)

NASA Space Telescope Repair Mission Task Force (1992)

NASA Advisory Committee on the Redesign of the Space Station (1993)

NASA Hubble Space Telescope Third Servicing Mission External Independent Readiness Review Team, Chair (1998-1999)

POST-NASA EXPERIENCE:

University of Washington, Seattle, WA (1989-1996)

- Associate Vice-Provost for Research, (1989-1996)
- Associate Professor, Department of Astronomy, (1989-1996)
- Adjunct Associate Professor, Department of Education, (1992-1996)
- Associate Director, Washington Space Grant College Program (1989-1996)

American Council on Education, Western Washington University, Bellingham, WA, and University of Washington, Seattle, WA (1992-1993)

- Fellow

American Association for the Advancement of Science (1996-2001)

- Deputy Director, Project 2061 (1996-1997)
- Director, Project 2061 (1997-2001)

Western Washington University, Bellingham, WA (2001-present)

- Director, Science, Mathematics, and Technology Education (2001-present)
- Associate Professor, Department of Physics/Astronomy (2001-present)

MISSIONS:

STS 41-C (*Challenger*)

- Crew: Commander Robert L. Crippen, Pilot Francis R. Scobee, Mission Specialist 1 Terry J. Hart, Mission Specialist 2 James D. A. van Hoften, Mission Specialist 3 George D. Nelson
- Launched: 6 April 1984 at 8:58:00 A.M. EST from Kennedy Space Center, FL
- Duration: 6 days, 23 hours, 40 minutes, 7 seconds
- Landed: 13 April 1984 at 5:38:07 A.M. PST, Edwards AFB, California
- Mission Highlights: Engaging its Orbiter Maneuvering Systems (OMS) engines only once, the *Challenger* completed the first direct ascent trajectory of the Shuttle Program. Utilizing the Remote Manipulator System (RMS) arm, the crew deployed the Long Duration Exposure Facility (LDEF) into orbit, which carried 57 experiments. Mission Specialists Nelson and van Hoften captured and repaired the Solar Max satellite, replacing the attitude control system and coronagraph/polarimeter electronics box. Astronauts conducted a Shuttle Student Involvement Program (SSIP) experiment, studying how bees construct honeycombs in microgravity. The orbiter also brought up an IMAX camera, Radiation Monitoring Equipment (RME), and Cinema 350.

STS 61-C (*Columbia*)

- Crew: Commander Robert L. Gibson, Pilot Charles F. Bolden, Jr., Mission Specialist 1 Franklin R. Chang-Diaz, Mission Specialist 2 Steven A. Hawley, Mission Specialist 3 George D. Nelson, Payload Specialist 1 Robert J. Cenker, Payload Specialist 2 Congressman Bill 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 orbiter also brought up an Infrared Imaging Experiment (IR-IE), Initial Blood Storage Experiment (IBSE), and Hand-held Protein Crystal Growth (HPCG) experiment.

STS-26 (*Discovery*)

- Crew: Commander Frederick H. Hauck, Pilot Richard O. Covey, Mission Specialist 1 John M. Lounge, Mission Specialist 2 George D. Nelson, Mission Specialist 3 David C. Hilmers
- Launched: 29 September 1988 11:37:00 A.M. EDT from Kennedy Space Center, FL
- Duration: 4 days, 1 hour, 0 minutes, 11 seconds
- Landed: 3 October 1988 at 9:37:11 A.M. PDT, Edwards AFB, California
- Mission Highlights: STS-26 marked the return-to-flight mission after the STS 51-L tragedy. The crew deployed a Tracking and Data Relay Satellite (TDRS) and conducted various experiments, including a Protein Crystal Growth experiment, two Shuttle Student Involvement Projects (SSIP) involving grain formation and crystal growth, Infrared Communications Flight Experiment (IRCFE), Aggregation of Red Blood Cells (ARC), Isoelectric Focusing Experiment (IFE), Mesoscale Lightening Experiment (MLE), Phase Partitioning Experiment (PPE), and an Earth-Limb Radiance Experiment (MLE). The crew deployed a Ku-band antenna in the payload bay, but its telemetry was faulty. The crew tested new partial-pressure flights suits and assessed the new crew escape system. When the Flash Evaporator system iced up after ascent, the crew cabin temperature reached 87 degrees Fahrenheit.

AWARDS & CITATIONS:

- American Astronautical Society Flight Achievement Award
- American Institute of Aeronautics and Astronautics Haley Space Flight Award
- Federation Aeronautique Internationale V.M. Komarov Diploma
- NASA Exceptional Engineering Achievement Medal
- NASA Exceptional Service Medal
- NASA Group Achievement Awards (5)
- NASA Outstanding Performance Rating NASA Spaceflight Medals (3)

SELECT PUBLICATIONS & PATENTS:

George D. Nelson, "Convection in the Surface Layers of the Sun and the Stars" (Ph.D. diss., University of Washington, 1978).

George D. Nelson and A.G. Hearn, "A Line Driven Rayleigh-Taylor Instability in Hot Stars," *Astronomy and Astrophysics* Vol. 65 (1978).

George D. Nelson, "Thermal and Continuum Driven Convection in B-Stars," *International Astronomical Union Colloquium* 51 (1979).

George D. Nelson, "Granulation in a Main-Sequence F-Type Star," *The Astrophysical Journal* Vol. 238 (1980).

George D. Nelson, Lawrence, J. DeLucas, et al., "Protein Crystal Growth in Microgravity," *Science* Vol. 246 (1989).

REFERENCES:

Michael Cassut, Who's Who in Space: The First 25 Years (Boston: G.K. Hall & Co., 1987).

Douglas B. Hawthorn, Men and Women of Space (San Diego: Univelt, 1992).

George D. "Pinky" Nelson, interview by Education World, Online transcript, http://www.education-world.com/a_issues/issues218/shtml (Last Updated 23 October 2001; Accessed 24 May 2002).

George D. "Pinky" Nelson Biographical Data Sheet (April 1989), Johnson Space Center Homepage, Online, <http://www.jsc.nasa.gov/Bios/htmlbios/nelson-gd.html> (Last Updated n.d.; Accessed 3 May 2002).

"George D. Nelson Biography", Project Kaleidoscope Homepage, Online, <http://www.pkal.org/people/nelson.html> (Last Updated 31 March 2001; Accessed 24 May 2002).

George D. Nelson, Resume, George D. Nelson Key Personnel File, Awards Office, NASA Lyndon B. Johnson Space Center, Houston, TX.

"Mission Summary, STS-26," NASA Spacelink Homepage, Online, <http://spacelink.nasa.gov/NASA.Projects/Human/Exploration.and.Development.of.Space./Human.Space.Flight/Shuttle/Shuttle.Missions/Flight.026.STS-26/Mission.Summary> (Last Updated n.d.; Accessed 24 May 2002).

"Mission Summary, STS 41-C," NASA Spacelink Homepage, Online, <http://spacelink.nasa.gov/NASA.Projects/Human/Exploration.and.Development.of.Space./Human.Space.Flight/Shuttle/Shuttle.Missions/Flight.011.STS-41-C/Mission.Summary> (Last Updated n.d.; Accessed 24 May 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).

"NASA News Release," 89-89, NASA Spacelink Homepage, Online, <http://spacelink.nasa.gov/NASA.News.Releases/Previous.News.Releases/89-06.News.Releases/89-06-11> (Last Updated n.d; Accessed 24 May 2002).

"STS-26," Kennedy Space Center Homepage, Online, <http://science.ksc.nasa.gov/shuttle/missions/sts-26/mission-sts-26.html> (Last Updated 29 June 2001; Accessed 24 May 2002).

"STS 41-C," Kennedy Space Center Homepage, Online, <http://science.ksc.nasa.gov/shuttle/missions/41-c/mission-41-c.html> (Last Updated 29 June 2001; Accessed 24 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).

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