ASTRONAUT DAVE WILLIAMS



Canadian Space Agency, 2008, Image Gallery: Dave Williams. Retrieved March 2, 2008, from http://spaceflight.nasa.gov/gallery/images/shuttle/sts-118/html/jsc2001-00190.html

Figure G-1 Astronaut Dave Williams

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ASTRONAUT DAVE WILLIAMS

Dave Williams is married and has two children. He enjoys flying, scuba diving, hiking, sailing, kayaking, canoeing, downhill and cross-country skiing.

MISSIONS

STS-90

Mission: Neurolab (the final Spacelab mission).

Space Shuttle: Columbia.

Launched: April 17, 1998, 2:19:00 p.m. EDT.

Landed: May 3, 1998, 12:08:59 p.m. EDT.

Mission Duration: 16 days.

Orbit Altitude: 150 nautical miles.

The launch of Columbia was postponed on April 16 for 24 hours due to difficulty with one of Columbia's two network signal processors, which format data and voice communications between the ground and the space shuttle. The network signal processor 2 was replaced, and Columbia lifted off on April 17.

Mission Highlights

Neurolab's 26 experiments targeted one of the most complex and least understood parts of the human body – the nervous system. The primary goals were to conduct basic research in neurosciences and expand understanding of how the nervous system develops and functions in space. Test subjects were crew members, rats, mice, crickets, snails and two kinds of fish. This was a cooperative effort of the Canadian Space Agency and several other national space agencies, including ESA (European Space Agency), NASA (USA), CNES (France), DARA (Germany) and NASDA (Japan). Most experiments were conducted in the pressurized Spacelab long module located in Columbia's X bay. This was the 16th and last scheduled flight of the ESA-developed Spacelab module although the Spacelab pallets continued to be used on the ISS.

STS-118

Launch: Aug. 8, 2007, 6:36 p.m. EDT.

Landed: Aug. 21, 2007,12:33 p.m. EDT.

Orbiter: *Endeavour*.

Mission Number: STS-118.

Mission Duration: 12 days, 17 hours, 55 minutes.

Altitude: 122 nautical miles.

Primary Payload: 22nd station flight (13A.1), S5 Truss.

Dave Williams was a mission specialist on STS-118, the 22nd flight to the ISS and the 20th flight for *Endeavour*. During the mission, the crew successfully added truss segment S5, a new gyroscope and an external stowage platform to the ISS.

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Show the cadets Figure 15G-2.

The mission successfully activated a new system that enables docked shuttles to draw electrical power from the ISS to extend visits to the outpost. Williams took part in three of the four spacewalks – the highest number of spacewalks performed in a single mission. He spent 17 hours and 47 minutes outside – a Canadian record. *Endeavour* carried 2 280 kg of equipment and supplies to the station and returned to earth with 1 800 kilograms of hardware and used equipment. Travelling 8.5 million km in space, the STS-118 mission was completed in 12 days, 17 hours, 55 minutes, and 34 seconds.

PLACE AND DATE OF BIRTH

Born May 16, 1954, in Saskatoon, Sask.

EDUCATION

Dave Williams' education includes:

- High school in Beaconsfield, Que.,
- BSc (Biology) from McGill University,
- MSc (Physiology) from McGill University,
- Doctorate of Medicine from the Faculty of Medicine, McGill University,
- Master of Surgery from the Faculty of Medicine, McGill University, and
- Completed a residency in family practice in the Faculty of Medicine, University of Ottawa.

PROFESSIONAL EXPERIENCE

Dave Williams pursued postgraduate studies in advanced invertebrate physiology at the Friday Harbour Laboratories at the University of Washington, Seattle, but his interests shifted to vertebrate neurophysiology when, for his master's thesis, he became involved in basic science research on how adrenal steroid hormones modify the regulation of sleep-wake cycles. While working in the Neurophysiological Laboratories at the Allan Memorial Institute for Psychiatry, Williams assisted in clinical studies of slow wave potentials within the central nervous system.

Williams served as an emergency physician with the Emergency Associates of Kitchener-Waterloo and as the medical director of the Westmount Urgent Care Clinic. Subsequently, he became the director of the Department of Emergency Services at Sunnybrook Health Science Centre and assistant professor of Surgery at the University of Toronto.

In June 1992, the CSA selected Williams as one of four successful candidates from a field of 5 330 applicants to begin astronaut training. He completed basic training and, in May 1993, was appointed manager of the Missions and Space Medicine Group within the Canadian Astronaut Program. His assignments included supervising the implementation of operational space medicine activities for the Canadian Astronaut Program Space Unit Life Simulation (CAPSULS) Project.

In January 1995, Williams was selected to join the international class of NASA mission specialist astronaut candidates. He reported to the Johnson Space Center (JSC) in March 1995, for a year of training and evaluation. Following the successful completion of this training in May 1996, he was assigned to the Payloads and Habitability Branch of the NASA Astronaut Office.

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From July 1998, until September 2002, Dave Williams held the position of Director of the Space and Life Sciences Directorate at the Johnson Space Center in Houston, Texas. With this appointment, he became the first non-American to hold a senior management position within NASA. He concurrently held a six-month position as the first deputy associated administrator for crew health and safety in the Office of Space Flight at NASA Headquarters in 2001.

In addition to these assignments, Dave Williams continued to take part in astronaut training to maintain and further develop his skills. In October 2001, he became an aquanaut through his participation in the joint NASA-NOAA (National Oceanic and Atmospheric Administration) NEEMO 1 mission, a training exercise held in Aquarius, the world's only underwater research laboratory located 5.6 km off the shores of Key Largo, Florida. During this seven-day exercise, Williams became the first Canadian to have lived and worked in space and in the ocean.

In 2006, Dave Williams took the lead of NEEMO 9 as the crew commander of this mission, dedicated to assess new ways to deliver medical care to a remote location, as in a long space flight.

SPECIAL HONOURS

Dave Williams' special honours include:

- Academic awards:
  - recipient of the A.S. Hill Bursary, McGill University (1980),
  - recipient of the Walter Hoare Bursary, McGill University (1981),
  - recipient of the J.W. McConnell Award, McGill University (1981 to 1983),
  - Faculty Scholar (1982), Faculty of Medicine, McGill University,
  - University Scholar (1983), Faculty of Medicine, McGill University,
  - recipient of the Psychiatry Prize, Wood Gold Medal,
  - Dean's Honour List, Physiology Department, McGill University (1983), and
  - recipient of Second prize (1986, 1987, 1988) for participation in the University of Toronto Emergency Medicine Research Papers Program;
- recipient of the Commonwealth Certificate of Thanks and the Commonwealth Recognition Award for contributions to the Royal Life Saving Society of Canada,
- recipient of the NASA Space Flight Medal,
- recipient of the Melbourne W. Boynton Award, American Astronautical Society (1999),
- recipient of the Ramon y Cajal Institute of Neurobiology, Spanish Council for Scientific Research (CSIC) Bronze Medal for contribution to neuroscience during Mission STS-90 (1999),
- recipient of the Rotary National Award for Space Achievement (2000),
- recipient of the NASA Outstanding Leadership Medal (2002),
- Patron of the International Life Saving Federation (2002),
- Spokesperson for the Life Saving Society Canada,
- Honorary Ambassador of the SmartRisk Foundation,
- NASA JSC Space and Life Sciences Directorate Special Professional Achievement Award (2003) for the implementation of the Automatic External Defibrillator Program that has saved several lives at the NASA Johnson Space Center, and
- Honorary Doctor of Laws, University of Saskatchewan (2004).

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AFFILIATIONS

Dave Williams' affiliations include:

- Member of the College of Physicians of Ontario,
- Member of Ontario Medical Association,
- Member of the Canadian Association of Emergency Physicians,
- Member of the Undersea and Hyperbaric Medicine Society, and
- Member of the Aerospace Medical Association.

Past affiliations include:

- Society for Neuroscience,
- New York Academy of Science, and
- Montreal Physiological Society.

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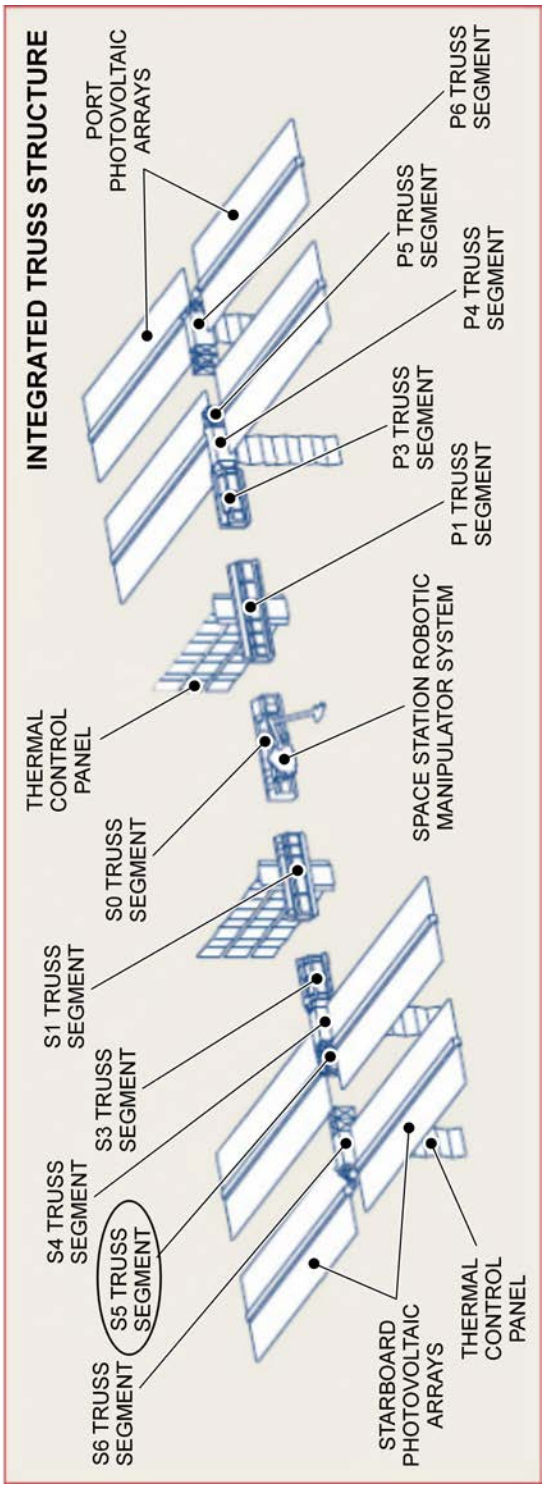

Canadian Space Agency, 2007, Missions: STS-118 Mission Overview. Retrieved March 2, 2008, from http://www.space.gc.ca/asc/eng/missions/sts-118/overview.asp

Figure G-2 Integrated Truss S5

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