

# Biographical Data

Lyndon B. Johnson Space Center  
Houston, Texas 77058



National Aeronautics and  
Space Administration

**RONALD E. MCNAIR (PH.D.)**  
**NASA ASTRONAUT (DECEASED)**

**PERSONAL DATA:** Born October 21, 1950, in Lake City, South Carolina. Died January 28, 1986. He is survived by his wife Cheryl, and two children. He was a 5th degree black belt Karate instructor and a performing jazz saxophonist. He also enjoyed running, boxing, football, playing cards, and cooking.

**EDUCATION:** Graduated from Carver High School, Lake City, South Carolina, in 1967; received a bachelor of science degree in Physics from North Carolina A&T State University in 1971 and a doctor of philosophy in Physics from Massachusetts Institute of Technology in 1976; presented an honorary doctorate of Laws from North Carolina A&T State University in 1978, an honorary doctorate of Science from Morris College in 1980, and an honorary doctorate of science from the University of South Carolina in 1984.

**ORGANIZATIONS:** Member of the American Association for the Advancement of Science, the American Optical Society, the American Physical Society (APS), the APS Committee on Minorities in Physics, the North Carolina School of Science and Mathematics Board of Trustees, the MIT Corporation Visiting Committee, Omega Psi Phi, and a visiting lecturer in Physics at Texas Southern University.

**AWARDS:** Posthumously awarded the Congressional Space Medal of Honor.

**SPECIAL HONORS:** Graduated magna cum laude from North Carolina A&T (1971); named a Presidential Scholar (1967-1971), a Ford Foundation Fellow (1971-1974), a National Fellowship Fund Fellow (1974-1975), a NATO Fellow (1975); winner of Omega Psi Phi Scholar of the Year Award (1975), Los Angeles Public School System's Service Commendation (1979), Distinguished Alumni Award (1979), National Society of Black Professional Engineers Distinguished National Scientist Award (1979), Friend of Freedom Award (1981), Who's Who Among Black Americans (1980), an AAU Karate Gold Medal (1976), five Regional Blackbelt Karate Championships, and numerous proclamations and achievement awards.

**EXPERIENCE:** While at Massachusetts Institute of Technology, Dr. McNair performed some of the earliest development of chemical HF/DF and high-pressure CO lasers. His later experiments and theoretical analysis on the interaction of intense CO<sub>2</sub> laser radiation with molecular gases provided new understandings and applications for highly excited polyatomic molecules.

In 1975, he studied laser physics with many authorities in the field at E'cole D'ete Theorique de Physique, Les Houches, France. He published several papers in the areas of lasers and molecular spectroscopy and gave many presentations in the United States and abroad.

Following graduation from MIT in 1976, he became a staff physicist with Hughes Research Laboratories in Malibu, California. His assignments included the development of lasers for isotope separation and photochemistry utilizing non-linear interactions in low-temperature liquids and optical pumping techniques. He also conducted research on electro-optic laser modulation for satellite-to-satellite space communications, the construction of ultra-fast infrared detectors, ultraviolet atmospheric remote sensing, and the scientific foundations of the martial arts.

**NASA EXPERIENCE:** Selected as an astronaut candidate by NASA in January 1978, he completed a 1-year training and evaluation period in August 1979, qualifying him for assignment as a mission specialist astronaut on Space Shuttle flight crews.

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He first flew as a mission specialist on STS 41-B which launched from Kennedy Space Center, Florida, on February 3, 1984. The crew included spacecraft commander, Mr. Vance Brand, the pilot, Commander Robert L. Gibson, and fellow mission specialists, Captain Bruce McCandless II, and Lt. Col. Robert L. Stewart. The flight accomplished the proper shuttle deployment of two Hughes 376 communications satellites, as well as the flight testing of rendezvous sensors and computer programs. This mission marked the first flight of the Manned Maneuvering Unit and the first use of the Canadian arm (operated by McNair) to position EVA crewman around Challenger's payload bay. Included were the German SPAS-01 Satellite, acoustic levitation and chemical separation experiments, the Cinema 360 motion picture filming, five Getaway Specials, and numerous mid-deck experiments -- all of which Dr. McNair assumed primary responsibility. Challenger culminated in the first landing on the runway at Kennedy Space Center on February 11, 1984. With the completion of this flight, he logged a total of 191 hours in space.

Dr. McNair was assigned as a mission specialist on STS 51-L. Dr. McNair died on January 28, 1986 when the Space Shuttle Challenger exploded after launch from the Kennedy Space Center, Florida, also taking the lives of the spacecraft commander, Mr. F.R. Scobee, the pilot, Commander M.J. Smith (USN), mission specialists, Lieutenant Colonel E.S. Onizuka (USAF), and Dr. J.A. Resnik, and two civilian payload specialists, Mr. G.B. Jarvis and Mrs. S. C. McAuliffe.

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