

DOCUMENTS OF THE GENERAL FACULTY

**REPORT OF THE MEMORIAL RESOLUTION COMMITTEE FOR
JAMES N. DOUGLAS**

The special committee of the General Faculty to prepare a memorial resolution for James N. Douglas, professor emeritus, astronomy, has filed with the secretary of the General Faculty the following report.

Sue Alexander Greninger, Secretary
The General Faculty

**IN MEMORIAM
JAMES N. DOUGLAS**

James Nathaniel Douglas, professor emeritus in the Department of Astronomy, was born in Dallas on August 14, 1935, and died in Austin on August 20, 2006, from cancer.

Jim was admitted to Yale University at the age of 16, after his sophomore year in high school, and majored in physics, earning a B.S. (1956), M.S. (1958), and Ph.D. (1961). He remained at Yale as an assistant professor from 1961-65. In 1965, Jim and some of his graduate students came to UT Austin at the invitation of Harlan J. Smith, when the latter moved from Yale to UT to become the director of the McDonald Observatory. Jim was promoted to full professor in 1971.

Jim's professional life centered on observational radio astronomy, and his earliest work involved the radio emission from the planet Jupiter, including the influence of the Jovian satellite Io. In 1967, Jim and Harlan Smith published some of the first evidence for interplanetary scintillation of radio signals, produced by the solar wind. Jupiter observations were carried out principally with Arakel Bozyan, one of Jim's students, with rather simple radio antennas, and together they amassed a large amount of data describing Jupiter's radio activity.

The Jupiter work continued for many years at an observing site in West Texas, but Jim's main contribution when he came to Texas was to construct a novel type of radio telescope intended to survey most of the northern hemisphere sky at meter wavelengths down to very low intensity levels. Various referred to as the Bandwidth Synthesis Interferometer or the White Light Interferometer, the instrument made use of a wide range of observing wavelengths to mimic the effect of extended antenna elements. It was constructed at a fraction of the cost of competitive radio telescopes by making use of very simple material, such as refrigerator tubing for the helical antenna elements. The UT Radio Astronomy Observatory was situated near Marfa in West Texas, not far from the McDonald (optical) Observatory.

The radio survey resulted in the discovery of nearly 100,000 radio sources, along with basic data, such as the sources' positions and flux densities, as well as some information on angular structures. The data reduction was carried out in collaboration with Jim's graduate students, UT faculty member, Frank Bash (who later succeeded Harlan Smith as director of McDonald Observatory), and others. The measured positions of the radio sources were accurate enough to identify thousands of them with optical objects, primarily very distant and luminous radio galaxies and quasars whose light and radio waves were emitted when the Universe was a fraction of its current size, and many were subsequently observed spectroscopically at McDonald Observatory.

Repeated surveys of some parts of the sky later provided data on the long-term variability of many of the radio sources, and analysis of these data occupied Jim for many years until his retirement in 2000, after which he was deeply involved in educational projects in Rangoon, Burma, and Beijing, China.

Jim supervised many graduate students during his time at Yale and UT, and some are still active in radio astronomy at national observatories. He took on many responsibilities in the Department of Astronomy over the years, including those of graduate advisor and undergraduate advisor, assistant department chair, and chair of the Graduate Admissions Committee. He taught a variety of graduate and undergraduate classes, including AST

350L, *History and Philosophy of Astronomy*, which he developed in 1997. He was a valuable contributor to faculty meetings, frequently offering wise counsel that served to calm the more energetic discussions.

Outside his professional life, Jim was a devoted husband, father, and grandfather, and an enthusiastic piano and banjo player. A memorial service was held at St. Francis Episcopal Church in Austin on August 26, 2006, and was attended by many family members, friends and astronomical colleagues. He is survived by his wife, Elizabeth; children, Neva Jean, Jamie, Alan, Eleanore, Alexander, and Hana; six grandchildren; and younger siblings, Nancy, George, Amanda, and David.

This memorial resolution was prepared by a special committee consisting of Professor Derek Wills (chair), Professor Emeritus Frank N. Bash, and Dr. Beverley J. Wills.

Distributed to the dean of the College of Natural Sciences and the executive vice president and provost on May 6, 2008. Copies are available on request from the Office of the General Faculty, WMB 2.102, F9500. This resolution is posted under "Memorials" at: <http://www.utexas.edu/faculty/council/>.