

John B. "Jack" Townshend (1927–2012)

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Jack Townshend, geophysicist and dedicated public servant, died on 13 August 2012 in Fairbanks, Alaska. He was 85. Jack's career with the federal government, most of it with the national magnetic observatory program, spanned more than six solar cycles of time, and he retired only days before his death. The duration of Jack's career encompassed an important period in the history of the advancement of our understanding of the Earth. Jack's career of contributions, his life, and his personality are worthy of retrospective celebration.

Jack was born on 24 April 1927 in Brandywine, Maryland. His father, Samuel Townshend, was a geophysicist who worked at the nearby Cheltenham Magnetic Observatory, the headquarters for the U.S. Coast and Geodetic Survey's (CGS) national Geomagnetism Program. When his father retired in 1946, Jack applied for the open position. At first, this was not taken seriously: Jack only had a high school education. But he was persistent and persuasive, and eventually he got the job. Jack was a very hard worker; his duties at the observatory included operating the photographic analog magnetometers that were standard in those days, making calibration measurements, "hand-scaling" magnetic activity indices, and supporting magnetic surveys.

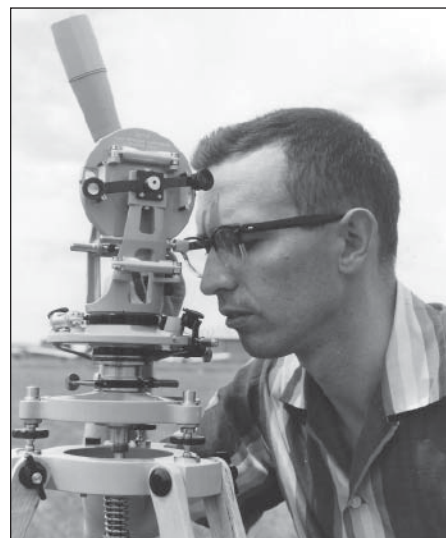
By the late 1940s, the growing responsibilities of the Geomagnetism Program began to exceed the physical capacities of the Cheltenham observatory. In 1953 the U.S. Congress appropriated funds for the construction of a new observatory and Program headquarters. A site near Fredericksburg, Va., was selected. Jack supervised the design of the observatory, and he managed its construction. The new Fredericksburg Magnetic Observatory was completed in 1956. As part of International Geophysical Year that soon followed, 1957–1958, Jack trained numerous domestic and foreign observatory workers, and he supervised the calibration of their magnetometers. With the arrival of the space age, Jack provided support for the operation of the coil facility at Fredericksburg for calibrating magnetometers used by NASA on early satellite missions. James A. Van Allen consulted with Jack on the interpretation of observatory magnetograms. Today the Fredericksburg Observatory is operated by the U.S. Geological Survey (USGS), and it remains one of the world's most important magnetic monitoring stations.

The next important chapter in Jack's career began in April 1963, when he was appointed chief of the CGS College Magnetic and Seismological Observatory at the University of Alaska Fairbanks (UAF). Jack brought his high standards with him, and in the decades that he worked at the College Observatory, it produced magnetic

data of extremely high quality. Jack promoted the use of observatory data by academic scientists, and, indeed, College data played an important role in the development of theories of magnetic storms and auroral substorms by Sydney Chapman and Syun-Ichi Akasofu (e.g., *Eos*, 74(29), 325, doi:10.1029/93EO00460).

The great M 9.2 Alaska earthquake occurred on the evening of 27 March 1964. Although the epicenter was near Anchorage, it was strong enough to disrupt the delicate seismometers and magnetometers at the observatory. Jack repaired his acquisition systems, and then, without seeking approval from CGS headquarters, he decided that he should make a damage assessment of the Anchorage area. The next morning he managed to get on a flight that had been chartered for doctors. The Anchorage airport had been damaged by the earthquake, but the charter eventually managed to land. Jack then flagged down a passing car that, by serendipity, was driven by an airline pilot whose flight had been temporarily grounded. After driving around the Anchorage area, they stopped at a small airstrip and, thanks to Jack's legendary persuasiveness, they managed to borrow a small airplane! Jack's aerial assessments and photographs formed part of a comprehensive study of the earthquake's aftermath. Jack was an exemplary spokesman for the CGS on this important event. For many years thereafter, he was known as "Earthquake Jack," even though his heart certainly remained with geomagnetism.

In 1965 the Geomagnetism Program became part of the short-lived Environmental Science Services Administration, and soon after the creation of NOAA in 1970, Geomagnetism was transferred to USGS. In response to these bureaucratic changes and the evolving demands of the scientific community, the mission of the Geomagnetism Program also changed, with greater emphasis placed on real-time space weather monitoring and hazard assessment. But modern digital data acquisition systems did not provide Jack with the tangible satisfaction he obtained from analog systems. By the 1980s, he was not much involved with day-to-day observatory operation. Still, Jack kept himself relevant. Drawing upon his vast experience and personal skills, he coordinated special projects and promoted interagency cooperation. Jack's participation in the U.S./U.S.S.R. Joint Nuclear Verification Experiment (1988) earned him an appreciative letter from President Bill Clinton. Under terms of a creative agreement that Jack initiated between USGS and UAF, in 1996 the College Observatory was moved to a new and larger site where high-quality geophysical data of many types could be collected. The facility



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is now known as the "Jack Townshend College International Geophysical Observatory."

Over the years, Jack's contributions to science were appreciated by many individuals, and he received recognition from many different agencies. Jack's AGU membership was sponsored, in 1949, by John A. Fleming, director of the Carnegie Institution's Department of Terrestrial Magnetism. Jack maintained this membership for the rest of his life. The Secretary of Commerce recognized Jack twice: in 1962 with a Meritorious Silver Medal Service Award, and in 1967 with an award for Superior Service to the Public. In 1989 Jack received the Long Service Scientific Award from the International Association of Geomagnetism and Aeronomy. In 1995 Jack finally got a college degree, an Honorary Doctorate in Science from UAF. In 2012, he received the Meritorious Service Award from the Department of the Interior.

The greeting that Jack used to have on the answering machine of his office telephone was "Yesterday is history, tomorrow is mystery, but today, the present moment, is a gift." He certainly lived his life according to that sentiment. Jack was a member of The Explorers Club, dedicated to promoting the scientific exploration of land, sea, air, and space. He was an active member of the Fairbanks Kiwanis Club, and he served on the Alaska State Board of Education. Jack ran in numerous marathons and was a member of Running Club North. Jack loved to sing at restaurant karaoke nights. He sang the national anthem at UAF hockey games. And he even once sang with the Mormon Tabernacle Choir during one of their rehearsals.

Jack had an enormously positive influence on his community, but above all, Jack was a devoted and loving family man. He is survived by his wife, Frieda, whom he married in 1952; three children; eight grandchildren; and two great-grandchildren.

—JEFFREY J. LOVE and CAROL A. FINN, Geomagnetism Program, U.S. Geological Survey, Denver, Colo.; E-mail: jlove@usgs.gov