

O. B. "Bill" Morgan

Ora B. "Bill" Morgan, former associate director of Oak Ridge National Laboratory (ORNL), died on 4 September at his home in Oak Ridge, Tennessee, after a courageous struggle with amyotrophic lateral sclerosis (Lou Gehrig's disease).

Bill was born in Kershaw, South Carolina, on 24 March 1930. After completing a two-year degree at Mars Hill Junior College in North Carolina, he served in the US Army in Trieste, Italy. He resumed his education at North Carolina State University, where he received a BS in 1956 and an MS in 1958—both in physics. He then joined ORNL and, apart from two years at the University of Wisconsin, where he earned a PhD in nuclear engineering in 1968, he remained there for his entire professional career.

Most of Bill's tenure at ORNL was spent in magnetic fusion R&D. When he joined the laboratory's fusion energy division (then known as the thermonuclear division), research was focused on an approach that involved the injection of a high-energy beam of molecular ions into a magnetic mirror. With George Kelley and Norman Lazar, Bill began working on high-current, high-efficiency ion sources—based on the duoplasmatron concept—which were applied to the DCX (Direct Current Experiment) device.

By 1971, energetic neutral particle injection was being used at ORNL both for filling magnetic mirrors and for heating toroidal devices. A simple, flexible and efficient "duoPIGatron" ion source developed by Bill and his colleagues was the basis for a number of neutral beam injection systems for tokamaks at Oak Ridge and the Princeton Plasma Physics Laboratory. These neutral beam injection systems were a key element in the rapid advances made in tokamak physics during the 1970s.

Bill served as director of the fusion energy division from 1977 until 1989, when he was appointed ORNL's associate director for operations, a position he held until his retirement in 1994. As associate director, he had new opportunities to apply his ability to find productive, team-oriented solutions to the technical and managerial challenges of large-scale research. This ability was in large part a product of Bill's honesty, candor and respect for the individual.

His dedication to helping others spanned both his professional and private lives and was matched only by the optimism and enthusiasm with which he pursued his many interests. Those of us who had the privilege of working with Bill learned much from

him and will miss his personal warmth and his good counsel.

**MICHAEL J. SALTMARSH
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Edward Norman Maslen

The death of Edward Norman Maslen on 2 February 1997 during a long-distance run in his native Australia saddened the physics and crystallography communities. An authority on precision electron density studies using diffraction techniques, he was well known for his contributions to research over some 40 years—from his early work on the elucidation of penicillin V and cephalosporin C to his recent synchrotron studies of rare earth oxides.

Ted completed an honors degree in physics at the University of Western Australia (UWA) in 1956 and won a Rhodes scholarship to the University of Oxford in 1957. There, he earned a DPhil in chemical crystallography under the guidance of Dorothy Crowfoot Hodgkin.

Ted returned to UWA in 1960 as a physics lecturer and rose to become head of the physics department in 1993.

Ted was an excellent theoretician,

but his main interests were focused on extracting the utmost from diffraction data of related crystal structures. He pioneered the investigation of chemical bonding from precision density distributions to study transition metal complexes, lanthanide complexes and perovskites. Recently, Ted's research had concentrated on the use of synchrotron radiation and microcrystals to reduce extinction errors in studying oxides and carbonates.

He established the Crystallography Centre at UWA, which he directed from 1972 to 1993. He served as a member of the International Union of Crystallography commission on charge, spin and momentum densities from 1974 to 1981 and held many other IUCr positions thereafter. He was president of the Society for Crystallographers in Australia (1980–81) and was made a fellow of the Australian Academy of Science in 1995.

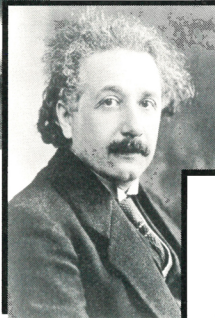
Ted led a full and remarkable life. In addition to pursuing his extensive scientific interests, he was dedicated to his large family and served as a city councillor for over 22 years, and was an active church member and avid sportsman and runner. He will be greatly missed by his many friends, colleagues and students.

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