

ponents at Federal Telecommunication Laboratories Inc, NY (later in Nutley, NJ), and within two months he was heading the microwave department. Later that year he consulted for Columbia University in the planning phases of Brookhaven National Laboratory.

Brookhaven's official start was in January 1947, and its first employee was Kuper's wife, the former Mariette Kovessi von Neumann. By February Kuper had joined the lab as head of the electronics and instrumentation division, where he designed the monitoring system for a nuclear research reactor.

In 1948 he was named chairman of the new instrumentation and health physics department, a position he retained until 1970. Under his leadership the department became vital to Brookhaven, developing state-of-the-art instrumentation. One of Kuper's principal contributions to the department was to create a stimulating climate, which attracted many outstanding individuals.

In 1970 Kuper became assistant to the director of Brookhaven; he kept that position until his official retirement in 1974. He continued as a consultant to Brookhaven until 1991.

Outside his work for Brookhaven, Kuper, who held several patents on early electronic technologies, was an enthusiastic ham radio operator. He was chairman of the radiation detector standards committee of the Institute of Radio Engineers during the 1950s. He served on the board of editors of the *Proceedings of the Institute of Radio Engineers* and headed the New York governor's advisory committee on atomic energy.

In 1954 Kuper succeeded G. P. Harnwell as editor of the *Review of Scientific Instruments*. Under Kuper's direction the journal enhanced and solidified its preeminent position. When Kuper turned over the editorial reins in 1979 to his successor, Thomas Braid, he remained with the journal as editor emeritus. Thanks to Kuper, a rather quiet and shy man, during his 25-year tenure the journal maintained its traditional role as the journal to consult for new developments or new ideas on how better to solve problems in almost any field of instrumentation.

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Zdeněk Kopal

Zdeněk Kopal, who died on 23 June 1993, was a classical astronomer whose career lasted nearly 60 years. He was born in 1914 in Litomyšl, Bohemia (now the Czech Republic), and studied astronomy at Prague University. In 1938 he moved to Cambridge University, England, where he worked with Arthur Eddington. He then held appointments at Harvard and later MIT. In 1951, the University of Manchester appointed him to their first Chair of Astronomy, which he held until he retired in 1981.

During the war years, he did work on shock-wave propagation that demanded the development of the tools of numerical analysis. His work culminated in a classic textbook, *Numerical Analysis*, (1955, Chapman and Hall: London). He spent the latter part of his career working in two areas. The most important was close binary systems: his work led to one of the most important discoveries in 20th-century astrophysics, that of mass transfer in binary systems. This discovery underpins such important topics as cataclysmic novae and x-ray binaries. The other area was the mapping of the Moon, funded largely by the US Air Force.

Kopal was active in training astronomers from all over the world. He was the founder of the journal *Icarus* and, in 1969, of *Astrophysics and Space Science*, which he edited right up to his death. He also founded a specialized journal, *The Moon*, which now exists as *Earth, Moon and Planets*. He wrote many semipopular books on aspects of the solar system, but he always remained at heart an elegant and perhaps by



Zdeněk Kopal

modern standards an old-fashioned astronomer. Kopal was an inspiring teacher and will be missed throughout the astronomical world.

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Howard H. Sample

Howard H. Sample, an experimental condensed matter physicist and a professor of physics at Tufts University, died unexpectedly on 13 February 1993.

Howard was born in Dallas, Texas, on 20 September 1938. He received both his bachelor's degree and his doctorate in physics from Iowa State University. After graduating he was a NATO postdoctoral fellow at the Clarendon Laboratory at Oxford. He began his academic career at Tufts in 1967, and in 1981 he became a professor of physics. Since 1968 he had been a visiting scientist at the Francis Bitter National Magnet Laboratory at MIT, and since 1977 he had been the director of the Undergraduate Research Projects program at the General Telephone and Electronics Laboratories.

At Tufts University Howard was a widely admired and popular lecturer in introductory physics. He was very active on university committees, particularly those concerned with curriculum development and with awarding scholarships and prizes. He served on the advisory committee of the PHYSICS TODAY *Buyer's Guide* and on the executive committee of the American Physical Society's instrument and measurement group.

Much of Howard's research was on solid systems at cryogenic temperatures and in high magnetic fields. His studies of instrumentation and methods for low-temperature measurements in the presence of high magnetic fields are classic, forming the standards for most contemporary measurements. He had recently been a prime investigator in the characterization of optoelectronic and optoacoustic materials and in their use for the optical detection of polluting gases.

Howard's colleagues appreciated his deft touch with instruments and the nitty-gritty of hardware as well as his keen insight in identifying and correcting the problems that always accompany complex experiments. Any group with whom he worked came to depend on his constant good humor, especially during difficult moments. He brought clarity and in-