

Two Argonne scientists win Optical Society's Meggers Award

The Optical Society of America has chosen Mark S. Fred and Frank S. Tomkins, both of Argonne National Laboratory, as co-recipients of its 1977 William F. Meggers Award. The Award consists of a silver medal and citation and is presented annually for outstanding work in spectroscopy. Fred and Tomkins will be cited for their contributions to spectroscopy and spectroscopic measuring instruments.

Fred joined the University of Chicago metallurgical laboratory in 1942 after receiving his bachelor's, master's and PhD degrees from the University. He came to Argonne as senior scientist in 1948, where he served until his retirement in 1976. Fred now serves as a consultant to Argonne.

Tomkins earned his PhD at Michigan State University in 1942 and began working at the University of Chicago metallurgical laboratory in 1943. Two years later he became a senior scientist at Argonne National Laboratory. He also spent a year in research at Purdue University in 1975 as the recipient of the 1975 Argonne Universities Association Distinguished Appointment Award.

The two recipients of the Meggers Award designed and built an improved instrument for measuring photographic plates of atomic emission spectra; this instrument has become the prototype for similar instruments now in use in laboratories worldwide.



FRED



TOMKINS

Fred and Tomkins have collaborated on a 30-foot spectrograph, which is used to analyze the spectra of both rare-earth and transuranic elements. Emission-spectrum measurements of einsteinium-253 (element 99) were the most recent investigations done with the spectrograph.

In addition, these two scientists have initiated cooperative research programs between Argonne National Laboratory and other laboratories, including the La-

boratoire Aimé Cotton in France, the Zeeman Laboratorium in The Netherlands, Imperial College and the University Observatory in England and the Harvard College Observatory.

The William F. Meggers Award was established by the Optical Society in 1970 in honor of Meggers and his contributions to spectroscopy and metrology. This year's Award will be presented at the Society's annual meeting in Toronto, 10-14 October.

Bruce Gold Medal presented to Bok

The Astronomical Society of the Pacific has presented its Catherine Wolfe Bruce Gold Medal to Bart J. Bok, professor emeritus of astronomy at the University of Arizona.

Bok, a native of Holland, received his PhD from the State University of Groningen in 1932. He was a faculty member in the Harvard University astronomy department, 1937-57, at which time he became a professor of astronomy at the Australian National University and director of the Mt Stromlo Observatory in Canberra. He went to the University of Arizona in 1966 where he served as pro-

fessor and director of the Steward Observatory; Bok served also as head of the astronomy department during this time, until he became professor emeritus in 1974.

Bok's scientific work has been directed to the problems of galactic structure and evolution; he is also known for his study of very small dark nebulae, which are known as "Bok Globules" and may be the locations of stellar birth.

Bok is a corresponding member of the Australian Academy of Sciences and has served as the vice-president of the International Astronomical Union, 1970-74, and as president of the American Astronomical Society, during the period 1972-74.

Herbert J. Bernstein has been appointed director of technical programs at the Volunteers in Technical Assistance (Mt Rainier, Md.); most recently he worked as science and technology consultant to the World Bank, while on leave from Hampshire College where he was associate professor of physics.

The first Woldemar A. Weyl International Glass Science Award, which is given by the Pennsylvania State University in cooperation with the International Commission on Glass, has been presented to Peter C. Schultz, materials-research manager for optical waveguide technology at the Corning Glass Works (Corning, N.Y.).

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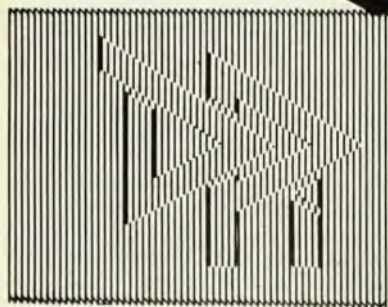
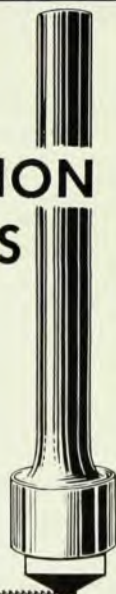
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we hear that

The American Nuclear Society has chosen **Terry Kammash** (University of Michigan department of nuclear engineering) as the recipient of its 1977 Arthur Holly Compton Award, which includes a \$1000 honorarium.

Anthony C. Danks, formerly of the Kapteyn Institute at the University of Groningen (The Netherlands), has taken up a position as astronomer at the European Southern Observatory, La Silla, Chile.

obituaries

Benjamin W. Lee

Benjamin W. Lee, head of the theoretical physics department at the Fermi National Accelerator Laboratory and professor of physics at the University of Chicago, was tragically killed in an automobile accident near Kewanee, Illinois on 16 June. He was travelling to the summer meeting of the Fermilab Program Advisory Committee in Aspen, Colorado. The other members of his family who were accompanying him were not seriously injured. Lee was widely regarded as one of the world's leading physicists working on the theory of elementary particles.

Born in Seoul, Korea in 1935, Lee came to the United States as a student, receiving his BS degree from Miami University of Ohio in 1956. His graduate work was at the University of Pittsburgh, where he received the MS degree in 1958, and at the University of Pennsylvania, where he worked under the direction of Abraham Klein, receiving the PhD degree in 1960. He became a naturalized US citizen in 1968. After several years at Pennsylvania and at the Institute for Advanced Study in Princeton, N.J., in 1966 Lee accepted a professorship at the Institute for Theoretical Physics at the State University of New York, Stony Brook, which is directed by C. N. Yang. He served there until his move to Fermilab in 1973.

Lee had one of the broadest ranges of interests and research of any physicist of his generation, but he returned again and again to the study of symmetry principles and the weak interactions. He was one of the first of the physicists working on SU(6) and related symmetries in the mid-1960's to propose that these symmetries would find their natural expression through the algebra of currents. He then played a leading role in the development and applications of current algebra and phenomenological Lagrangians, culminating in the publication in 1972 of his monograph on *Chiral Dynamics*. Lee turned in the early 1970's to the fundamental problem of the renormalization of theories with spontaneously broken

Formerly a professor of astronomy and director of the University of Maryland astronomy program, **Gert Westerhout** has become scientific director of the US Naval Observatory.

George E. Ostrowski of Argonne National Laboratory's solid-state physics division was among eight scientists there who have received 1977 University of Chicago Awards for Distinguished Performance; he was cited for his contributions to neutron-scattering instruments and experiments.

PHOTO: G. PRESENT



LEE

symmetry, such as the σ model, and developed ideas and techniques that were to serve him well in his later work on gauge theories.

Lee's involvement with gauge theories dated back to 1964. He was concerned about the fact that superconductors appear to provide a counterexample to the general theorem, which requires that spontaneous symmetry breaking is always accompanied with massless spin-zero bosons. With Klein, he wrote an article suggesting that the same might occur in relativistic theories. It was soon realized that this is indeed the case, provided the broken symmetry is a gauge symmetry, as it is in a superconductor.

Lee continued to work on the quantization of spontaneously broken gauge theories. In 1971, after it had been shown by functional methods that these theories are renormalizable, Lee developed a proof of this result (for Abelian gauge theories) by operator methods. For theorists who were unfamiliar with the functional for-