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radiation health and nuclear medicine technology. His research on radiation physics and biology, and radio-pharmaceutical dosimetry has led to a lifelong interest in radiation safety. In his capacity as a member of the Scientific Committee 51-B of the National Council for Radiation Protection and Measurements he is currently preparing a Report on Radiation Protection on Nuclear Medicine Applied to Children. He has also served as a physics examiner for the American Board of Radiology and has been both a past president of the AAPM and editor of the Quarterly Bulletin.

Optical Society honors Francon and Mills

The Optical Society has announced the 1981 winners of two medals—the C.E.K. Mees Medal to Maurice Francon and the Ellis R. Lippincott Award to Ian M. Mills.

The Mees Medal is named in honor of the photographer C. E. Kenneth Mees. It is presented every two years to someone whose work in optics transcends both interdisciplinary and international boundaries. Francon, director of the optics laboratory at the University of Pierre and Marie Curie in Paris, is recognized for his pioneering contributions to interferometry and microscopy and for his role in the advancement of optics education throughout the world. His published works on instrumental optics, diffraction, microscopy and interferometry include the famous *Atlas of Optical Phenomena*.

The Lippincott Award, established jointly in 1975 by the Optical Society of America and the Society for Applied Spectroscopy, recognizes contributions to the field of vibrational spectroscopy. Mills will be honored for his contributions to the understanding of the structure and properties of small polyatomic molecules, and in particular for both his method of analyzing intensity perturbations to determine the sign of



FRANCON



MILLS

transition moments and his computer applications in spectroscopy. Mills, who received his PhD from Oxford in 1954, has been at the University of Reading since 1957, where his research has focused on the study of rotational, rovibrational and rovibronic spectra of small molecules.

Robert N. Varney, retired from the Lockheed Palo Alto Research Laboratory, was presented with the Austrian cross of honor, first class, for science and art.

William R. Stratton, staff member at the Los Alamos National Laboratory, is one of the two winners of the University of Wisconsin's Distinguished Alumnus Award.

Joseph W. Mather is now research professor of chemical and nuclear engineering at the University of New Mexico.

in brief

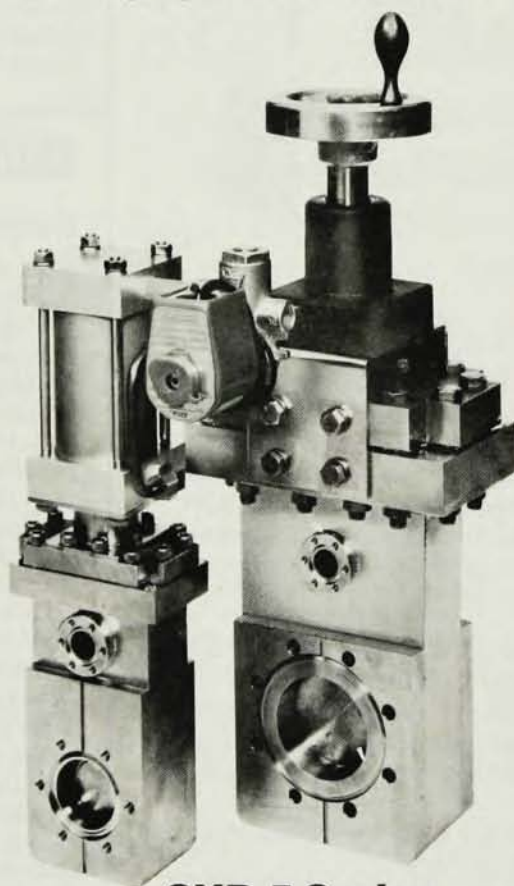
George Gamota, who headed the DOD research office, has been appointed professor of physics and Director of the Institute of Science and Technology, University of Michigan, Ann Arbor.

Wolfgang Göpel of the University of Hannover has become professor of physics at Montana State University. **Richard Smith** of Brookhaven National Laboratory and **Gerry Wheeler** of Temple University have become associate professors of physics.

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The first-prize winner of the Gravity Research Foundation's awards for essays is **Jacob D. Bekenstein** of the physics department of Ben Gurion University of the Negev, Israel ("Black Holes and Everyday Physics"). Other winners are **J. Anandan**, department of mathematics, and **R. Y. Chiao**, department of physics, Berkeley ("Gravitation Radiation Antennas Using the Sagnac Effect"), **John D. Barrow**, department of physics, Berkeley ("General Relativistic Chaos and Nonlinear Dynamics"), **John L. Friedman**, physics department, University of Wisconsin, and **Rafael D. Sorkin**, Institute for Advanced Study ("Half-Integral Spin from Quan-

tum Gravity") and **Phillip B. Yasskin** and **James A. Isenberg**, department of mathematics, Berkeley ("Non-Self-Dual Nonlinear Gravitons").

George Dacey, currently a vice-president at Bell Labs, will become President of Sandia Labs effective 1 August. **Morgan Sparks** is retiring from the presidency.

Peter A. Wolff, Director of the Research Lab of Electronics at MIT, has become the Director of MIT's Francis Bitter National Magnet Laboratory. **Benjamin Lax**, the former director, has retired.

obituaries

Beatrice Tinsley

Beatrice M. Tinsley, professor of astronomy at Yale University, died at the age of 40 on 23 March 1981 after an extended and courageous struggle with melanoma.

Tinsley turned to astronomy after first taking BSc and MSc degrees in physics at the University of Canterbury in New Zealand. Upon emigrating to the United States, she entered graduate studies in astronomy at the University of Texas, where she earned a PhD degree in 1967 in record-setting time. For her thesis research, Tinsley studied the evolution of stellar populations in galaxies and devised a model to describe the complex interplay between star formation, stellar evolution, and the recycling of the interstellar medium with a degree of realism never before achieved. She was able to demonstrate that evolutionary changes in the properties of galaxies are large enough to be clearly observable over the range of lookback times of 5 to 10 billion years accessible with present telescopes. As Tinsley emphasized, the expected evolutionary trends are of such a magnitude as to completely overshadow the small differences in galaxy brightness predicted in open and closed cosmological models of the Universe.

This work, together with the many increasingly detailed papers Tinsley wrote on related subjects over the next 14 years, changed the course of cosmological studies. The redshift-magnitude diagram and other similar observations of distant galaxies, formerly favored as cosmological tools, came to be viewed as even more effective methods for studying galactic evolution. Tinsley's work thus helped to open up a new field of research, in which many groups are now planning extensive observations and in which preliminary, positive results have been reported.

Tinsley in her early career encoun-



TINSLEY

tered several of the practical difficulties which have often beset women scientists, in particular, that of finding a permanent appointment consistent with her personal commitments. From 1969 to 1975 she held a variety of temporary and visiting appointments at the University of Texas, Hale Observatories, the University of Maryland and Lick Observatory. It was not until eight years after completing her PhD work that Tinsley finally found a permanent home, first as an associate, then as a full professor at Yale University. This rewarding and fruitful association continued until her death.

Tinsley, more than any other individual over the last decade, succeeded in illuminating and unifying the complex processes that constitute galactic evolution. Concepts which she either originated or played a significant role in developing include the chemical and isotopic evolution of matter via nucleosynthetic processes, the importance of the stellar luminosity function and the physics of highly evolved stars in understanding the integrated properties of galaxies, and several new ap-