



ZIMM



PATTERSON



WASSERBURG



DONAHUE

Johns Hopkins University (PhD in physics, 1948). He was a research associate and assistant professor of physics at Johns Hopkins 1948-51. He went to the University of Pittsburgh in 1951 to be assistant professor of physics, became associate in 1953, and was full professor 1959-74. Since 1974 he has been chairman of the Department of Atmospheric and Oceanic Science at the University of Michigan.

He receives the medal in "recognition of his fundamental contributions to understanding the role of solar radiations in the physics and chemistry of the atmospheres and ionospheres of the Earth, Mars, and Venus."

The French Government has declared **Cecile DeWitt-Morette**, a professor of astronomy at the University of Texas at Austin, a knight of the National Order of Merit for the role played by Les Houches School for Theoretical Physics, which she founded. Becoming "acutely aware of the void in theoretical physics in France" while she was a student in Paris during World War II, she organized the summer school, where physicists who were advancing the field could come and present their work in full technical detail. The school held its first session in 1951, on quantum mechanics. DeWitt-Morette continued to direct it until 1972, and it prospered to the extent that 13 of its faculty received Nobel Prizes in its first 15 years.

Lewis H. Nosenow has been named Associate Provost of the University of Chicago and professor in the department of physics and at the James Franck Institute. Formerly head of the section of condensed-matter sciences of the Materials Research Division at NSF, Nosenow had previously been professor of physics at the Universities of Florida and Minnesota.

The Main Board of the Polish Physical Society awarded **Ben R. Mottelson** of the Niels Bohr Institute in Copenhagen the

1980 Marian Smoluchowski Medal, the highest distinction the Society confers.

David L. Clark from Stanford University was appointed assistant professor of physics at the University of Rochester.

Rex J. Snodgrass has been named director of the Environmental Science Information Center in Rockville, Md., a part of NOAA. Snodgrass was previously manager of technical services and assistant director of the New England Research Application Center at the University of Connecticut.

Moshe Lubin has been appointed vice-president, research and development, patent and licensing, of Standard Oil of Ohio (SOHIO). He had been the director of the University of Rochester's Laboratory for Laser Energetics since

1970 and professor of both mechanical and aerospace sciences and of optics since 1974.

Jay M. Eastman, former deputy director of the lab, has become its acting director.

Paul Frampton has become assistant professor in the department of physics and astronomy at the University of North Carolina at Chapel Hill.

Wilson Ho, assistant professor of physics at Cornell University, received the Victor K. LaMer Award (from the American Chemical Society) for outstanding graduate research in colloid and surface science. Ho's research in gas-solid interactions with electron-loss spectroscopy was performed at the University of Pennsylvania in collaboration with E. Ward Plummer and J. Robert Schrieffer.

obituaries

James Leslie Tuck

James Leslie Tuck, after an extended illness, died on 15 December 1980 at the age of 70. He was a leader in thermonuclear fusion research, even in the early years of the US Project Sherwood, and contributed unique experimental and theoretical concepts to the heating and confinement of hot plasmas.

Born in Manchester, England, Tuck was educated at the Victoria University of Manchester, where he did research in physical chemistry. His interest in nuclear physics took him to the Clarendon Laboratory, Oxford, in 1937.

At the outbreak of World War II, Tuck served as a scientific assistant to Frederick Alexander Lindemann on the private staff of Winston Churchill. For his research, which included work on the mechanisms of shaped explosive charges, he was awarded a decoration,

the Order of the British Empire, by King George VI.

His expertise acquired in explosives interested the leaders of the American Manhattan Project. At their request, Tuck became one of the first of the British mission that came to Los Alamos in 1943 and 1944. Tuck, together with Seth Neddermeyer and John von Neumann, is credited with originating the high-explosive lens configurations that were used successfully to produce converging waves in implosion devices.

In 1946, he returned to England and to the Institute for Advanced Studies at Oxford to work in nuclear physics. Three years later Tuck returned to the US, to the University of Chicago, where he, together with Lee Teng, devised an ingenious scheme for deflecting the beam in the Chicago synchrocyclotron. The system, regenerative deflection, has been successfully applied to a number of proton synchrocyclotrons.

In 1950 he returned to Los Alamos to work on aspects of thermonuclear

obituaries

weapons and fusion research. He was leader of the group that in 1950-52 successfully measured the D-T, D-D and D-He³ cross sections below 120 keV.

During the war, in theoretical collaboration with Enrico Fermi and Edward Teller on controlled use of fusion energy, he had defined a workable shape of a confinement vessel for the thermonuclear plasma and calculated energy production. It was natural then that Tuck would become one of the early champions and leaders of the US thermonuclear program that started in 1952. He initiated the experimental and theoretical program at Los Alamos in 1952 with toroidal pinch experiments. Contrary to many others, he envisaged the project to be a research program; a self-sustaining thermonuclear reaction would be so difficult that a reactor should not be thought about until the problems could be worked out on a small scale.

Tuck's contributions to the thermonuclear fusion program were many. In addition to serving as a member of the US Fusion Steering Committee, he proposed a collective process for trapping energetic plasmas known as entropy trapping, devised unique minimum-B confinement geometries and led the group of scientists credited with the first laboratory demonstration of thermonuclear fusion. Through Tuck's leadership in Project Sherwood, the Los Alamos Laboratory became one of the leading fusion laboratories in the US and the world.

Following his retirement in 1973, Tuck was a frequent lecturer and consultant to the scientific community. He occupied the Walker-Ames Professorship, University of Washington, 1974. His recent studies and talks on "ball lightning" have given considerable impetus to the understanding of this elusive phenomenon.

Tuck was a delegate at the United Nations Atoms for Peace Conference at Geneva in 1958. In 1960, he officially toured the Russian controlled thermonuclear installations as part of the Atomic Energy Commission exchange delegation.

He was a Fellow of the American Physical Society, served on the editorial boards of the *Physical Review* and the *Journal of Applied Physics* and, along with two others, served as editor of the annual *Review of Plasma Physics and Controlled Thermonuclear Research*.

Jim Tuck was a physicist with diverse interests, an ardent supporter and a strong leader of fusion research and an innovator of unique ideas and concepts. He was also a stern critic of projects and ideas that violated his



PHOTO BY DAVIS

TUCK

physical sense. The fusion community has lost one of its strongest supporters and will miss his keen wit and idiosyncrasies—he was great fun to work and be with.

D. A. BAKER
HARRY DREICER
H. RALPH LEWIS
JOHN MARSHALL JR
N. METROPOLIS
JAMES A. PHILLIPS
WARREN E. QUINN
LOUIS ROSEN

Los Alamos Scientific Laboratory

Henrietta H. Swope

Henrietta H. Swope, astronomer noted for her work in establishing the distances to galaxies, died on 24 November 1980. She was educated at Columbia University (AB, 1925) and Radcliffe College (AM, 1928), and spent the next 14 years at the Harvard Observatory. During World War II she was a member of the scientific staff of the radar laboratory at MIT; she also served as a mathematician in the US Navy Hydrographic Office. After the war, Swope taught astronomy (1947-52) at Barnard College.

From 1952 to 1978 she was assistant, then research fellow, at Mount Wilson

and Palomar Observatories. Working with Harlow Shapley, she helped establish the famous period-luminosity relation for Cepheid variable stars, thereby permitting determination of the Sun's position in our galaxy and of distances to other galaxies.

In 1962, using plates taken with the 200-inch Hale reflector by Walter Baade, Swope determined the distance to the Andromeda galaxy to be 2.2 million light years.

A gift she made to the Carnegie Institution of Washington made possible the initial development of the Las Campanas Observatory in Chile and the establishment there of a 40-inch telescope that is named in her honor.

William E. Stephens

William E. Stephens, who had been professor of physics at the University of Pennsylvania, the head of its physics department, and the dean of its College of Arts and Sciences, died on 17 July 1980. He was 68 years old.

Stephens studied at Washington University and earned a PhD in physics at Caltech in 1938. He taught at Stanford and then in 1941 went to Penn. His research interests were nuclear physics, photonuclear reactions, mass spectroscopy and nucleosynthesis. □