

ty's faculty of arts and science.

Also honored at the ASA meeting was Anthony Armstrong Atchley of the Naval Postgraduate School, who received the R. Bruce Lindsay Award. The award, which recognizes achievements by a young researcher, was given to Atchley for "contributions to the understanding of acoustic cavitation and thermoacoustics." With Andrea Prosperetti and Larry Crum, Atchley demonstrated that cavitation in liquids depends primarily on the characteristics of the liquid and on bubble dynamics. More recently he has experimented on thermoacoustic heat transport at high acoustic amplitudes and on the onset of thermoacoustic oscillations.

Atchley earned a PhD in physics from the University of Mississippi in 1984. He then was the Hunt postdoctoral fellow at Yale University before joining the faculty of the Naval Postgraduate School in 1986.

ASTRONOMICAL SOCIETY HONORS PACZYNSKI, BABCOCK

At the June meeting of the American Astronomical Society held in Columbus, Ohio, Bohdan Paczynski received the 1992 Dannie Heineman Prize for Astrophysics, and Horace W. Babcock received the 1992 George Ellery Hale Prize.

The Heineman Prize, given jointly by AAS and the American Institute of Physics, was presented to Paczynski for his "timely, important and insightful contributions to our theoretical understanding across a wide range of topics in modern astrophysics. These include his contributions to the theory

Bohdan Paczynski



of stellar structure and evolution, of interacting binary stars, and of a variety of puzzling objects in high-energy astrophysics." His work on stars covered the effects of mass transfer and gravitational radiation on the evolution of close binary systems, the formation of planetary nebulae and the evolution of their central stars. He is coordinating an observational search for very rare events of gravitational microlensing of stars in the Galactic bulge by any compact objects—stars, brown dwarfs or planets—in the Galactic disk. The search is being carried out at Las Campanas Observatory in Chile by a team from the Warsaw University and Carnegie Institution Observatories.

Paczynski received a PhD in astronomy from Warsaw University in 1964. From 1962 to 1982 he worked at the Institute of Astronomy (which later became the Copernicus Astronomical Center) in Warsaw. He then moved to Princeton, where he now is the Lyman Spitzer Jr Professor of Astrophysics.

The Hale Prize, a biennial award of the AAS solar physics division, is given for outstanding contributions to solar astronomy over an extended time. Babcock, a former director of the Mount Wilson and Las Campanas Observatories, is best known to solar physicists for inventing, in 1952, the magnetograph, a photoelectric instrument that has made practical the mapping of the Sun's magnetic field. In 1953 he proposed a system to correct telescopic seeing, which was the forerunner of adaptive optics.

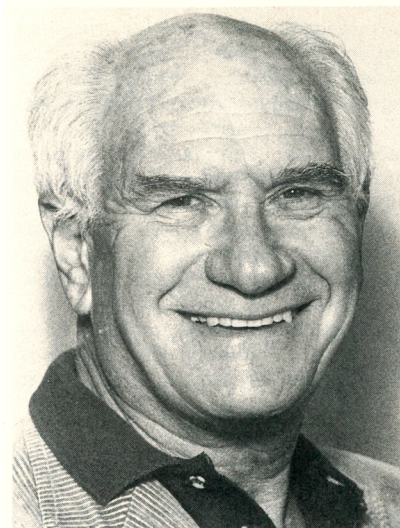
Babcock received a PhD in astronomy from the University of California in 1938 and then worked at Lick, Yerkes and McDonald Observatories. During World War II he worked on various military projects at MIT and then at Caltech. In 1946 he joined the staff of the Mount Wilson and Palomar Observatories and served as director from 1964 to 1974. From 1963 to 1978 he also directed Las Campanas Observatory.

OBITUARIES

David H. Frisch

After a short illness, David H. Frisch, professor emeritus of physics at MIT, died on 23 May 1991 at his home in Cambridge, Massachusetts. He was 73.

David was born in New York City on 12 March 1918 and grew up in San Antonio, Texas. He received his AB degree from Princeton University



David H. Frisch

in 1940 and then became a graduate assistant at the University of Wisconsin. The war sent him to Los Alamos, where he worked until 1945 on basic research toward the development of the fission bomb. After the war he came to MIT, where he obtained his PhD in physics while working under Victor Weisskopf. David ascended the professorial ladder, becoming a full professor in 1958 and retiring (in name only) as professor emeritus in 1988.

At MIT, David launched into a program in experimental particle physics. Characteristically, the experiments he pursued were at the frontier of knowledge. This program took him to virtually all the high-energy accelerators in the world at that time: Lawrence Berkeley Laboratory, Brookhaven National Laboratory and CERN. He developed the cylindrical spark chamber with its latest version in a magnetic field. The latter was, in a sense, grandfather to today's large-scale, almost 4 π electronic detectors. In this work he trained, inspired and was helped by a truly world-class set of graduate students, who are now productive scientists at many institutions; they remember him with gratitude and affection.

David's urge to share the excitement of physics permeated his teaching at the undergraduate level. His best-known efforts included the movie *Relativistic Time Dilation*, which described measurements with cosmic-ray muons done with James Smith, and the book *Elementary Particles*, written with Alan M. Thorndike. David was at all times a strong proponent of bringing undergraduates into the laboratory, and he initiated many modern physics experi-

ments for their appreciation.

In his last years David was busy with projects on reversible vasectomies, which, very typically, required his becoming an expert in a field new to him—in this case, the biology of the reproductive system. He also wrote articles on the search for extraterrestrial intelligence and, into his last weeks, articles on simple, demystifying approaches to general relativity giving correct values for several of the measurable phenomena in this field.

David was active in the Association of Los Alamos Scientists, the Federation of American Scientists and the National Planning Association Arms Control Committee, and he participated in several arms control conferences. He edited *Arms Reduction* (1961), which was based on the 1959 and 1960 American Academy of Arts and Sciences summer studies. More recently David founded the Scientists and Engineers Emigrant Fund, a human rights organization.

David served on the physics advisory committee of the National Science Foundation and on Brookhaven National Laboratory's high-energy advisory committee, and he headed the long-range planning committee of Fermilab.

The same eclecticism that characterized his professional life was evident in David's personality. In conversation David might illustrate a point by quoting a salient passage from the Bible, Shakespeare or S. J. Perelman, or by describing a cartoon by Saul Steinberg; his speech was often punctuated by appropriate jokes from some limitless source. His lighthearted, sane and human presence stimulated thoughts on physics, civics and other topics. His colleagues and friends miss that irreplaceable source of intelligence and energy very much; his loss leaves a hole in our lives.

VICTOR WEISSKOPF

FRANCIS LOW

LOUIS OSBORNE

*Massachusetts Institute of Technology
Cambridge, Massachusetts*

Arthur Herschman

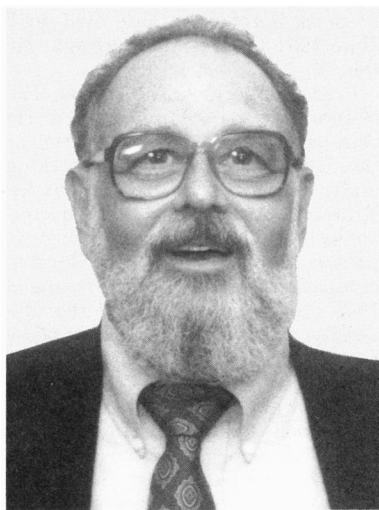
Arthur Herschman, who had recently retired as head of meetings for the American Association for the Advancement of Science, died of liver and prostate cancer at his home in Alexandria, Virginia, on 29 May 1991. He was 62.

Herschman was born in Brooklyn, New York, and attended Brooklyn College, where he majored in physics, mathematics and philosophy. In 1950

he began graduate study with Gregory Breit at Yale University, working on nucleon-nucleon scattering and spontaneously emitted radiation. He received his PhD in theoretical physics in 1954, and he then became an instructor at Colby College and at the Illinois Institute of Technology. During this same period, he was a consultant for the US Army Quartermaster Corps, doing research on the use of radiation to sterilize and process food. In 1957 he joined the physics department at Worcester Polytechnic Institute, where he rose from assistant to associate professor. At Worcester he continued theoretical studies on the effects of electric and magnetic fields on biological materials and on models for enzyme synthesis, and he also served on the Commission on College Physics.

In 1961 Herschman began a new career as an assistant editor at *Physical Review*, where he developed what would be his lifelong interest in scientific communications and publishing; he later became an editor. He remained at the offices in Brookhaven until 1966, when he came to the American Institute of Physics in New York to head the newly constituted information division. AIP had just received a substantial grant from the National Science Foundation to further work on a national information system for physics, including a database (now known as SPIN), information retrieval systems, computer composition of journals and the integration of primary and secondary publications. He combined his love of physics and philosophy in the development of a comprehensive, multifaceted indexing scheme for physics and astronomy. That work resulted in the Physics and Astron-

Arthur Herschman



omy Classification Scheme, which, with regular updates, has become an international standard.

In 1974 Herschman joined AAAS as the head of the office of meetings and publications, in which role he supervised all aspects of the association's large annual meetings and the books, journals and reports AAAS published, until a separate publications office was created in 1990. He was a charter member of the Society for Scholarly Publishing and served on its board of directors from 1982 to 1986.

Art Herschman brought a deep sense of compassion and a generosity of spirit to his dealings with colleagues and staff. His contributions to the physics information network have been perpetuated in the SPIN database, the PACS indexing system and the research that resulted in the present-day composition system of the AIP and member-society journals and books.

RITA G. LERNER

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James H. Wakelin

James H. Wakelin, who served three presidents as assistant secretary of the Navy for research and development, died on 21 December 1990 in Washington, DC. He was 79.

After graduating from Dartmouth College, Wakelin studied physics at Cambridge University, where he received both a bachelor's and a master's degree. He then studied at Yale University, where he received his PhD in physics in 1940. From 1939 to 1943 he was a senior physicist with B. F. Goodrich Co. During World War II he was a lieutenant commander in the Navy and helped establish the Office of Naval Research. From 1948 to 1959 he was with the Textile Research Institute in Princeton, New Jersey, serving for a few years as its director of research.

In 1959 President Eisenhower appointed Wakelin to the newly created post of assistant secretary of the Navy for R&D. He thus followed to Washington many other physicists who were named to top-level policy positions in the Federal government during the post-Sputnik period.

Wakelin's accomplishments in the Navy Department were many. Perhaps the most notable was his national leadership in the development of the field of oceanography. As chairman of the Interagency Committee on Oceanography, he promoted and guided a long-range plan among the sever-