

WE HEAR THAT

Winners of AAS Divisional Prizes Announced

The following are recent recipients of awards presented by five of the divisions of the American Astronomical Society:

The solar physics division has awarded the 1998 George Ellery Hale Prize to **Richard B. Dunn**, a staff scientist at the National Solar Observatory in Sunspot, New Mexico. Dunn is cited for "his bold and imaginative innovation of instrumentation for solar physics, his discovery of important new phenomena on the Sun, and the impact of his contributions on solar physicists worldwide."

The winner of the 1997 Brouwer Award, given by the division on dynamical astronomy, is **Scott D. Tremaine**. The division cited Tremaine for his theoretical work on a wide range of dynamical problems, including Solar System dynamics and Galactic dynamics, and also for his role as the founding director of the University of Toronto's Canadian Institute for Theoretical Astrophysics, where he is now a professor.

The recipient of the 1997 Bruno Rossi Prize, awarded by the high-energy astrophysics division, is **Trevor C. Weekes**, who is cited for "his key role in the development of very-high-energy gamma-ray astronomy and the discovery of TeV gamma radiation from the Crab nebula and Mrk 421." Weekes is a senior astrophysicist at the Harvard-Smithsonian Center for Astrophysics in Cambridge, Massachusetts.

The historical astronomy division has announced that the first LeRoy E. Doggett Prize for Historical Astronomy goes to **Curtis A. Wilson**, a professor emeritus at St. John's College in Annapolis, Maryland. Wilson is recognized for "his decades of rigorous and exemplary work in the history of 18th and 19th century celestial mechanics, for his editorship and original contributions to Volumes 2A and 2B of the *General History of Astronomy* and for the generations of students he taught and inspired through the reading and study of the works of Ptolemy, Copernicus, Kepler and Newton."

The AAS division for planetary sciences presented three awards in 1997: >**Irwin I. Shapiro**, director of the Harvard-Smithsonian Center for Astrophysics and the Timken University Professor at Harvard University, received the Gerard Kuiper Prize for "his

significant contributions to planetary radar astronomy and applications to fundamental questions in physics."

>The Harold C. Urey Prize went to **Renu Malhotra** for "her insights into our understanding of the orbital evolution of our Solar System and newly discovered objects around other stars." Malhotra is a staff scientist at NASA's Lunar and Planetary Institute in Houston.

>The Harold Masursky Award for Meritorious Service to Planetary Science went to **John Trauger** "for his efforts as principal investigator overseeing the design and construction of the WFPC 2 for the Hubble Space Telescope," which effectively corrected the spherical aberration in the telescope's primary mirror. Trauger is a senior research scientist in the Earth and Space Sciences Division at the Jet Propulsion Laboratory.

OSA Bestows Engineering Excellence Awards

Among the awards presented during the Optical Society of America's annual meeting in Long Beach, California, in October were the OSA Engineering Excellence Awards for 1997. **Paul R. Yoder Jr** was one of the awardees, for "his definitive, highly regarded reference books on opto-mechanical design, as well as his numerous journal articles and many short courses on optical engineering topics." Yoder, a consultant in optical engineering, previously designed optical instruments at Frankford Arsenal and Perkin-Elmer.

The other Engineering Excellence Award was shared by **Donald Combs**, **John Mader**, **Jeffrey Roblee** and **Edward Yobaccio** for "the creation, development and continuous improvement of three ultraprecision machines that have made possible the manufacture of millions of Polaroid cameras that utilize aspherical and nonrotational aspherical elements." Combs, Mader, Roblee and Yobaccio are all optical engineers at Polaroid Corp.

IN BRIEF

Lehigh University has made three new appointments in materials science and engineering. In August, **G. Slade Cargill III**, formerly a professor at Columbia University, became the Sherman Fairchild Chair and professor of materials science and engineering at



DAN A. HAYS, at left, accepts the 1997-98 American Institute of Physics Prize for Industrial Applications of Physics, presented at the AIP Corporate Associates Meeting in Dallas in November. At right is AIP CEO Marc Brodsky. Hays, a research fellow and technical adviser at Xerox Corp's Wilson Center for Research and Technology in Stamford, Connecticut, was cited for his "contributions to the physics of xerography resulting in three generations of innovative new copiers and printers." (Photo by Cecelia Brescia, AIP.)

Lehigh. Also in August, **Wojciech Z. Misiolek**, former director of Rensselaer Polytechnic's Powder Research Laboratory and Aluminum Processing Program, succeeded the retiring **Betzalel Avitzur** as director of Lehigh's Institute of Metal Forming and as the Loewy Chair of Materials Forming and Processing. Misiolek also became an assistant professor of materials science and engineering. In October, **Alwyn Eades** joined Lehigh's department of materials science and engineering as a professor; he had formerly directed the Center for Microanalysis of Materials at the University of Illinois, Urbana-Champaign.

At the 1997 meeting of the Lasers and Electro-Optics Society in November in San Francisco, **Malvin C. Teich** received the 1997 IEEE Morris E. Leeds Award from the Institute of Electrical and Electronics Engineers, Inc, for "outstanding contributions to electrical measurement using infrared and nonlinear heterodyne detection." In an-

nouncing the award, IEEE stated that Teich, a professor of electrical and computer engineering, biomedical engineering and physics at Boston University, is "most widely known for his work in quantum optics and for his studies of fractal stochastic processes and information transmission in sensory systems."

Robert Q. Fugate, a scientist at the US Air Force's Philips Laboratory at Kirtland Air Force Base, New Mexico, received the Department of Defense's Distinguished Civilian Service Award

in October. Fugate was honored for his work on optical compensation at the Starfire Optical Range.

Gerald J. Iafrate is now a professor of electrical engineering at the University of Notre Dame. He is working with the department's nanodevices group, which has collaborative ties with the departments of computer science and engineering, physics and chemistry. Iafrate retired last summer as the director of the US Army Research Office in Research Triangle Park, North Carolina.

OBITUARIES

Norris Edwin Bradbury

Norris Edwin Bradbury, who directed what is now Los Alamos National Laboratory for 25 years, died at his home in Los Alamos, New Mexico, on 20 August 1997, following a long illness.

Bradbury was born in Santa Barbara, California, on 30 May 1909. He obtained his AB degree from Pomona College in 1929 and his PhD in physics and mathematics from what is now the University of California, Berkeley in 1932.

After spending two years at MIT as a National Research fellow, he moved to Stanford University in 1934 as an assistant professor. He soon became an acknowledged expert on atmospheric electricity and the behavior of ions in gases—which had been the subject of his PhD thesis. In 1943, Bradbury was elected to a chair in Stanford's physics department.

Bradbury's association with the US atomic energy program began in 1944, about two years after Enrico Fermi achieved the first controlled nuclear chain reaction. As a naval officer and physics professor on wartime leave from Stanford, Bradbury was assigned to what was then Los Alamos Scientific Laboratory (LASL) and placed in charge of the assembly of nonnuclear components for the first nuclear device, which was tested in July 1945 near Alamogordo, New Mexico.

In October 1945, he succeeded J. Robert Oppenheimer as laboratory director. Under Bradbury's leadership, LASL grew from a complex of temporary wartime structures into one of the nation's largest institutions dedicated to basic and applied research in many fields of science, especially nuclear science and its related fields. This expansion of research required a facility that could attract top scientific talent. Bradbury was the key to accomplishing that goal. As one of his former colleagues remarked, Oppenheimer was the founder of the Los Alamos labora-



NORRIS EDWIN BRADBURY

tory, whereas Bradbury was its savior.

As LASL director, Bradbury played a major role in planning the postwar development of nuclear weapons, directing research on advanced weapon concepts and conducting field tests. The US tests from 1948 to 1952 in Nevada and on the Pacific Ocean atoll of Eniwetok yielded data that completely revolutionized nuclear weapon technology and served as the scientific basis that made the US nuclear capability the cornerstone of the free world's security. The postwar role of nuclear weapons, Bradbury used to explain, was to buy time for the politicians to build a peaceful world.

An outstanding physicist in his own right, Bradbury had an incisive technological insight into the great promise of the peaceful uses of nuclear energy. While maintaining LASL's defense activities, he directed the laboratory toward becoming a primary center for research in the chemistry and metallurgy of uranium and plutonium. Under his leadership, LASL also became the leader in nuclear rocket propulsion technology and space nuclear systems

and a pioneer in the development efforts on controlled thermonuclear reactions. He promoted major activities in nuclear safety and techniques to enhance US capability to safeguard nuclear material.

Typical of Bradbury's foresight to achieve the necessary balance between peaceful and defense efforts was his establishment of LASL as one of the centers for non-classified research in medium-energy physics. The Los Alamos Meson Physics Facility has served scientists and students from the regional and national academic community. Even today, that facility forms the basis for the Los Alamos Neutron Science Center, which serves the nation's Science-Based Stockpile Stewardship and Management Program and supports Bradbury's dream of a comprehensive test ban treaty.

He also promoted and directed various biomedical programs that enlarged our fundamental knowledge of the consequences and limiting values of human radiation exposure. Following his retirement in 1970, Bradbury continued his vigorous pace in numerous arenas outside LASL—active participation in the affairs of the National Academy of Sciences, church responsibilities, gardening and furniture making.

From 1955 to 1957, Bradbury served on the US Air Force science advisory board, and from 1970 to 1976, he served as chairman of the assembly of mathematics and physical sciences of the National Academy of Sciences and the National Research Council.

Although my acquaintance with Bradbury began right after World War II, my closest contact with him occurred when I chaired the Atomic Energy Commission in the 1960s. I recall with pleasure the occasion at Los Alamos when I presented him with the coveted Enrico Fermi Award for 1970, just a couple of days before his retirement. The appropriately worded citation read as follows: "For his inspiring leadership and superb direction of the Los Alamos Scientific Laboratory throughout one quarter of a century, and for his great contributions to the national security and to the peacetime applications of nuclear energy."

The Bradbury years at Los Alamos were marked by his competent leadership and dedicated personal effort. During a memorial service for Bradbury, a communication from Hans Bethe read, in part, "There could not have been a better director of the laboratory after 1945 than Norris Bradbury."

Bradbury was a person of many exceptional talents, which he used with great effect. He was a dedicated servant of humanity. He believed that