

AMERICAN ASTRONOMICAL SOCIETY RECOGNIZES OUTSTANDING WORK

Each year the American Astronomical Society and several of its divisions recognize achievements in the field by presenting awards, grants and prizes. The following individuals were so honored in 1989 and 1990.

Sidney van den Bergh of the National Research Council of Canada is the recipient of the 1990 Russell Lectureship, the Astronomical Society's highest honor. AAS cites van den Bergh's "lifetime of innovative research that has had broad impact on our understanding of observational cosmology, the extragalactic distance scale, galaxy formation and evolution, galactic structure, stellar populations, the properties of globular and open star clusters, the characteristics of Cepheid variables and supernovas and their remnants." At present, van den Bergh is working on the rate of supernova occurrences in the Milky Way and other galaxies, the classification of galaxies on charge-coupled-device frames and the missing-mass problem.

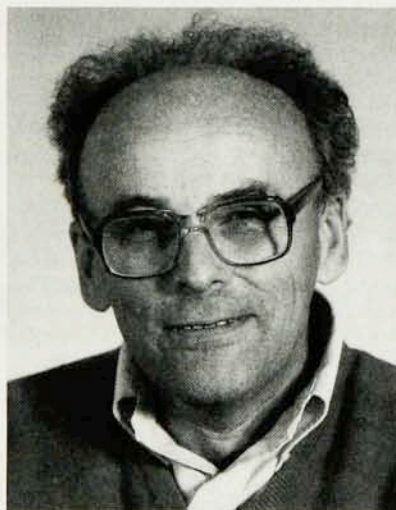
Van den Bergh received his doctorate from Göttingen University in West Germany in 1956. From 1958 to 1977 he was a physics professor at the University of Toronto. From 1977 to 1986 he was director of the Dominion Astrophysical Observatory in Victoria, British Columbia. He has been a principal research officer at the National Research Council's Herzberg Institute of Astrophysics in Victoria since 1977.

Richard A. McCray of the University of Colorado at Boulder is the recipient of the 1990 Dannie Heineken Prize for Astrophysics, which is awarded jointly by AAS and the American Institute of Physics. The award citation said that McCray was "a master at devising simple but realistic astrophysical models to elucidate complex phenomena and at exploring how these models may be tested by observations." In particular, McCray was cited for his studies of the heating and cooling of the interstellar medium, galactic x-ray sources,

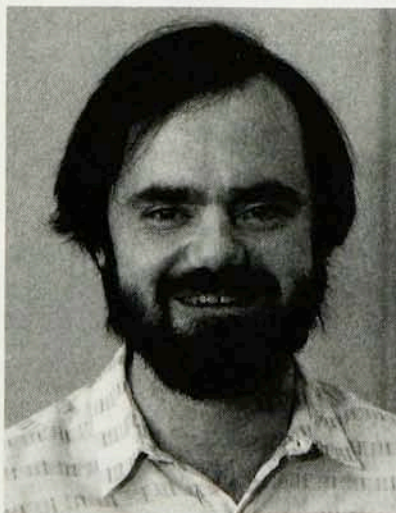
the origin of interstellar "bubbles" and "superbubbles," and the expanding envelope of supernova 1987a.

McCray has been a professor in the department of astrophysical, planetary and atmospheric sciences at the University of Colorado since 1975. Prior to that he was an associate professor in the department of physics and astrophysics there. He re-

Sidney van den Bergh



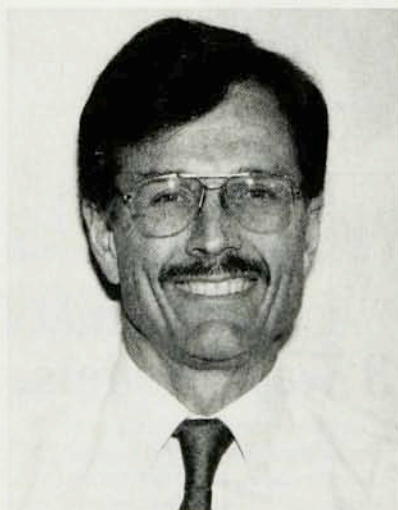
Ethan T. Vishniac



ceived his PhD in theoretical physics from the University of California, Los Angeles, in 1967.

Ethan T. Vishniac of the University of Texas at Austin is the winner of the 1990 Helen B. Warner Prize, given for exceptional work done in the past five years. He was chosen for "his important theoretical contributions in cosmology and the stability of shock

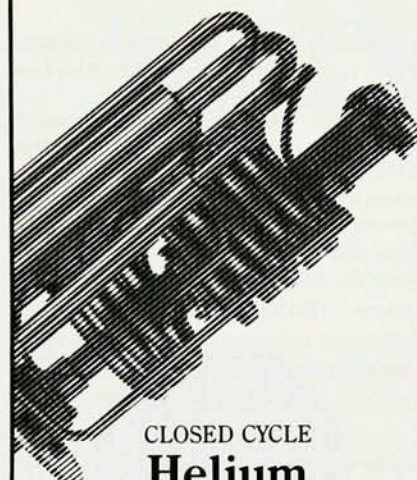
Richard A. McCray



Kristen Sellgren



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waves in astrophysics." Vishniac has used the homogeneity of the background radiation to set constraints on galaxy formation and has studied the stability of thin radiating shock fronts; his research on a new dynamical instability has direct implications for observations of supernova shells and the shells around O stars and planetary nebulae.

Vishniac earned his PhD in astronomy from Harvard University in 1980. Since 1982 he has been a member of the astronomy faculty at the University of Texas, where he is currently an associate professor.

The Newton Lacy Pierce Prize, which recognizes achievements by an astronomer under the age of 36, is being given this year to Kristen Sellgren of the University of Hawaii. Sellgren is recognized for "her major advance in our understanding of the nature of interstellar grains." Sellgren first began studying these tiny grains—now often identified as polycyclic aromatic hydrocarbons—while working on her doctoral dissertation, in which she demonstrated that emission from the grains provides the only viable explanation for the observed near-infrared continuum radiation in reflection nebulae. Her later work provided essential clues to understanding grain chemistry.

Sellgren received her PhD in physics from the California Institute of Technology in 1983. She has been an astronomer at the University of Hawaii in Honolulu and a support scientist for the NASA Infrared Telescope Facility at Mauna Kea since 1984.

The 1990 Beatrice M. Tinsley Prize is being given to Antoine Labeyrie of the Centre d'Etudes et de Recherches Géodynamiques et Astronomiques in Grasse, France, for "his pioneering work in optical speckle interferometry." In the early 1970s, Labeyrie suggested that speckle in stellar images could be used to extract data that were diffraction limited and not limited by distortions imposed by the atmosphere.

Labeyrie received his doctorate in physics from the University of Paris in 1968. Since 1978 he has been at CERGA, where he is presently head of the optical interferometry group.

Last fall AAS awarded Henri Chretien International Research Grants to Kenneth C. Chambers, a postdoctoral fellow at the Leiden Observatory in the Netherlands, and Arlin P.S. Crofts, a National Research Council associate at NASA's Goddard Space Flight Center. The grants are given each year to support international observational astronomy, in particular, long-term international visits and

collaborative work with astronomers from other countries.

The \$14 000 grant to Chambers will help fund a search for distant radio galaxies, for which he and his collaborator George Miley, also of Leiden, have been allocated observation time at the European Southern Observatory. The money will be used to pay for a computer workstation for data reduction and analysis. Chambers earned his PhD in physics from Johns Hopkins in 1989.

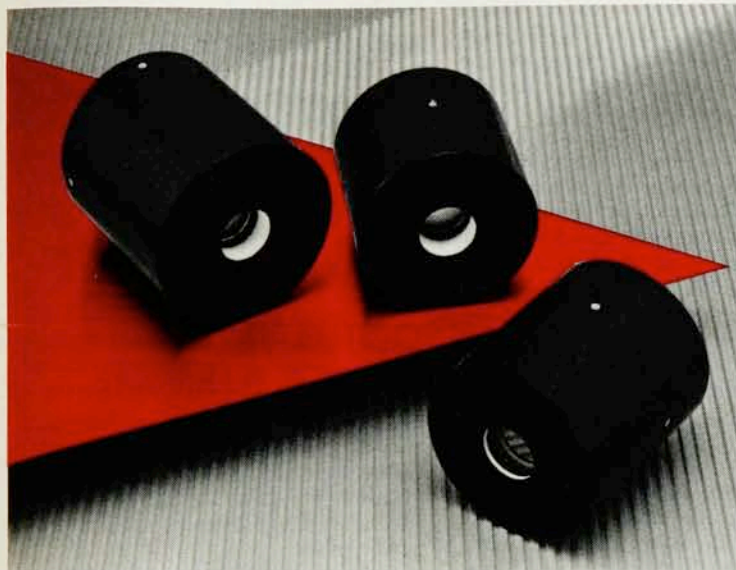
Crofts's \$6000 grant will go toward a photographic four-band quasar survey he is working on using the 1-meter Centro de Investigaciones de Astronomia telescope in Mérida, Venezuela. The survey is part of a study of large-scale structure at high redshifts. The grant will help pay for upgrading the CIDA photographic laboratory. Crofts earned his PhD in physics from the University of Chicago in 1986.

Stirling Colgate, leader of the high-energy astrophysics theory group at Los Alamos National Laboratory, is the winner of the 1990 Bruno Rossi Prize, which is awarded annually by the high-energy astrophysics division of AAS. Colgate was cited for his role in predicting the generation of neutrinos in core collapse, as was demonstrated by the detection of neutrinos from supernova 1987a, and for elucidating the importance of the neutrinos for the dynamics and diagnostics of supernova explosions. Colgate received his PhD in physics from Cornell University in 1952. He joined Los Alamos in 1976.

Last year the Rossi prize was awarded jointly to the members of two experiment teams—the Kamiokande group and the IMB group—for their mutually confirming detections of a neutrino burst from supernova 1987a, "which provided the first direct data on the high-energy processes occurring in the centers of collapsed stars." The number and energies of the observed neutrinos and the duration of the burst confirmed the theory of stellar collapse and supernovas that had been developed during the past two decades.

The Kamiokande group did its work at a detector in the Kamioka metal mine in Japan. The IMB group (the letters stand for Irvine-Michigan-Brookhaven, the institutions from which many team members came) made its detections in the Morton Thiokol salt mine located 30 miles from Cleveland, Ohio. Y. Totsuka of the University of Tokyo's Institute of Cosmic Ray Research accepted the prize on behalf of the Kamiokande team. Frederick Reines

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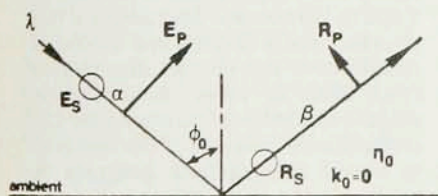
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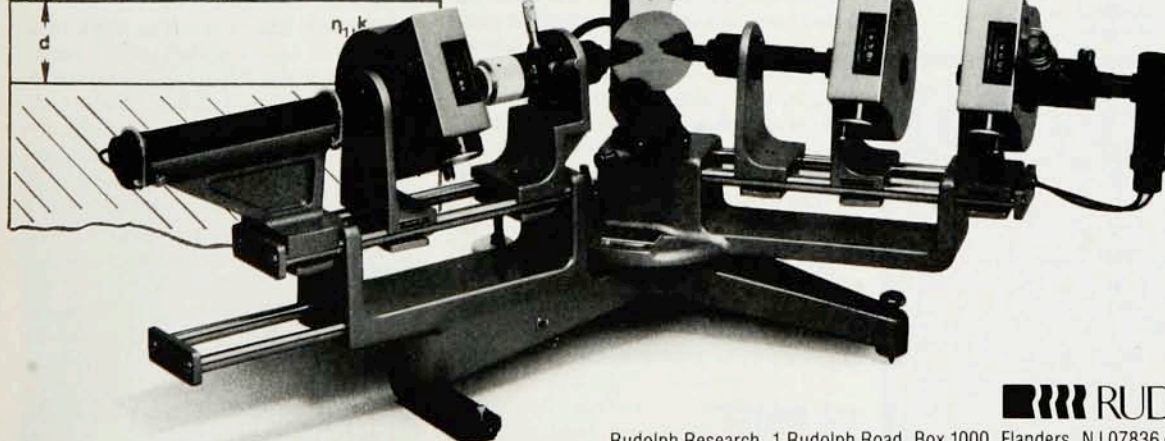
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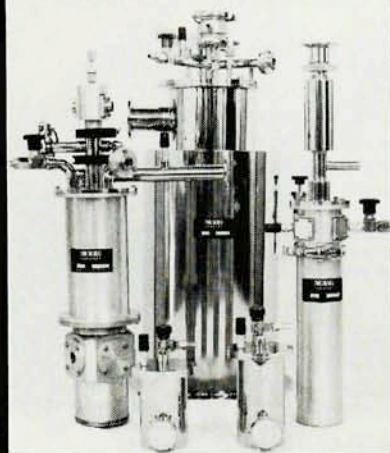
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of the University of California at Irvine accepted the prize on behalf of the IMB team.

The George Ellery Hale Prize, a lifetime achievement award given biennially by the solar physics division of AAS, is being presented this year to Richard Tousey of the US Naval Research Laboratory in Washington, DC. In the late 1940s Tousey used captured German V-2 rockets to record the solar uv spectrum from above the Earth's atmosphere, thereby helping to pave the way for space-based astronomical research. Tousey received his PhD in physics from Harvard University in 1933. In 1941 he became a physicist at the Naval Research Lab, and from 1958 to 1978 he was head of the rocket spectroscopy branch in the space science division.

The 1989 Dirk Brouwer Award, given annually by the AAS division of dynamical astronomy for excellence in the field, was presented to Yoshihide Kozai, director of the National Astronomical Observatory in Tokyo. Kozai's work in celestial mechanics has included determining the orbits of Saturn's satellites and studying the motion of artificial satellites. He received his doctorate from the University of Tokyo in 1957.

Last year the Gerard Kuiper Prize, which is presented annually by the division of planetary sciences for contributions to the field, went to James B. Pollack of NASA's Ames Research Center. Pollack was cited for his "outstanding contributions to studies of planetary surfaces and atmospheres and of the evolution of planets." Pollack received his PhD in astronomy from Harvard University in 1965. He has been a research scientist at Ames since 1970.

Christopher P. McKay, also at Ames Research Center, was the winner of the 1989 Harold C. Urey Prize, which is given by the division of planetary sciences to recognize outstanding research by a young scientist. McKay was chosen for "his insightful studies related to the evolution of atmospheres and the origin of life." McKay earned his PhD in astrogeophysics from the University of Colorado, Boulder, in 1982, and then joined NASA as a research scientist.

The 1990 winners of Chrétien Grants, the Urey and Kuiper Prizes and the Brouwer Award will be announced later this year.

IN BRIEF

Terrence J. Sejnowski, formerly a professor of biophysics at The Johns Hopkins University, is now a profes-

sor of biology and physics at the University of California, San Diego, and director of the computational neurobiology laboratory at the Salk Institute.

Richard L. Greene has been appointed director of the Center for Superconductivity Research and a professor of physics at the University of Maryland, College Park. Greene comes to the research center, which was founded in July 1988, from IBM, where he spent over 18 years as a researcher in the Almaden and Yorktown Heights laboratories.

OBITUARIES

Ralph E. Behrends

Ralph Eugene Behrends, an elementary-particle theorist who was a professor of physics at Yeshiva University, died on 29 May 1988 in New York City after a long period of illness with lung cancer.

Behrends was born in Chicago on 20 May 1926. He received his BS in physics from the US Naval Academy and immediately following his graduation served for three years as an ensign in the US Navy. He earned his PhD in physics from the University of California, Los Angeles, in 1956, and had postdoctoral research appointments at Brookhaven National Laboratory, the Institute for Advanced Study and the University of Pennsylvania.

In 1961 Behrends was appointed an assistant professor of physics in the Belfer Graduate School of Science at Yeshiva University. He became a full professor there in 1966 and served as chairman of the physics department from 1982 to 1986. Behrends remained at Yeshiva University for the rest of his life, even after the university closed its graduate program in science in the mid-1970s.

Behrends did pioneering work in a number of areas of theoretical particle physics. In 1955, in collaboration with his thesis adviser, Robert J. Finkelstein, and another graduate student, Alberto Sirlin, Behrends carried out a detailed analysis of the radiative corrections to muon decay. Their work marked the beginning of the modern period in the study of higher-order corrections to the allowed weak-interaction processes. This is currently a field of considerable activity because of the high-precision experiments at LEP, SLC and Fermilab at the Z^0 mass scale and the very accurate experiments at lower energies investigating beta and muon decays, atomic parity violation and neutrino scattering. Behrends's