

WE HEAR THAT

AAS Names Prize Recipients for 1998

The American Astronomical Society has announced the recipients of its prizes for 1998. This year, AAS's highest honor, the Henry Norris Russell Lectureship, goes to **Charles Hard Townes**. "Dr. Townes pioneered the new field of the physics and chemistry of the dense interstellar medium, including the discovery of stable polyatomic molecules by their microwave



CHARLES H. TOWNES

emission," the award citation notes. "He led the development of high-spectral-resolution astronomical spectroscopy in the far infrared and introduced the use of Michelson interferometry in the mid-infrared to achieve very high angular resolution." Townes is a University Professor in the physics department at the University of California, Berkeley.

The recipient of the Dannie Heine-man Prize for Astrophysics, awarded jointly by AAS and the American Institute of Physics, is **Roger D. Blandford**, the Richard Chace Tolman Professor of Astrophysics at Caltech. Blandford is being recognized for "his enduring contributions to theoretical astrophysics over an outstanding range, spanning relativistic jets, accretion disks, particle acceleration, active galactic nuclei and gravitational lenses."

Marc Kamionkowski is being given the Helen B. Warner Prize for "his contributions to progress on a wide range of theoretical topics, including nuclear reactions related to the solar neutrino puzzle, the detectability of alternative dark matter candidates, phase transitions and topological defects in cosmology, the polarization of fluctuations in the cosmic microwave background and microlensing." Kamionkowski is an assistant professor of physics at Columbia University.

The winner of the Newton Lacy Pierce Prize is **Andrea M. Ghez**, an assistant professor of physics and astronomy at UCLA. Ghez is being cited for "her work on the motions of stars near the putative black hole at the galactic center, for her studies of binary stars, and for her contributions to the

development of high-resolution imaging, particularly speckle imaging."

Robert E. Williams, director of the Space Telescope Science Institute, has garnered the Beatrice M. Tinsley Prize. He is being given the prize "in recognition of his leadership in the design and execution of the innovative Hubble Deep Field campaign."

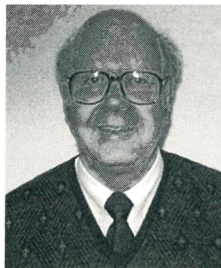
The George Van Biesbroeck Prize, which recognizes extraordinary service to the astronomy community, goes to **Francis J. Lovas** of the National Institute of Standards and Technology. The prize citation states that "during the past 25 years, Dr. Lovas has compiled and kept up to date lists of frequencies and identifications of interstellar lines, lists of known molecular lines of astrophysical interest and information on molecular structures and transitions. These have been used by radio and infrared astronomers as their primary and invaluable tools. These compilations were made without special funding or support. In awarding the Van Biesbroeck Prize to Dr. Lovas, we hope that these important catalogues for worldwide astronomy will be maintained and extended."

Helmut A. Abt of the Kitt Peak National Observatory received the Van Biesbroeck Prize last year, the first time the prize was given under AAS auspices (prior to that, a private foundation in Arizona had administered the prize). AAS cited Abt for "his dedicated and unselfish long-term service to the astronomical community, namely for his long and caring editorship of the *Astrophysical Journal*."

AAPT Presents Awards in New Orleans

At the winter 1998 meeting of the American Association of Physics Teachers, the following individuals were recognized for their contributions to physics education.

Edwin F. Taylor of the Center for Innovation in Learning at Carnegie Mellon University received the Oersted Medal, AAPT's highest honor. In accepting the medal, Taylor gave a lecture entitled "Einstein and Feyn-



EDWIN F. TAYLOR

man: Attracting Students to Physics," in which he described an undergraduate course that he has developed on special and general relativity and quantum mechanics.

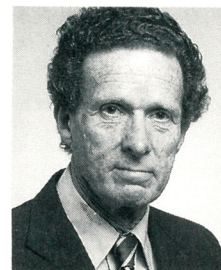
This year's Richtmyer Memorial Lecture Award went to **Douglas Osheroff**, the J. G. Jackson and C. J. Wood Professor of Physics at Stanford University. Osheroff's lecture, entitled "The Role of Luck in Physical Discovery: A Personal Perspective," described events leading up to the discovery of superfluidity in helium-3, for which he shared the 1996 Nobel Prize in Physics.

Six individuals each received the AAPT Distinguished Service Citation: **Ralph Baierlein** (Wesleyan University), **Paul D. Lane** (University of St. Thomas), **Harold Lefcourt** (Morris Knolls High School, Rockaway, New Jersey), **Mary Beth Monroe** (Southwest Texas Junior College), **Dwight E. Neuenschwander** (Southern Nazarene University) and **Joe H. Pifer** (Rutgers University).

AGU Bestows Medals at Boston Meeting

One of the highlights of the American Geophysical Union's spring meeting in Boston was the presentation of several medals and awards.

Richard M. Goody received the Gold Medal, AGU's top honor, for "his fundamental contributions to the fields of atmospheric radiation and planetary atmospheres and for unselfish cooperation in research." Goody is an emeritus professor at Harvard University.



RICHARD M. GOODY

Tuija I. Pulkkinen, group leader for space plasma physics at the Finnish Meteorological Institute in Helsinki, garnered the James B. Macelwane Medal, which recognizes outstanding young geophysicists. The medal citation stated that Pulkkinen's work "has greatly extended the theoretical models describing the magnetic fields surrounding the Earth, added critically needed time dependence to these models and compared the theoretical results to a wide array of observational data sets from throughout the Earth's plasma environs."

The John Adam Fleming Medal was presented to **Donald M. Hunten**, the Regents Professor of Planetary Sciences at the University of Arizona. Hunten's contributions "are evident everywhere in the record of terrestrial and planetary aeronomy," the medal citation stated, noting in particular his development of the theory of diffusion-limited escape and the subsequent analysis of escape of hydrogen from the planets.

Ignacio Rodriguez-Iturbe, the R. P. Gregory Professor of Civil Engineering at Texas A&M University, garnered the Robert E. Horton Medal, given for outstanding work in hydrology. According to the medal citation, Rodriguez-Iturbe "has led the revolution in fluvial geomorphology from the late 1980s to the present by developing a whole new theory of river basin organization and evolution."

The Harry H. Hess Medal was presented to **David J. Stevenson**, the George Van Osdel Professor of Planetary Science at Caltech. The medal citation praised Stevenson's development of "ongoing models of the planets, satellites and dwarf stars [and] his exceptional ability to assimilate the work of others and to use it to achieve new depths of understanding."

The Walter Sullivan Award for Excellence in Science Journalism went to **Kevin Krajick**, a freelance science writer, for his article on recent investigations into gas hydrates, vast deposits of which lie beneath the seafloor. Entitled "The Crystal Fuel," the article appeared in the May 1997 issue of *Natural History*.

Anderson, Dziewonski Receive Crafoord Prize

Although the Royal Swedish Academy of Sciences does not award Nobel Prizes for astronomy, biosciences, geophysics or mathematics, the academy does recognize those fields with its handsomely endowed Crafoord Prize. The 1998 Crafoord Prize, worth \$500 000, will be presented to geophysicists **Don L. Anderson** and **Adam Dziewonski** in a ceremony this September. Anderson is the Eleanor and John R. McMillan Professor of Geophysics at Caltech and Dziewonski is the Frank B. Baird Jr Professor of Science in Harvard Uni-

versity's department of Earth and planetary sciences.

The academy is honoring Anderson and Dziewonski for "their fundamental contributions to our knowledge of the structures and processes in the interior of the Earth." The two researchers have worked both together and separately to study earthquakes. They have used seismological studies to develop models of the organization of the Earth and the dynamics of its processes. According to the citation, Anderson and his group have studied changes in Earth's composition arising because of the pressure deep in the planet's mantle; they have shown that changes in the composition of the mantle may explain the occurrence of tensions in Earth's crust that can lead to earthquakes. Anderson and his coworkers have also used seismic data to study convection currents in the mantle and, more recently, they have used geochemical and chemical-isotope methods to look at the geophysical development of Earth and other planets.

Dziewonski has used the speed and nature of seismic waves to learn more about the temperatures and mineral densities within Earth. The academy credits Dziewonski and his coworkers with developing global seismic tomography, a technique corresponding to computed tomography in medicine. In earlier work, according to the academy's citation, by studying the 1964 Alaska earthquake, Dziewonski and his colleagues formed a picture of the planet's interior, with its solid inner core and a fluid outer core consisting chiefly of iron. Outside the core are the mantle and the crust, composed chiefly of silicates. Recently, Dziewonski and his colleagues observed that the inner core is rotating 2-3 degrees per year faster than the mantle and crust. (See PHYSICS TODAY, September 1996, page 17.)

Academy of Sciences Adds to Its Ranks

At its annual meeting in April, the National Academy of Sciences elected 60 new members and 15 foreign associates from 10 countries. The total number of academy members now stands at 1798 and its foreign associates number 310. Among the newly



ADAM DZIEWONSKI

named members are

David E. Aspnes, a professor of physics at North Carolina State University at Raleigh

Bruce J. Berne, a professor of chemistry at Columbia University

A. Welford Castleman, the Evan Pugh Professor in the chemistry department at Pennsylvania State University

William L. Chameides, a Regents' Professor in the School of Earth and Atmospheric Sciences at the Georgia Institute of Technology

Ingrid Daubechies, a professor of mathematics and the director of the program in applied and computational mathematics at Princeton University

Norval E. Fortson, a physics professor at the University of Washington

Donald A. Gurnett, the Carver/Van Allen Professor of Physics at the University of Iowa

John M. Hayes, a senior scientist in the department of geology and geophysics at the Woods Hole Oceanographic Institution in Woods Hole, Massachusetts

Roman Jackiw, the Jerrold Zacharias Professor and the chair of the physics department at the Center for Theoretical Physics at MIT

Thomas H. Jordan, the Robert Shrock Professor and head of the department of Earth and planetary sciences at MIT

Robert P. Kirshner, a professor of astronomy and chair of the astronomy department at Harvard University

Miles V. Klein, a professor of physics and director of the Science and Technology Center for Superconductivity at the University of Illinois at Urbana-Champaign

James M. Moran, a professor and senior radio astronomer at the Harvard-Smithsonian Center for Astrophysics in Cambridge, Massachusetts

William R. Schowalter, the dean of the College of Engineering at the University of Illinois at Urbana-Champaign

Lu Jeu Sham, a professor of physics at the University of California, San Diego

Paul J. Steinhardt, the Mary Amanda Wood Professor of Physics at the University of Pennsylvania

Melvin E. Stern, a distinguished research professor in the department of oceanography at Florida State University

Michael S. Witherell, a professor of physics at the University of California, Santa Barbara

Andrew C. Yao, the William and Edna Macaleer Professor of Engineering and Applied Science in the department of computer science at Princeton University



DON L. ANDERSON