

National Academy of Sciences presents its annual awards

At the 114th annual meeting of the National Academy of Sciences held last April, seven awards were presented in recognition of scientific achievements. Among the recipients were three scientists who work in physics- or astronomy-related fields—Chia-Chiao Lin of the Massachusetts Institute of Technology, Arno Penzias and Robert W. Wilson, both of Bell Laboratories, Holmdel, N.J.

The 1976 National Academy of Sciences Award in Applied Mathematics and Numerical Analysis, with a \$5000 honorarium, was presented to Lin "for his fundamental contributions to fluid mechanics, especially for his path-breaking work on stability of fluid flows."

Lin was born in China and educated at the University of Toronto and the California Institute of Technology, where he received his PhD in 1944. He has been a faculty member at MIT since 1947 and now holds the title of Institute Professor of Mathematics. Lin's research specialties include hydrodynamics, stellar dynamics, spiral structure of galaxies and density wave theory.

Penzias and Wilson shared the Henry Draper Medal, with \$1000, which recognizes an original investigation in astronomical physics. They were cited for their discovery of the cosmic microwave radiation and their leading role in the discovery of interstellar molecules.

Penzias earned his doctorate at Columbia University in 1962, at which time he had already been with the Bell Labs radio research laboratory for one year; his current position is director of that laboratory. Penzias's research interests in-



Award recipients were (l to r) George B. Dantzig, Jean R. St Clair, Aaron J. Shatkin, Chia-Chiao Lin, Miron L. Heinselman, Arno Penzias, Leona Baumgartner, Robert W. Wilson and Preston Cloud.

clude satellite communications, atmospheric physics, radioastronomy techniques and cosmology.

After studying at Rice University, Wilson did graduate work at the California Institute of Technology and earned his PhD there in 1962. He remained at Caltech as a research fellow in radioastronomy for one year before taking up a position at Bell Labs as a member of the technical staff in 1963. Wilson is now head of the radio physics research department. In addition to problems related to the galaxy, Wilson has worked on absolute-flux and background temperature measurements and millimeter-wave mea-

surements of interstellar molecules.

The other awards and their recipients were: 1977 NAS Award in Applied Mathematics and Numerical Analysis to George B. Dantzig (Stanford University), NAS Award for Environmental Quality to Miron L. Heinselman (University of Minnesota), NAS Public Welfare Medal to Leona Baumgartner (formerly of Harvard Medical School), US Steel Foundation Award in Molecular Biology to Aaron J. Shatkin (Roche Institute of Molecular Biology), Charles Doolittle Walcott Medal to Preston Cloud (US Geological Survey) and the NAS Award for Distinguished Service to Jean R. St Clair.

National Academies elect members and associates

The National Academy of Sciences has announced the election of 60 new members—among them are these scientists of interest to physicists: Harold Brown (Secretary of Defense, Washington, D.C.), Roderick K. Clayton (Cornell University), John M. Dawson (University of California, Los Angeles), Sheldon L. Glashow (Harvard University), Gerson Goldhaber (Lawrence Berkeley Laboratory), James E. Gunn (California Institute of Technology), N. Bruce Hannay (Bell Laboratories, Murray Hill, N.J.), David Harker

(State University of New York, Buffalo), Louis N. Howard (Massachusetts Institute of Technology), Martin J. Klein (Yale University), Richard M. Noyes (University of Oregon), James C. Phillips (Bell Labs), George W. Preston III (Hale Observatories), Howard Reiss (University of California, Los Angeles), Burton Richter (SLAC) and Samuel C.C. Ting (MIT).

Among the recently elected foreign associates are: Anatole Abragam (Center for Nuclear Studies of Saclay, France), Louis M.N. Duysens (Leiden University, The Netherlands), Hendrik Van De Hulst (Leiden University) and Hiroshi Inose (University of Tokyo, Japan).

Joining the roster of the National Academy of Engineering as newly elected members are these physicists and scientists who work in physics-related areas: Andreas Acrivos (Stanford University), Turner Alfrey Jr (Dow Chemical Co, Midland, Mich.), Roy H. Beaton (General Electric, San Jose, Calif.), William B. Bridges (Hughes Research Laboratories, Malibu, Calif.), Stephen H. Crandall (Massachusetts Institute of Technology), Leopold B. Felsen (Polytechnic Institute of New York), Robert N. Hall (GE Research and Development Center, Schenectady, N.Y.), Stephen E. Harris (Stanford University), Robert W. Hell-

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we hear that

warth (University of Southern California), Arthur R. Kantrowitz (Avco Everett Research Laboratory), John Laufer (University of Southern California), Frederick F. Ling (Rensselaer Polytechnic Institute, Troy, N.Y.), Artur Mager (Aerospace Corp, El Segundo, Calif.), Stanford S. Penner (University of California, San Diego), Ronald F. Probst (MIT), Norman C. Rasmussen (MIT), Richard W. Roberts (General Electric Co., Fairfield, Conn.), Joseph E. Rowe (Case Western Reserve University, Cleveland, Ohio), John G. Trump (MIT), Arthur R. von Hippel (MIT), Paul B. Weisz (Mobil Research and Development Corp, Princeton, N.J.) and Dean E. Wooldridge (Santa Barbara, Calif.).

The following are among the recently elected foreign associates: Edward G. Bowen of Wales (West River, Md.), Leo Esaki of Japan (IBM Watson Research Center, Yorktown Heights, N.Y.), André Giraud of France (Atomic Energy Commissariat, Paris), Wolf Haelele of the Federal Republic of Germany (International Institute of Applied Systems Analysis, Laxenburg, Austria), Georgy V. Kurdyumov of the USSR (Academy of Sciences, Moscow) and Sir Michael J. Lighthill of England (University of Cambridge).

The Fannie and John Hertz Foundation Award in applied physical sciences has been presented to **Gregory H. Canavan** (Defense Advanced Research Projects Agency, Department of Defense, Arlington, Va.). The award includes a \$20 000 honorarium.

John H. Steele, deputy director of the marine laboratory of the Department of Agriculture and Fisheries (Scotland), has been named head of the Woods Hole Oceanographic Institution.

The first prize in the Gustav Ohaus-National Science Teachers Association award program for innovations in college-science teaching has been presented to **Lubna R. Ijaz**, adjunct assistant professor of physics at Virginia Polytechnic Institute and State University.

The W.R.G. Baker Award of the Institute of Electrical and Electronics Engineers has been presented to **Manfred R. Schroeder**, a physicist at Bell Laboratories, for his article "Models of Hearing," which was published in the September 1975 *Proceedings of the IEEE*.

Harry G. Drickamer, professor of chemical engineering and physical chemistry at the University of Illinois, has been named the first recipient of the P. W. Bridgman Award of the International Association for the Advancement of High Pressure Science and Technology.

As we announced in June (page 70), **Betsy Ancker-Johnson** has left the Department of Commerce to join Argonne National Laboratory; the post she has accepted is associate laboratory director for physical research.

obituaries

Paul Rood

Paul Rood, retired professor and head of the physics department at Western Michigan University, died 7 March at the age of 82. His tenure at Western Michigan University spanned 48 years, from 1916 to 1964.

Rood graduated from Albion College (Michigan) in 1916 and began teaching college physics, high-school physics and chemistry at Western Michigan University. He completed his master's at the University of Michigan in 1921. During 1925-26, Rood spent a year with the General Electric Co (Schenectady, N.Y.) where he did research on the photoelectric effect under the direction of W. R. Whitney, then the director of research. He spent a second sabbatical leave, 1932-33, doing graduate study at the California Institute of Technology. In 1938 he received his doctorate from the University of Michigan.

Rood became head of the department of physics in 1944, a post he held for 20 years. During the early 1960's, Rood actively built up the department through the addition of new staff and the planning of a new building complex for research and teaching. Spectroscopy was Rood's research interest; as a teacher, he devoted his time primarily to the development of demonstration equipment. His teaching assignments included atomic physics, optics, astronomy and general physics.

NATHAN L. NICHOLS
Western Michigan University

Katherine M. Chamberlain

Katherine M. Chamberlain, emeritus professor of physics at Wayne State University, died 9 January at the age of 84.

She attended the University of Michigan as an undergraduate and, following World War I, returned to earn her doctorate in 1924. She then took up a position as mathematics instructor at the City College of Detroit (which later evolved into Wayne State University) and spent a year's leave as a research student at the Cavendish Laboratory in Cambridge, England.

Chamberlain became associate professor of physics at Wayne State University in 1930 and later was promoted to full professor. For several years she pursued