AMERICAN GEOPHYSICAL UNION SALUTES RESEARCH ACHIEVEMENTS

At the December meeting of the American Geophysical Union, held in San Francisco, several individuals received awards in recognition of their contributions.

Thorne Lay received the James B. Macelwane Medal, which is given for significant contributions to geophysics by a young scientist. Lay was cited for his studies of the structure of the lower mantle of the Earth, particularly his ideas about the D″ layer as a thermal and compositional boundary layer above the core–mantle boundary. The citation praised, among other things, Lay's ability to document "what constitutes the evidence and the speculation, thus separating fact and fiction."

Lay received a PhD in geophysics from Caltech in 1983. The following year he became an assistant professor in the geological sciences department at the University of Michigan. In 1989 Lay moved to the University of California, Santa Cruz, to become a professor of Earth science and the director of the Institute for Tectonics.

Charles David Keeling was given the Maurice Ewing Medal, which is presented jointly by the US Navy and AGU. Keeling was cited for his research on atmospheric and oceanic carbon dioxide and the global CO_2 cycle. His measurements of the atmospheric carbon dioxide concentrations since 1957 constitute a valuable data set, which the award citation said provides "some of the clearest evidence of human impact on the global environment."

After earning a PhD in chemistry from Northwestern University in 1953, Keeling became a postdoc at Caltech. In 1956 he joined the faculty of the Scripps Institution of Oceanography, where he became a professor of oceanography in 1968.

The Charles A. Whitten Medal went to Irwin I. Shapiro, who was cited for his application of "a wide variety of measurement techniques to the study of the dynamics of the Earth and planets." Shapiro is perhaps best known for his seminal role in the development of very-long-baseline interferometry, the award citation said.

Shapiro received a PhD in physics from Harvard University in 1955. From 1954 to 1970 he was a staff scientist at MIT's Lincoln Laboratory, and from 1967 to 1985 he was a professor of geophysics and of physics at MIT. In 1983 Shapiro became director of the Harvard–Smithsonian Center for Astrophysics.

Seiya Uyeda received the Walter Bucher Medal, given for contributions to the basic knowledge of the Earth's crust. "His studies of heat flow, the driving mechanism for plate motion, and island arc and backarc tectonics have provided essential building blocks to our understanding of the Earth's crust and lithosphere," the award citation said.

Uyeda earned a PhD in geophysics from the University of Tokyo in 1958. From 1957 to 1990 he was on the staff of the Earthquake Research Institute of the University of Tokyo. He is currently the Harris Chair Professor of Geophysics at Texas A&M University and a professor of geophysics at Tokai University in Japan.

The Harry H. Hess Medal was presented to George W. Wetherill, who was cited for his pioneering development of new methods of radiometric geochronology and his work on the origin of the solar system, including his prediction that "the latter stages of planet accumulation would be characterized by the collision of very large objects."

Wetherill earned a PhD in physics from the University of Chicago in 1953 and then began working at the Carnegie Institution of Washington. From 1960 to 1975 he was a professor of geophysics and geology at the University of California, Los Angeles. He then returned to the Carnegie Institution, where he served as director of the Department of Terrestrial Magnetism until 1991. He is currently a staff member there.

OPTICAL SOCIETY RECOGNIZES FIVE OUTSTANDING ENGINEERS

The Optical Society of America recently recognized five individuals for their contributions to optical engineering. The 1991 OSA Engineering Excellence Awards were presented at the society's November meeting in San Jose.

LeRoy D. Dickson, a senior engineer at IBM in San Jose, was cited for the "pioneering development of the IBM 3687 Supermarket Scanner." Introduced 10 years ago, the scanner is a holographic device used to read bar codes. Dickson is credited with the preliminary design of the scanner and with establishing it as a product.

Dickson earned a PhD in electrical engineering from the Johns Hopkins University in 1968 and joined IBM that same year.

Un-Chul Paek was chosen for his "contributions to high-speed fiber coating resulting in increased productivity in fiber drawing and for analytical work dealing with mode propagation in fiber waveguides for optical communication, which results in novel fiber design." Paek's work in fiber drawing involved laying much of the theoretical founda-