of his 35 years of service in the US Navy and Naval Reserve was his leadership of a group of Reserve data-processing specialists gathering information for intelligence operations through the analysis of acoustical data from the oceans.

William S. Cramer was honored with a Distinguished Service Citation for "outstanding and devoted editorial service to the acoustics community over a period of almost a quarter of a century."

American Geophysical Union presents awards for 1984

At its spring meeting, the American Geophysical Union presented the following awards: Marcel Nicolet received the William Bowie Medal; Charles V. Theis was presented the Robert E. Horton Medal; Mary K. Hudson, Raymond Jeanloz and John H. Woodhouse were jointly awarded the James B. Macelwane Award; and Xavier LePichon received the Maurice Ewing Medal, which is mutually sponsored by the AGU and the US Navy.

Nicolet, who worked in the US and Belgium, received the Bowie metal for "outstanding contributions to fundamental geophysics and for unselfish cooperation in research." He was cited by Julian Heicklen as having made "a greater contribution to our understanding of the chemistry of the earth's upper atmosphere than any other single individual." Nicolet's earliest research determined the molecular composition of the Sun and, later, he carried out a similar analysis on the composition of comets. During the period 1937–40, he concentrated on the physical and chemical processes associated with atmospheric airglow and auroras. After World War II, he published his famous work on the constitution of the ionosphere that has formed the basis for many subsequent studies of the ionic chemistry of Earth's upper atmosphere. Nicolet's research interests have also included the mechanisms of infrared airglow formation and the determination of photoionization and photodissociation coefficients. He predicted the presence of many molecular species in the upper atmosphere before they were measured, and correctly predicted the presence of the helium layer. Nicolet also acted as Secretary General of the Special Committee of the International Geophysical Year from 1953–60 and has been instrumental in fostering international cooperation and the exchange of ideas in astronomy.

Theis, a pioneer in the science of groundwater hydrology, was awarded the Horton medal "for outstanding

contributions to the geophysical aspects of hydrology." Theis received his PhD in geology from the University of Cincinnati in 1929, and has spent most of the last six decades with the US Geological Survey. He has written many classic papers in his field, including a 1935 paper that laid the foundation for later studies in groundwater hydrology.

The Macelwane award is presented each year "in recognition of significant contributions to the geophysical sciences by a young scientist of outstanding ability." Hudson, a research physicist at the Space Sciences Laboratory of the University of California at Berkeley, was honored for her theoretical research on the microphysics of magnetospheric plasmas. Jeanloz, associate professor of geology and geophysics at the University of California at Berkeley, received the award for his research concerning chemical and thermodynamic models of mineral structures and convection in the earth's mantle. He also has recently established a mineral physics laboratory at Berkeley. Woodhouse, associate professor of geophysics at Harvard University, was cited for his work in theoretical seismology: He has extended theories about wave propagation in the Earth's interior, and has worked on earthquake source mechanisms and methods for performing seismic calculations.

LePichon, of the University of Paris, received the Ewing medal "for leadership in marine geophysics." LePichon has made important contributions in a number of marine science disciplines; most notably, in the field of plate tectonics. He helped estabish the plate tectonics theory initially and also produced the first global map of plate boundaries and motions. In addition, he has published papers on such topics as ocean circulation, mantle processes and magnetic and geothermal studies, as well as helping to develop such international scientific programs as the International Program of Ocean Drilling and Project French–American Mid-Ocean Undersea Study.

Max Born Prize to Faessler; Holweck medal to Bleaney

The Max Born Prize, which is jointly sponsored by the Institute of Physics and the German Physical Society, was presented this year to Amand Faessler of the Institute for Theoretical Physics at the University of Tübingen. Faessler has contributed extensively to our understanding of atomic nuclei, from his earliest research on the rotation–vibration model to his ongoing studies of the Brueckner–Hartree–Fock–Bogliubov method, which is an attempt to bridge the gap between realistic basic two-body problems and phenomenological nucleon–nucleon forces used in nuclear many-body calculations. Faessler is one of the major theoretical leaders in our understanding of the behavior of deformed nuclei at high spins; in addition, he has contributed to investigations of nucleon–nucleon interactions through work on pion condensation and a possible quark–gluon basis for the hard core of nuclear force.

The annual Holweck Medal and Prize, which is awarded in alternate years to French and British physicists, was presented this year to Brebis Bleaney, professor emeritus at Oxford University, in recognition of his work over the past six years on enhanced nuclear magnetism. Bleaney has spent his lifetime studying magnetic resonance—both electron-spin and nuclear-magnetic resonance. The 'enhanced' technique, which was developed in part through the collaboration of Bleaney and Anatole Abragam in Paris, involves dynamic nuclear polarization via electronic magnetization and associated hyperfine interactions to produce effects analogous to external fields, which may in turn be considerably enhanced. Bleaney has contributed greatly to the development of the technique, and has applied it to the study of rare earth compounds. The importance of the technique is that it allows one to study the ions in effective fields of 100 T; thus it permits a detailed extension of the theories of magnetism developed by John H. van Vleck to these "high effective fields" and to "low effective temperatures" (on the order of microkelvin).

1984 Appleton Prize for ionospheric physics

The Royal Society has presented the 1984 Appleton prize for ionospheric physics to K. D. Cole of La Trobe University, Melbourne, Australia, "in recognition of his distinguished contributions to understanding the fundamental processes taking place in the magnetosphere and ionosphere."

Cole studied at the University of Queensland, Australia, receiving his doctorate in 1967. He took part in an Australian expedition to Maquarrie Island in 1956 and held research positions at the Universities of Chicago and Colorado (1963–65) before joining the faculty of La Trobe University in 1967, where he has remained as head of the division of theoretical and space physics. Cole's studies have included the interaction of the solar wind plasma with the geomagnetic field in remote regions of the magnetosphere, and the