

rium statistical mechanics. Zwanzig has also contributed to theories of dielectric relaxation, energy migration, and surface tension as well as research on polymer structure and dynamics.

Institute of Medicine elects physicists among new members

The Institute of Medicine of the National Academy of Sciences elected new members to join the Institute in January 1984. Members of the Institute—at least one-fourth of whom must come from fields other than the health professions—contribute to studies of health-policy issues.

Among the newly elected members are George B. Benedek, professor of physics and biological physics at MIT; Lyle V. Jones, director of the L. L. Thurstone psychometric laboratory at the University of North Carolina, Chapel Hill; and Robert Hofstadter, professor of physics at Stanford University.

AGU awards Bowie medal for high-pressure geophysics

The American Geophysical Union has awarded the William Bowie medal to Syun-iti Akimoto for his pioneering work in the application of high-pressure, high-temperature research to geophysical problems.

In the 22 years since he joined the faculty of the Institute for Solid State Physics (ISSP) of the University of Tokyo, Akimoto has played a leading role in building Japanese high-pressure geophysics research. The award recognizes not only the research Akimoto has done, but also his efforts in teaching graduate students and in encouraging the establishment of other laboratories.

Akimoto demonstrated the importance of obtaining accurate phase diagrams of major mineral systems as a function of composition, pressure and temperature. Through quantitative determination of phase transformation boundaries in mantle minerals in the laboratory, Akimoto and his colleagues confirmed the identification of seismic discontinuities in the transition zone (350–1000 km depth) of the Earth's mantle with such crystallographic phase transformations. Akimoto was a pioneer in high-pressure research during a period in which the conditions accessible to experimenters progressed from those corresponding to the Mohorovičić discontinuity to those of the lower mantle.

Akimoto obtained his PhD in 1950 at the University of Tokyo as a student of

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Takeshi Nagata. He devoted the next 10 years of his career to the study of rock and mineral magnetism at the Geophysical Institute of the University of Tokyo.

Although his high-pressure research has been principally devoted to geophysical problems, Akimoto has also made important contributions to the solid-state physics of semiconductors and their thermal and electrical transport properties.

in brief

The Smithsonian Institution has presented the **Henry Medal** to **George B. Field**, former director of the Smithsonian Astrophysical Observatory and since 1982 senior scientist there. The Institution noted that Field's "broad vision of astronomy and astrophysics has guided the Smithsonian Astrophysical Observatory and the Harvard College Observatory for a decade, creating the intellectual and cooperative climate for a surge of astronomical advances."

The Solar Energy Research Institute has named **Alvin Czanderna** to the newly created position of Research Fellow.

Czanderna's research is on methods of surface analysis.

John D. Dow has joined the faculty at the University of Notre Dame as Freeman Professor of Physics. Previously at the University of Illinois in Urbana-Champaign, Dow plans to continue his research on materials for microelectronics.

Columbia University has presented the Charles Frederick Chandler Medal to **Rudolph A. Marcus** (Caltech) for his research in theoretical chemical kinetics.

The new director of the Haystack radio observatory, which MIT operates for a consortium of universities and laboratories, is **Joseph E. Salah**. He will also be a lecturer in the department of Earth, Atmospheric and Planetary Sciences at MIT.

The physics department at California State Polytechnic University at Pomona has appointed **Harvey S. Leff** as professor and department chairman; he comes to the department from the Institute of Energy Analysis at Oak Ridge. Other new members of the physics department are **Mary E. Mogge**, **George W. Rainey** and **Gerald Lee Swafford**.

obituaries

George O. Abell

George O. Abell, professor of astronomy at the University of California, Los Angeles, died on 7 October at the age of 56 in the prime of his career.

Except for military service in Japan and sabbatical leaves in Germany and Scotland, Abell resided in the Los Angeles area his entire life. His undergraduate and graduate work was at the California Institute of Technology, and he was a member of the UCLA faculty from 1956 and chairman of the department of astronomy 1968-1975.

During his years as a graduate student, Abell worked as a principal observer for the *National Geographic Society-Palomar Observatory Sky Survey*, the fundamental two-color photographic reference source for stars and nonstellar objects over the sky observable from Palomar. It was during this work that he conceived and carried to completion his prodigious doctoral dissertation on clusters of galaxies. Every astronomer knows that "A2616," for example, means a cluster in the Abell catalog, which comprises a complete, homogeneous list of rich clusters of galaxies. At the time of his death,

Abell was working with Harold G. Corwin on a catalog of southern clusters of galaxies based on the southern hemisphere sky survey, as well as on a revision of the original catalog.

Abell early became convinced that clustering to second-order—but not in a continuing hierarchy—is a basic feature of the largest-scale distribution of

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