

Flinn receives Argonne Appointment Award

Paul A. Flinn, a Carnegie-Mellon University professor, has received one of the two Argonne Universities Association Distinguished Appointment Awards for 1971. The award will enable Flinn, who is professor of physics and metallurgy and materials science, principal research metallurgical engineer and senior fellow at Mellon Institute of Science, to devote next year exclusively to the study of glasses and amorphous materials at Argonne National Laboratory. He will also receive a \$5000 merit award.

The award, now in its second year, is to "recognize and reward outstanding accomplishments by scientists and engineers on the Argonne staff and on university faculties and to foster interaction between the Argonne Universities Association institutions and Argonne through a year-long exchange of individuals who have displayed exceptional talent and have gained outstanding reputations." The Argonne Universities Association, which consists of 30 US universities, is the supervisory body of the Argonne National Laboratory.

Draper and Gould awards to Chandrasekhar and Roemer

Among the seven awards presented this year by the National Academy of Sciences were the Henry Draper Medal to Subrahmanyan Chandrasekhar and the Apthorp Gould Prize to Elizabeth Roemer.

Chandrasekhar, of the Laboratory for Astrophysics and Space Research, University of Chicago, was recognized for his contributions to theoretical astrophysics and particularly for his studies of the structure, evolution and dynamics of stars. Established in 1883, the Draper Medal consists of a gold medal and \$1000. Chandrasekhar was the first person to set the correct upper limit to the mass of white dwarf stars, now known as "Chandrasekhar's limit." He also developed an inverse relationship of the mass and radius of white



CHANDRASEKHAR

dwarf stars. He has contributed to the understanding of the internal constitution of stars, their atmospheres, evolution and dynamics of gravitational interactions with other stars in clusters or galaxies. A citizen of the US since 1953, Chandrasekhar was born in Lahore, India and received his PhD degree from Trinity College in Cambridge, UK.



ROEMER

Roemer, professor of astronomy at the Lunar and Planetary Laboratory, University of Arizona, received the Gould prize for her "contributions to cometary astronomy, particularly for her consistent successes in first sighting comets as they return toward the sun." The prize, which was awarded for the first time, consists of \$5000. Roemer, who has been studying periodic comets for the past 18 years, is at present engaged in plans for possible space probes connected with the return of the comet d'Arrest in 1976 and with that of Halley's comet in 1986. She has also studied asteroids. She received her BA degree from the University of California at Berkeley in 1950 and her PhD degree jointly from Berkeley and Lick Observatory in 1955. She has taught astronomy in the Oakland public schools and at Berkeley and has worked as an astronomer for the Lick Observatory and the Yerkes Observatory of the University of Chicago.

New members elected to National Academy of Sciences

During the 108th annual meeting of the National Academy of Sciences in April, 50 new members were elected in recognition of their distinguished and continuing achievements in original research, and ten distinguished scientists were elected as foreign associates.

Among the 50 new members are Marvin Chodorow, professor of applied physics and electrical engineering and director of the Microwave Laboratory at Stanford University; Arthur D. Code, professor of astronomy at the University of Wisconsin; Mildred Cohen, professor of biophysics and physical biochemistry, Johnson Research Foundation, Univer-

sity of Pennsylvania School of Medicine, and Alan Garen, professor of molecular biophysics at Yale University. Also elected to the Academy were David S. Heesch, director, National Radio Astronomy Observatory; Michael Kasha, professor of chemistry and director for the Institute of Molecular Biophysics, Florida State University; Robert P. Kraft, professor of astronomy, University of California, Santa Cruz and astronomer, Lick Observatory; Philip Morrison, professor of physics, Massachusetts Institute of Technology; Edward P. Ney, professor of physics, University of Minnesota, and William A. Nierenberg, professor of physics, University of California at San Diego and director of Scripps Institution of Oceanography. Additional new members include: Frederic M. Richards, professor of molecular biophysics, Yale University; Robert G. Sachs, associate laboratory director for high-energy physics, Argonne National Laboratory and professor of physics and director, Enrico Fermi Institute, University of Chicago; John R. Schrieffer, Mary Amanda Wood professor of physics, University of Pennsylvania, and Gerald J. Wasserburg, professor of geology and geophysics, California Institute of Technology.

Among the newly elected foreign associates are Aage N. Bohr, professor of physics, Niels Bohr Institute, Denmark; Dorothy C. Hodgkin, Wolfson research professor of the Royal Society, Chemical Crystallography Laboratory, Oxford, UK; Vladimir I. Keilis-Borok, professor at the Institute of the Physics of the Earth, Academy of Sciences, Moscow, USSR, and Bengt Strömberg, professor of the department of astronomy at the University of Copenhagen, Denmark.

George O. Zimmerman was appointed associate chairman of the department of physics at Boston University.

Donald L. Hammond, director of the physical electronics laboratory at Hewlett-Packard, has been awarded the sixth C. B. Sawyer Memorial Award for the "development and applications of crystal devices to highly precise frequency control and temperature and pressure instrumentation."

Two new volumes in the series

ULTRASONIC TECHNOLOGY*

Series edited by **Lewis Balamuth**,
Ultrasonic Systems, Inc., New York

HIGH-INTENSITY ULTRASONIC FIELDS

Edited by **L. D. Rozenberg**, *Academy of Sciences of the USSR, Moscow, USSR*

Translated from Russian by **James S. Wood**

Available here for the first time in a single volume are the significant contributions on the effects produced by high-intensity ultrasonic fields with special attention given to industrial applications.

CONTENTS: K. A. Naugol'nykh, Absorption of finite-amplitude waves • Z. A. Gol'dberg, Acoustic radiation pressure • L. K. Zarembo, Acoustic streaming • V. A. Akulichev, Pulsations of cavitation voids • M. G. Sirotyuk, Experimental investigations of ultrasonic cavitation • L. D. Rozenberg, The cavitation zone • Index.

429 PAGES APRIL 1971 \$30.00
SBN 306-30497-X

ULTRASONIC TRANSDUCER MATERIALS

Edited by **Oskar E. Mattiat**, *Aquasonics Inc., Portsmouth, Rhode Island*

This volume offers a thorough review of the recent progress in the development of materials for ultrasonic transducers for electrical and acoustic engineers and physicists who require expert knowledge on electroacoustically active materials.

CONTENTS: Yoshimitsu Kikuchi, Magnetostrictive metals and piezomagnetic ceramics as transducer materials • Don Berlincourt, Piezoelectric crystals and ceramics • A. H. Meitzler, Piezoelectric transducer materials and techniques for ultrasonic devices operating above 100 MHz • Index.

185 PAGES APRIL 1971 \$12.50
SBN 306-30501-1

* Place your continuation order today for books in this series. It will ensure the delivery of new volumes immediately upon publication; you will be billed later.

plenum press / consultants bureau

Divisions of Plenum Publishing Corporation
227 W. 17th ST., NEW YORK, NEW YORK 10011
Circle No. 20 on Reader Service Card

we hear that

Promoted to professor at Emory University is **Allen K. Garrison**.

Arnold R. Fritsch has been named president of Gulf United Nuclear Fuels Corp.

Yoichiro Nambu and **Valentine L. Telegdi** have been named Distinguished Service Professor at the University of

Chicago. This honor, the highest bestowed by the university, signifies outstanding achievement both to the University and to the academic world as a whole.

North Texas State University has appointed **Rogers W. Redding** and **Bernard McIntyre** as assistant professors. **M. E. Anderson**, professor of physics, is now also associate vice-president for academic affairs.

obituaries

Arthur G. Rouse

Arthur G. Rouse, professor at St. Paul University, died on 4 April at the age of 60.

Rouse, who had been with the university since 1937, conducted summer institutes there for high-school physics teachers funded by the National Science Foundation. In 1967 and 1968, Rouse took leaves from the university to serve as a consultant for the National Science Foundation to universities in India. He conducted institutes for high-school physics teachers there, instructing them in new teaching materials and techniques and in several complex areas of physics.

Indonesia as professor of physics at Gadjah Mada University. When he returned home, he was one of 20 engineers comprising the Engineering Advisory Council reporting to the president of the University of California on the engineering colleges of the seven University of California campuses.

Leonard I. Schiff

In the midst of a full life Leonard I. Schiff, professor of physics at Stanford University, suffered a fatal heart attack on January 19 at the age of 55. Deeply grieved, his colleagues suddenly lost a devoted friend whose qualities are evident in the perfect union of his achievements as scientist, teacher and statesman.

The scientific work of Schiff presents an impressive view of his universality. In this age of extreme specialization he belonged to the very few theorists whose contributions cover almost the entire range of physical phenomena. While some of them only attracted his temporary attention, there are several topics in which he was permanently interested so that he returned to them at various stages of his development.

Starting with his thesis under Philip Morse, which he completed when he was 22 years old, the scattering of particles in collisions is a recurrent "Leitmotif" of his later work. With characteristic foresight and interest in the work of his colleagues he emphasized, in a technical report written in 1949, the information to be gained from the elastic scattering of high-energy electrons. The present linear accelerator at Stanford's High Energy Laboratory was at that time still in the early stages of construction but his considerations provided much of the stimulus to Robert Hofstadter and his collaborators in their important work that later revealed the distribution of charge and current in nuclei. The first major publication of their data was directly followed by a paper of Schiff's

Niels E. Edlefsen

Niels E. Edlefsen, applied physicist and retired engineering executive, died on 21 March at the age of 78.

While working on his PhD at the University of California at Berkeley in 1930, Edlefsen applied some of E. O. Lawrence's ideas on periodic acceleration of protons to build several six-inch models of what later became known as the cyclotron. After receiving his degree, Edlefsen taught at the Agricultural Experiment Station and studied the physics and chemistry of soils. During World War II, he was appointed project engineer for a new surface-search radar for PT boats. After the war Edlefsen spent a year as director of research for Raytheon Company before joining North American Aviation to develop inertial navigation devices. Under his direction, his guidance section of North American grew into the electro-mechanical division with several hundred engineers and other hundreds of supporting personnel. In 1955 Edlefsen became vice-president of Vickers Corp, a division of Sperry Rand, where he was responsible for reorganizing and revitalizing Vickers' research and engineering. After retirement, he spent two years in