Compton Award presented to Ramsey

Norman Foster Ramsey, Higgins Professor at Harvard University, was honored at the AIP Corporate Associates meeting in Rochester, New York, with AIP's Karl Taylor Compton Award. AIP Director H. William Koch presented the prize to Ramsey at a ceremony on 22 October.

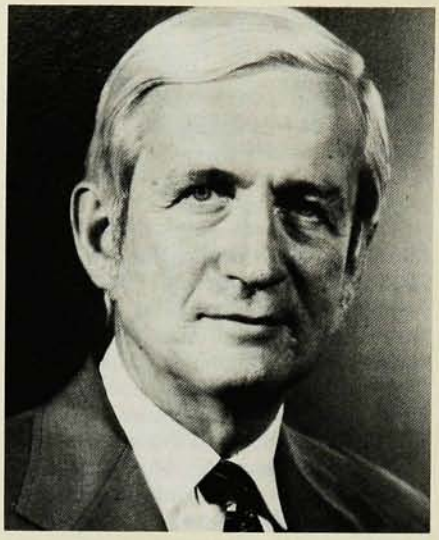
The Compton Award recognizes distinguished statesmanship in science and consists of a bronze medal, $3000 and a certificate. The prize is intended mainly for US citizens and is made occasionally, not at any fixed interval. Earlier recipients of the prize have included Melba Newell Phillips (1981), Samuel Goudsmit (1974) and Ralph A. Sawyer (1971).

Ramsey, who has been chairman of the AIP Governing Board since 1980, was recognized for his outstanding achievements as a leader in physics research and an adviser on science policy.

During World War II Ramsey served as a consultant to the Secretary of War. He was the first science adviser to the Secretary General of NATO from 1958 to 1959 and a member of the General Advisory Committee of the Atomic Energy Commission from 1960 to 1972. He served as chairman of the high-energy physics panel of the President's Science Advisory Committee in 1963 and as president of the Universities Research Association from 1966 to 1972.

Ramsey earned his PhD in 1940 under I. I. Rabi at Columbia University. He headed groups at the MIT Radiation Laboratory that developed the first 3-cm-wavelength magnetrons and related radar systems, and he worked on the Manhattan Project as a group leader, associate division chief and chief scientist for the Tinian technical group. He returned to Columbia in 1945 and studied the properties of molecules and nuclei using molecular-beam resonance. He was executive secretary of the group that set up Brookhaven National Laboratory and served as the first chairman of the lab's physics department before joining Harvard's faculty in 1947.

Ramsey's diverse research interests have led to key contributions to the determination of magnetic moments of elementary particles, the structural shape of nucleons, the nature of nuclear forces and the thermodynamics at negative absolute temperatures of energized populations of atoms and molecules. Ramsey invented the method of using separated oscillatory fields to excite resonances, which provides extremely high resolution in atomic and molecular spectroscopy and forms the practical basis for the most precise



RAMSEY

atomic clocks. In collaboration with his students, he invented the atomic-hydrogen maser, which allows still greater spectroscopic resolution and serves as the basis for atomic clocks having the highest levels of stability for periods extending to several hours.

Ramsey was elected a member of the National Academy of Sciences in 1952, and was president of The American Physical Society in 1978–79. He was honored with the E. O. Lawrence Award in 1960, the Davisson–Germer Prize of APS in 1974, the IEEE Medal of Honor in 1984 and the Rabi Prize in 1985. He was a Guggenheim fellow at the University of Oxford in 1954–55 and Eastman Professor at Oxford in 1973–74.

The citation presented to Ramsey on 22 October praised his "spirited teaching and impeccable taste in problems worthy of attack" and his "keen administrative skills and scientific leadership in the service of physics societies and national laboratories."

Industrial prize recognizes magnet research done at GM

John J. Croat and Robert W. Lee of General Motors Research Laboratories were honored at the AIP Corporate Associates meeting with the 1985 AIP Prize for Industrial Applications of Physics. The prize recognizes their discovery of a new class of permanent-magnet alloys of the rare earth–iron–boron type, as well as a new process for forming these alloys into permanent magnets. The Nb–Fe–B magnets developed by Croat, Lee and their colleagues Jan Herbst and Frederick Pinkerton are currently the world's highest-energy-product magnets, and they are expected to be widely applied in transportation-related electrical equipment and, more generally, lightweight motors, generators and transducers.

The research that led to the new magnet alloys began in the late 1970s, when a shortage of cobalt led to a five-fold increase in its price and rendered the standard mischmetal–samarium–cobalt magnetic alloy uneconomical. The commercial development of Nb–Fe–B magnets was achieved almost simultaneously at GM and Sumitomo Special Metals Company Ltd in Japan. The GM approach is novel in that it combines rapid solidification, via melt-spinning and densification, with magnetic alignment via hot-pressing. This processing technique is expected to have cost advantages over the more conventional powder-metallurgy methods employed by the Sumitomo researchers, and GM is betting heavily on its technology by building a new plant to produce the Croat–Lee magnets.

Croat has worked at General Motors Research since receiving a PhD in metallurgy from Iowa State University in 1972. His PhD thesis was concerned with the magnetic properties of pure rare-earth elements. Lee has worked at General Motors Research since 1955, when he received an MS in physics from Michigan State University, where he studied microwave absorption in liquid crystals.

Krupp honored with AIP science writing award for second time

Edwin C. Krupp, director of the Griffith Observatory in Los Angeles, has been named the 1985 scientist winner of AIP's Science Writing Award in Physics and Astronomy. Each year AIP makes two science writing awards, one to a scientist and one to a journalist. Krupp won the scientist award for his

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