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## we hear that

tral currents," a phenomenon crucial to the theory of the electroweak interaction.

## obituaries

### C. J. Gorter

On 30 March 1980 C. J. Gorter, one of The Netherlands' leading physicists, died after a long illness. He was 73 years old.

Cornelius Jacobus Gorter studied at the University of Leiden under W. J. de Haas and Paul Ehrenfest in the early 1930's. He obtained his doctoral degree in 1932 with a thesis entitled "Paramagnetic Properties of Salts." By that time he had already felt the stimulus of the work of John H. van Vleck, with whom he had close contact in later years.

After his doctoral work, Gorter worked for five years in Adriaan D. Fokker's laboratory at Teyler's Foundation in Haarlem. From there he went as a lecturer to the University of Groningen, after which he became extraordinary professor at the University of Amsterdam in Pieter Zeeman's chair. In 1946 Gorter succeeded Willem H. Keesom as professor at Leiden. He remained in Leiden as director of the Kamerlingh Onnes Laboratory until 1973.

Among Gorter's most important scientific work was the discovery of paramagnetic relaxation, the electric analog of which was known since 1932 through the theoretical work of Ivar Waller. During the Second World War, he wrote a classic monograph on the subject "Paramagnetic Relaxation." Another important field of research in which he stimulated many of his collaborators was antiferromagnetism. Gorter studied many aspects of this phenomenon in  $\text{CuCl}_2 \cdot 2\text{H}_2\text{O}$  and developed with Haantjes a theoretical description of antiferromagnetism in a double-sublattice substance.

Gorter was also active in other fields. In 1933 he was the first to apply thermodynamics to the transition of materials from the normal to the superconducting state. Together with Hendrik B. G. Casimir, he developed a thermodynamic description of the phenomenon, using a two-fluid model and an internal-order parameter. The electrostatics for this model were developed by Fritz and Heinz London about the same time. Gorter's contributions to the understanding of second-order phase transitions should also be mentioned as should his formulation of the "Gorter-Mellink equation" for the

Jerome I. Friedman, professor of physics at Massachusetts Institute of Technology, has been named director of the Institute's Laboratory for Nuclear Science.



GORTER

mutual friction of two fluids in liquid helium II.

Gorter was a man of great kindness and integrity as well as brilliant physicist. During his career he served as president of the Royal Netherlands Academy of Sciences and vice-president of IUPAP. His high standing in international circles is attested to by his seven honorary doctorates from foreign universities and his membership in seven foreign science academies.

J. VAN DEN HANDEL  
*Kamerlingh Onnes Laboratory  
Leiden, The Netherlands*

### John D. McNutt

John D. McNutt, director of the Center for Positron Studies at the University of Texas at Arlington, died on 15 July 1980 at the age of 42. He received his education at the University of Michigan and Wayne State University. It was during his doctoral and postdoctoral training under Leonard O. Roellig that McNutt developed an enduring enthusiasm for low-energy positron research.

McNutt spent his entire professional career, beginning in 1967, in the department of physics of the University of Texas at Arlington. He was soon recog-



nized as the leader of the UTA positron research program, and catalyzed its growth and strength through his vigor, vision and enthusiasm. The positron physics and chemistry programs present when he arrived evolved into the Center for Positron Studies in 1979 with McNutt as its director. The Center has been the site of positron lifetime studies in gases, liquid crystals, liquids and solids, of studies of positron-surface interactions, and of measurements of total, inelastic and differential cross-sections for the scattering of positrons by gases. The diversity of the activities of the Center is a testimony to the seemingly boundless energy and dedication of its former director.

McNutt keenly supported state, national and international research organizations. He was chairman of the Organizing Committee for the Sixth International Conference on Positron



MC NUTT

Annihilation, to be held in Arlington in 1982. It is particularly tragic that he died so shortly before an event that would have undoubtedly been a high point in his career and which would have granted him some of the recognition he so richly deserved.

John's cheerful, friendly and energetic presence, and his scientific leadership, will be greatly missed by his colleagues and students.

PAUL G. COLEMAN  
LEONARD M. DIANA  
SURESH C. SHARMA

*University of Texas at Arlington*

## James A. Jacobs

James Albert Jacobs, professor of physics emeritus at Virginia Polytechnic Institute and State University, died on 29 May 1980 in Blacksburg, Va.

Jacobs was born on 10 April 1913 in Sioux City and reared in Marshall-

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