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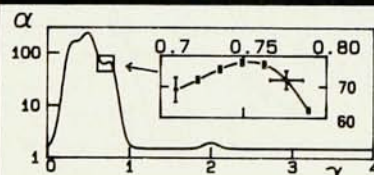
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ry councils for physics and engineering and he was on the editorial boards of *CRC Critical Reviews of Solid State and Materials Sciences*, *Thin Solid Films* and *Surface Engineering*.

John was a very serious man who was single-minded about his work. He put in long hours not because he needed to but because he wanted to. John enjoyed physics. He reveled in it. He had the ability to immediately see the central physics of a problem; he was also an excellent and patient teacher who always had time, even on the busiest of days, to discuss science as well as personal problems with students.

Thornton had a special affection for the American Vacuum Society, to which he belonged for almost 15 years. He served the society in a variety of capacities, including national program committee member for several years, chairman of the national symposium (1980), member of the board of directors (1981-83) and president (1982). He represented AVS as a deputy executive councilor in the IUVSTA from 1986 until his death, and he was a member of the AVS board of trustees. Thornton was also a member of the governing board of the American Institute of Physics. In all of these positions, he served with honor and integrity while vigorously pursuing the educational and scientific goals for which the society was founded.

As great a scientist and teacher as John was, he was equally impressive as a humanist. He had exceptional interpersonal sensitivity and was known for his ability to solve seemingly intractable "people-related" problems. He will be sorely missed by his friends and colleagues. He has, however, left us a better world for his having been here.

JOSEPH GREENE
University of Illinois
Urbana, Illinois

Taber de Forest

After a short illness, Taber de Forest died unexpectedly on 30 July 1987 at his home in Castricum, the Netherlands. He was 47 years old.

Born in Evanston, Illinois, he first attended Yale and went on to study theoretical physics at Stanford University. Working under Dirk Walecka, he received his PhD in physics in 1966 with a dissertation on quasi-elastic electron-nucleus scattering. In the following years he stayed at MIT and Orsay as a research associate. In 1970 he then joined IKO, the Netherlands Institute for Nuclear

Physics in Amsterdam (now NIKHEF-K), where he started the theory group.

Throughout all the years of his career, de Forest's scientific work focused on the theory of electron scattering from nuclei. One of his first publications, a 1966 review article with Walecka in *Advances in Nuclear Physics*, is the classic reference in the field. In subsequent work he addressed meson exchange currents and the Coulomb sum rule. He studied in detail off-shell effects in nucleon knockout reactions. His work contributed greatly to the use of electrons as a precise probe for nuclei. In particular his work on nucleon knockout served as a guideline for the planning and interpretation of many experiments. More recently he had studied the electromagnetic current of nucleons inside a nucleus in relativistic theories and examined consequences of the quark substructure of bound nucleons. He suggested the key measurement to make in looking for modifications of the electromagnetic properties of bound nucleons, which stimulated a whole series of further experiments in Amsterdam and at other electron accelerators.

In all his work de Forest showed a deep and intuitive understanding of physics. His strength was the ability to express and test his ideas in terms of realistic, but clear and manageable, models. He was always eager to discuss physics and exchange ideas with his colleagues, both theorists and experimentalists.

With his passing, we have lost a good friend and a creative scientist who made numerous significant contributions to nuclear physics. His friends and colleagues all over the world will not forget him.

JUSTUS H. KOCH
PIET MULDER

National Institute for Nuclear Physics
and High Energy Physics
Amsterdam, The Netherlands

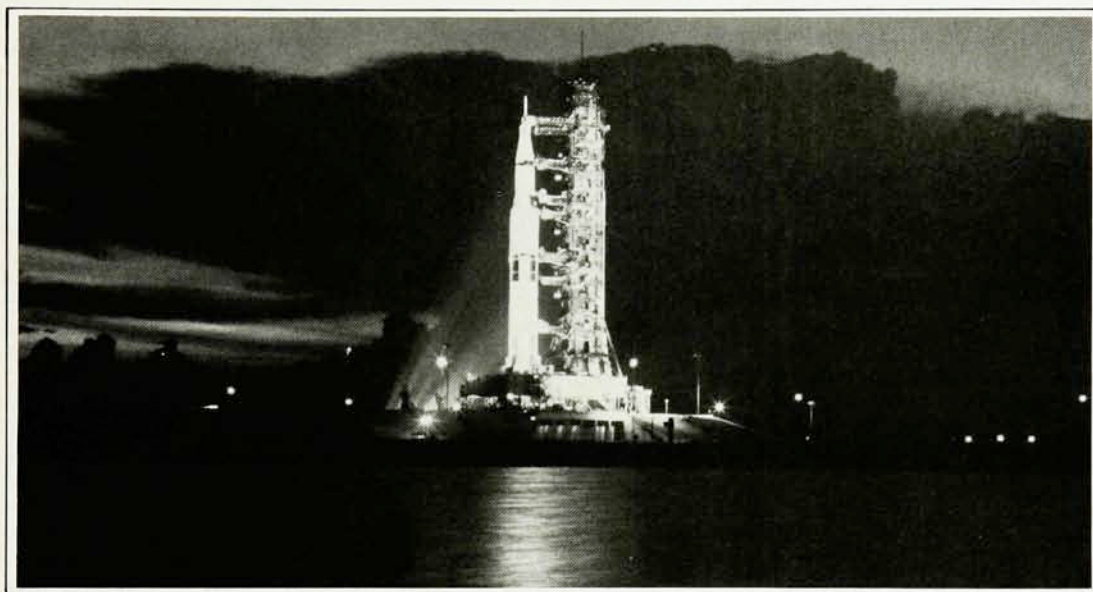
LEX DIEPERINK
Kernfysisch Versneller Instituut
Groningen, The Netherlands

Ira M. Freeman

Ira M. Freeman, professor emeritus of physics at Rutgers University, died in Florida in February 1987. He was 81.

His undergraduate and graduate degrees were from the University of Chicago, and he pursued his postdoctoral studies in astrophysics and spectroscopy at the Johann Wolfgang von Goethe Universität in Frankfurt am Main. He then held appointments with the National Advisory Committee on Aeronautics in Washington,

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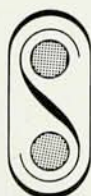
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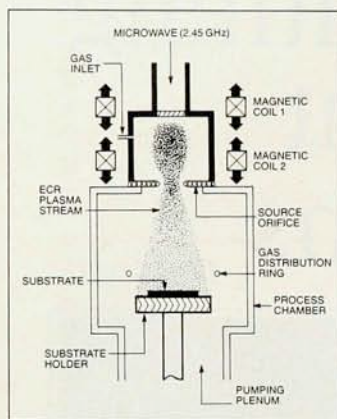
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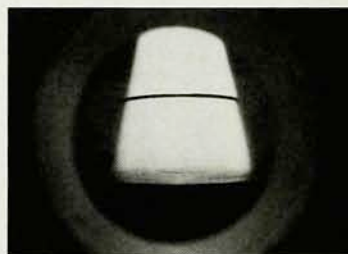
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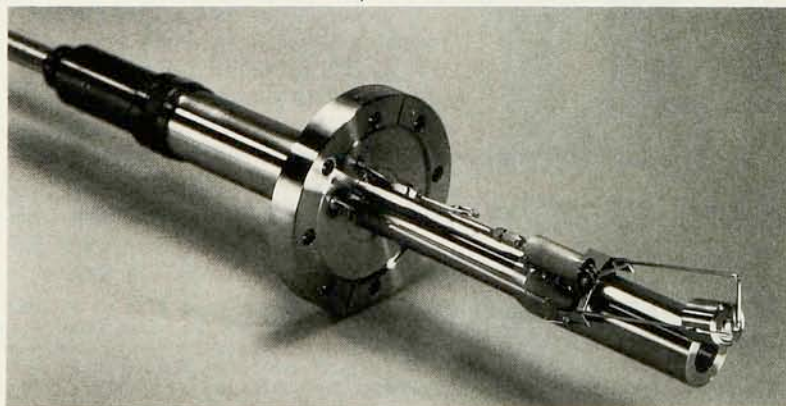
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DC, at Central College in Chicago, as a research associate with the National Defense Research Council at Princeton University and as associate professor at Swarthmore College. He joined the Rutgers faculty in 1947 and remained there until he became professor emeritus in 1969.

In 1934 Freeman translated *Theoretical Physics* by Georg Joos from German into English; it became the standard graduate-level text in its field. He wrote a number of highly regarded introductory physics textbooks addressed primarily to non-science students. He also collaborated with his wife, Mae, in writing a large number of successful juvenile books, mostly on topics in the sciences and many with titles beginning "Fun with..." or "All about..." The husband-wife coauthors especially enjoyed trading puns, quips and stories with their Random House editor, Bennett Cerf.

Freeman served as a program specialist with UNESCO in Paris during 1950-51 and afterward continued to be a consultant to the organization. He was a frequent contributor to the *American Journal of Physics*, even long after his formal retirement, and he also served as an associate editor of the journal.

Although he always retained an interest in astrophysics and occasionally traveled to exotic places to observe eclipses, Freeman's primary professional interest was teaching physics painlessly, but effectively, to non-science students. He had a special flair for creating eye-catching demonstration experiments, often using jumbo-sized devices. He was also adept at improvising. I recall a brown-bag lunch gathering at which the topic of boomerangs somehow came up—what they looked like, why they worked. While an inconclusive discussion ensued, Freeman sat quietly at his desk cutting and bending a small piece of cardboard, which he then flicked with a finger. Out across the room the little object spun, and right back to its launch site. This done, Ira told us briefly and convincingly how it had worked.

Freeman was a person of great charm and humor. He relished *bon mots* and funny stories, the best of which he would dutifully enter into an actual little black book he always kept nearby. His impersonations of Albert A. Michelson and Groucho Marx, done infrequently and only after the most strenuous urging, were equally arresting.

RICHARD T. WEIDNER
Rutgers University
New Brunswick, New Jersey ■