

C. Phenomenological Categories

V-event:

phenomenon which can be interpreted as the decay in flight of K -meson or V -particle. Subdivisions: V^0 -event; decay of a neutral particle; $V^\pm$ -event, decay of a charged particle.

S-event:

phenomenon which can be interpreted as the decay at rest of a charged K -particle or V -particle.

Jeffries Committee Upholds NBS

AD-X2 Declared to be Without Merit

The eleven-man independent committee of scientists to evaluate procedures used in testing the battery additive AD-X2, appointed earlier this year by the National Academy of Sciences at the request of the Secretary of Commerce, has reported unequivocally that the tests conducted by the National Bureau of Standards were "excellent" and that "the relevant data now available to the committee on the effects of AD-X2 are adequate to support the position of the Bureau of Standards that the material is without merit". The committee, which was headed by Zay Jeffries, retired vice-president of General Electric Company, recommended that no further tests of the additive be conducted in view of the "very considerable reliability" of the conclusion that AD-X2 has no beneficial action on battery performance or longevity. The committee's report was released on November 13th together with a statement by Secretary of Commerce Sinclair Weeks, who is quoted as saying that the committee's evaluation "is an assurance to the public and a source of satisfaction to me and to the Bureau". Mr. Weeks added that he would do all in his power "to aid the Bureau in maintaining this high level of scientific service to the nation". AD-X2 manufacturer Jesse M. Ritchie is quoted as having declared the report to be a "whitewash", written "for the most part" by the Bureau itself, and "an insult to the intelligence of Secretary Weeks, my customers, and the American public". The committee's 34-page report, it might be noted, was amplified by two volumes of appendices giving data from the various tests of the product, including the several exhaustive tests performed by NBS.

123 NSF Awards Announced

In Physical and Biological Sciences

The first group of awards for the support of basic scientific research and related matters for the fiscal year 1954 by the National Science Foundation consists of 123 grants totalling \$1 332 000. Over 525 such awards involving nearly \$5 million have now been made since the start of the program in 1950. In addition to the direct support of research these grants also cover meetings and conferences, scientific information exchange, and travel by American scientists to international scientific meetings. Awards for research in physics and

biophysics in the latest series were made as follows: University of California (C. Kittel), "Interaction of Fundamental Particles with Solid State Systems"; Case Institute of Technology (L. L. Foldy and M. J. Klein), "Theoretical Research in Nuclear and Solid State Physics"; University of Connecticut (C. A. Reynolds), "Hydrodynamics of Liquid Helium II"; Duke University (L. W. Nordheim and E. Greuling), "Theory of Nuclear Shell Study"; University of Illinois (D. W. Kerst), "Photoproduction of Pi-Mesons"; Kent State University (A. A. Silvidi), "Continuous Cloud Chambers"; Marquette University (A. G. Barkow), "Elementary Particle Reactions in Photographic Emulsions"; Michigan State College (E. A. Hiedemann), "Light Diffraction and Ultrasonic Waves"; University of Nebraska (D. C. Moore), "Half-Life of Positrons in Condensed Matter"; New York University (A. Beiser), "Sensitivity Time in Nuclear Emulsions"; University of Oklahoma (J. R. Nielsen), "Vibrational Spectra of Compounds in Different States of Aggregation"; University of Puerto Rico (A. Cobas), "Zenith Angle Variation of Cosmic Rays"; Purdue Research Foundation (F. J. Belinfante), "Elementary Particles and Field Theory"; Rice Institute (C. F. Squire), "Studies in Solid State Physics"; Southwestern University at Memphis (D. E. Matthews), "Critical Energy for Secondary Electron Research"; U. S. Embassy, London, England (R. W. G. Wyckoff, science attaché), "Electron Microscopic Study of the Structure of Biological Tissues"; University of Pittsburgh (M. A. Lauffer), "Biophysical Studies on Plant Viruses"; and Yale University (E. C. Pollard and F. Hutchinson), "X-Ray Studies of Viruses".

The following awards are among those granted in other sciences: University of Chicago (W. A. Hiltner), "Interstellar Polarization"; University of Chicago (G. P. Kuiper), "Physical and Statistical Study of the Asteroids"; Harvard University (H. Shapley), "The Stellar Corona Surrounding our Discoidal Galactic System"; Northwestern University (K. A. Strand), "Photographic Observation of Double Stars"; Yale University (D. Brouwer), "Systems of Fundamental Catalogues from Observations of Selected Minor Planets"; University of Chicago (H. C. Urey), "Isotopic Abundances Relating to Geochemical Research"; Georgia Institute of Technology (W. T. Ziegler), "Studies of Compounds for Superconductivity"; and Pennsylvania State College (A. H. Waynick), "Detecting Solar and Upper Atmosphere Phenomena by Long-Wave Radio Methods".

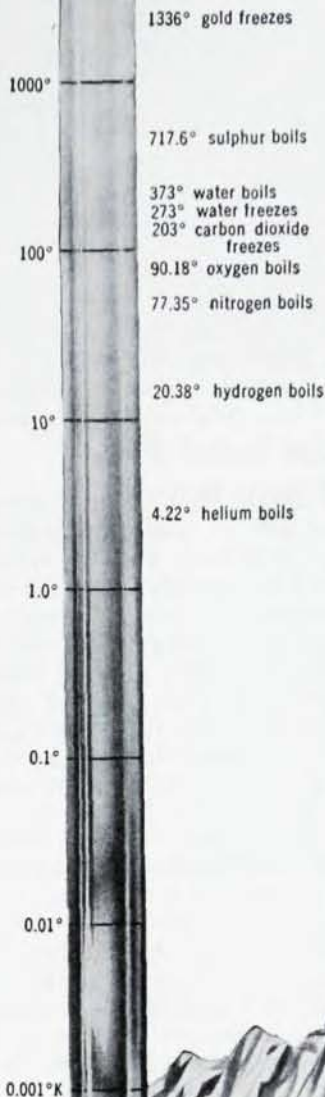
Among the conferences that received NSF support are: The American Academy of Arts and Sciences, "Conference on the Validation of Scientific Theories"; Carnegie Institution of Washington, "Conference on Radio Astronomy"; University of Chicago, "Conference on Nuclear Processes in Geological Settings". One physicist, L. W. Alvarez of the University of California at Berkeley, received a grant to enable his attendance at the Symposia on Nuclear Physics, Geophysics, and Astrophysics to be held next January in Canberra by the Australian-New Zealand Association for the Advancement of Science.

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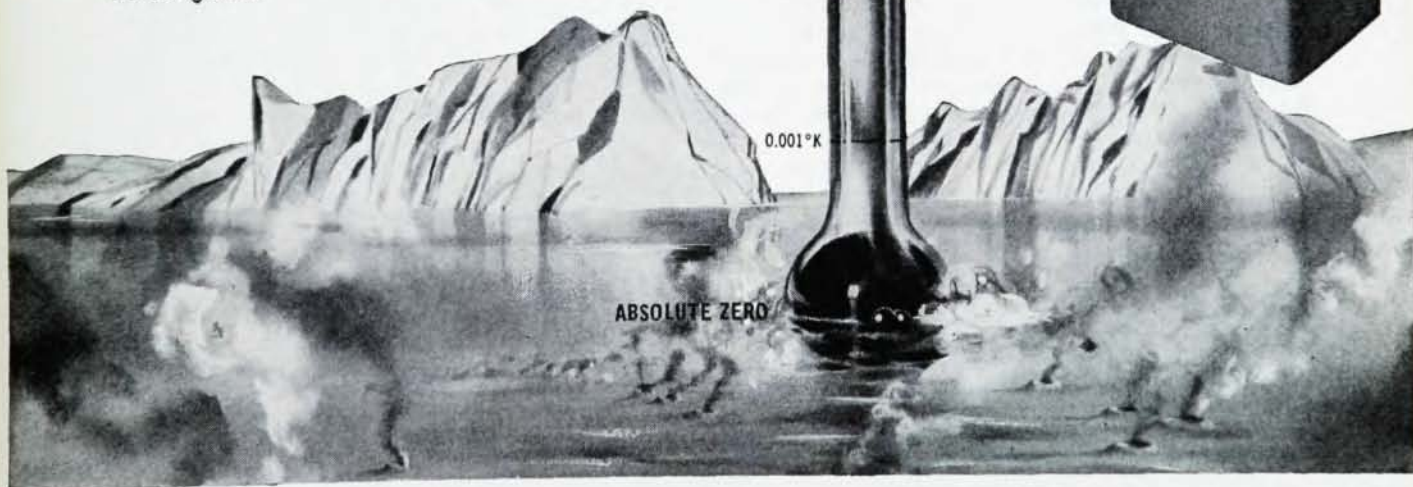
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The Foundation also announced an award of \$29 400 to the American Academy of Arts and Sciences, Boston, for a two-year policy study entitled "History of Activities of the Federal Government in Science", to be carried out under A. H. Dupree. Three additional awards were granted under the category "Dissemination of Scientific Information". Two of these are for projects at the Library of Congress: "Study of Publications Stemming from Defense-Related Technical Reports" (D. E. Gray), and "Establishing and Operating a Center for Recording, Reporting, Duplicating, and Distributing Translations of Scientific Literature" (R. L. Zwemer). The third went to the U. S. Department of Agriculture Graduate School (R. R. Shaw) for an "Investigation of the Effectiveness of Information Sources Available to American Scientists".

Zernike Awarded Nobel Prize For Discovery of Phase Contrast

Fritz Zernike, professor of theoretical physics at Groningen University, in Holland, has been named to receive the 1953 Nobel Prize in physics for his invention of the phase contrast microscope, a contribution not only to physics but also to biology and medicine because of its usefulness in the study of living cells. Dr. Zernike's discovery of the principle of phase contrast dates from the early thirties when he attempted, without success, to interest a famous German optical firm in the idea. "They said," Dr. Zernike is reported to have recalled, "if it was practical they already would have developed it". Phase contrast is used in observing thin, almost transparent, objects, such as living tissue, which differ optically from their surroundings only in refractive index. Phase changes in wavefronts of light passing through such an object are converted into changes in light intensity by use of an optical system employing an annular substage diaphragm and an annular quarter-wave plate, which has the effect of making the object seem either more or less bright than its surroundings. Dr. Zernike was also honored just one year ago by the British Royal Society, which presented to him its Rumford Medal.

Translations Pool Established at Crerar Library

The Special Library Association, in cooperation with the Crerar Library, Chicago, has announced a new translation program aimed at increasing the availability of translations in a number of technological fields, including physics. A nucleus of some 1300 translations has already been deposited in the Library, and listings are expected to be available shortly. Because the usefulness of the pool will depend upon the number of translations collected, the Association says it will welcome contributions of complete translations or the opportunity to microfilm such documents, with permission to lend or reproduce in photocopy being a condition of deposit. In view of the emphasis currently

placed upon Russian scientific translations by the National Science Foundation's translating program, the Association plans to concentrate on translations from languages other than Russian. Contributions and requests for a price list or information on the availability of translations should be addressed to the S. L. A. Translations Pool, John Crerar Library, 86 East Randolph Street, Chicago 1, Illinois.

AEC Unclassified Contracts

37 Awarded for Physical Research

A total of 37 unclassified physical research contracts with universities and private research institutions has recently been announced by the Atomic Energy Commission. Among the ones concerned with physics are:

Carnegie Institute of Technology (R. Smoluchowski), "Properties of Grain Boundaries and Lattice Imperfections" and "Radiation Effects"; Columbia University (W. W. Havens, Jr.), "Neutron Spectroscopy and Nuclear Physics"; Columbia University (J. L. Kulp), "U-Pb Method of Age Determination"; Duke University (H. W. Newson), "Fast Neutron Cross-Sections and Shell Structure"; University of Florida (D. C. Swanson), "Electrostatic Generator Program"; University of Illinois (F. Seitz), "Experimental and Theoretical Investigation of Radiation Damage in Solid Materials"; Kansas State College (C. M. Fowler), "Precision Beta-Ray Spectroscopy"; University of Michigan (H. R. Crane), "42-Inch Cyclotron Program"; University of Minnesota (J. H. Williams), "50 Mev Linear Proton Accelerator"; University of Nebraska (T. Jorgensen, Jr.), "Mechanism of Energy Transfer of Slow Ions"; North Carolina State College (K. O. Beatty, Jr.), "Measuring the Thermal Conductivity of Poor Conductors"; Pennsylvania State College (T. F. Bates), "An Investigation of the Mineralogy and Petrography of Uraniferous Shales and Lignites"; Stanford University (E. L. Ginzton), "Limitations of Electron Linear Accelerators"; Vanderbilt University (S. K. Haynes), "Precision Beta-Ray Spectroscopy"; and University of Wisconsin (R. G. Sachs), "Theory of Light Nuclei".

Radiation Research

New Journal to Appear Shortly

A new journal entitled *Radiation Research*, to be the official organ of the Radiation Research Society, will be published bimonthly by Academic Press. *Radiation Research* will publish original articles on all aspects of the effects of radiation (ionizing, visible, ultraviolet, and infrared) on matter, and is meant to be of interest to physicists, chemists, biologists, and medical researchers. The managing editor of the journal is Titus C. Evans of the College of Medicine, State University of Iowa. The first issue is to appear in February 1954, and information about subscriptions may be obtained from Academic Press Inc., 125 East 23 Street, New York 10, N. Y.