

The Neutrino

The neutrino is a hypothetical particle which was proposed by Pauli a number of years ago, mainly to save the principle of the conservation of energy in beta-decay. Its mass is very small compared to that of an electron, and it has no charge. These characteristics make it undetectable, by present techniques at least, when it is in the free state. Experimental investigations by several different observers have shown, however, there is evidence that the impulse or recoil due to the neutrino at the moment of its creation is observable in the parent nucleus.

In the present investigation the momentum spectra of the recoil ions from a monolayer source of Y90 are measured for several different angles between the electrons and the recoil ions. This is done by timing the flight of the individual recoil ions in a field-free space. The electrons alone do not account for the observed recoil spectra, but they are accounted for in a fairly quantitative way if one assumed the existence of a neutrino which most probably goes into the opposite hemisphere from the electron. The neutrino is necessary in order to satisfy *both* the conservation of energy and the conservation of momentum. C.W.S.

Conservation of Momentum in the Beta-Decay of Y90
C. W. SHERWIN *Phys. Rev.*, 73: 1173, May 15, 1948

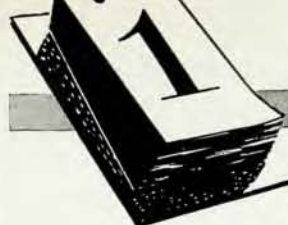
Airplane Mapping

Camera lenses of extremely wide angle are desirable for airplane mapping, because more area can be included in a single picture and the cost of making a map from a series of photographs is greatly reduced. In general, wide angle lenses without distortion give excessive variation in exposure from center to edge of picture, thus producing a negative that is difficult to print. Uniform illumination can be obtained if there are large amounts of negative distortion, but the scale varies greatly from center to edge. When a picture is made with such a lens, a projection printer is needed to make a distortion-free print from the original negative.

This paper gives a general treatment of the characteristics of wide angle airplane camera lenses and the results of an extended series of measurements on a Pleon lens and rectifying instrument brought from Germany to this country after the close of the war. I.C.G.

Lenses of Extremely Wide Angle for Airplane Mapping
I. C. GARDNER, F. E. WASHER

Journal of the Optical Society, 38: 421, May, 1948



CALENDAR

of EVENTS

June 10-12	Symposium on Electron and Light Microscopy, Chicago, Illinois.
June 14-18	American Association of Physics Teachers and American Society for Engineering Education, Austin, Texas
June 14-19	Symposium on Molecular Structure and Spectroscopy, Columbus, Ohio.
June 19	American Mathematical Society, Vancouver, British Columbia
June 21-23	American Physical Society, Madison, Wisconsin
June 21-25	American Institute of Electrical Engineers (Summer General Meeting), Mexico City
June 21-25	American Society for Testing Materials (Annual Meeting), Detroit, Michigan
June 21 -Sept. 3	Gordon Research Conferences (formerly Gibson Island Research Conferences), American Association for the Advancement of Science, New London, New Hampshire
June 23-25	National Colloid Symposium, Cambridge, Mass.
June 24-26	American Physical Society, Pasadena, California
June 28 -July 1	American Astronomical Society, Pasadena, California
June 28 -July 16	Northwest Conference on Nuclear Science, Reed College, Portland, Oregon
July 8-11	General Assembly, International Union of Pure and Applied Physics, Amsterdam, Holland
July 12-18	Conference on the Physics of Metals, under auspices of Netherlands Physical Society and Netherlands Committee of the International Union of Pure and Applied Physics, Amsterdam, Holland
July 12-18	International Commission of Optics, Delft, Holland
July 21-23	American Society of Civil Engineers, Seattle, Wash.
July 28 -August 3	International Union of Crystallography, Cambridge, Massachusetts
July 29-31	Second Symposium on Applied Mathematics, American Mathematical Society, Cosponsorship of American Institute of Physics, Cambridge, Massachusetts
August 2-6	Instrumentation Conference (Gordon Research Conferences), New London, New Hampshire
August 10	International Astronomical Union, Zurich, Switzerland
August 19-28	International Union of Geophysics, Oslo, Norway
August 24-27	American Institute of Electrical Engineers (Pacific General Meeting), Spokane, Washington
August 24 -September 1	18th International Geological Congress, London, England
August 30 -September 4	American Chemical Society (Eastern Session), Washington, D. C.
September 1-10	International Society of Photogrammetry, Amsterdam, Holland
September 6-7	Mathematical Association of America, Madison, Wisconsin.
September 6-10	American Chemical Society (Midwest Session), St. Louis, Missouri
September 7-10	American Mathematical Society, Madison, Wisconsin.
September 13-17	Instrument Society of America, Philadelphia, Penn.
September 13-17	American Chemical Society (Western Session), Portland, Oregon
September 13-17	American Association for the Advancement of Science, Washington, D. C.
September 14-19	American Roentgen Ray Society, Chicago, Illinois.
September 19-23	Illuminating Engineering Society, French Lick, Indiana
September 20-24	Illuminating Engineering Society (National Technical Conference), Boston, Massachusetts
September 21-24	International Rheological Congress, Scheveningen, Holland
September 27-30	American Society for Professional Geographers, Madison, Wisconsin
September 30 -October 3	Institute of Radio Engineers (West Coast Convention), Los Angeles, California