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	new magnet	typical magnet
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field intensity (gauss)	30,000	30,000
inside diameter (inches)	.5	4.1
outside diameter (inches)	2.0	6.2
length (inches)	4.5	14.0

18 field proved magnet designs

	Field Intensity	Inside Diameter	Winding Length	Field Uniformity	Operating Temperature	Outside Diameter	Overall Length	Delivery - Weeks
1	15,000	2"	4"	1%-1/2"	4.2°K	3"	6"	4
2	50,000	1"	5-1/2"	1%-1"	4.2°K	4"	8-1/4"	7
3	15,000	2"	8"	0.1%-1/2"	4.2°K	3-1/2"	10-1/2"	4
4	50,000	1-1/4"	2-1/2"	10%-1"	4.2°K	4-1/4"	5-1/2"	7
5	30,000	1/2"	2-3/4"	1-1/2%-1/2"	4.2°K	2"	4-1/2"	4
6	30,000	2"	2-1/4"	6%-1/2"	4.2°K	4"	4-1/2"	7
7	50,000	1/2"	3"	1%-1/2"	4.2°K	3"	5-1/2"	4
8	15,000	1.4"	6"	0.15%-1/2"	4.2°K	2-1/4"	8-1/2"	4
9	50,000	1"	4-1/4"	2-1/2%-1"	4.2°K	3-3/4"	7-3/4"	7
10	50,000	1"	3-1/4"	5%-1"	4.2°K	4-1/2"	6"	7
11	60,000	1/2"	3-3/4"	1%-1/2"	4.2°K	3-3/4"	5-3/4"	7
12	20,000	1"	11"	.05%-1"	4.2°K	2-1/2"	13-3/4"	7
13	8,000	1/2"	1-1/4"	2-1/2%-1/2"	4.2°K	1-1/4"	4-13/64"	4
14	30,000	1"	2-3/4"	12%-1"	4.2°K	2-47/64"	5-13/64"	7
15	50,000	1-1/4"	4"	2-3/4%-1"	4.2°K	4-1/4"	6-1/4"	7
16	50,000	1-1/2"	4-1/4"	2%-1"	4.2°K	4-1/4"	7-25/32"	9
17	50,000	2"	4-3/16"	3%-1"	4.2°K	5-1/4"	6-25/32"	9
18	30,000	4.1"	9-1/2"	8%-4"	4.2°K	6-1/4"	12-13/64"	12

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CALENDAR

Meeting announcements intended for inclusion in the calendar should be submitted at least eight weeks before meetings are to take place. Send notices to Physics Today, 335 East 45th Street, New York 17, N. Y.

• denotes first appearance of announcement

▲ denotes change in information published in previous listing

1963

September

25-26 Physics of Failure in Electronics (Chicago) spon's'd by Rome Air Development Center, Armour Research Foundation: M. E. Goldberg, ARF, Technology Center, Chicago, Ill. (See May PT, p. 114)

30-4 Creep and Fracture (London) spon's'd by American and British engineering socs., continuation of New York conf., Aug. 25-28: Inst. of Mechanical Engrs., 1 Birdcage Walk, London, S.W.1, England

30-4 Time-of-Flight Mass Spectrometer (Cincinnati) spon's'd by Bendix Corp.: D. C. Damoth, Bendix Corp., 3625 Hauck Rd., Cincinnati 41, Ohio

30-4 Colloquium Spectroscopicum Internationale (Belgrade) spon's'd by Yugoslav Union of Chemical Soc.: V. Vukanović, Prirodnomatematički fakultet, Fizičko-hemijski zavod, Studentski trg 16, Blok C, Belgrade, Yugoslavia (See June PT, p. 106)

30-5 Elementary Particles (Sienna) by invitation, spon's'd by Italian Physical Soc. and government agencies: E. W. D. Steel, Scientific Conf. Secretariat, CERN, Geneva 23, Switzerland (See Apr. PT, p. 118)

October

1-3 Physics and Nondestructive Testing (San Antonio) spon's'd by Southwest Research Inst.: W. J. McGonagle, SRI, 8500 Culebra Rd., San Antonio 6, Tex. (See June PT, p. 108)

3-4 Physics of Optical Glass (Pilkington Bros. Ltd., Lathom, Lancashire) spon's'd by Optical Group, Inst. of Physics and Physical Soc.: Administration Assistant, IPPS, 47 Belgrave Sq., London, S.W.1, England (See May PT, p. 114)

7-10 Instrument Symposium and Research Equipment Exhibit (Nat'l Insts. of Health): J. B. Davis, NIH, Public Health Service, Bethesda 14, Md.

8 Physics Club of Chicago (Chicago): E. L. Bussell, Welch Scientific Co., 1515 Sedgwick St., Chicago 10, Ill.

7-11 Biological Effects of Neutron Irradiations (Vienna) spon's'd by Internat'l Atomic Energy Agency: IAEA, United Nations, New York 17, N. Y.

8-10 Analytical Chemistry in Nuclear Technology (Gatlinburg, Tenn.), spon's'd by Oak Ridge Nat'l Lab: C. D. Susano, ORNL, Box X, Oak Ridge, Tenn. (See June PT, p. 108)

10-12 Reactors (Hamburg) spon's'd by Soc. for the Study of Nuclear Energy: Kernenergie Studiengesellschaft, Neuer Wall 34, Hamburg 36, Germany

10-12 Compound Nuclear States (Gatlinburg, Tenn.), American Physical Soc. Topical Conf. spon's'd by Oak Ridge Nat'l Lab: Mr. Tom Woods, Manager, Mountain View Hotel, Gatlinburg, Tenn. (See June PT, p. 108)

11-12 Elementary Particles and the Nucleus (St. Bonaventure U.) spon's'd by APS N. Y. State Section: J. M. Geiger, Physics Dept., St. Bonaventure U., Allegany, N. Y.

11-12 Excitons in Molecular Crystals (Du Pont Experimental Sta., Wilmington) spon's'd by E. I. du Pont: D. B. Chesnut, E. I. du Pont de Nemours and Co., Inc., Wilmington 98, Del.

14-18 Society for Applied Spectroscopy (El Cortez Hotel, San Diego): E. P. Wadsworth, Jr., San Diego State College, San Diego 15, Calif. (See May PT, p. 116)

15 APS New England Section (Wesleyan U., Middletown, Conn.), joint meeting with AAPT New England Section: J. M. Davies, US Army QM Research and Engrg. Center, Natick, Mass.

15-16 Reactor Operations (Ottawa) spon's'd by American Nuclear Soc.: ANS, 244 E. Ogden Ave., Hinsdale, Ill.

15-17 Nuclear Physics with Reactor Neutrons (Argonne Nat'l Lab), American Physical Soc. Topical Conf. spon's'd by ANL; abstracts deadline Oct. 1: F. E. Throw, Bldg. 203-F169, ANL, Argonne, Ill.

16-18 American Vacuum Society (Statler Hilton Hotel, Boston): AVS, PO Box 1282, Boston 4, Mass. (See May PT, p. 116)

16-18 Gaseous Electronics (Mellon Inst., Pittsburgh), American Physical Soc. Topical Conf. spon's'd by Westinghouse Research Labs, U. of Pittsburgh: M. A. Biondi, U. of Pittsburgh, Pittsburgh 13, Pa. (See June PT, p. 108)

16-18 Calorimetry (Bartlesville, Okla.): J. A. Morrison, Nat'l Research Council, Ottawa, Canada

18-19 American Physical Society (Chicago): K. K. Darrow, 538 W. 120th St., New York 27, N. Y.

20-24 Society of Exploration Geophysicists (New Orleans): T. O. Hall, Box 1536, Tulsa 1, Okla.

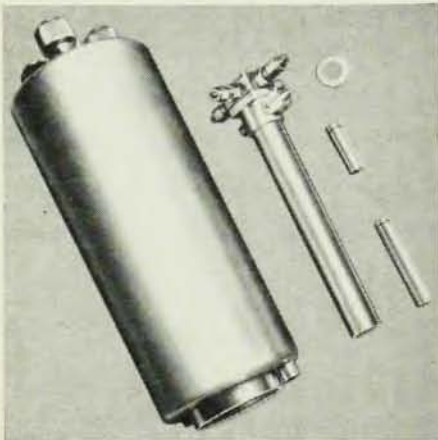
21 Alloying Behavior in Concentrated Solid Solutions (Cleveland, Ohio) spon's'd by American Inst. of Mining, Metallurgical, and Petroleum Engrs.; send abstracts to D. A. Parks, Metallurgical Soc., AIME, 345 E. 47 St., New York 17, N. Y.; T. B. Musalski, Mellon Inst., 4400 Fifth Ave., Pittsburgh 13, Pa. (See July PT, p. 76)

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- 21-23 Direct Aeronomic Measurements in the Lower Ionosphere (U. of Illinois): *S. A. Bowhill, Dept. of Electrical Engrg., U. of Ill., Urbana, Ill.*
- 21-25 Metal Show and Congress (Cleveland) spons'd by American Soc. for Metals: *ASM, Stanford U., Stanford, Calif.*
- 21-25 Society for Nondestructive Testing (Cleveland): *P. D. Johnson, 914 Chicago Ave., Evanston, Ill.*
- 21-25 Beryllium Oxide (Sydney): *Conf. Secretary, Australian Atomic Energy Commission Research Establishment, Private Mail Bag, Netherland, New South Wales, Australia*
- 23-25 **Optical Society of America** (Sherman House, Chicago): *Mary Wurga, 1155 16th St., N.W., Washington 6, D. C. (See June PT, p. 108)*
- 25-26 Theoretical Physics (U. of N. Carolina): *E. Merzbacher, Dept. of Physics, U. of N. Carolina, Chapel Hill, N. C.*
- 28-29 Combustion Institute Western States Section (U. of Southern Calif.): *Secretary, Combustion Inst. Western States Section, 16902 Bollinger Dr., Pacific Palisades, Calif. (See Mar. PT, p. 94)*
- 29-31 Plasma Phenomena and Measurement (San Diego) spons'd by Inst. of Electrical and Electronics Engrs.: *IEEE, Box A, Lenox Hill Sta., New York 21, N. Y. (See June PT, p. 108)*
- 31-1 Transition-Metal Compounds: Transport and Magnetic Properties (Carnegie Tech) spons'd by Carnegie Tech, Buhl Foundation: *E. R. Schatz, Carnegie Tech, Pittsburgh 13, Pa. (See Aug. PT, p. 76)*

November

- 3-6 Electrical Insulation (White Sulphur Springs, W. Va.) spons'd by Nat'l Academy of Sciences: *D. W. Thornhill, NAS-NRC, 2101 Constitution Ave., Washington 25, D. C.*
- 6-8 Diffraction (Mellon Inst., Pittsburgh): *W. M. Diagas, Crucible Steel Co., PO Box 7257, Pittsburgh 13, Pa. (See July PT, p. 76)*
- 6-9 **APS Division of Plasma Physics** (El Cortez Hotel, San Diego) spons'd by General Atomic, Division of General Dynamics; abstracts deadline Sept. 24: *A. Simon, c/o General Atomic, PO Box 608, San Diego 12, Calif. (See Mar. PT, p. 102)*
- 6-9 **Acoustical Society of America** (Ann Arbor): *G. Peterson, U. of Mich., Ann Arbor, Mich.*
- 7-9 **APS Southeastern Section** (U. of Kentucky, Lexington): *H. Carr, Auburn U., Auburn, Ala.*
- 11-15 Physics and Material Problems of Reactor Control Rods (Vienna) spons'd by Internat'l Atomic Energy Agency: *IAEA, United Nations, New York 17, N. Y.*
- 12-14 Severe Storms (Urbana, Ill.) spons'd by American Meteorological Soc.: *AMS, 45 Beacon St., Boston 8, Mass. (See Aug. PT, p. 76)*

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- 12-14 Fall Joint Computer Conference (Las Vegas) spons'd by American Federation of Information Processing Soc.; Phyllis Huggins, AFIPS, PO Box 55, Malibu, Calif. (See Apr. PT, p. 118)
- 12-15 Magnetism and Magnetic Materials (Atlantic City) spons'd by **American Inst. of Physics**, Inst. of Electrical and Electronics Engrs.; W. D. Doyle, Franklin Inst. Labs, Philadelphia 3, Pa. (See June PT, p. 110)
- 13-15 Eastern Analytical Symposium and Instrument Exhibit (Statler Hilton Hotel, New York City); M. Slavin, Brookhaven Nat'l Lab, Upton, N. Y.
- 18-21 American Nuclear Society (New York City), meeting jointly with Atomic Industrial Forum and Atom Fair; O. J. Du Temple, ANS, 86 E. Randolph St., Chicago 1, Ill.
- 19 Materials for Sodium-Cooled Nuclear Power Reactors (New York City) spons'd by American Inst. of Mining, Metallurgical, and Petroleum Engrs., American Nuclear Soc., at ANS Winter meeting; R. B. Gordon, Nuclear Metallurgy Committee, AIME, PO Box 309, Canoga Pk., Calif.
- 19-21 Stratosphere-Mesosphere Structure (El Paso) spons'd by American Meteorological Soc.; AMS, 45 Beacon St., Boston 8, Mass. (See Aug. PT, p. 76)
- 25-27 Geological Society of America (New York City); F. Betz, Jr., 419 W. 117 St., New York 27, N. Y.
- 25-27 Nuclear Electronics (Paris) spons'd by Soc. Française des Electroniciens et Radio-Electroniciens; SFER, 10 av. Pierre-Larousse, Malakoff, Seine, France
- 25-27 **APS Division of Fluid Dynamics** (MIT); send abstracts by Oct. 7 to S. Corsin, Dept. of Mechanics, Johns Hopkins U., Baltimore, Md.; R. J. Emrich, Dept. of Physics, Lehigh U., Bethlehem, Pa. (See June PT, p. 110)
- 29-30 Biomagnetics (College of Pharmacy, U. of Ill.; M. F. Barnothy, College of Pharmacy, U. of Ill., 833 S. Wood St., Chicago 12, Ill.

December

- 4-6 Ultrasonics (Washington, D. C.) spons'd by Inst. of Electrical and Electronics Engrs.; IEEE, Box A, Lenox Hill Sta., New York 21, N. Y. (See June PT, p. 108)
- 6-7 Signal Statistics (Seattle) spons'd by US Nat'l Committee of Internat'l Scientific Radio Union, Boeing Scientific Research Labs, U. of Washington College of Engrg., Inst. of Electrical and Electronics Engrs.; D. K. Reynolds, PO Box 3981, Seattle 24, Wash.
- 9-11 International Scientific Radio Union—Institute of Electrical and Electronics Engineers (Seattle); US Nat'l Committee, Internat'l Scientific Radio Union, 2101 Constitution Ave., N.W., Washington 25, D. C.
- 9-13 Isotope Mass Effects in Chemistry and Biology (Vienna) spons'd by Internat'l Atomic Energy Agency, Internat'l Council of Scientific Unions' Joint Commission on Applied Radioactivity; J. H. Kane, Chief, Internat'l Confs. Branch, Div. of Special Projects, Atomic Energy Commission, Washington 25, D. C. (See Aug. PT, p. 78)

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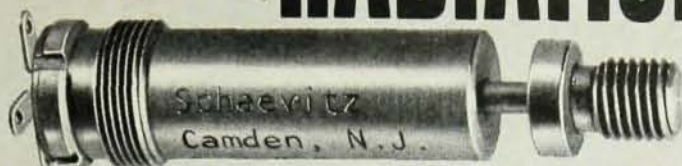
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11-13 Heterogeneous Combustion (Palm Beach, Fla.) spons'd by American Inst. of Aeronautics and Astronautics: AIAA, 500 Fifth Ave., New York 36, N. Y. (See July PT, p. 76)

16-18 Electrical and Magnetic Properties of Thin Films in Relation to Their Structure (Imperial College, London) spons'd by Inst. of Physics and Physical Soc.: Administration Assistant, IPPS, 47 Belgrave Sq., London, S.W.1, England

19-20 Radiation Emergencies in Medicine, Research, and Industry (Pick-Congress Hotel, Chicago) spons'd by Midwest Chapter of Health Physics Soc.: R. V. Wheeler, Argonne Nat'l Lab., 9700 S. Cass Ave., Argonne, Ill.

19-21 American Physical Society (Pasadena); abstracts deadline Oct. 11: W. A. Nierenberg, U. of Calif., Berkeley 4, Calif.

26-28 American Astronomical Society (Washington, D. C.): G. C. McVittie, U. of Illinois Observatory, Urbana, Ill.

26-28 American Geophysical Union (Boulder); abstracts deadline Oct. 10: W. Kellogg, Rand Corp., 1700 Main St., Santa Monica, Calif. (See Aug. PT, p. 78)

26-30 American Association for the Advancement of Science (Cleveland): R. L. Taylor, AAAS, 1515 Massachusetts Ave., N.W., Washington 5, D. C.

1964

January

1-4 Solid-State Physics (U. of Bristol) spons'd by Inst. of Physics and Physical Soc.; send abstracts by Nov. 15 to R. G. Chambers, H. H. Wills Lab, Royal Fort, Bristol 8: Administration Assistant, IPPS, 47 Belgrave Sq., London, S.W.1, England (See June PT, p. 112)

20-22 American Institute of Aeronautics and Astronautics (New York City): AIAA, 500 Fifth Ave., New York 36, N. Y.

20-23 Semiconductor Applications (London): U.T.P. Applications Ltd., Racquet Court, Fleet St., London, E.C.4, England

20-24 American Mathematical Society (Miami): AMS, 190 Hope St., Providence 6, R. I.

22-25 American Physical Society (Statler-Hilton Hotel, New York City); abstracts deadline Nov. 9: K. K. Darrow, 538 W. 120 St., New York 27, N. Y.

22-25 American Association of Physics Teachers (Statler-Hilton Hotel, New York City): E. U. Condon, Oberlin College, Oberlin, Ohio

25-27 Mathematical Association of America (Miami): H. M. Gehman, U. of Buffalo, Buffalo 14, N. Y.

29-31 Solid-Propellant Rockets (Palo Alto—Sunnyvale, Calif.) spons'd by American Inst. of Aeronautics and Astronautics: AIAA, 500 Fifth Ave., New York 36, N. Y. (See July PT, p. 76)

29-31 American Meteorological Society (Los Angeles): AMS, 45 Beacon St., Boston 8, Mass. (See Aug. PT, p. 76)

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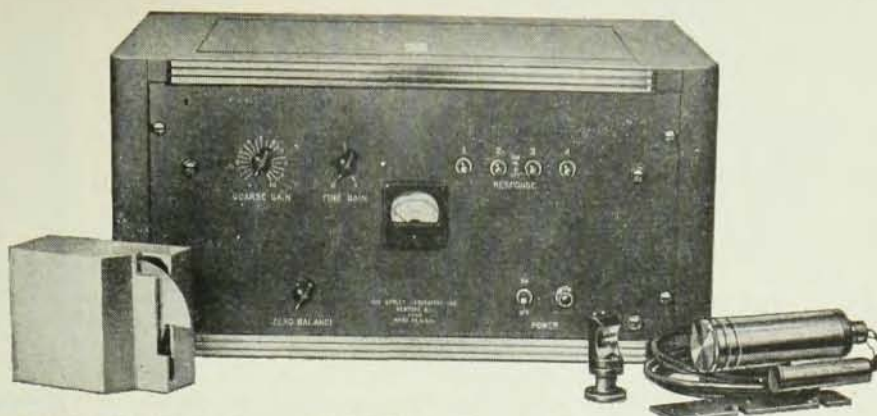
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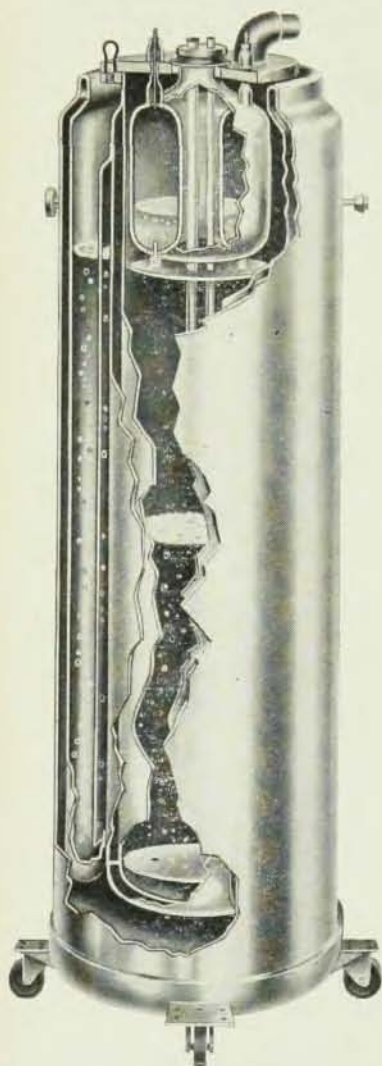
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February

- 2-11 Documentation and Scientific Technical Information (Rome): *Executive Secretary, Viale Regina Margherita, 83D, Rome, Italy*
- 3-7 American Society for Testing and Materials (Sheraton Hotel, Philadelphia): *ASTM, 1916 Race St., Philadelphia 3, Pa. (See Nov. '62 PT, p. 102)*
- 12-14 Solid-State Circuits (Philadelphia) spons'd by Inst. of Electrical and Electronics Engrs., U. of Pa.: *IEEE, Box A, Lenox Hill Station, New York 21, N. Y.*
- 17-20 Metals for Use at High Temperatures (New York City) spons'd by Metallurgical Soc. of American Inst. of Mining, Metallurgical, and Petroleum Engrs.: *D. A. Parks, Metallurgical Soc., Inst. of Metals Div., 345 E. 47th St., New York 17, N. Y.*
- 26-28 Scintillation and Semiconductor Counters (Washington, D. C.) spons'd by Inst. of Electrical and Electronics Engrs., Atomic Energy Commission, Nat'l Bureau of Standards; send abstracts by Dec. 1 to W. A. Higginbotham, Brookhaven Nat'l Labs, Upton, N. Y.: *G. A. Morton, RCA Labs, Princeton, N. J. (See July PT, p. 78)*
- 27-29 American Physical Society (Tucson): abstracts deadline Dec. 13: *K. K. Darrow, 538 W. 120th St., New York 27, N. Y.*

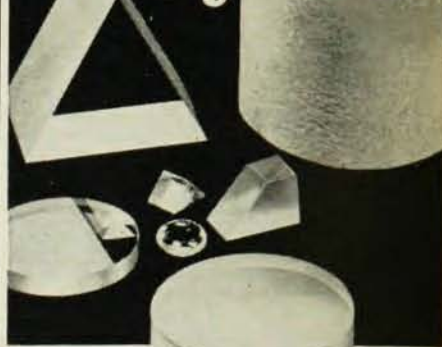
March

- 2-6 Analytical Chemistry and Applied Spectroscopy (Pittsburgh) spons'd by American Chemical Soc., Spectroscopy Soc. of Pittsburgh; abstracts deadline Oct. 15: *R. B. Friconi, Allegheny Ludlum Steel Corp., Quality Control Lab, Research Center, Brackenridge, Pa.*
- 4-6 Thermal Radiation of Solids (Sheraton Palace Hotel, San Francisco) spons'd by Nat'l Bureau of Standards, Nat'l Aeronautics and Space Administration, US Air Force, U. of Calif.: *W. D. Harris, Engrg. and Sciences Extension, U. of Calif., Berkeley 4, Calif.*
- 23-26 Institute of Electrical and Electronics Engineers (New York City): *IEEE, Box A, Lenox Hill Sta., New York 21, N. Y.*
- 24-26 Physics and Dynamics of Clouds (Chicago) spons'd by American Meteorological Soc.: *AMS, 45 Beacon St., Boston 8, Mass. (See Aug. PT, p. 78)*

April

- 1-2 Engineering Aspects of Magnetohydrodynamics (Massachusetts Inst. of Technology) spons'd by Inst. of Electrical and Electronics Engrs., American Inst. of Aeronautics and Astronautics, MIT: *IEEE, Box A, Lenox Hill Sta., New York 21, N. Y.*
- 1-3 Optical Society of America (Sheraton Park Hotel, Washington, D. C.): *Mary Wurga, 1155 16th St., N.W., Washington 6, D. C.*

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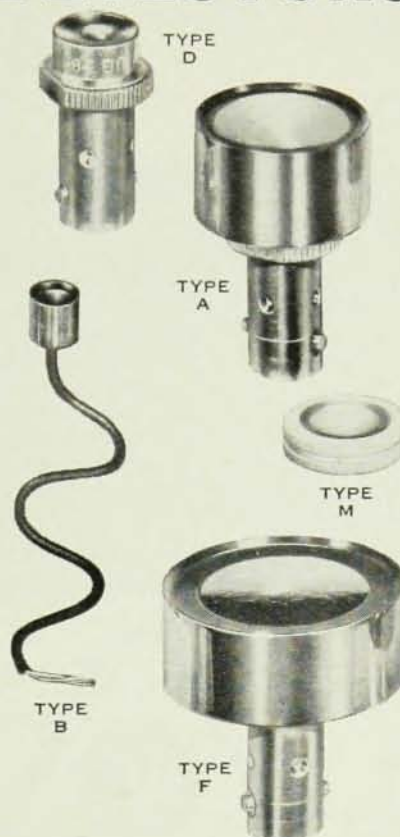
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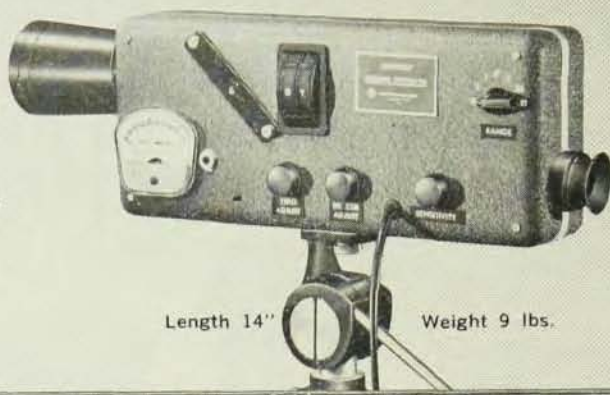
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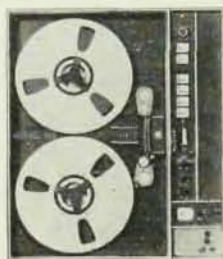
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DATA HANDLING SYSTEMS

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- 6-8 Nonlinear Magnetics (Shoreham Hotel, Washington, D. C.) spons'd by Inst. of Electrical and Electronics Engrs.: *W. L. Shevel, Jr., Internat'l Business Machines, MRD 807, PO Box 218, Yorktown Hts., N. Y.*
- 21-23 Spring Joint Computer Conference (Washington, D. C.) spons'd by American Federation of Information Processing Soc.: *Phyllis Huggins, AFIPS, PO Box 55, Malibu, Calif.*
- 27-28 Combustion Institute Western States Section (Santa Clara County, Calif.): *Secretary, CI/WSS, 16902 Bollinger Dr., Pacific Palisades, Calif.*
- 27-1 Society of Photographic Scientists and Engineers (New York City) co-spons'd by Columbia U. School of Engineering and Applied Sciences: *W. Clark, Eastman Kodak Co., Research Labs, Rochester 4, N. Y.*

May

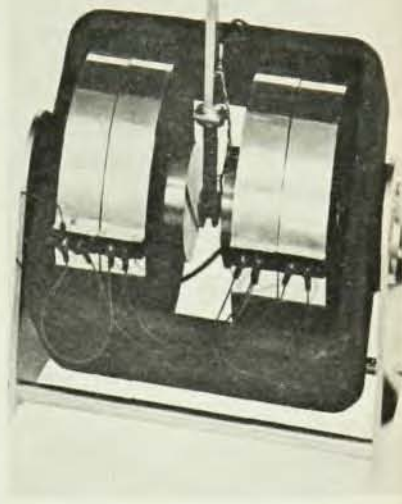
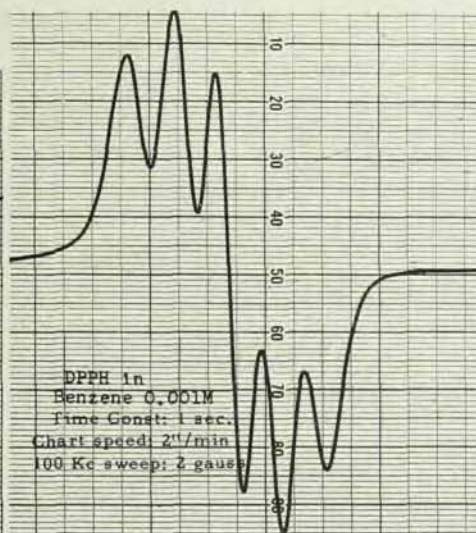
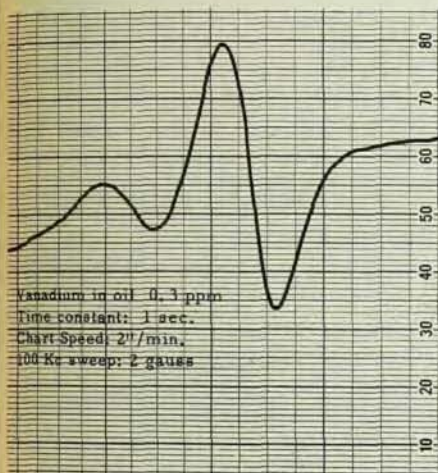
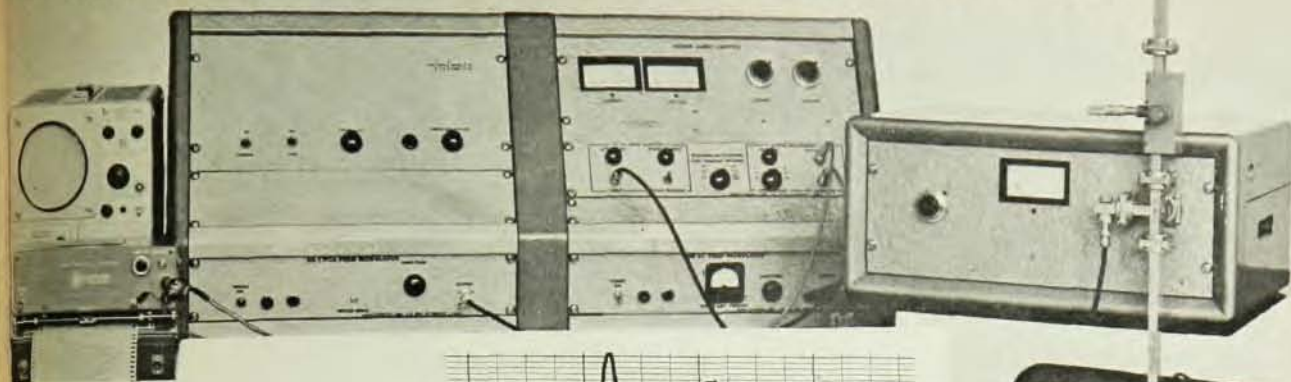
- 4-8 Strata Control and Rock Mechanics (New York City): *S. Boshkov, Columbia U., New York 27, N. Y.*
- 6-9 Acoustical Society of America (New York City); abstracts deadline Feb. 5: *R. Frosch, Columbia U., Hudson Labs, 145 Palisades St., Dobbs Ferry, N. Y.*
- 19-21 Microwave Theory and Techniques (Internat'l Airport, Idlewild, N. Y.) spons'd by Inst. of Electrical and Electronics Engrs.: *L. Swern, Sperry Gyroscope Co., 3 T 105, Great Neck, N. Y.*
- 25-27 Power Reactors and Radioisotopes (Toronto) spons'd by Canadian Nuclear Assoc.: *General Manager, CNA, 19 Richmond St. W., Toronto 1, Ont., Canada*
- 27-29 Canadian High-Polymer Forum (Ste. Marguerite, Que.) spons'd by Nat'l Research Council of Canada, Chemical Inst. of Canada; send abstracts by Feb. 15 to *L. Breitman, Polymer Corp. Ltd., Sarnia, Ont.: H. Daoust, U. de Montréal, PO Box 6128, Montreal, Que., Canada*

June

- 14-18 Health Physics Society (Cincinnati): *H. E. Kolde, Taft Sanitary Engrg. Center, Cincinnati 26, Ohio*
- 18-20 Precision Electromagnetic Measurements (Boulder) spons'd by Inst. of Electrical and Electronics Engrs., Nat'l Bureau of Standards: *IEEE, Box A, Lenox Hill Sta., New York 21, N. Y.*
- 21-26 Physics and Chemistry of Solid Surfaces (Brown U.): *H. E. Farnsworth, Brown U., Providence, R. I.*
- 21-26 American Society for Testing and Materials (Chicago): *ASTM, 1916 Race St., Philadelphia 3, Pa. (See Aug. PT, p. 80)*
- 22-24 Photosensitization in Solids (Chicago) spons'd by Illinois Inst. of Technology: *L. Grossweiner, Dept. of Physics, IIT, Chicago 16, Ill.*

PHYSICS TODAY

A NEW RESEARCH EPR SPECTROMETER



A new X-Band Electron Paramagnetic Resonance Spectrometer is now available from Alpha, in addition to the low cost 340 megacycle and 30 to 60 megacycle EPR units which have found wide usage in schools and research laboratories for over 2 years. The new EPR Spectrometer System is an extremely sensitive system which has several unique advantages over presently available systems. One major advance of this system is the use of a "slow wave" structure to replace difficult-to-use microwave cavities. The tremendous advantage of the Alpha designed slow wave sample receptacle structure is that larger samples can be investigated with higher sensitivity than heretofore possible with any other EPR system. A typical example of the X10 in use is shown above in the study of vanadium compounds in oil.

For comparative quantitative and qualitative calibration a resonance curve of the free radical 2, 2, diphenyl 1, picryl hydrazyl, (DPPH) dissolved in benzene is also shown. The calibrated distance between the first and last peaks is 41 gauss. The multiple (fine) lines are hyperfine structures due to the sharing of one electron between two nitrogen atoms. The nitrogen nuclei have a spin I of unity, and provide 2 (2I) + 1 = 5 hfs lines.

Qualitative analysis of the vanadium resonance was accomplished by checking the value of the magnetic field at resonance against the standard sample DPPH resonance curve taken as a index of resonance position. Quantitative analysis of the number of atoms participating in the resonance signal is determined by integrating the area under the resonance signal and comparing with the standard sample. An integrating recorder attachment is an optional feature of the Alpha AL-X10 microwave Spectrometer.

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• Vacuum Techniques in Space Research (Paris) spons'd by French Soc. of Vacuum Engrs. and Technicians: J. Mainier, 147 Blvd. de Strasbourg, Nogent-sur-Marne, Seine, France

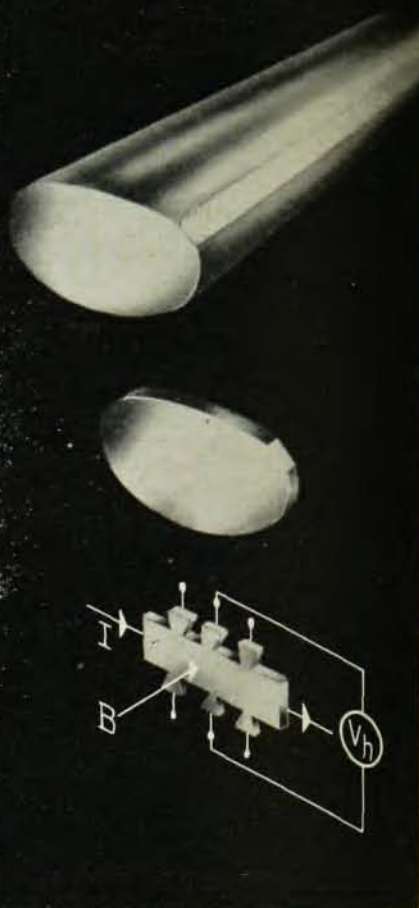
July

- 2-8
• Nuclear Physics (Paris) spons'd by UNESCO, Internat'l Union of Pure and Applied Physics, on 30th anniversary of discovery of artificial radioactivity: *Congrès Internat'l de Physique Nucléaire*, PO Box 14, Orsay, Seine-et-Oise, France
- 6-10
• Magnetohydrodynamic Electrical Power Production (Paris) spons'd by European Nuclear Energy Agency, French National Inst. of Nuclear Science and Technology: *ENEA*, 38, Blvd. Suchet, Paris 16, France
- 7-10
• Rarefied Gas Dynamics (Toronto): G. N. Patterson, Inst. of Aerophysics, U. of Toronto, Toronto 5, Ont., Canada
- 20-24
• Physics of Semiconductors (Paris) spons'd by Internat'l Union of Pure and Applied Physics, French Society of Physics: M. Balkanski, Laboratory of Physics, Ecole Normale Supérieure, 24 rue Lhomond, Paris 5, France
- 26-31
• American Crystallographic Association (Montana State College): B. Post, Brooklyn Polytechnic Inst., Brooklyn 1, N. Y.

August

- 4-10
• Reactivity of Solids (Munich) spons'd by Internat'l Union of Pure and Applied Physics, Internat'l Union of Pure and Applied Chemistry: R. Morf, F. Hoffman-La Roche et Cie., Basel 2, Switzerland
- 17-21
• Combustion (Cambridge U.) spons'd by Combustion Inst., Cambridge Physical Chemistry Dept.; abstracts deadline Jan. 15: *Combustion Inst.*, 986 Union Trust Bldg., Pittsburgh 19, Pa. (See Aug. PT, p. 80)
- 25-29
• Electron Microscope Society of America (Detroit): A. Taylor, Virus Div., Parke Davis Co., Detroit 32, Mich.
- 26-2
• Logic, Methodology, and Philosophy of Science (Jerusalem) spons'd by Internat'l Union for History and Philosophy of Science: Y. Bar-Hillel, Hebrew U., Jerusalem, Israel
- 30-5
• Applied Mechanics (Munich): *Organization Secretariat, Mechanics Congress, Inst. for Mechanics, Arcistr. 21, Munich, Germany* (See June PT, p. 112)
- 31-2
• Mathematical Association of America (U. of Mass., Amherst): H. M. Gehman, State U. of New York, Buffalo 14, N. Y.
- 31-4
• Low-Temperature Physics (Columbus) spons'd by Internat'l Union of Pure and Applied Physics, Ohio State U., Battelle Memorial Inst.: J. G. Daunt, Dept. of Physics, Ohio State U., Columbus, Ohio

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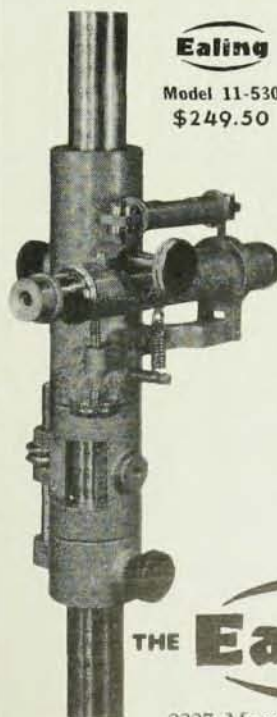
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31

September

- 1-8 Photographic and Spectroscopic Optics (Tokyo and Kyoto) spons'd by Internat'l Commission for Optics, Science Council of Japan, Japanese Soc. of Applied Physics; abstracts deadline Jan. 31: H. Kubota, Science Council of Japan, Ueno Park, Tokyo, Japan (See July PT, p. 78)
- 7-11 Magnetism (U. of Nottingham) spons'd by Internat'l Union of Pure and Applied Physics, British Nat'l Committee for Physics; Deputy Secretary, IPPS, 47 Belgrave Sq., London, S.W.1, England
- 7-11 Microwaves, Circuit Theory, and Information Theory (Akasaka Prince Hotel, Tokyo) spons'd by Inst. of Electrical Communication Engrs. of Japan, Science Council of Japan, Internat'l Scientific Radio Union; send abstracts by Mar. 31 to K. Morita, Inst. of Electrical Communication Engrs. of Japan: T. Utsunomiya, Inst. of Electrical Communication Engrs. of Japan, 2-8 Fujimicho, Chiyoda-ku, Tokyo, Japan
- 22-24 Antennas and Propagation (Long Island, N. Y.) spons'd by Inst. of Electrical and Electronics Engrs.; H. Jasik, 100 Shames Dr., Westbury, N. Y.
- 23-25 Fundamental Problems of Low-Pressure Measurements (Nat'l Physical Lab, Teddington) spons'd by Nat'l Physical Lab, Inst. of Physics and Physical Soc.; abstracts deadline Nov. 30: R. S. Dadson, Standards Div., Nat'l Physical Lab, Teddington, Middlesex, England
- 26-3 Electron Microscopy (Prague) spons'd by Internat'l Federation of Societies for Electron Microscopy: Organizing Committee, Albertov 4, Prague 2, Czechoslovakia

October

- 12-16 Instrument Society of America (New York City): ISA Mtgs. Mgr., Penn Sheraton Hotel, 530 Wm. Penn Pl., Pittsburgh 19, Pa.
- 21-24 Acoustical Society of America (Austin, Tex.): C. P. Boner, U. of Texas, Univ. Sta., Austin, Tex.
- 26-27 Combustion Institute Western States Section (U. of Utah): Secretary, CI/WSS, 16902 Bollinger Dr., Pacific Palisades, Calif.

November

- 16-19 Magnetism and Magnetic Materials (Minneapolis) spons'd by American Inst. of Physics, Inst. of Electrical and Electronics Engrs.; R. Prosen, Minneapolis-Honeywell Research Center, Hopkins, Minn.
- 17-19 Fall Joint Computer Conference (Brooks Hall, San Francisco) spons'd by American Federation of Information Processing Soc.: Phyllis Hugins, AFIPS, PO Box 55, Malibu, Calif.

December

- 14-22 International Geological Congress (New Delhi): Secretary General, c/o Geological Survey of India, 27, Chowringhee, Calcutta 13, India

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The Keithley Model 149 is the most sensitive electronic voltmeter available today, having a signal-to-noise ratio that approaches the theoretical limit. Recommended for use with thermocouples or thermopiles, the Model 149 is also ideal in cryogenics investigations and Hall Effect studies.

Zero suppression up to 100 times full scale adds versatility for the user. Line-operated, the Model 149 can accommodate either a floating or ground-referenced input. Output is 5 v or 5 ma on all ranges. Brief specifications:

- **range:** 0.1 microvolt to 100 millivolts in 13 overlapping 1x and 3x steps
- **noise:** less than 6×10^{-12} v rms with shorted input
- **input impedance:** 10K ohms on 0.1 μ v range rising to 10 megohms on 100 μ v scale
- **stability:** within 0.01 μ v per hour
- **speed of response:** to 90% fs in .5 seconds on most ranges
- **accuracy:** 2% fs on all ranges
- **price:** \$895.00

Other MICROVOLT METERS:

Model 150A 1 μ v sensitivity \$750.00
Model 151 100 μ v sensitivity \$420.00

full details in latest catalog...



**KEITHLEY
INSTRUMENTS**

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