

## Magnetosphere and Ionosphere

**Wave Instabilities in Space Plasmas.** Proceedings of a symposium, Helsinki, Finland, July 1978. PETER J. PALMADESSO and KONSTANTINOS PAPADOPOULOS, Eds. Reidel, Boston, 1979. viii, 312 pp., illus. \$39.50. Astrophysics and Space Science Library, vol. 74.

This book contains the sometimes significantly revised versions of 20 of the more than 60 papers given at a symposium on wave instabilities in space plasmas. Because only manuscripts submitted soon after the conference are included, the coverage of topics is uneven, but the papers are quite up to date compared with those in many conference proceedings. There is a nice mixture of reviews and papers on recent work. The reviews were deliberately limited in length; hence the discussions are usually on a fairly descriptive level, with a minimum of detailed mathematics. Unfortunately, the introductory material is sometimes also abbreviated a bit too much for nonspecialist readers. Both theory and experiments are discussed, but the emphasis is on theory.

The book is divided into four parts. Although this follows the conference organization, the resulting grouping of papers is probably not the most logical. The first part, entitled Natural Noise in Space, contains six papers dealing with extremely low frequency and very low frequency waves in the magnetosphere. This is a big subject, and the only general review included suffers from the problem of overspecialization (for example, the reader is presumed to know what "lion's roar" is). Nevertheless, there is much useful and readable material in this part, particularly on the subject of power line harmonic radiation effects in the magnetosphere.

The second and third parts, Plasma Turbulence and Nonlinear Effects, are highly overlapping, for there can be no turbulence without nonlinear effects, and contain a total of 12 papers on natural and artificially driven instabilities and wave-particle interactions in the magnetosphere (really a continuation of the first part), electrostatic double layers, ion sound instabilities, equatorial electrojet instabilities, and type III solar radio bursts. I found the papers on double layers interesting but perhaps a bit misleading, since they ignore magnetic field effects, which admittedly make life difficult for theorists but apparently play a key role in the actual magnetospheric acceleration process. A paper on electrojet instabilities contains important data that have not been published elsewhere as far

as I know. I enjoyed reading the two papers on type III bursts, a subject I am not very familiar with, because the strong turbulence theory that has been developed seems to be amazingly successful.

The last part of the book consists of two excellent reviews on instabilities in the F region of the equatorial ionosphere. They accurately describe the spectacular recent advances both in experimental studies of these intriguing processes and in our theoretical understanding of them.

In summary, this is a good book and conveys the flavor of the conference. I think most readers will find the papers in their own fields to be useful and papers in allied fields to be successful in conveying at least the major theoretical ideas.

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## BOOKS RECEIVED

**The Anticancer Drugs.** William B. Pratt and Raymond W. Ruddon. Oxford University Press, New York, 1979. x, 324 pp., illus. Cloth, \$18.95; paper, \$12.95.

**The Antigens.** Vol. 5. Michael Sela, Ed. Academic Press, New York, 1979. xiv, 410 pp. \$35.

**Anti-Herpesvirus Chemotherapy.** Experimental and Clinical Aspects. Papers from a symposium. Hamburg, Sept. 1978. K. K. Gauri, Ed. Karger, Basel, 1979. xii, 300 pp., illus. \$97.25. Advances in Ophthalmology, vol. 38.

**Biological Applications of Magnetic Resonance.** R. G. Shulman, Ed. Academic Press, New York, 1979. viii, 588 pp., illus., \$29.50.

**The Biological Aspects of Normal Personality.** Readings selected and comments written by R. A. Prentsky. University Park Press, Baltimore, 1979. viii, 392, illus. \$24.50.

**Biological/Biomedical Applications of Liquid Chromatography II.** Papers from a symposium, Boston, Oct. 1978. Gerald L. Hawk, Paul B. Champlin, Robert F. Hutton, Howard C. Jordi, and Chris MOI, Eds. Dekker, New York, 1979, xiv, 504 pp., illus. \$45. Chromatographic Science, vol. 12.

**Computer Vision and Sensor-Based Robots.** Proceedings of a symposium, Warren, Mich., Sept. 1978. George G. Dodd and Lothar Rosol, Eds. Plenum, New York, 1979. x, 354 pp., illus. \$39.50.

**Conquering Cancer.** Lucien Israël. Translated from the French edition (Paris, 1976) by Joan Pinkham. Vintage, New York, 1979. xx, 284 pp. Paper, \$2.95. Reprint of the 1978 edition.

**The Electrochemistry of Lead.** A. T. Kuhn, Ed. Academic Press, New York, 1979. xviii, 468 pp., illus. \$59.

**Electron Spectroscopy of Crystals.** V. V. Nemoshkalenko and V. G. Aleshin. Translated from the Russian edition (Kiev, 1976) by Irina Curelaru. Stig Lundqvist and Per-Olof Nilsson, Transl. Eds. Plenum, New York,

1979. xiv, 360 pp., illus. \$49.50. Physics of Solids and Liquids.

**Elementary Hearing Science.** Lawrence J. Deutsch and Alan Richards. University Park Press, Baltimore, 1979. xii, 192 pp., illus. \$12.95.

**Fermented Food Beverages in Nutrition.** Papers from a symposium. Rochester, Minn., June 1977. Clifford F. Gastineau, William J. Darby, and Thomas B. Turner, Eds. Academic Press, New York, 1979. xxii, 538 pp., illus. \$45. Nutrition Foundation Monograph Series.

**Hokule'a.** The Way to Tahiti. Ben R. Finney. Illustrations by Richard Rhodes. Photographs by Francis Wandell and Ben R. Finney. Dodd, Mead, New York, 1979. x, 310 pp., illus. + plates. \$17.50.

**Holographic Interferometry.** From the Scope of Deformation Analysis of Opaque Bodies. W. Schumann and M. Dubas. Springer-Verlag, New York, 1979. x, 196 pp., illus. \$32.40. Springer Series in Optical Sciences, 16.

**The Hudson River Basin.** Environmental Problems and Institutional Response. Ralph W. Richardson, Jr., and Gilbert Tauber, Eds. Academic Press, New York, 1979. vol. 1, xviii, 354 pp. \$19.50. vol. 2, xviii, 402 pp., illus. \$19.50.

**The Iceland Papers.** Select Papers on Experimental and Theoretical Research on the Physics of Consciousness. Papers from a conference, Reykjavik, Iceland, Nov. 1977. Adria Puharich, Ed. Essentia Research Associates, Amherst, Wis., 1979. 192 pp., illus. \$25.

**Image Reconstruction from Projections.** Implementation and Applications. G. T. Herman, Ed. Springer-Verlag, New York, 1979. xii, 286 pp., illus. \$49. Topics in Applied Physics, vol. 32.

**The Imagination of Reality.** Essays in Southeast Asian Coherence Systems. Papers from a conference, Ann Arbor, Mich., May 1974. A. L. Becker and Aram A. Yengoyan, Eds. Ablex Publishing Corporation, Norwood, N.J., 1979. xvi, 336 pp., illus. \$25.

**Immune Mechanisms and Disease.** Proceedings of a meeting, Brook Lodge, Mich., Dec. 1977. D. Bernard Amos, Robert S. Schwartz, and Bernard W. Janicki, Eds. Academic Press, New York, 1979. xx, 376 pp., illus. \$22.

**Immunodiagnosis of Cancer.** Part 2. Ronald B. Herberman and K. Robert McIntire, Eds. Dekker, New York, 1979. xvi + pp. 701-1258. \$55. Immunology Series, vol. 9.

**Immunological Aspects of Infectious Diseases.** George Dick, Ed. University Park Press, Baltimore, 1979. xii, 524 pp. \$24.50.

**Immunological Tolerance and Enhancement.** F. P. Stuart and F. W. Fitch, Eds. University Park Press, Baltimore, 1979. viii, 196 pp., illus. \$29.50.

**Immunological Xenogenization of Tumor Cells.** Papers from a workshop, Sapporo, Japan, June 1978. Hiroshi Kobayashi, Ed. Japan Scientific Societies Press, Tokyo, and University Park Press, Baltimore, 1979. x, 292 pp., illus. \$49.50. Japanese Cancer Association GANN Monograph on Cancer Research No. 23.

**Making Decisions.** A Multidisciplinary Introduction. Percy H. Hill and eight others. Addison-Wesley Advanced Book Program, Reading, Mass., 1979. xx, 244 pp. Paper, \$14.50.

**Man-Made Gemstones.** D. Elwell. Halsted (Wiley), New York 1979. 192 pp., illus. \$44.95.

**Manual of Gynecologic Surgery.** Byron J.

(Continued on page 526)