Books

ASTRONOMY
by Fred Hoyle
Doubleday $12.95

A lavish, oversized (8x11) pictorial history of astronomy by Fred Hoyle, the British astronomer who has served as part-time visiting professor at Caltech during the past five years. The illustrations are numerous and colorful; the text is lively, comprehensive, and understandable.

THE CHALLENGES OF SPACE
edited by Hugh Odishaw
University of Chicago Press $6.95

A collection of 22 essays on the scientific aspects of space exploration, covering everything from space research and technology to national space programs and international space cooperation. The authors, all experts in their fields, include such men as Joshua Lederberg, John R. Pierce, James A. Van Allen, Lyman Spitzer, Jr., and George P. Sutton.

Illustrated Guide to U. S. Missiles and Rockets
by Stanley M. Ulamoff
Doubleday $3.95


Science Writer's Guide
by John Foster, Jr.
Columbia University Press $6.00

This compact dictionary of scientific terms ought to prove useful not only to science writers but to readers of general scientific material as well. It may not have every scientific term in it, but it's a good start. Definitions are short and simple and they range all the way from abampere and ACTH to magneto-hydrodynamics, Mendel's laws, penis envy, phonon, zooplankton, and zygote.

THE SPACE INDUSTRY: America's Newest Giant
by the Editors of Fortune
Prentice-Hall $4.95

A collection of tightly-written, informative articles from Fortune that touch on assorted aspects of space—technical, physiological, and commercial.

ALUMNI BOOKS
ELECTRIC CIRCUIT ANALOGIES FOR ELASTIC STRUCTURES
by Richard H. MacNeal, MS '47, PhD '49
John Wiley & Sons, Inc. $11.50

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QUANTUM THEORY OF MOLECULES AND SOLIDS
Volume 1—The Electronic Structure of Molecules
By JOHN C. SLATER, Massachusetts Institute of Technology.

First volume of a series which will survey modern solid state theory. This series is in effect a continuation of Slater's two volumes on QUANTUM THEORY OF ATOMIC STRUCTURE. This text covers the theory of the relatively simple molecules for which fairly complete theoretical discussions are available. In connection with this, the author has developed general methods of handling molecular theory, including the nature of the chemical bond and the symmetry of molecules, including a thorough discussion of group theory. Intended for graduate level courses in solid state physics, and should also be of interest to people working in chemical physics, quantum chemistry and materials science.

INTRODUCTION TO STATISTICAL COMMUNICATION THEORY

A senior or first-year graduate text introducing the field of statistical communication theory. The text covers work in the study of random signals and probability theory, information and coding theory, and the processing of random signals. The purpose of the book is to prepare the student to read the literature in this field and to give him a reasonable amount of facility in setting up problems in statistical terms.

PLASMA PHYSICS AND MAGNETOFLUIDDYNAMICS

The text indicates how the subject of classical electrodynamics may be utilized in developing various technological devices. It coordinates the many aspects of magnetofluidodynamics into a systematic and clear approach. Although primarily an introductory textbook for the student of engineering, it will also prove to be a very useful source book for the practicing engineer. Considerable attention has been given to plasma physics because the engineering devices being developed will, by and large, utilize directed gasses as working media. Consequently, the viewpoint followed is primarily that of a thermodynamicist-fluidmechanician rather than that of a hydrodynamicist.

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Provides a thorough treatment of the fundamental aspects of solar utilization, and timely information on the nature and problem areas which arise in attempts to utilize solar energy by a very wide variety of means — from the basic one of obtaining heat to the more sophisticated applications in space power systems. Analytical work is presented to determine the performance capabilities of various devices, and sufficient material is included to enable the reader to analyze new or novel approaches to the utilization of solar energy as they occur in the future. Comprehensive coverage makes it ideal for the beginner or for the graduate student or practicing engineer.

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