contributors, and deal with four juxtaposed topics: magnetic fields due to currents, microwave techniques, reactor-associated physics, and nuclear kinematics—a sort of miscellany of technical "hand-book" material. There are some interesting pieces in the remaining quarter—some sixty pages covering a dozen diverse topics—but it is too dispersed and scrappy to be effective.

Samuel Devons
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Gravitation and The Universe

By R. H. Dicke
82 pp. American Philosophical Society, Phila., Pa., 1970. $2.50

In the last decade, some incredibly ingenious experimental tests of Einstein's gravitational theory have been proposed or performed. They involve, for example, Mössbauer methods, radar, supercooled gyroscopes and gravity-wave detectors. Princeton's Robert Dicke has consistently been close to where the action was, and has even sponsored a rival relativistic theory. He is particularly associated with three superb experiments for which he likes to cite the earth and sun as part of his "apparatus" and the universe as his "laboratory." These are: an Eötvös type of experiment that establishes the proportionality of inertia and gravity for gold and aluminum to one part in 10^{11}, improving previous accuracy by a factor of 500; an optical measurement of the sun's oblateness, which, if due to a fast rotation of the core would account for about 10% of the "relativistic" advance of Mercury's perihelion and thus upset general relativity, and the search for, and discovery of, the thermal-radiation fall out from a "big-bang" origin of the universe. The book under review consists of three 1969 lectures to a general audience, and it tells in fascinating detail, with the help of some 40 illustrations, about these three experiments and their theoretical implications, and also some historical sidelights.

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Integral Equation Methods

By C. D. Green
243 pp. Barnes & Noble, New York, 1970. $15.00

The subject of integral equations is usually part of a course in mathematical physics, and there are at least two excellent references available: the monographs by F. G. Tricomi and S. G. Mikhlin. It is then natural to ask whether this book by C. D. Green is in any way an improvement over the sources already available. Unfortunately my answer must be a negative one.

Although the author includes all the topics that one would want in a book on integral equations, the treatment is very often superficial, offering little real insight into why methods work when they do, and when they can be expected to fail. No general conclusions are drawn from the few numerical examples presented. Short and confusing discussions are given of several topics, such as stochastic processes, Monte Carlo methods and the steepest-descent method. The latter is covered in a page and a half, leaving the reader with no clue as to the subtleties involved. The only really new textbook material is a chapter on dual-integral equations. There is almost no discussion of purely numerical methods. This is unfortunate since such a chapter would represent a real contribution when digital computers are widely available.

One misses in this book the insight of a master, such as that which characterizes the work of Tricomi. The little additional material included would appear to me to be insufficient for a new work on the subject.

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Advances in Plasma Physics, Vol. 3

A. Simon, W. B. Thompson, eds.
249 pp. Interscience, New York, 1969. $14.95

"We feel a desperate need for some review volume that will present authoritative discussions of advances in the several branches of plasma physics and even perhaps form a channel of communication among plasma physicists with allegiance to CTR, space physics, astrophysics, direct conversion, ion engines, solid state, and so forth." Thus the editors, Albert Simon, University of Rochester, and William B. Thompson, University of California at San Diego, introduced Volume 1 of their *Advances in Plasma Physics*. These review volumes have been coming out quite rapidly in the last year or so, and Volume 3 differs considerably from the other two. The first two volumes covered a fairly wide range of subject matter, whereas this volume is restricted to theoretical papers on kinetic theory and plasma wave phenomena.

The longest paper, which is also the lead article in the volume, concerns kinetic theory of plasma waves in a magnetic field and is a published version of the course that the authors, David Baldwin, Ira Bernstein, and M. P. H. Weenink, have been giving for the past few