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some basic analytic and asymptotic properties of the Erlang functions and a number of tables of these functions together with a few other useful tables.

This volume does not pretend to be either a complete or a basic exposition of queuing theory but it does provide a very useful steppingstone to the application of the fundamental principles in this field to a number of practical examples. The treatment is kept alive by frequent review of the appropriate Kolmogoroff equations which govern the underlying probabilities and the presentation therefore has intrinsic interest apart from its usefulness as a practical handbook.

Satellites and Spaceflight. By Eric Burgess. 159 pp. The Macmillan Co., New York, 1958. \$3.95. *Reviewed by J. R. Pierce, Bell Telephone Laboratories.*

This modest book of 159 pages has a very special value. It is not wordy, watered down, and gee whizz, as books intended for the complete novice tend to be. On the other hand, it does not try to present all the details of every aspect of a hopelessly broad subject. Instead, it summarizes results and cites sources.

In this way, a surprising number of points concerning space flight are brought to the reader's attention. These include not only space medicine but human reaction time as its limit on the performance of space pilots, temperature on reentry, telescopic resolution on earth and in space, satellites as radio repeaters, accuracy of velocity required for moon-circling orbits, various orbits for a probe vehicle to Mars, berthing at a space station, ion rockets, and a great deal more. In fact, the book calls to the attention of the reader about all of the sensible ideas connected with space travel that anyone has expressed. In doing this, difficulties, and especially the difficulties of manned lunar and planetary flights, are adequately stressed.

This does not necessarily mean that every statement in the book is absolutely correct. On many points Mr. Burgess has to take the word of the authors of more technical material. In a few cases he cites references and makes statements which seem dubious to me. This is unlikely to mislead any competent person who pursues seriously the various matters introduced in a book which is less of a final authority than a sensible and valuable introduction and guide.

Radiological Physics. By M. E. J. Young. 365 pp. Academic Press Inc., New York, 1957. \$7.50. *Reviewed by Joseph G. Hoffman, University of Buffalo.*

In fourteen brief chapters the author has sketched the physical aspects of clinical applications of penetrating radiations. Although written as a short textbook for prospective clinicians, it serves also to introduce the physicist to the practical business of using radiations in therapy. The first eight chapters deal with the basic physics and engineering of production and measurement of radiations. X-ray apparatus and its circuitry are described along with high-energy devices such as

the linear accelerator, Van de Graaff generator, and the cyclotron. The naturally occurring radioactive elements are included in the section on sources of radiation, while artificial radioactive isotopes are introduced in later chapters in connection with their immediate clinical applications.

Curiously enough, an attractive feature has been brought about by the need for brevity. There is considerable ground covered in the subjects ranging from diagnostic radiography, through the complex area of biological effects of radiation, to the questions of health hazards and protection. Since it is formulated as a textbook it gives only well authenticated facts and does so succinctly. The last six chapters are commendable because they introduce the outsider to the salient methods and problems of radiology. For specializing students these chapters form a basic foundation. At the end of each chapter are examination questions of a borderline field of study. How does one formulate questions about physics for students in other fields, as far removed as clinical therapy? For example, at the end of chapter two, "give a short account of thermionic emission", or at the end of chapter eleven, "Upon what factors does the percentage depth dose of x rays at any point in a water phantom depend?"

The index is adequate; there are 184 diagrams; and the format makes for easy reading. As an outline guide for a course in radiologic physics the text will serve admirably although it presents no more than the minimum essentials.

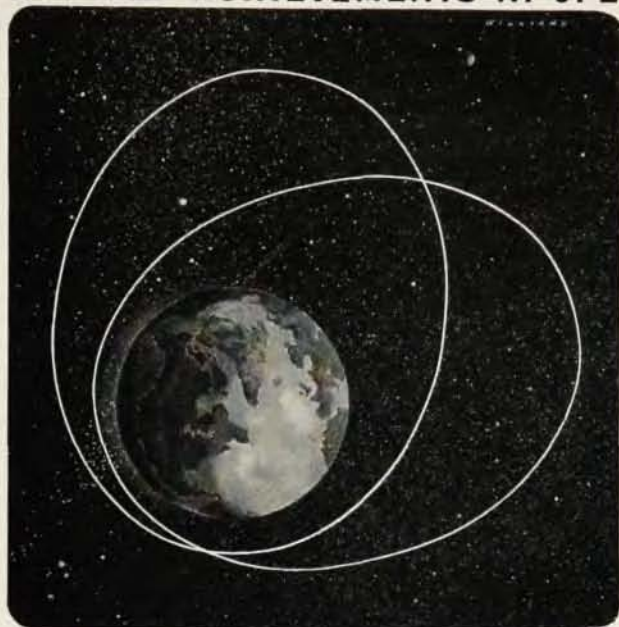
Progress in Semiconductors, Vol. 2. Edited by Alan F. Gibson, R. E. Burgess, P. Aigrain. 280 pp. John Wiley & Sons, Inc., New York, 1957. \$10.50. *Reviewed by C. Kittel, University of California.*

Series of books reporting on "Progress" or "Advances" are now appearing in many fields of physics. The series vary considerably in usefulness. The most useful are always those which provide elementary critical readable introductions and intellectual insight into well-defined problems of current importance. The least useful series present bibliographies in prose form; these are of service principally to other bibliographers. In my opinion the value of a review is usually inversely proportional to the density of the phrase "it has been shown". The review should give as fully as necessary the physical core of every question treated. There is, however, a service which is badly needed and which could be appropriately presented in reviews: the collection and tabulation of important physical data.

The selection of topics in the present volume on semiconductors is excellent—all the topics are of lively current importance. Almost every paper would be improved markedly if it were twice as long—the average length is 35 pages, inclusive of figures and bibliography. The topics are too large to be discussed adequately in such a small compass.

The subjects treated are "Semiconductor Alloys", by F. Herman, M. Glicksman, and R. H. Parmenter;

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