Book Reviews

The Moon. H. Percy Wilkins and Patrick Moore. Macmillan, New York, 1955. 388 pp. Illus. $12.

This is the first major treatise on descriptive selenography to appear in English for a quarter-century. The field has badly needed a modern summary, for a host of isolated observational facts await ordering. Perhaps this disorganization was a major cause of the comparative disinterest, until very recent years, of many astronomers in lunar problems.

Both authors are well-known English amateur observers of the moon, and Wilkins is director of the lunar section of the British Astronomical Association. They are specialists in charting minute lunar surface detail from visual examination. From this fact come both the strength and weakness of their book—the excellent qualitative descriptions of surface features, and the neglect of means of attack other than direct inspection. For example, photometric and polariscopic observations are not considered. However, such topics presumably will be thoroughly covered by G. P. Kuiper's forthcoming section on the moon in *The Solar System,* which is now appearing under his editorship.

The bulk of *The Moon* consists of topographic descriptions of more than 700 of the principal craters and other formations. Here are enumerated interior details such as peaks, mounds, clefts, craterlets, and pits. Recent observations are comprehensively covered, but only a selection of the older findings is given. As the authors point out, their book supplements but does not supersede earlier treatises; the reader will still want to consult the classics by Neison, Elger, and Goodacre. Wilkins' great 300-inch map of the moon is reproduced on a reduced scale in 29 sections; there are many detailed charts of individual craters, as well as lunar photographs of exquisite quality.

In the main portion of the book, quantitative data are scarce, and there are far too few references. Surely the sources of the basic observations should have been listed for questions such as the problematical transformation of the crater Linne. New names have been introduced for a number of craters without the sanction of the International Astronomical Union, but their unofficial status is not made clear to the reader.

A 30-page introduction surveys the history of lunar observations and sketches the classification of surface formations. It also contains a rather confused collection of many attempted explanations of the origin of lunar features. Here the opportunity was lost to clarify a subject badly muddied by controversy. But we are treated to curiosa such as coral-atoll hypotheses of crater formation, and the recent studies by Kuiper and Urey are not mentioned.

E. A. Whitaker of Greenwich Observatory has contributed a valuable appendix on the techniques of lunar photography. A collection of biographical sketches of leading selenographers has been added. The choice of names strongly reflects the personal tastes of the authors; some rather minor figures appear, while Gaudibert, Weinek, Hayn, and Banachiewicz are passed over.

While one must turn elsewhere for a full treatment of the theoretical and astrophysical aspects of lunar research, unquestionably *The Moon* will long remain a standard reference work on descriptive selenography.

JOSEPH ASHBROOK
Harvard College Observatory

Handbuch der Laplace-Transformation. vol. II, pt. 1, *Anwendungen der Laplace-Transformation.* Gustav Doetsch. Birkhäuser, Basel–Stuttgart, 1955. 436 pp. 48 illus. DM. 52.

This book, by the distinguished professor of mathematics at the University of Freiburg, is the second of a trilogy which is to comprise an exhaustive account of the theory and application of the Laplace transform. The first volume, *Theorie der Laplace-Transformation* (1950), encompasses an inclusive treatment of fundamental mathematical theory of the Laplace transform. The present second volume and the forthcoming third volume constitute, in principle, an integrated account of a further body of theory, both complementing and supplementing that of volume I, which is particularly pertinent to solution of physical and technologic problems and exemplification of its use by examples drawn from these domains. In such fact the word *handbuch* must be translated as "treatise" rather than as "handbook" in the conventional American usage of this term.

Volume III, now in press, includes partial differential equations, difference-equations, integral equations, and functions of exponential type. The present volume, partly in preparation for the material of this third volume and partly as an entity in itself, constitutes a thorough treatment of asymptotic representations, convergent representations, and solution of ordinary differential equations as effected by Laplace transform techniques.

The context is divided into one short and three major sections. The range of content, scope of treatment, division of material, and relative emphasis on different subjects is well summarized by giving a *free* translation of the 16 chapter headings, corresponding page numbers, and concise note of the principal purpose underlying the exposition of each section. Thus, the first section, "Introduction," comprises a single chapter, "Correspondence of fundamental operations [in the original domain] to functions [in the transform domain] through the Laplace-transform and its inverse" (pp. 15–26). This is given over to a well-organized statement, without proof, of certain basic properties, manipulations, and theorems, derived formally in volume I and brought together here for convenience of use in volumes II and III.

Part I, "Asymptotic representations," includes nine chapters: "General considerations concerning asymptoticity" (pp. 29–44); "Abelian asymptoticity of the one-sided Laplace-transform: behavior of $f(s)$ at infinity" (pp. 45–96); "Abelian asymptoticity of the one-sided Laplace transform: behavior of $f(s)$ at a finite point" (pp. 97–100); "Abelian asymptoticity of the two-sided Laplace transform and of the Mellin transform" (pp. 101–108); "Abelian asymptoticity of the V-transform comprised by the complex inversion integral for functions with isolated singularities" (pp. 109–140); "Abelian asymptoticity of the V-transform comprised by the complex inversion integral for functions with algebraic and logarithmic singularities" (pp. 141–173); "Abelian asymptoticity of the V-transform for $t \rightarrow 0$" (pp. 174–180). "Tauberian asymptoticity of the Laplace transform (pp. 181–192); "Asymptotic expression in various fashions of the original function and the associated Laplace transform" (pp. 193–200).

This unit comprises a thorough exploration and integration of the essen-