BOOK REVIEWS


Reviewed by Richard G. Hodgson

Most of the literature of astronomy runs to extremes. It is either of the elementary, general survey type, or else is the advanced technical essay of professional research. The need for works on an intermediate level which will pull together the findings of research scattered in many sources on a carefully delimited subject is apparent. The books by Peech on Jupiter and by Alexander on Saturn are invaluable for this reason; this book by Roth proposes to do much the same thing on the subject of the minor planets. Originally published in German as one in the series of Orion books, this English translation has been revised and enlarged.

Roth's book is valuable for three reasons. First, for those of historical bent, it presents a good summary history of the discovery of the minor planets. Second, it provides a good deal of information on minor planets, scattered through its pages and in three appended tables. The organization of this material could have been better. For example, the diameters of the minor planets are discussed in both chapters 6 and 15, and might better have been placed in chapter 9 on physical data. Orbital data, set forth in five brief chapters, might have been consolidated into one of greater length. The third, and perhaps most valuable, aspect of the book is its detailed account of equipment within amateur means which can be used to undertake serious work. The description of the multi-purpose astrophograph of A. Gütter and W. Strohmeier is well illustrated, and should be of great interest. There is also helpful material on visual work with micrometers, and for photography.

In spite of some organizational weaknesses and some parts which may be rather elementary, Roth's The System of Minor Planets is a valuable book which should be in the library of every serious amateur astronomer.


Reviewed by J. Russell Smith

If you have ever made a telescope or if you are interested in making or using a telescope, you will be interested in this small volume of 128 pages. It is filled with basic information and is written for the amateur astronomer by one very experienced in the field of telescope making and of amateur astronomy in general. The excellent figures, diagrams, and photographs, used for illustrating the principal facts and concepts, will be helpful to the beginner. The following divisions will be found in the contents: Introduction, Choosing Telescopes and Binoculars, Making a telescope, Using a Telescope, Objects and Visual Techniques, Lenses and Cameras for Astrophotography, and Skyshooting. The appendices are composed of a number of titles as follows: Solar System Data; Clusters, Nebulae, and Galaxies; Double Stars for Testing Telescope Resolution; Bright Stars for Use with Setting Circles; Meteor Showers; Sources of Supplies; and Suppliers.

In the data about the Solar System on page 117, this reviewer found that the author lists 11 moons for the planet Jupiter instead of 12, which is the correct figure. One excellent point that was noted about the listing of clusters, nebulae, and galaxies on page 118 is that they are arranged in order of right ascension. Thus, the author's listing groups objects visible on a particular night. This plan is very commendable.
This small but comprehensive astronomical handbook undoubtedly ranks among the finest of its kind, along with the handbooks of the British Astronomical Association and the Royal Astronomical Society of Canada. In a clear and concise manner, it presents a monthly summary of astronomical events, pointing out and describing in detail the highlights among these. For example, the July 20 solar eclipse of this year over the U.S. and Canada is described in considerable detail and is illustrated with accurate maps.

For planetary observers, along with standard information and diagrams showing the planets' positions throughout the year, a detailed map of Mars, a schematic representation of Jupiter's belts and zones, and aspects of Saturn's ring system in the past and future are given. These are to mention but a few of the more outstanding features. Comets, minor planets, meteor showers, fixed and variable stars, the Sun, the Moon, and so forth are all dealt with through tables, diagrams, and special description where necessary. The book concludes with a list of definitions of more common astronomical terms and symbols.

The only weak point found by this reviewer appeared not to be in the context but in the binding of the book, which is unnecessarily flimsy, especially for a handbook which is intended to receive frequent handling. Aside from this, however, nothing but praise can be allotted to this fine book, now in its 23rd year of publication. Although written in German, Der Sternhimmel is easily understood by the interested reader; and no serious amateur should be without it.


Reviewed by G. Tóth, Geophysical Institute "Roland Eotvos", Budapest, Hungary

In Hungary several books have been published on astronomical subjects during the past few years. These have been mostly works of a general character, dealing with some extended parts of astronomical science such as the Solar System as a whole, with the galaxy or other galaxies, etc.

The book under review, on the other hand, might be looked upon as being of a new type since it is dealing only with one celestial body, the Moon. No such book has previously been published in Hungary. Despite the rather restricted extent of the book, it was the aim of the author to give a fairly complete account of researches concerning the Moon. Its leading viewpoint is geophysical, and he intended to clear up the similarities and connections between phenomena on the Earth and the Moon. The internal structure of the Moon is dealt with in great detail since – as the author sees it – internal processes have played the most important role in forming the surface of the Moon, too. In the frame of the discussion, a theory of the expansion of the Moon – based on a similar theory of the Hungarian geophysicist, L. Egyed, concerning the Earth – is given.

We may mention on this occasion that in the meantime the theory has been extended by the author; upon his recent standpoint one may suppose that in the last phase of expansion the core of the Moon – which had been once in a metallic phase – reached a state of instability, thus resulting in giant explosions and crater-forming. The energy needed for the forming of the Moon's surface was easily available from the internal transforming processes. We may calculate the energy needed for the formation of the individual craters, using vulcanological considerations (see the article of the author on pages 275-277 of Volume 16, Numbers 11-12 of The Strolling Astronomer).
The first chapter of the book deals with ancient views and beliefs connected with the Moon; then follows the discussion of the Moon as a celestial body as well as a description of the features of the surface. Most interesting is chapter four, where the views and theories put forward in connection with the development of the Moon are discussed. A minor gap felt by the present reviewer is that the meteor-theory of the craters is but briefly mentioned; it may have deserved a somewhat more complete treatment. The internal structure of the Moon is treated in chapter five, together with the expansion theory; chapter six deals with the influences exerted by the Moon.

When discussing the radioactivity of the Moon, the author mentioned only the investigations made by Kuiper and MacDonald, while the pioneering works of Professor Urey remained unrecorded. In a new edition or in publication in some foreign language, this omission must be remedied.


Reviewed by Patrick S. McIntosh

This book is the fourth in a series called _A Survey of Astronomy_, edited by Ronan and Moore; and like its predecessors, it is intended to bridge the gap between the elementary texts and the highly mathematical advanced books. It is written within a minimum of equations, and most of these are in footnotes. The language is simple and is readily understood by the high school student and the amateur astronomer. It is not a beginner's book on the sun since it assumes some previous knowledge of the sun, and some physics and math. It is recommended for presenting a very up-to-date account of our present knowledge of the sun in a concise and readable manner. Many of the paragraphs are condensations of research papers of the last five years. Not only does the book bring the reader right up to the latest frontiers of solar research, but it also presents a glimpse of problems yet to be solved.

Unfortunately, in comparison to previous books on the sun, this book rates low on several counts. The illustrations and photographs, while excellent, are far too few and certainly should have been distributed throughout the chapters instead of being put in a center section. There seems to be some inconsistency in the first chapter in the use of equations. Several equations are omitted which are usually included even in elementary books, while some rather advanced equations are included in the footnotes. The terminology is often confusing and inconsistent and is not in keeping with the professional designations for features on the sun. This may well be the fault of the translator and not the author. Dr. Abetti is a much better astronomer and writer than this book indicates. A few facts that are erroneous may also be due to the translation. It is stated that the time for the sunspot numbers to rise to a maximum in the solar cycle is longer than the time for them to fall to minimum. This is the reverse from fact. The description of the evolution of a sunspot group is misleading in suggesting that the pores which result from the dissolution of a group grow again into another mature group. This is not true. The organization of the material is often poor. The chapter on total eclipses contains as much detailed description of sunspots as the chapter entitled "Photosphere of Sun and Sunspots". In other sections, the material on a specific subject is often scattered among other facts, creating some discontinuity.

The book could benefit from the inclusion of references to the books and papers containing the original research quoted in the text. The reader who is ready to step beyond the elementary text should be introduced to the use of references. Many of these readers could benefit from reading the original papers. Certainly some of the errors in this book could be corrected by using the references. There is a page of bibliography at the end of the book; but it was disappointing to see that it