which offers an extensive treatment of diffuse scattering as caused by disorder and thermal motion. This is a rather difficult subject in an area in which the authors have considerable experience. It is a pity that the book does not quite come out as well as might have been expected. The authors do not quite manage to get the subject across. The mathematics in the first three chapters is treated perfunctorily and nonrigorously, derivations are frequently left incomplete, and statements beginning "it is easily seen that. . ." occur rather too often in cases where the next step is not at all obvious. Proceeding to the next three chapters the reader will find that there is in fact rather little correlation between the theory he has just worked through and the applications he now finds. These last chapters, which occupy roughly the second half of the book, are suddenly quite descriptive, as if there were no real connection between this part and the first part of the book. In the many examples cited there is not a single case where a complete interpretation based on the preceding theory is given.

Added to this is the problem that the book contains an unacceptable number of mistakes, ranging from typographic errors, through references to wrong equations, to mistakes in the equations themselves.

Altogether this makes the book rather hard going. For those physicists and crystallographers who are intimately involved with the subject of disorder and diffuse scattering it will be a useful additional source of information, and the list of references is excellent.

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Astronomy in Britain

Astronomers Royal. COLIN A. RONAN. Doubleday, Garden City, N.Y., 1969. xiv + 226 pp., illus., + 16 plates. $5.95.

As a popular history of British astronomy, this volume has much to commend it. An engaging mixture of science and biography, the story is populated by first-rate characters such as Issac Newton, Edmond Halley, and William Herschel. Here are excellent reviews of material not readily found elsewhere, such as the introduction of Copernicanism into England or the development of photography; even often-retold tales such as the Neptune scandal achieve a commendable freshness, and Airy—who is generally portrayed as the villain—wins a balanced presentation.

The original English title, *His Majesty's Astronomers,* was considerably more honest than the book's present appellation. This work does not attempt to cover each Astronomer Royal—for example, the enigmatic Nathaniel Bliss, who held the office for two years between Bradley and Maskelyne, is written off with the remark that his sole claim to fame is that his only known portrait is inscribed on a pewter tankard with the legend "This sure is Bliss, if Bliss on Earth there be." Happily, instead of the text's being limited to the lives of the Astronomers Royal, vital and lively sections are included on William Huggins, Arthur Eddington, and William Herschel.

The opening chapter on the Copernican revolution is unfortunately the weakest in the book. Ronan augments and perpetuates the traditional fallacious mythology. We find such statements as "Copernicus was not a good observer—the poor accuracy of his measurements of planetary positions proves that—but even his fumbling efforts made it clear to him that the theory and observation were poles apart. Predicted and observed positions were in wild disagreement." In fact, Copernicus worked basically from the time-honored positions of Ptolemy's *Almagest,* adding his own quite reasonable observations only occasionally. Whether the positions predicted from the Ptolemaic theory were "in wild disagreement" with the observations depends on one's point of view. Certainly severe discrepancies could sometimes be found —but predictions with the Copernican system fared little better. Indeed by the end of the 16th century, Tycho Brahe had occasion to complain that the Copernican tables were often worse than their predecessors.

Barring the first chapter, the presentation is generally accurate with regard to overall emphases as well as specific details. Ronan has a flair for popular science writing, and his narrative is both readable and informative.

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Stellar Events

Supernovae. I. S. SHKLOVSKY. Translated from the Russian by Literaturprojekt. Interscience (Wiley), New York, 1969. viii + 444 pp., illus. $20. Interscience Monographs and Texts in Physics and Astronomy, vol. 21.

At its maximum, the luminosity of a supernova equals that of an average galaxy. An event of such magnitude is important from many points of view, ranging from stellar evolution to the chemical composition of galaxies and to the origin of primary cosmic rays. Remnants of supernovae are an important class of radio sources. This wide range of problems is undoubtedly the reason why there have been review articles or chapters in compendia dealing with one or another aspect but never before a book presenting all observational information and the many theoretical discussions and speculations to which Shklovsky has made many important contributions.

Supernovae are rare, occurring at a rate of roughly one every several hundred years in an average galaxy. There has been no observed outburst in our own Galaxy in modern times. Data on the outbursts thus are obtained by observations of supernovae in external galaxies. Nebular remnants formed after the outbursts are found in our Galaxy, but only few can be connected with outbursts for which there are—necessarily crude—historic data. A gap of hundreds of years separates observations of the outbursts and of the remnants. Only one remnant, the Crab Nebula, is bright enough to be accessible to detailed observations. One third of the book is devoted to this object.

Shklovsky was well aware that a monograph in a rapidly evolving field is in great danger of becoming obsolete. The list of references has no entry later than 1965. The Russian edition was still essentially up to date at the time of publication, 21 September 1966. The translation, published more than two years later, is already seriously out of date in some respects. Since the translation was made from the original manuscript, one wonders why the delay was so long.

The translation is poor. There are too many differences between the English and Russian editions, some trivial—for instance, "astronaut" instead of "astronomer" at the end of the introduction—but some material—such