The Milky Way. Bart J. Bok and Priscilla F. Bok. Harvard University Press, Cambridge, Mass., ed. 3, 1957. 269 pp. $5.50.

This is an excellent book, as were the two earlier editions, and the Harvard University Press dresses up the new volume in a very attractive format.

The first two chapters provide general background information: a description of the visual and photographic appearances of the Milky Way and a useful schematic model of the system, a summary of astronomical coordinates, examples of various kinds of telescopes, and an outline of the basic data of observation used in Milky Way research. The importance of cooperation in research is stressed, with special mention of the influence of the International Astronomical Union and the fact that "the National Science Foundation is taking the lead in promoting the growth of cooperative research facilities in the United States; a National Radio Observatory and a National Optical Observatory are important items on the high priority list."

The third and fourth chapters discuss the structure of the galaxy, from the sun's nearest neighbors to the distant globular clusters and the nucleus of the galaxy. The importance of the Hertzsprung-Russell diagram and of Baade's fruitful concept of the "two stellar populations" are fully explored. Blaauw's discovery of the expansion of the Zeta Persei association and subsequent work by Blaauw and Morgan on other associations have opened up a new field since the second edition appeared in print. The change in the zero-point of the classical Cepheids, with the consequent doubling of the distances of the external galaxies, has also come since the publication of the second edition.

Stellar motions, a valuable source of information about the physical properties and dimensions of the galaxy, are reviewed in chapter 5. The interstellar medium is thoroughly discussed in chapters 6 and 7.

The revolution in Milky Way research that has been brought about by radio astronomy is described in chapters 8 and 9. The remarkable work by Morgan and his associates in tracing the spiral structure of our galaxy in the sun's neighborhood was followed, in less than a year, by the Dutch radio results, which traced an outer arm halfway around the galaxy. Australian observations are filling in the rest of the picture.

Long-time evolutionary changes in the galaxy and the cosmic time scale are taken up in the final chapter.

On the very day this review was written, Bart Bok arrived in Australia to take up his new duties as director of the Mount Stromlo Observatory. Anyone who reads this book will realize how serious is our loss and how great is Australia's gain.

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Arizona's Meteorite Crater. Past, present, future. H. H. Nininger. American Meteorite Museum, Sedona, Ariz., 1956. 232 pp. Illus. $3.75.

The meteorite crater in northern Arizona is an outstanding topographic feature of the earth's surface and has attracted great attention. The crater has been well known since 1870. By 1909 its topographic features had been exhaustively described, and the most serious investigators agreed with the view that the crater was blasted out by the impact of a large meteorite. It is our largest authenticated meteorite crater. Since then, numerous surveys have been made of the crater, with various objectives in mind. In the main, these surveys were conducted by the Barringers, who are intent upon locating and, if possible, recovering the large meteorite that made the crater, and by Nininger, who has considerable scientific curiosity concerning the crater and who was also interested in augmenting his museum collection. It is fitting, therefore, that Nininger should summarize the information that is available on the crater. In general, he makes an exceedingly thorough and splendid job of the summary.

He describes the early history of the crater and the researches and surveys that have been carried on there and reviews critically all the findings to date. I found no serious omissions. In addition, he speculates extensively on the nature of the event that took place at the time of the earth's encounter with the meteorite. When did it strike? How fast was it moving? From what direction did it come? How large was it? Was it a single large meteorite or a swarm of meteorites? In many instances, his speculations are unsatisfying and inconclusive. This stems from the paucity of the data he has to work with and from his own enthusiasm. He takes the view that no large body of meteoritic material now lies buried in the crater.

There is a certain undercurrent of personal differences running through the book, but I found this more unfortunate than objectionable.

The book is well and interestingly written. It has both popular appeal and considerable scientific merit. The illustrations are excellent and the type is good. The very extensive bibliography will be of great help to anyone doing research on the crater.

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Dynamic Meteorology and Weather Forecasting. C. L. Godske, T. Bergeron, J. Bjerknes, and R. C. Bundgaard. American Meteorological Society, Boston, and Carnegie Institution of Washington, 1957. xvi + 800 pp. Illus. $15.

This remarkable treatise is a fitting monument to the memory of Vilhelm Bjerknes, the great leader of modern meteorology. Written by four of his closest associates, of whom two were his active partners from the early days of frontology, the book is produced in continuation of the earlier works: *Dynamic Meteorology and Hydrography* (1910) and *Hydrodynamique Physique* (1933) by V. Bjerknes and various collaborators. As a monument, it is both massive and elegant.

The conception of the book goes back to about 1935. In the foreword we read that the manuscript was completed in 1948, was submitted for publication in 1951, and was finally published in 1957. Although not explained, the circumstances underlying this delay are readily understood and reflect the difficulties encountered nowadays when it comes to publishing a work of extraordinary dimensions, except in the rare cases where there is a ready market.

Progress in theoretical meteorology, as well as in other branches of geophysics, depends on talent, with thorough background in classical physics. More than 50 years ago, V. Bjerknes set out to transform meteorology into a branch of classical physics. As early as 1904 he formulated the problem of weather forecasting as an initial value problem. In our time, when teaching of classical physics in the universities has been pushed into the background, to give space for nuclear physics, electronics, photography, and so on, it is refreshing to read *Dynamic Meteorology and Weather Forecasting* and to find that its roots are where they truly belong. Undoubtedly, the authors have set an example and a standard which cannot easily be ignored.

The book is divided into five major parts. Although a complex science does not readily lend itself to division into compartments, the arrangement is logical and convenient. The first three parts deal with (i) thermodynamics and statics, (ii) kinematics, and (iii) hydrodynamics. This is what is commonly called theoretical meteorology, and nowhere else will one find a treatment which is so complete and inspiring as the one here given by the principal author, C. L. Godske. On occasions, and particularly in the treatment of simple atmospheric motions, one could wish that fewer details had been included, but the chapters and sections are so well arranged, and the headings are so eloquent, that large portions may be skipped without loss of