Book Review

Received June 5, 2007

David Levy's Guide to Variable Stars

David H. Levy, 2005, 262 pages, glossary and index (ISBN 0-521-60860-0). Price $26, softcover. Published by Cambridge University Press.

This is the second edition of a book first published in 1989, updated with information on new developments such as Go-To telescopes, CCD cameras, and the recent eruption of δ Scorpii. The author is a long-time AAVSO member, observer, and recipient of the AAVSO William Tyler Olcott Distinguished Service Award for promoting variable star astronomy.

The first challenge confronting any author of a variable star book is to define his intended audience. Levy's book is pitched toward the beginning stargazer. The experienced variable star observer won't benefit much from reading this book, but amateurs who are getting to know their way around the sky and want to delve into the field of variable stars will find this guide very helpful.

The book is divided into four parts. The brief Part I, "Getting to Know the Sky," begins with a cursory introduction to the constellations, then an explanation of magnitudes and star colors, binoculars and telescopes, and the importance of training your eyes.

Part II is the meat of the book, "Getting to Know the Variables." After a very brief review of major variable star types, Levy wisely begins by introducing the reader to four naked-eye variables: the Cepheids δ Cep and η Aql, and the eclipsing binaries Algol and β Lyr. These stars are excellent targets for beginners because they can be observed with little or no optical aid and their variations are rapid. Seeing a star vary by a magnitude within a few hours or days is much more rewarding for the new observer than the slower and often obscure fluctuations of semiregular variables or the stately cycles of Mira stars.

Observing tips and record keeping are followed by individual discussions, with charts and light curves, of a selection of the brighter or more important variables, from R Leo and o Cet to R CrB, R Sct, SS Cyg and several other cataclysmic stars, and the Orion "star factory."

Sometimes the presentation seems too simple, even for beginners (considering that the novice stargazer may also be an engineer or CPA). The author misses a chance to explain the dramatic difference between the light curves of Algol and β Lyr due to the different sizes, shapes, and separations of the component stars in these binary systems. Julian Dates are explained, but there is no mention of how to use them and a variable star's period to plot a phase diagram so that estimates of periodic stars such as δ Cep or beta Lyr can be combined into a folded light curve (indeed, there are no light curves of these prominent naked-eye variables.)

In Part III, "Suggested Variables for Observation throughout the Year," Levy lists and briefly discusses many additional variables by constellation. The position of each variable is indicated on constellation charts, but these charts are not detailed enough actually to locate the variables. This space might have been better used to discuss more stars or add light curves (no book on variable stars can have too many light curves).

Levy also rates the difficulty of observing each variable, from Level 1 (very easily found and estimated) to Level 5 (recommended only for advanced observers with larger instruments). Here, experienced observers will enjoy comparing the author's rating of each variable with their own experience.

Part IV, "A Miscellany," includes recommended books for further reading and a glossary. Perhaps this is the place to note that there is almost no recognition in this book of the many resources on variable stars now available on the World Wide Web.

The ideal variable star handbook has yet to be written. Such a volume would describe all the types of variable stars and explain the physical and geometric reasons for their changes in brightness, all the methods to observe them, and all the ways in which variable stars can inform our understanding of the universe.

Levy's goal is worthy but more limited. "The purpose of this book is to inspire you to observe variable stars. Through its pages, I want to share my enthusiasm for these distant suns that change in brightness." Levy succeeds in communicating his enthusiasm for observing variable stars. I would have relished a book like this when I was starting out.

David B. Williams
P. O. Box 58
Whitestown, IN 46075

David B. Williams is an editor and staff writer for Kiwanis International, the worldwide service club, and a 45-year member and 2005–2007 president of the AAVSO.