CORONAL MAGNETIC ENERGY RELEASES
Eds. A. O. Benz & A. Krüger
Lecture Notes in Physics 444
Springer Verlag 1995
H/b 283pp. ISBN 3 540 59109 5 £40.00

This small volume contains the proceedings of a CESRA Workshop on coronal magnetic energy releases held at Caputh/Potsdam Germany in May 1994. The initiative of holding this meeting arises from the realisation that the solar corona is a very complex region in which flares of many kinds occur. During recent years a wealth of information has been gained not only from ground-based radio observations but also satellite experiments, in particular the SOHO and CORONAS-I missions. The plethora of activity signatures, including filament eruptions, coronal mass ejections (CMEs), Ho brightenings etc. combine to reveal a Sun of outstanding complexity. However, our present understanding reveals that all of these phenomena can be suitably explained, at least in part, by the energetic and evolving magnetic properties of our nearest star.

This volume, then, presents some of our current ideas on the various forms of magnetic energy release in the solar corona. In 271 pages we find papers on solar flares and the corona, flare theory and statistics and the goals and instrumentation of recent space missions. These papers do not represent simply a catalogue of recent observations but include some timely discussion of key ideas and useful summaries of current models. The student of solar physics will find much of use here concerning the energetics of coronal phenomena. Benz’s discussion of coronal heating and flare characteristics is most welcome, Klein’s summary of non-thermal energy sources neatly reviews the basic facts whilst Fleck’s paper on the SOHO mission is a very useful reference for those wishing to learn of the objectives, instrumentation and operation of this joint NASA/ESA mission. Overall, the volume is extremely well-presented with clear text and illustrations and will be a valuable addition to research libraries or the shelves of those actively pursuing this area.

ALVAN CLARK & SONS: ARTISTS IN OPTICS
D.J. Warner & R.B. Ariail
Willmann-Bell, Inc. 1996
H/b 304pp., ISBN 1 943396 46 8 US$ 25.95

The name Alvan Clark & Sons conjures up visions of the art of 19th century telescope making at its best. This greatly expanded second edition of Deborah Jean Warner and Robert B. Ariail’s book, Alvan Clark & Sons: Artists in Optics, covers the history of the Clark family, their Cambridgeopt, MA, company and the principle men who worked for them. As far as possible it follows the history of each telescope made by the company, from its founding in 1848 until the company assets were liquidated and the equipment sold for its junk value in 1958. The biographical information on the members of the family is a little thin for a book about such important men in such a field of endeavour, but this slight shortcoming is amply compensated for by the breadth of the detailed history of the instruments and accessories. The missing biographical material can easily be located elsewhere, but the information on telescopes would probably be hard to locate elsewhere. Much of this came from company records, scarce astronomical journals and personal letters written in the 19th century. Clark’s telescopes are arranged alphabetically by the purchaser’s name, then by size and date of manufacture. In most cases the original and subsequent owners are given. An additional 103 telescopes are listed in which the original owner is unknown. As an inventory alone the book is a valuable reference text, with footnotes and sources, many drawn from the company’s financial accounts. The reader may trace the evolution of Clark’s instruments and find out how to identify them. The book also contains about 100 photographs and detailed drawings of Clark’s instruments. As with any company producing a technological product for over 100 years, designs are changed and improvements made, and the book allows the reader to follow this continual process. Alvan Clark was also a painter, and the authors add information and examples from about 135 portraits made by him early on and in retirement. Obviously, Clark’s artistic talent was a contributing factor in his striving for perfection in telescope optics. He developed a technique of correcting minor flaws in the figure of a lens by actually rubbing out imperfections with his fingers! Clark strove after new techniques in his optical creations. The reviewer highly recommends Artists in Optics to historians of astronomy and to anyone fascinated with the ongoing exploration of the heavens. Telescopes by Alvan Clark & Sons, although 100 years old or more, are still in use either as professional instruments or teaching tools. See, for example, the great 46-inch refractor at Yerkes Observatory in Williams Bay, WI, and the 20-inch refractor at Chabot Observatory in Oakland, CA, respectively. The fact that Clark’s instruments are still highly sought after speaks of their quality, and Warner and Ariail’s excellently presented book brilliantly mirrors the work of this great company.

R. A. Garfinkle

LIGHT CURVES OF VARIABLE STARS
A Pictorial Atlas
C. Sterken & C. Jaschek
Cambridge University Press 1996
H/b xx + 229pp. ISBN 0 521 39016 8 £50.00 (US$ 69.95)

The subsidiary title, A Pictorial Atlas is a misnomer in the sense that it is not a particularly large collection of light curves (there are 187 figures) but the book does contain some of the best available plotted variable star data. Neither is the book’s layout such as to make it a handy quick reference for different types of light curves in the sense that one of the contributors claim. To serve as a helpful tool in the identification and classification of new variables from HIPPARCOS/TYCHO using various statistical algorithms the book might more effectively, indeed, have been prepared as an atlas, with comments on how the tens of thousands of new objects will be sorted out. The authors discovered (and certainly knew beforehand) that uniformity of presentation of light curves was virtually impossible, and even the amplitudes and timescales and differing photometric systems present some problems. The other dictionary definition of Atlas seems more appropriate, a Titan compelled to support the sky on his shoulders as punishment for rebelling against Zeus! The book is, however, an excellent modern résumé on variable stars compiled by leading experts in most of the fields. There is a 29-page introduction to the subject and six chapters on eruptive, pulsating, rotating and cataclysmic variables (taken individually!), eclipsing binaries and X-ray bi-