

## Library - Book Review

### **Observing And Measuring Visual Double Stars**

by Bob Argyle (Editor)  
Published by Springer (Patrick Moore's Practical Astronomy Series), 2004  
326 pp + CD, soft cover.

Reviewed by: Tim Napier-Munn

(Extracted From AAQ February, 2006 Newsletter)

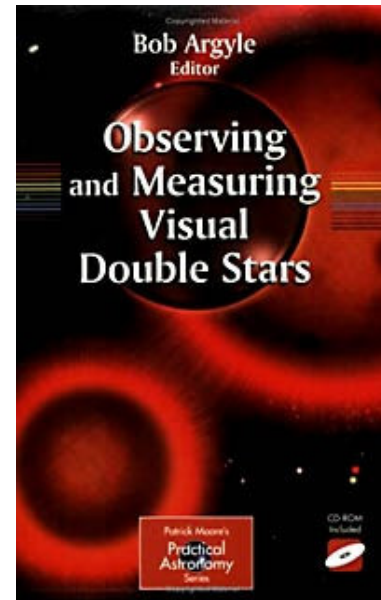
In 1975 the Webb Society published the first of its Deep-Sky Observer's handbooks. The chosen topic was Double Stars, and Bob Argyle was the principal author. Thirty years later Argyle has popped up again, this time with an up to date comprehensive technical treatment of this fascinating subject, one of publisher Springer's extensive series of texts in amateur astronomy.

Double and multiple stars are probably an acquired taste. To some, two stars are almost as dull as one. To the enthusiast however these subtle phenomena are beautiful, dramatic, often with lovely colour contrasts, and close doubles are the ultimate test of optics, observer and seeing conditions. And no-one doubts their importance to cosmology. Observations of their separation and position angle over many years allows their orbits to be established, allowing their masses to be calculated and thus the all-important relationships established between mass, luminosity and spectral type.

In contrast to earlier times when double stars were an important part of any self-respecting astronomer's activity (the great William Herschel established the first major catalogue 200 years ago), they now tend to be neglected by the professionals. However their measurement turns out to be a skill well within the amateur's reach, given knowledge of the equipment and methods required. This book meets this need, and it does so comprehensively and lucidly. Argyle has assembled a worthy group of knowledgeable practitioners who describe all the accessible methods of measuring visual double stars. These include the traditional filar micrometer, the diffraction grating micrometer, simple techniques such as the illuminated reticle, photographic techniques using CCD cameras, and others. It even turns out that speckle interferometry, a sophisticated method until recently the preserve of the professionals, can be used by the amateur with access to imaging equipment and the right software. Each method is clearly explained with enough information to allow one to get started and to acquire the necessary skills.

The book includes some good background material on double stars, their history, why they should be observed, catalogues, atlases, software, useful web sites, what the amateur can contribute, and observing tips including how to report observations. There are two excellent chapters on the resolution of a telescope (a key issue for double star observing) and the use of reflectors, which debunks the myth that only refractors are appropriate for double star measurement (a relief to this owner of the ubiquitous SCT). A nice touch is a short chapter on current amateur observers and their equipment, which gives an interesting insight into this rarefied world. The book is well illustrated with photographs and diagrams.

A very valuable aspect is the inclusion of important formulae such as the computation of orbits, precession, the prediction of PA, and the rigorous treatment of measurements taken with alt-azimuth mounted telescopes which have some



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peculiarities when it comes to double star measurement. These formulae are available as executable files on the CD which accompanies the book. The CD also contains several double star catalogues including the Washington catalogue which is the standard reference. Most of these can be accessed easily through the web but it is useful to have them all in one place without having to download them. One small deficiency is the lack of a simple search routine for accessing the catalogues (they are just very long text files) such as the excellent search engine at:

*<http://www.virtualcolony.com/sac/star-search-form.html>*

However a more serious problem is the presence of a number of typographical errors in some of the printed formulae and other material in this chapter, although the programs on the CD appear to give the correct values.

Other minor irritations for this reviewer were the large and wasted inner margins of most pages, the shiny paper and binding which means the book doesn't stay open where wanted, and the tiny font of the index which only people under 40 will be able to read. It's difficult to understand why publishers indulge in such masterstrokes of design. However Argyle has done a pretty good job of achieving some degree of stylistic and technical consistency in the book which is always difficult when many authors are involved.

This is quite a technical offering and makes no apology for being so. For anyone interested in getting started on the serious observation and/or measurement of double stars, it is compulsory reading and very rewarding. If money is no object, it should find a place on any dedicated amateur's shelf. For those with only a passing interest and a vulnerable bank account, borrow it from the AAQ library and browse. You won't be disappointed.