

## Observing Comets

by Nick James and Gerald North

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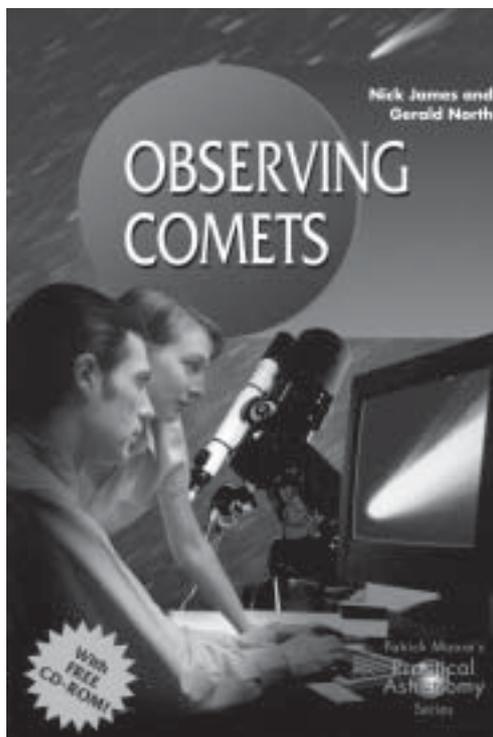
This book is intended primarily for those observers who wish to progress from the basics of comet observing and to maximise their results, hopefully ensuring they are of real scientific value. For this reason, whilst there are sections describing visual observing and reporting formats, greater emphasis is placed on exploring the various techniques of imaging these objects.

The introductory chapter briefly covers the historical observation of comets and the way in which many people feared them, which still persists to this day in some cases. The question of nomenclature is tackled which, like variable stars, has been through great complexity. The result is that the same comet is referred to in the literature in different ways. The notes on the pre-1995 scheme suggest the final designation was based on year of discovery (with a number for perihelion passage) whereas the reviewer's understanding is that the year also related to that of perihelion passage.

Chapter two entitled 'Comets Unveiled' provides details of the physical characteristics of comets. This section provides a useful message to the observer who merely sends in a magnitude estimate and does not report the intricate detail seen in some comets. Drawings by Robert Bullen illustrate just how much detail could be seen in the jets of Comet Hale-Bopp but which were missed by many observers.

The next section on 'Comets in Vision' contains a lengthy and valuable discussion concerning image brightness and advice on magnification and telescope aperture. The difficulty here is that each comet's appearance is quite different and the reviewer has found some large comets visible in binoculars are virtually invisible in telescopes regardless of aperture. The chapter acknowledges the value of binoculars and correctly suggests caution in purchasing large binoculars because of weight considerations.

The 'Visual Practices' in the next chapter balance this book well since it is acknowledged that much pleasure can be gained from direct visual sighting of comets, especially those just discovered. An in-depth discussion follows on the important subject of locating comets, which many find quite a difficult task. It may have been useful to mention the excellent finder charts



placed on the WWW by Reinder Bouma of The Netherlands which also contain reliable magnitudes for comparison stars. (<http://www.shopplaza.nl/astro/>)

Even the variety of magnitude estimating methods can cause confusion for observers. To the reviewer's knowledge, the Sidgwick method remains the most popular rather than the Bobrovnikoff method as stated in the book, which tends to be difficult to use for diffuse and faint comets.

The chapter on 'Comets in Camera' still makes a case for the use of photography for comets, which is very welcome given the impression given in some books that only digital imaging can be useful. As the authors state, second-hand SLR cameras can now be obtained quite cheaply, lowering the setup costs of starting out in the comet imaging field. The chapter's discussion then covers the use of CCDs and how this compares with photography.

Discussion follows on the increasing use of computers to analyse comet orbits and produce ephemerides. The current speed of the home PC brings all this into the domain of the amateur and is a fascinating area of enjoyment for some.

The following chapters cover imaging with CCDs in more detail and it is clearly in this

area that those who wish to advance their observing techniques can make great strides. The notes on the processing of images are particularly valuable for those trying these techniques for the first time. Images in this book of the central region of Comet Hale-Bopp show the amazing amount of detail which can be obtained by careful processing.

The section on 'Advanced Research' options has many tempting projects. This includes astrometry, still in great demand by professionals especially for newly-discovered comets. Photometry and spectroscopy are discussed, which until now have only been seriously attempted by comparatively few observers around the world, but which surely will be explored by many more amateurs in the future.

Comet discovery covers only a few pages as the authors point out that the domination of professional surveys is making the traditional visual discovery by amateur astronomers more difficult. Despite

the authors' comments, the back cover of the book, presumably written by the publishers, states 'most comets are first discovered by amateur astronomers', which is sadly no longer true.

The concluding chapter covers the two comets which have promoted this area of observing in recent years, Comets Hyakutake and Hale-Bopp. Last but not least, the CD ROM offers a considerable bonus to those with computers and a Web browser, containing both comet software and an excellent set of images, mainly of comets from 1995 onwards.

Overall this book succeeds in the authors' quest to encourage the comet observer, who is already familiar with the basics, to progress to more detailed results. I have no hesitation in highly recommending it and believe it will enhance the overall contribution levels on comets to the BAA Comet Section and other organisations.

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