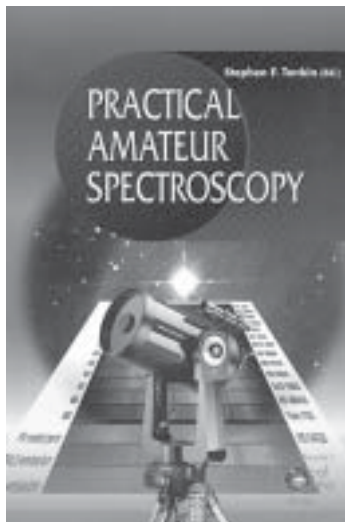


Practical Amateur Spectroscopy

by Stephen E. Tonkin [Ed]

Springer-Verlag, 2002. ISBN 1-85233-489-4. Pp x + 210, £24.00 (pbk)

This book, part of Springer's *Practical Astronomy* series, is a sampler authored by six practitioners of the slowly growing interest in amateur spectroscopy. It covers the simplistic [sunlight and emission lamps playing on CDs and DVDs, by David Randall] to the exotic [measuring a stellar wobble caused by an orbiting planet, by Tom



Kaye]. Editor Stephen Tonkin fronts the book with a brief history, the physics that causes spectra and basic instrumentation. Much of the latter content can be found on the Internet or in basic physics books.

The remaining practical content is unique although most authors have related webpages. Where appropriate authors explain the use of reduction software, including professional IRAF software, for analysing spectra. The book has numerous references and websites listed within the chapters and appendices. Mathematics has been kept to a minimum.

Following David Randall's initial practical chapter, Jack Martin carries the slitless theme further using a Rainbow Optics grating before a regular SLR film camera at the focus of his unguided 30cm Dobsonian telescope. He records low reso-

lution trailed spectra of some brighter stars, expanding on a summary published in a letter in the *Journal* [111(3), 156 (2001)].

Nick Glumac gets down to the nitty gritty of designing spectrographs using fibre optic feeds which remove any load from a guided telescope of less than 30cm aperture. He also explains the virtues of photon efficient CCDs to record spectra orders of magnitude fainter than the Martin arrangement, which greatly increases

the targets within range. This is an invaluable chapter with many exciting practical examples of work including detection of CO₂ in Venus' atmosphere and CH₄, NH₃ and H₂ in the solar gas giants.

Stephen Deaden continues the instrumental theme with a review of small commercial slitted spectrographs for coupling direct to the telescope focal plane, and the

use of fibre optics to decouple the spectrograph. Numerous sample spectra are included. Dale Mais uses the unique self-guiding SBIG spectrometer on his Celestron 14 to analyse a wide range of targets from planetary nebulae to metal rich stars like 78 Virginis.

In the final chapter Tom Kaye dispenses with the preliminaries to build a high resolution spectrograph. This epic ongoing project has a single aim – to detect planets orbiting neighbouring stars. It requires the highest precision not least in the mounting of the spectrograph on a marble table in a temperature controlled environment. A 1.1m aperture telescope is under construction to collect more photons onto the back-illuminated CCD to increase the sample of viable stars.

Spectroscopy is a huge subject with innumerable specialist targets even for the amateur. The contents of this book reflect the authors' interests. As the only current book on amateur spectroscopy it must be recommended. Perhaps future versions will include the adrenaline rush of less static challenges, e.g. confirming the identity of transient phenomena in newly discovered novae and supernovae from the likes of Liller, Fujii and Buil.

Maurice Gavin

Maurice Gavin, a former President of the BAA, enjoys building and using spectrographs.

Aurora

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