



Equipment & Techniques Section

Astronomy from a balcony



David Arditti, Director

From the early days of the Association until 2015, our Memorandum of Association had – at only its fifth sentence – a commitment to ‘promote the association of observers, especially the possessors of small telescopes, for mutual help’. In those early days, the reason for using small telescopes would usually have been the expense of acquiring large ones. This is much less true today; for experienced observers at least, it is more commonly restrictions in their observing environment that cause them to do their observing with small instruments.

I do enjoy hearing about members who are ingeniously exploiting the possibilities of small telescopes in difficult locations. Andrew Read lives in Hong Kong, and has south-east views from the very small balcony of a seventh floor apartment. As well as restricted access to the sky, he has much light pollution, high humidity and quite a lot of cloud. However, as compensation, he has a view of the whole of the exciting band of sky lying between -50° & $+10^\circ$ declination and, of course, the planets can pass overhead. In addition, it is always dark by 7pm, and he can observe in a T-shirt year-round.

Andrew has been observing recently with a Borg 76ED refractor, a Baader T-2 dielectric mirror diagonal and Pentax XW eyepieces. He has mounted these on an iOptron AZ Mount Pro computerised altazimuth mount, and he has had a special bracket made from a piece of L-channel aluminium, drilled for the iOptron and made to clamp to the railing of his balcony. This creates a stable, permanent and compact observing setup that both he and his family can use.

‘ED’ refractors have doublet objectives, with one element made from low-dispersion glass.



The mounting bracket. Note how it is clamped and stabilised without the drilling of any holes in the balcony.

They have better colour correction than traditional achromats, but not so good as triplets (there cannot be a direct comparison, since most triplet designs are ‘widefield’, trading off the chromatic benefit by reducing the focal ratio as much as possible). ED telescopes are medium-focal-ratio instruments that are capable of giving fine high-magnification planetary views and also reasonably wide deep sky fields.

For users of small telescopes who do not need the very high tracking accuracy required for long exposure imaging, the new generation of small GoTo altazimuth driven mounts (like the iOptron) offer a viable alternative to the much heavier and bulkier German equatorials. A lighter option is the Skywatcher AZ-GTi. Both allow control from a phone app via WiFi.

Andrew is impressed with the optical quality of the Borg 76mm refractor, describing the figure-of-eight diffraction ring around the binary star Zeta Aquarii (separation 1.7 arcminutes) as ‘glorious’. He finds the iOptron to be a solid mount with very satisfactory GoTo accuracy. It has built-in level adjustment and, thanks to GPS, the mount can put an alignment star in the eyepiece field of view by itself, so he does not need a finder. He believes he could not enjoy so much astronomy under his skies without such a mount and a planetarium app. The telescope is kept inside, but can be set up within two minutes. Although his setup is within his living space, it takes up very little of it.

On binoviewers

You will see that later in this issue we feature a review of the Celestron Stereo Binocular Viewer, contributed by Peter Anderson, a member in Australia. This could well be the first time in the long history of the *Journal* that its pages have featured a review of a commercial hardware product. This is something I would like to encourage, as I feel it will be useful for readers to get members’ informed and ‘without favour’ opinions on options across the range of telescopes and accessories in the marketplace. If you would like to write an equipment review to be considered for the *Journal*, please send it to me at eandt@britastro.org.

On the subject of binoviewers, it seems that success, or affinity, with them is a very personal thing. I have done much observing with two mod-



Andrew Read's balcony telescope.

els – a Taiwanese-made William Optics, and a USA-made Denkmeier – using a variety of telescopes. I have enjoyed using them both, although (not unexpectedly) I found the more expensive Denkmeier to have the edge in terms of both mechanical and optical quality. My impression contradicts that of Peter, who reports in his review that the binocular viewer did not allow him to see more detail than with a single eyepiece. In my experience they clearly do, and I find the benefits to be greatest in detecting subtle planetary detail – particularly the fine features in Jupiter’s belts and zones. However, I do know leading visual planetary observers who never use binoviewers and, when inviting guests into my observatory, most can’t get good results using them. I’d welcome more opinions on the subject.

Meetings & mailing list

The Section is helping to sponsor a spectroscopy software training workshop in Birmingham, on Saturday August 24. Then we have the first meeting of the Equipment & Techniques Section, scheduled for Sunday, 2019 Nov 17. This will be an all-day meeting at Bedford School, with lunch included. I am assembling a varied programme of speakers and offers of more contributions are welcomed. To attend either of these events, you will need to book; see the ‘Events’ page of the BAA website.

Looking much further ahead, if you are interested in planetary imaging, put the date of 2020 Jun 20 in your diary. We will be holding a workshop day in London devoted to this topic, with leading experts.

In the near future I will be producing an e-mailed Equipment & Techniques Newsletter, to contain less formal contributions than might find a place in the *Journal*. If you would like to be put on the list for receiving this, once again e-mail me at the address given above. 📧