

# A virtuoso performance

**Steve Ringwood** takes a liking to Sky-Watcher's latest small telescope as part of its heritage legacy, the 114P Virtuoso.

**T**he four-hundredth anniversary of Galileo's 1609 observations flooded the market with small telescopes in celebration, including Sky-Watcher's 'Heritage'. Having since developed into a steady line in its own right, I had the pleasure of reviewing its latest offering, the Virtuoso 114P.

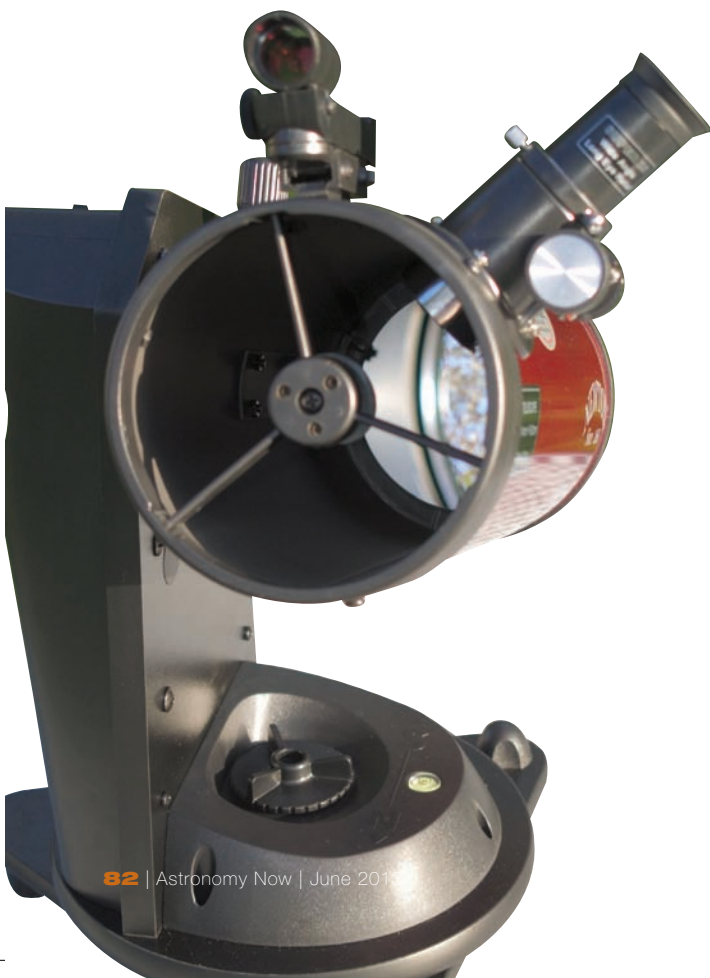
Despite an aperture of 4.5 inches, its  $f/4.38$  ratio means a focal length of only 500mm! Even attached to the driven alt-az table-top mounting, the whole instrument fills barely more than a cubic foot of space. Immediately, it becomes apparent how portable and convenient this smart-looking telescope is. Two supplied eyepieces, 25mm and 10mm, deliver magnifications of 20 $\times$  and 50 $\times$  respectively.

Examining the optics via the focuser, I noticed that transit had pushed the optics slightly out of collimation, but this was remedied in minutes via the Newtonian secondary's conventional three-axis and longitudinal adjustment.

## Set up

Celestial alignment of the alt-az is breathtakingly simple. An initial session informs the mount of its observational latitude. It is afterwards only necessary to switch on the power (whilst pointing the tube towards Polaris) for the drive to track celestial objects wherever directed. Remarkable!

▼ Looking down the optical tube at the secondary mirror spider and collimating screws.



My first target, Jupiter, was a Sun-hugging dusk object after a long sojourn high in the dark winter sky. Using the 10mm at 50 $\times$ , the disc was clean, bright and displayed the belts nicely. However, I felt that the telescope had more to deliver, so used my own 4.7mm Nagler to lift the scale to 106 $\times$ .

This was so beneficial that I pressed on, deploying a 3.5mm Hyperion eyepiece to provide 143 $\times$ . The telescope comfortably accommodated this both optically and mechanically. The planet and its moons were clearly defined and did not waver even when forced slowly through the field periphery by my delicate use of the multi-function drive system. And what a joy it is to use deathly quiet drive motors, demonstrating clearly that even at this economical end of the market you can have telescope motors that do not sound like maniacal coffee grinders!

Saturn entered the fray from the east a few hours later. The 10mm yielded a great sight of the disc and ring system, the type of 'wow' view that gives telescopic novices such a thrill on seeing Saturn in the flesh for the first time. At 143 $\times$  Saturn's pastel bands, Cassini's Division and the obediently attendant moon Titan were well seen.

Although the documentation proffers a recommended maximum of about 230 $\times$ , the short focal length and low  $f$ -ratio give it no pretensions

of being a planetary telescope – rather, a low power wide-field sky net. In fact, the 114mm (4.5-inch) parabolic primary is so good that on several occasions I was using a 2.5mm eyepiece (200 $\times$ ) to great effect on planets and the Moon. The focusing requires a deft touch at these higher powers but the smooth 1.25-inch focuser is well up to the job.

In using the telescope in its table-top configuration, I did find occasionally that the focuser (fixed at one side of the telescope tube) was inaccessible from my table-side position, requiring movement and re-alignment of the whole instrument. I would therefore recommend frequent observers to use the mount's underside tripod bush connection, thus allowing 360 degree universal access.

My planetary 'fix' out of the way, I wanted to test the Virtuoso's light gathering prowess. Swivelling the telescope to a point high in the east, I rested upon the Ring Nebula (M57) in Lyra, simply found using the red dot finder. The 10mm eyepiece easily picked up its pale smokey doughnut, albeit a very small object at 50 $\times$ .

Swapping that eyepiece out for the 25mm, I used the control panel's slow motion buttons to breeze gently across Cygnus' rich stellar pastures, particularly enjoyable as there was precious little optical disturbance at the field periphery.

▼ A closer look at the collimating screws.



## At a glance:

Type:	Newtonian reflector
Aperture:	114mm (4.5-inches)
Eyepieces:	25mm (20×) 10mm (50×)
Focal length:	500mm (f/4.38)
Mounting:	Computerised multi-function table-top alt-az
Tracking speed:	sidereal
Slew speeds:	8×, 16×, 64×, 400×, >2000× max
Weight (including tube):	5.3kg
Power:	8 × AA, or DC supply
Price:	£199
Details:	www.opticalvision.co.uk

The mount is also capable of holding and controlling a DSLR camera.



## Full solar disc

A rare Sun-drenched weekend gave me the opportunity to test the telescope's mettle on solar observation. I had ruefully noted that the dust-cap had a solar port-hole for such use, but I opted instead to use one of my glass aperture filters that happened to have a snug fit on the tube. Both the 25mm and 10mm gave excellent views of the solar disc, showing the primary features of a white-light Sun extremely well. Limb darkening, sunspot details and granulation were well seen. Indeed, I took the opportunity to snap sunspots using my Orion Solar System imager.

Clarity was sufficiently good for me to again raise the magnification to 106× with the 4.7mm Nagler, an eyepiece that was fast becoming my favourite on this telescope. Its 82-degree apparent field, together with a power just a shade over 100×, meant I could enjoy rich detail whilst still encompassing the entire disc of the Sun. A striking view.

The Moon is the friend of all telescope apertures, for at all scales there is crisp interesting detail to enjoy. At 20×, aiming at a post-nascent Moon, the field encircled the diminutive 25 percent phase crescent. The 10mm revealed the full majesty of the craggy terminator, low solar illumination picking out the long dead frozen waves of oily lava flows on the lunar plains. The terminator brushed close to the large craters Cyrillius and Theophilus, both inky secretive pools with a central twin-bouldered peak puncturing the gloom of the latter. No glare or distortion marred the scene and the slow motion buttons on the control panel allowed me precise roaming when I upped the power to 143× with my 3.5mm. This eyepiece

permitted a clear view of the multi-layered terracing on the inner walls of Theophilus – an excellent definition that held when I switched to my 2.5mm giving 200×. I then alighted on the Taurus-Littrow area at the edge of the Sea of Serenity, the grazing sunlight drawing me to a group of strange humps, named the Sculptured Hills by the Apollo 17 astronauts that visited this area. Looking like a group of mud huts on a baked plain, these hummocks have lately been revealed to be impact debris from the Imbrium impact and therefore interlopers very far from home!

Requiring the services of a good rich star-field, I bowed to the website recommendation of my esteemed colleague Mark Lancaster as I lifted the tube's gaze to just south of the zenith, towards the globular cluster Messier 3. The 25mm showed the cluster as a small ball of haze punctured by scintillation. It was best viewed by my 4.7mm, through which the cluster fairly crackled with life despite some sky glow bleeding from a low interfering Moon.

This plucky little machine has a wonderful can-do attitude, being both optically and mechanically very sound. It is easy to set up and control and can even be enhanced to fully GOTO with the optional SynScan AZ handset. Given that it can clearly take the heat, a Barlow lens or good high-power eyepiece would be my first recommended addition.

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► The Sky-Watcher 114P Heritage Virtuoso. All images: Steve Ringwood.

▲ The telescope hooked up to an Orion Solar System imager with a glass aperture filter for a spot of solar observing.

► The control panel for the motorised mount. It can be upgraded to full GOTO with a SynScan handset.

