

# ASTRO KIT REVIEW

## A Newtonian travel 'scope

This portable Dobsonian-style telescope is ideal for those nights where you need to take advantage of a brief break in the cloud or for packing for a trip to a dark-sky site, as Neil English explains.

**S**mall, portable telescopes are all the rage among amateur astronomers who like to deploy them for quick, grab 'n' go excursions to the backyard or for travel. Traditionally, this niche has been filled by small, short-focal length refractors and/or catadioptric telescopes that can be mounted on a lightweight tripod. But in recent years, a new line of ultra-portable Newtonian reflectors has hit the market that has the potential to buck this trend; enter the Sky-Watcher Heritage 130P flextube Dobsonian telescope.

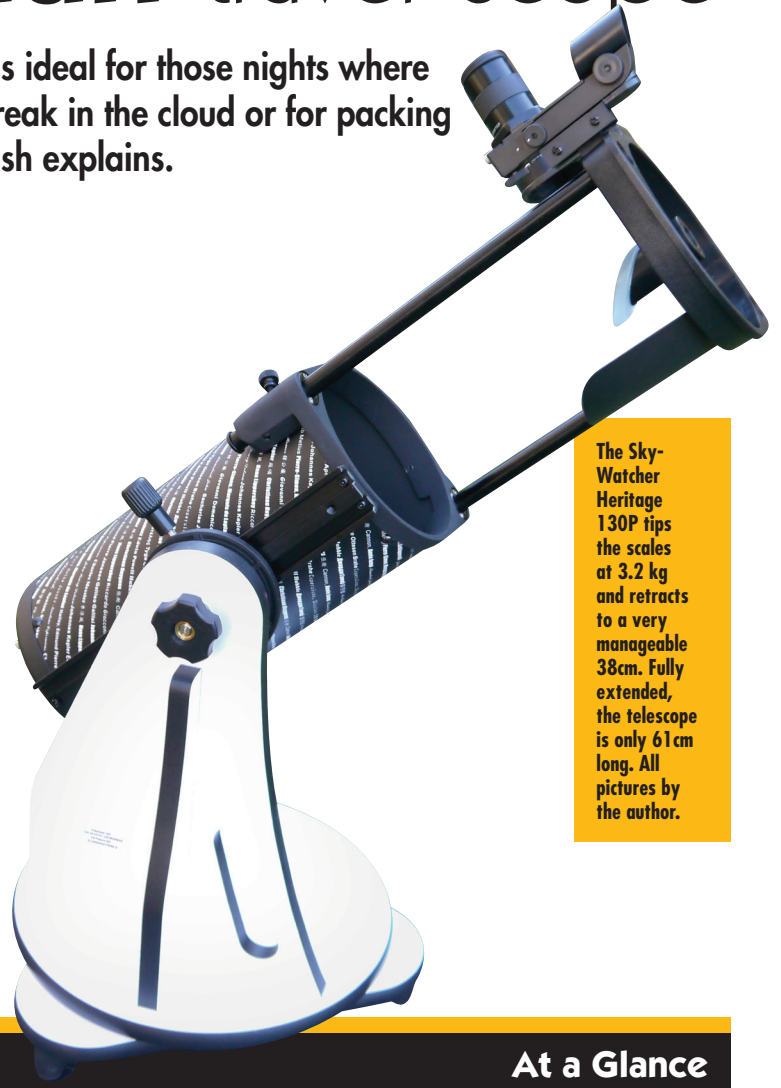
The telescope arrived in a package containing the telescope, a 130mm (5.1 inch) f/5 Newtonian with a parabolic primary mirror, a red dot finder, two eyepieces (25mm and 10mm, delivering both medium and high magnification) and a well-written instruction manual. The instrument came already attached to its fully assembled lazy Susan-style Dobsonian mount via a dovetail plate affixed to the optical tube. The lower tube assembly housing the parabolic primary mirror is adorned with the names of celebrated astronomers covering four centuries of telescopic astronomy. And while some may find this gimmicky, I rather liked it.

### Simple, ergonomic design

The Heritage 130P has a number of unusual features worth mentioning. The first is the retractable nature of the upper tube assembly, which extends the optical tube assembly from just 38cm to 61cm. The instrument is very lightweight, breaking down to just 3.2 kg for the optical tube and 2.8 kg for the mount. Conveniently, a carry handle is cut into the Dobsonian mount for easy transport to and from the field.

Focusing is achieved by securing the eyepiece in the holder and rotating it either clockwise or anticlockwise until the sharpest images are obtained. Although it takes a bit of getting used to, I found it worked perfectly well in field tests. Care must be made not to unscrew the eyepiece holder too far, lest it come loose from the instrument proper. Most any eyepiece and/or Barlow combinations will come to focus in the telescope, either when the upper tube assembly is fully extended or moved backward by a half an inch or so before retightening the nylon screws.

Both the primary and secondary mirrors can be fully adjusted – an important feature necessary to squeeze the best performance out of the instrument. I was relieved to discover that the collimation of the optics was good right out of the box and requiring only a minor tweak



The Sky-Watcher Heritage 130P tips the scales at 3.2 kg and retracts to a very manageable 38cm. Fully extended, the telescope is only 61cm long. All pictures by the author.

### At a Glance

#### Sky-Watcher Heritage 130P Tabletop Dobsonian

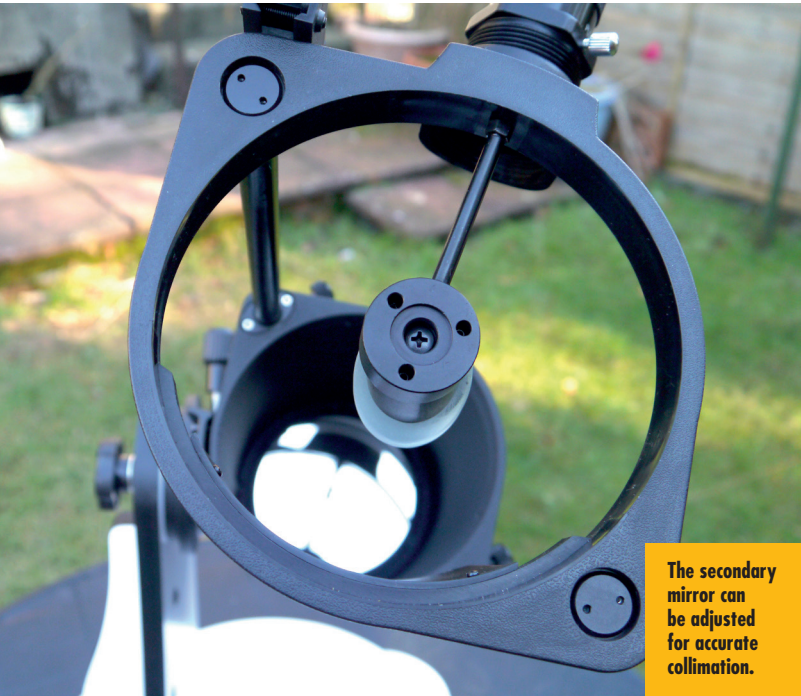
<b>Aperture:</b>	130mm (5.1 inches)
<b>Focal length:</b>	650mm
<b>Focal ratio:</b>	f/5
<b>Supplied with:</b>	25mm and 10mm eyepieces, red dot finder, tabletop lazy Susan-style Dobsonian mount.
<b>Size:</b>	
<b>Fully retracted:</b>	38cm
<b>Fully extended:</b>	61cm
<b>Weight:</b>	
<b>Optical tube assembly:</b>	3.2 kilograms
<b>Lazy Susan mount:</b>	2.8 kilograms
<b>Retail price:</b>	£129



The versatile Heritage 130P, shown here fully retracted, can be mated to most any light weight mount.



The 130mm primary mirror can be easily adjusted.



The secondary mirror can be adjusted for accurate collimation.

using a laser collimator. That this was so is an indicator of the care vested by Sky-Watcher to deliver a telescope that can work well from the get go. I shudder to think how many novices have been turned right off the hobby owing to shoddy factory alignment of the optical train. The Heritage 130P has a Vixen-style dovetail rail affixed to the side of the optical tube assembly, which allows the telescope to be precisely balanced with eyepieces of various weights.

**Optical tests**

Testing the telescope at various magnifications in bright daylight, the instrument provided very sharp and crisp views of the landscape from 20x right the way up to 366x. This in itself is a good sign that the Heritage 130P has accurately figured optics, but the real mettle of any astronomical telescope can only be revealed by rigorous testing under the stars.

Because of its open-tube design and low mass, cooling to the ambient temperature occurs rapidly. Just set it outside 10 or 15 minutes before use and you're cooking with gas. Bright stars focused down to tight pinpoint of light both at low and high powers. Carefully examining the intra- and extrafocal diffraction images of Polaris, I was delighted to see that the optics were well corrected for spherical aberration, with no astigmatism that I could detect. Comparing the views with a high-quality 90mm refractor, the 130P showed a little more detail on Jupiter at 165x, especially when glare-reducing filters were employed. Using low-power eyepieces, the little tabletop Newtonian served up better and more compelling views of celebrated deep-sky objects such as M35, the Orion Nebula, the Double Cluster and the Pleiades, among many others. In addition, the telescope showed me clean, well-resolved views of iota (ι) Cassiopeiae, eta (η) Orionis and theta (θ) Aurigae – systems that can sometimes prove challenging for a 3- or 4-inch refractor. Lunar vistas are stunning at all reasonable magnifications. All in all, the 130P exceeded my expectations by some considerable margin, especially when one considers the very modest price of the instrument.

**Questioning culture**

That a Newtonian could meet or exceed the usual requirements cited by amateurs as being important for both grab 'n' go and travel came as a great surprise to me, but it is true. It is lightweight, cools quickly and can be used at both high and low powers. Its decent light-gathering power gives it a distinct edge over smaller refractors, especially when studying fainter deep-sky objects. While the telescope works perfectly well using the supplied Dobsonian mount, the 130P can be easily mounted on other kinds of mounts (the Vixen Porta II, for example) or even lightweight GoTo mounts.

There are a number of ways to improve the performance of the telescope still further, not least of which is to construct a light shroud to eliminate sources of stray light, especially when viewing from a light-polluted urban and suburban site. And while the supplied oculars do an adequate job, the user will benefit from upgrading these to higher-quality units. For the highest power applications, a high-quality shorty Barlow would be a useful accessory.

Don't get me wrong: I'm as much a refractor and catadioptric fan as the next guy, but nowadays there is no compelling reason to confine one's choices to these telescopes if all one wishes to do is grab 'n' go astronomy. And having that choice is surely a good thing.

Neil English is a regular contributor to *Astronomy Now* and is the author of *Grab 'n' Go Astronomy*.