

Go sky watching with the Sky-Watcher Skyliner-300P

The humble Dobsonian is unquestionably the instrument of choice for the budget-conscious observer seeking the largest aperture telescope for their money. They are often unfairly perceived as the poor relation to equatorially mounted Newtonians of the same size and focal ratio, but the reality is that they frequently use the exact same optical tube assemblies of their more expensive counterparts.

Many observers prefer the optical security offered by one-piece optical tube assembly over the rather more portable truss-tube models. Now that the highly

regarded GSO Revelation Dobsonians are no longer readily available, the Sky-Watcher Skyliner range from Taiwanese manufacturer Synta Technology Corp. offers some of the best-equipped instruments of this type. The largest model in the range is the Skyliner-300P, a 305mm (12-inch) aperture Dobsonian of 1,500mm focal length (f/5).

Put to the test

In tests conducted during July and August the instrument was used on the Moon and Jupiter plus a number of deep-sky objects from a typical suburban back garden where light pollution permits views of the Milky Way's brighter portions only on nights of good transparency. The well-ventilated primary and secondary mirror cells ensure that the Skyliner-300P

cools down surprisingly rapidly for such a large instrument. I found that I could get good images after only thirty minutes exposure to outdoor temperatures (in the winter this will be somewhat longer).

Given the relatively short focal ratio (f/5), one could be forgiven for thinking that this 'scope would not excel as a planetary instrument but, when seeing permitted, Jupiter displayed a wealth of detail despite its low altitude from the UK. In fact, my non-astronomer neighbour described the Jovian Red Spot without any prompting from me. Once I had recovered from the brightness of the Moon (a polarising or neutral density filter is recommended), its surface was replete with sharply defined rille, craterlet and mountain detail.

From my lunar and planetary experiences I already knew that figure of the mirror was good, but star testing with a Ronchi grating revealed just a hint of overcorrection with a smooth polish and no astigmatism. On one memorable night of good seeing with Vega riding high I looked at the Double-Double – epsilon Lyrae – with the 10mm Plössl and a 2x premium Barlow. At 300x the 'scope clearly showed even diffraction rings around all four components.

Not surprisingly given its aperture, the Skyliner-300P really showed its mettle on the deep-sky. The Hercules globular cluster, M13, was a magnificent sight, beautifully framed in the supplied 10mm Super Plössl eyepiece and easily resolvable with direct vision even in my light-polluted skies. The Ring Nebula, M57, had the appearance of a fine gauze across the centre of the ellipse while the Dumbbell Nebula, M27, nestled in a field full of background Milky Way stars. Even the brighter portion of the Veil Nebula surrounding 52 Cygni, NGC 6960, was there.

Good looks

The curvaceous lines of the alt-azimuth mount immediately sets it apart from the boxy appearance of traditional Dobsonians. Interestingly, the rolled steel tube of the Skyliner-300P appears to have a finely welded seam rather than the commonly encountered folded form. This gives the instrument's 147cm-long, 36cm-diameter tube a very smooth and professional appearance, especially in its pure white livery



The Skyliner 300P. All images: Ade Ashford.

The secondary mirror in the foreground, and looking down the tube towards the primary mirror.



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The Skyliner 300P. All images: Ade Ashford.

with black Hammerite finish tube rings.

Given the telescope's weight (35kg), I initially thought that the traditional Teflon bearings of the Skyliner-300P offered too much friction. However, once the pads had bedded-in after a couple of hours' use the azimuth action of the mount in common with the motion in altitude was perfectly satisfactory. The vibration damping time on grass is in the region of four seconds.

The two-inch focuser with its 1.25-inch eyepiece adaptor proved something of a pleasant surprise. Although not mentioned anywhere in the documentation, it is a fine example of the Crayford form with 38mm of travel. All of the eyepieces in my collection came to focus without any problems. The bundled 10mm and 25mm multi-coated Plössl eyepieces are of surprisingly good quality, as is the 9 x 50 finderscope.

The telescope itself arrives in not one, but three boxes: the optical tube assembly, the Dobsonian base in flat pack form, and the primary mirror and cell. The overall shipping weight (including packaging) is in the region of 45 kilograms (seven stone). Clearly, it's not an instrument for the faint-hearted.

While it is quite possible to assemble the 'scope single-handed from the well-illustrated instructions, an extra pair of hands is strongly recommended. In common with most Dobsonians in this price bracket, the alt-azimuth mount is made from plastic coated particleboard sporting a carrying handle and an eyepiece accessory tray. You probably need to set aside about 30 minutes for assembly of the base.

Two tensioner/carrying handles with 5cm-long threads bolt through both sides of the altitude axis, firmly mating the tube assembly and mount. The handle on the eyepiece side has a roller bearing that acts like a clutch so that you can adjust the altitude axis tension to suit your preference. It also means that two able-bodied adults can each grasp a handle and carry the fully assembled telescope over short distances. That the primary mirror (pre-fitted in its well-engineered nine-point cell) also needs to be installed into the tube is a departure from the smaller Skyliner models, but this should not give cause for alarm. It is a heavy and delicate item that is wisely delivered separately from the tube so as to prevent damage in transit. So long as simple care is taken

when following the installation instructions, attaching the cell to the base ring of the tube assembly is a simple matter for two people with just six Phillips head screws to tighten.

Conclusions

From my experience, the tube assemblies of the Sky-Watcher Skyliner range offer the optical performance of the equatorially mounted Explorer models of the same aperture and focal ratio. The thin four-vane secondary mirror holders impart minimal diffraction noise and, in the case of this 305mm aperture model, the 70mm minor axis secondary represents a less than 23 percent central obstruction.

Perhaps it is not so surprising that its planetary performance is so good.

The Skyliner-300P has a suggested retail price of £549, but if previous experience is anything to go by I see competition between dealers driving this down closer to £500. Even at full retail price this instrument offers a staggering specification for the money with an optical performance that would be the envy of many a manufacturer. With equipment like this available at such reasonable cost, observers truly have never had it so good.

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The rear end of the Skyliner 300P, showing where the primary mirror cell is attached.