REVIEWED

Omegon's Advanced X N 152mm Dobsonian

An expert Dobsonian great for beginners

A new series of Dobsonians are now available from Omegon. **Steve Ringwood** took the 152mm-aperture model for a spin, and found that as an all-rounder, it handled expertly.

The Omegon Advanced X N 152mm, 1200mm focal length Dobsonian. All images: Steve Ringwood.

It can appear sometimes that almost all contemporary astronomy is concerned with an unseemly rush to image as much of the Universe as possible, with just a single wide-field capture. Indeed, there are rich-field refractors out there with such short 'all-sky vista' focal lengths that the field lens of the eyepiece is almost in contact with the rear element of the objective lens. But here I welcome a telescope with a firmer footing in observational astronomy – and one that openly seeks to provide a facility for detailed planetary and stellar viewing, while still offering a light-pulling ability for enjoying nebulae and galaxies. Underlying all of this is a stated aim to provide a simple intuitive system with rapid deployment. I was keen to discover how well Omegon have succeeded.

In the box

The kit arrives in two boxes: the optical tube assembly is in the first, while the Dobsonian mount comes flat-packed in the second. Do not let the term 'flat-pack' panic you, for this is no inscrutable jigsaw puzzle with designed-in misinterpretations. There are only five major elements, with just a few add-on fixings. The (downloaded) assembly instructions are fully comprehendible, and I had the Dobsonian mount ready to use in a leisurely 30–40 minutes – and that included a coffee break. The tube comes attached to its trunnions, so it only remained for the telescope to be lowered into position.

In order to provide additional tension between the rocker-box's Teflon pads and the running surface of the tube trunnions, the design includes a pair of rather fierce springs that pull the tube against the rocker box via protrusions in each. This adds commendable stability to the telescope's altitude motion, compensating for the possible imbalance of the varying payloads that might be applied at the focuser end. However, I can personally attest that care must be taken during the connection of these springs, and to hold them only by their

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terminating loops, for otherwise the contracting coils can bite.

Once fully assembled, these springs stay attached to the telescope's trunnions, where they sort of waggle about and get in the way during storage. It makes more sense to me for them to remain attached to the rocker box. But then, perhaps the designers had other considerations.

I encountered only one oddity during assembly, that of the 6 × 30mm finderscope. Focus is achieved by adjusting the objective lens. I found that I could hardly reach focus, and only then with the lens assembly unscrewed and literally hanging by a single thread, right at the end of its travel. My right-eye dioptre value is about +2.0, but the finder should supply more correction that that. I made do, but precariously. Perhaps the finderscope's tube length could be a little longer, or its objective lens' adjusting thread a little deeper.

When all is done, the wooden base and rocker box together weigh a little over eight kilograms, making it eminently comfortable to transport one-handed to your observing position using the carry handle provided. Once in place, it takes just a second trip to fetch and fit the nine kilogram tube assembly and you are up and running. Truly, a 'fast' system for getting ready to observe the sky.

Before commencing an observing run, I did of course check the collimation of the optics. It was the merest trice out (likely caused in transit), but the fine adjustments available on the centre-spotted primary and secondary mirrors and the assistance of a friendly laser collimator made short work of the deviation. I would add that at least a brief tuition on collimation could be added to the instructions, since this facility is, after all, part of the telescope's construction – and beginners are a target market for this telescope.

▲ The completed rocker box on its swivel base.

At a glance

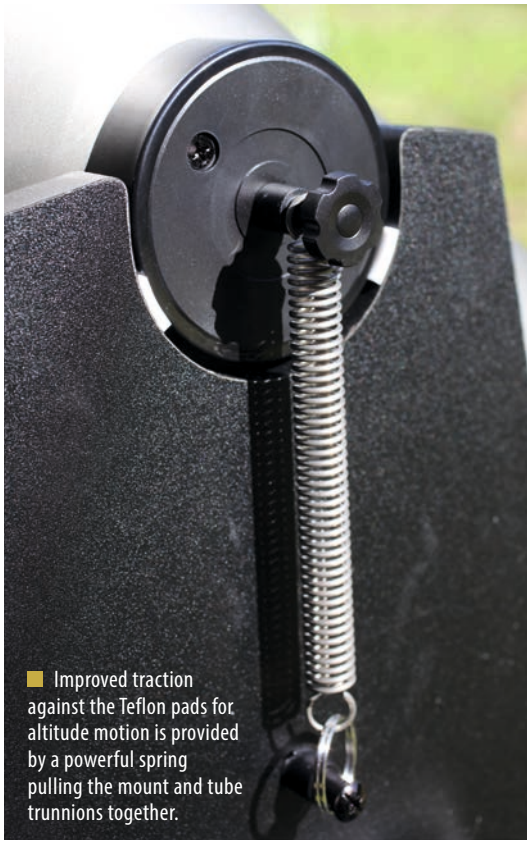
Type: Newtonian reflector
Aperture: 152mm (parabolic primary)
Focal length: 1,200mm (f/7.9)
Mount: Dobsonian
Finder: 6 × 30mm
Focuser: 1.25-inch Crayford (T2 connection)
Supplied eyepiece: 25mm (48×) Plössl
Weight: OTA 9kg, mount 8.1kg
Price: £268
Details: omegon.eu

In test

Just a day after a clouded out partial lunar eclipse, a waning gibbous Moon made amends by making itself available, low down in a south-eastern sky, for observation. As an additional treat, the telescope and I were ourselves observed, since the International Space Station made a brilliant pass just as I was setting up.

I began by using the supplied 25mm eyepiece, delivering 48×. The Crayford-style focuser was very smooth, and the Moon snapped into focus within a field a little over twice the lunar diameter. Detail was excellent with good contrast. Lunar light finished at the Moon's limb, disturbed only occasionally by some annoying wispy cloud. What creased my forehead a little was that getting to focus consumed almost the entirety of the back focus (stated as 50mm). This

▲ The finder focuses by means of moving the objective lens on its threaded attachment.



■ Improved traction against the Teflon pads for altitude motion is provided by a powerful spring pulling the mount and tube trunnions together.

margin is a little tight for my liking, since many like to experiment with interposing accessories between the eyepiece and telescope. It gave me no problem during the review but does lead on to my next comment.

Of this new series of Omegon's advanced reflectors, the 152mm is the only one fitted without a two-inch focuser. It can of course be argued that because of the smaller secondary mirror of this model's optical system, use of larger eyepieces may result in vignetting (peripheral fall-off of illumination). Yet many eyepieces and accessories that might otherwise be confined within a 1.25-inch fitting are commonly contained within a two-inch standard jacket. As it happens, the rackmount offers a T2 thread, to which (when needed) I fitted

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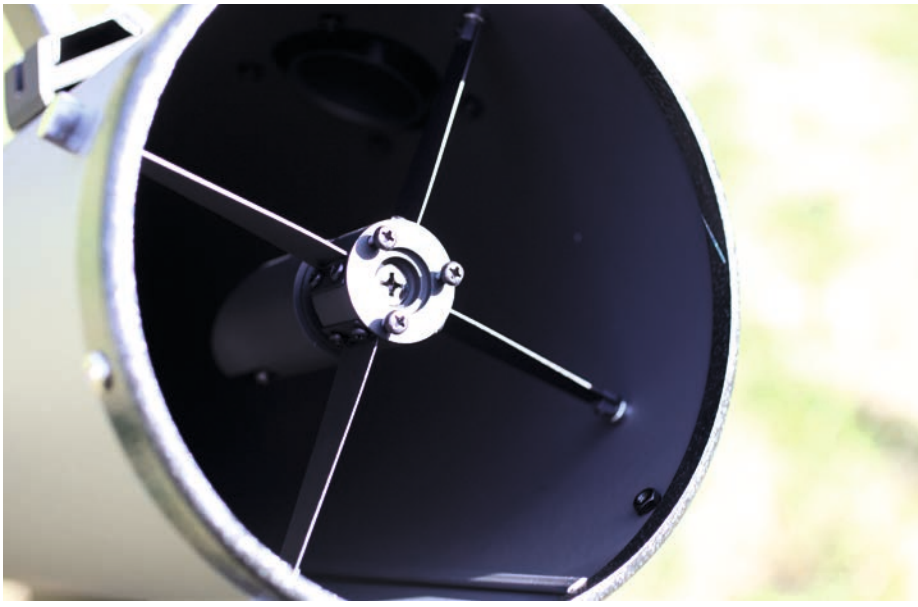
a T2 two-inch-fitting adaptor. You will read further on that, in this manner I enjoyed excellent views through various two-inch fitting eyepieces.

It is far easier to step down a two-inch focuser to a 1.25-inch fitting, rather than vice-versa – and my view would be to ask why start someone off with a limitation that at the manufacturing stage could be corrected for just a few pounds extra, to what is already a very keenly priced instrument. The additional weight of my two-inch eyepieces did not overpower the tension exerted by the trunnion springs, and even if they had, inventive users can always add some mass at the other end.

As testament to the usefulness of two-inch eyepieces on this telescope, I swapped out the supplied eyepiece and (after retro-fitting my adaptor) deployed a 9mm Lunt, boasting an apparent field of 100 degrees. Even at the resulting magnification of 133×, the entirety of the Moon's disc was still in view, with room to spare in a field 45 arcminutes wide. On the eastern limb sunset was beginning to break out, with the 'limbward' terraces of Mare Crisium only just starting to show relief. It was a beautiful view. Admittedly, a beginner may not initially aspire to the possession of the more expensive two-inch eyepieces, but the whole point of a telescope aimed at beginners is to develop their ambitions, so I suggest that this focuser be upgraded to the same level as its siblings.

Planetary challenges

Already low, the Moon sank out of view behind some houses, but (staying with the 9mm) Saturn offered itself as an alternative. Saturn had none of its usual splendour, but this was no fault of the telescope. Just a few months short of the Earth passing through the plane of Saturn's rings, the planet looked like a washed-out Jupiter with a thin pencil driven through it. Titan floated nearby. The telescope was delivering great clarity and really beginning to show its mettle as a planetary instrument. Because the rings were at such an acute angle, more of the very soft pastel shading of the equatorial banding was coming into view.



▲ The secondary and collimation adjustment is supported by the classical four vanes.

Rain had earlier settled the atmosphere and stability was very good, so I swapped out the two-inch configuration and installed an old diehard, my 1.25-inch, 4.8mm (82 degrees) Nagler. Now at a magnification of 250×, Saturn and Titan were still captured in a single glance, but there was no loss of quality. Indeed, if anything, the pastel bands of Saturn's disc were bolder and the rings were no longer stick-like, with their incredibly slim elliptical profile becoming visible. I could even make out the knife-like slash of the shadow of the rings projected onto the globe. The darker backdrop of the higher power also lifted the magnitude +9.8 moon Rhea and +10.3 Tethys from the gloom, creating a warming family scene.

The claim for this series of telescopes is of using superb optics, underpinned by the use of a superior parabolic primary mirror (you sometimes find the use of spherical at this focal ratio). I can attest this claim is valid, since the more I demanded, the more it gave.

Not just for the devilment, I moved to a higher power Nagler, that of 2.5mm. At a magnification of 480× (I hear the purists scream!) this is beyond what you would normally apply to a telescope of this aperture. However, this was not a test of what I could see, although Saturn still presented a creditable appearance in the 10-arcminute field. This was a trial of how I could move.

The alt-az mount of a Dobsonian is very intuitive, but its performance relies very heavily on how smoothly it can be manhandled to a target and kept there. In this example, the altitude motion is controlled by the Teflon pads tensioned (albeit without adjustment) by trunnion springs, with azimuth motion controlled by friction altered by a hand knob connecting the base plates. With just a little tinkering with the azimuth adjustment, I had little trouble keeping a swift-footed Saturn within its 10-arcsecond field. This was great evidence that the mount was fully capable of allowing the telescope to reach its full potential.

I would add only one thing to the rocker box. It comes fitted with a handle for its own transport and this works well. However, when mated to its telescope cargo, I had the occasional need to move the whole assembly a few yards in order to make observations from a slightly different position. The existing handle does not really assist in this case, and I found myself reaching for non-existing handholds at the top of each side of the rocker box.

The collimation facility on the primary mirror is very smooth.

The focuser is a Crayford-style 1.25-inch fitting, with tension adjustment.

Star tests

Of course, this telescope is not just about planets. I needed a close examination of a star image and with a high power settled on magnitude +1.8 Mirfak (alpha Persei), high in the north-eastern sky. It yielded an excellent diffraction pattern, indicating good definition for stellar as well as planetary observation. In what seemed a needless confirmation, I stayed with this magnification for a look at epsilon Lyrae (the 'Double-Double'). This quartet of stars can be separated by a telescope of smaller aperture, but the clarity of that separation remains a good test of even moderate instruments. I am happy to report that each of the paired components had a satisfying wash of clear water between them.

Once the Moon had moved on in its orbit and left the sky to fainter prey, I returned to Lyra for examination of M57 (the Ring Nebula). It's a favoured little beast, but it seems always surprisingly smaller than you expect,

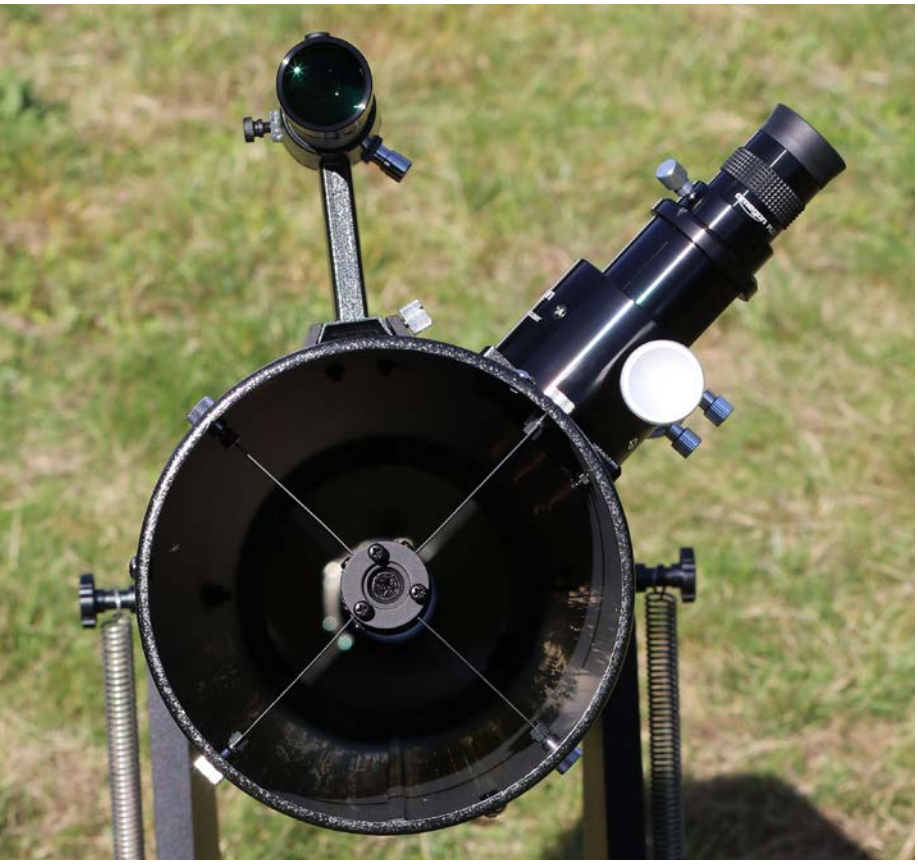
regardless of magnification. Contrast was very good, a distant smoke ring puffed from the darkness.

Being late September, two other deep-sky favourites presented themselves, the Double Cluster in Perseus and (almost overhead) the galaxy M31 in Andromeda.

I dropped a little below the supplied eyepiece and used a 40mm Plössl, obtaining a magnification of 30× and yielding a very useful wide field of nearly two degrees. The Double Cluster never fails to impress. I was treated to a twin explosion of stars, perfect to the edge of the field. Again, superb optics at work. I did not rush away – I simply drank in the scene. I then moved to M31. At a power of 30× its nucleus is almost star-like, and impressively I could make out the ansae of the galaxy's ellipse disappearing through each side of the eyepiece's field stop. The 40mm eyepiece delivered a great stand-off view, but as the seeing conditions were good I decided it was time to bring back one of the two-inch-eyepiece squad – a 13mm at 92× having an apparent field of 100 degrees. The real field it delivered was still just a little under a degree of sky, therefore capturing just a third of the galaxy, but it distended the star-like nucleus into a diffuse ball of light, like a distant headlight in the fog.

With the same eyepiece I returned to the Double Cluster. Although the smaller field did not capture both elements as before, the higher magnification deepened the background to a velvety black, enriching the brilliance of every star in view – and what a view it was! Like hot coals burning in a cellar. A beginner unused to such visions is going to be very pleased with this level of delivery.

Set-up in the garden takes only moments. You just have to carry out the rocker base, lower the tube into it, and attach the springs.



▲ Down the tube of the 152mm Newtonian.

▲ The 6 × 30mm finder. Alignment is via twin screws against an opposing spring.

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Wide apparent fields

Any telescope claiming a planetary ability has to have its mettle tested against the king of planets, Jupiter – and fortunately, just as morning twilight was seeping into the night sky, it became accessible in the east. I began with a 10mm at 120×, providing a pleasing scene of a clean-shaven belted disc accompanied by all of its Galilean moons. Io and Europa were in close attendance, with Ganymede and Callisto flung to the farthest reaches of their orbits.

I quickly scaled up to a 6mm, delivering 200× with no loss of quality. The equatorial bands were in stark relief, bracketed top and bottom by the polar hoods. At 300×, the more delicate traceries of intervening belts could be seen. The planet was rich in grey-browns and amber and the moons stood proud as diminutive discs.

By dint of its appearance, Jupiter provided an opportunity to play with maximum usable powers. While my 2.5mm Nagler did not present a usable magnification to work with, dropping down to a 3.5mm (100-degrees) Lunt did give moments of great detail. Since this delivered a power of 343×, this accords well with Omegon's suggested maximum of 300×. I do recommend use of eyepieces of wide apparent fields, such as those between 82 and 110 degrees, especially for moderate to higher powers. This makes it easier to keep an object in view with fewer nudges of the alt-az mount.

The eyepiece height from the ground, viewing from horizon to the zenith, approximates 75cm to 120cm. All of this range is accessible from the seat of an average comfy chair, although you may have to lift yourself onto your toes occasionally to get beneath the eyepiece of the straight-through finder.

This is an outstanding telescope for rapid set-up, at the outset of a new observer or the onset of a clear evening. It has great potential, belied by a very keen price point.

▲ Provision is made on the mount for both 1.25- and two-inch eyepieces.

Steve Ringwood is a regular contributor to *Astronomy Now*.