

SKY-WATCHER PRO SERIES

Equinox-80 ED APO

Paul Money puts Sky-Watcher's new refractor through its paces and reveals a package that fuses top quality with practicality



Rotatable tube

This allows the end focuser or tube to be rotated 360° to allow better positioning of objects – especially useful for photography. Rather than a single tightening screw, there's a central ring to loosen the tube, which can then be re-tightened to lock it in place.

SPECS

- ▶ **PRICE** £425
- ▶ **MANUFACTURER** Sky-Watcher
- ▶ **APERTURE** 80mm (3.2-inch)
- ▶ **OPTICS** FPL-53 Fluorite ED Glass
- ▶ **FOCAL LENGTH** 500mm (f/6.25)
- ▶ **FOCUSER TYPE** Dual-speed Crayford
- ▶ **SUPPLIER** Optical Vision Ltd
- ▶ **TEL.** 01359 244200
- ▶ **WWW.** opticalvision.co.uk

Sky-Watcher's entry into the competitive refractor market looks sleek and ready for business. This 80mm (3.2-inch) ED apochromatic (APO) refractor comes as an optical tube assembly (OTA) – that is without eyepieces – but the price does include the handy aluminium case and a 1.25–2-inch (31–50mm) eyepiece adapter. It also requires an

additional star diagonal, which is available to purchase separately.

We mounted the OTA on an EQ6 mount to allow for photographic testing. Our test objects were observed using 20mm (0.8-inch) and 65mm (2.5-inch) eyepieces, a star diagonal and, on a select few objects, a 2x Barlow.

One principal test was to view a bright star as it crossed the field of

view to watch for any distortion in the image. For this we chose two stars: Betelgeuse and Procyon. The view was pin-sharp across 85 per cent with the 20mm lens and there was no apparent colour fringing at all around the stars. Some slight distortion became apparent close to the edges, but did not detract from the overall view. ▶

CRAYFORD FOCUSER

The quality of the whole telescope gives the Equinox-80 a good feel, but the Crayford focuser is especially practical and a delight to use. It allows initial focus to be quickly achieved. Then, with the dual-speed action of the second knob, you can fine-tune the focus until you're satisfied.

This function really came to the fore when we used the telescope for imaging.

We found that we were able to select a bright star and carefully

focus until it appeared pin-sharp every time. A locking screw underneath fixes the focus, so you can then move back to your intended target without a shift in position.

The graduated scale that is now becoming standard is also featured on the Equinox, and this helps tremendously. Once you have achieved focus, simply note the position on the clearly marked scale and make a note of that position. Time and again we could come back and quickly refocus, and be either observing or imaging without losing time finding focus.

Tripod bush

The Equinox-80 features a standard tripod adapter, which means it can be mounted on a normal tripod. The tripod bush also allows it to be fitted to standard Sky-Watcher dovetail mounts, enabling it to be used as a photographic lens or daylight telescope.

Extendable dew shield

This prevents dew forming on the front objective lens – one of the main problems of observing or imaging. In practice, we didn't lose any observing because the dew shield did its job well.



The Crayford focuser offers fast focus and superb fine-tuning

PAUL WHITFIELD



Optics

The objective lens is multicoated with a fluorite extra-low dispersion (ED) glass composition, giving excellent colour correction and a sharp field of view across 2° using a 20mm eyepiece.

► As the Equinox-80 has a wide field of view of around 2°, it performs as a rich-field telescope. As such, it gave excellent views of large objects such as M45, the Pleiades, and M31, the Andromeda Galaxy. The Perseus OBI association of open clusters that includes alpha (α) Persei was stunning, with a field full of stars.

Deep-sky views

Turning towards the Orion Nebula we had a great view of the entire sword of Orion, which consists of the open cluster NGC 1981 at the top, down past M43 and M42 to iota (ι) Orionis. The Orion Nebula could be fully appreciated, with generous nebulosity.

Just north of it, another area of nebulosity involving NGCs 1973, 1975 and 1977 (the Running Man Nebula) showed strong hints of patchwork. Galaxies and faint planetary nebulae such as M81, M82 and M76 stood out and bore higher magnifications well, attesting to the quality of the optics.

We wondered how, being a rich-field refractor, the Equinox would perform at higher magnifications. We tackled the double stars of Castor in Gemini, and Algenib in

Leo, as well as planetary detail with Saturn and, later in the test, the Moon. Both doubles were crisply resolved when using our 2.5-inch (65mm) eyepiece coupled with a 2x Barlow, giving a magnification of 154x. The Airy discs merged on both doubles and the orange yellow pair of stars forming Algenib were exquisite.

We could make out good planetary detail with the high magnification – Saturn displayed the Cassini division in the rings, a belt and polar hood, and several of its moons. The Moon seemed small using the 0.8-inch (20mm) eyepiece but, when we increased the magnification, its detail became apparent, with excellent views.

Astro adaptation

Using our own adapter we easily attached a Canon 300D digital SLR to the Equinox-80 and, using an EQ6 mount to track the sky, we managed several imaging tests. We took five, two-minute, exposures of the Pleiades and the Andromeda Galaxy, which were then stacked and image-enhanced using K3CCDTools.

They gave a tremendous amount of detail – in fact, they were the

best images of these objects that I have ever taken. There was some slight distortion of the stars near the image edges, but overall the results were very satisfying.

The Crayford dual-speed focuser enabled fine-tuning of the telescope's focus, making this chore much easier. One notable, great feature is the rotatable tube, which enables better framing of the subjects, whether it is for visual or photographic purposes. This did not always keep a centred star in the centre of the view, but it was certainly close enough, and none of the tested stars were lost to view when rotating the tube.

Overall, the refractor performed well on all the tasks. It would make a top quality, fun addition to any astronomer's scope collection. ⚡



Eyepiece adapter

The main focuser is made to fit a 2-inch eyepiece, but the Equinox-80 also comes with a 1.25-inch adapter. A brass central ring grips either the eyepiece or star diagonal firmly, preventing damage to the eyepiece barrel.



The author's superlative Pleiades shot

VERDICT

OPTICS	94%
BUILD QUALITY	92%
ERGONOMICS	88%
FEATURES	95%
VALUE FOR MONEY	90%
OVERALL	92%