



PRODUCT REVIEW

by Alan Dyer

COMPACT APO

Sporting a sleek silver and black exterior, the Sky-Watcher Equinox 80mm ED apochromatic refractor boasts a 500mm focal length at f/6.2.



FINE FOCUS The Equinox 80's 2-inch focuser holds any modern eyepiece or camera and fully rotates for photographic framing or ease in selecting a comfortable eyepiece viewing angle. Dual focus knobs on the right side offer one-tenth-speed fine focus for critical focus applications, which are especially useful in astrophotography.

PHOTOS BY ALAN DYER

Sky-Watcher Equinox 80ED Apo Refractor

Weighing in at just 6½ pounds, this little refractor aims high

SMALL HIGH-QUALITY REFRACTORS, most with optics made in Taiwan or China, now abound in today's marketplace. Far from flooding the market with sub-standard gear, these little telescopes are proving to be an excellent value. The latest entries in this class are from Synta Optical Technology Corporation in China, sold in Canada under the Sky-Watcher brand name as part of its new Equinox Series of premium telescopes. We tested two models, the 80mm ED apochromatic refractor, described here, and the 120mm ED apochromatic refractor, reviewed in the July/Aug. *SkyNews*. The Equinox line also includes 66mm and 100mm models.

The hallmark of the Equinox Series is a slick black enamel finish and dual-speed focusers that can rotate 360 degrees when you loosen a knurled lock ring. The fit and finish of the Equinox refractors are first-class and certainly a cut above Sky-Watcher's previous "top-end" Pro Series models.

At first glance, the Equinox 80 might be taken for a repackaged version of Synta's popular 80ED Pro Series refractor. Not so. The Equinox 80 has faster optics (f/6.2

vs. the Pro Series' f/7 lens), which translates into a more compact telescope that is better suited to wide-field astrophotography and quick grab-and-go observing. Like other Equinox telescopes, the 80mm employs a doublet lens, with one element made from FPL-53 low-dispersion glass, the best available glass for reducing the false colour inherent in refractor telescopes.

Our tests indicate that the design works very well, easily earning this telescope the title of "apochromatic." False colour is as low as we've seen in any doublet-lens apo refractor, with only a mild green tint seen as images rack outside of focus and a slight blue-cyan tint to images inside of focus. In focus, however, bright stars and the lunar limb appear colourless. Achieving any higher level of correction would require a more complex triplet lens for at least double the \$700 price tag of the Equinox 80.

There was no sign of any image-blurring aberrations, even in subfreezing temperatures, when lesser optics can be pinched or warped by poorly designed lens cells. Images in the Equinox 80 are tack-sharp, allowing this little scope to perform

well both at low power as a star-field sweeper and at high power for lunar and planetary inspection. Test shots with a DSLR camera (with a 23mm x 15mm APS-sized chip) and a third-party field flattener/reducer lens (a Borg model #7887) showed pinpoint stars almost to the corners of the frame. As with almost all such apo refractors, an add-on field-flattener lens is essential for deep-sky imaging, and this must come from another supplier, as Synta doesn't offer one.

The Equinox 80 comes with a dovetail "foot" that mates to any mount with the Vixen-standard dovetail channel, or the scope can be attached directly to a sturdy camera tripod. This foot can be removed, allowing the tube to be placed into 80mm tube rings (again, available from another supplier), useful if you want to piggyback a guidescope for astrophotography.

The 2-inch focuser is a joy to use. The coarse focusing is fast and positive, while the fine motion allows nailing focus precisely with ease, which is important both for imaging and for observing with such fine optics. The focuser can be locked down to prevent slippage when a heavy eyepiece or camera is used. The focuser's rotation capability means that the focus knobs can be set at a convenient angle and a camera can be turned for framing camera fields. Unlocking and locking the ring to rotate the focuser can result in bumping the scope if you aren't careful. A lock knob rather than a large ring would probably be a better choice.

All things considered, the Equinox 80ED apo refractor represents superb value. While not inexpensive, the price is reasonable and very competitive considering the top quality of the optics and mechanics. ■

SPECIFICATIONS

Sky-Watcher Equinox 80

Optics: 80mm (3.1-inch) ED apochromatic doublet refractor
Focal length/ratio: 500mm; f/6.2
Tube length: 540mm with dewcap retracted
Focuser: Crayford style, with 360-degree rotatable housing
Tube assembly includes dovetail "foot" mounting block (removable)
Aluminum foam-padded carry case included
Canadian dealer price: about \$650
www.skywatchertelescope.net