Orion’s new binocular telescope tested

For the past 4 decades, I’ve lived by the creed that, for stargazing, two eyes are better than one. If you need convincing, Orion Telescopes and Binoculars makes a strong case with its BT70 binocular telescope. The BT70’s 20x eyepieces capture 3.2° of sky thanks to their 63° apparent fields of view. Each eyepiece focuses individually. Fold-out rubber eyecups and 15.5mm of eye relief make viewing comfortable, even if you wear glasses.

The BT70 also comes with a removable handle, slide-out dew caps, and a sturdy, foam-fitted carrying case.

Although the BT70 eyepieces have larger diameters than standard 1½” eyepieces, I found that by unscrewing the chrome barrels from a couple of my Plössl eyepieces, their housings matched the focusers. Unfortunately, while the eyepieces fit fine, the drawtube did not have enough in-travel to bring images into focus.

For those looking to expand the BT70’s magnification range, Orion sells ancillary 16x and 25x eyepiece sets. The 16x eyepiece uses four lens elements to produce a 48° apparent field of view and 22mm eye relief. The resulting real field of view is 3°, slightly narrower than the included 20x. The 25x eyepieces rely on the same 5-element proprietary design as the 20x eyepieces to produce a 60° apparent field and 12.5mm eye relief. Their true field of view is 2.4°.

The BT70 weighs nearly 9 pounds (4 kilograms), making an external support an absolute must. To address this need, Orion offers the BT70 with its alt-azimuth VersaGo mount. Although the VersaGo was not part of my test, it offers a viable option, as would a parallelogram mount.

For an observer to see the entire field of view, the spacing between a binocular’s eyepieces must match the spacing between the observer’s eyes. Conventional binoculars use a central pivoting hinge between the barrels, but this method is impractical for a right-angle design like the BT70.

Instead, Orion places an adjustment rod between the prism housings. Turning the conveniently located knob changes the interpupillary distance from a minimum of 2.38 inches (60.5 millimeters) to a maximum of 3 inches (76mm). The BT70 maintained alignment between the barrels across the full range of motion.

Along with their strengths, conventional binoculars have their drawbacks. Some observers lament that binoculars can be a pain in the neck, literally, when viewing objects high in the sky. Others wish they

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**INTERCHANGEABLE EYEPieces** make these binoculars adaptable to a variety of astronomical targets. An eyepiece pair that yields 20x comes with each BT70.

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The BT70 binocular telescope provides high-quality optics, 2.8-inch (70mm) aperture lenses, and interchangeable eyepieces.

Orion’s BT70 binocular telescope addresses both of these concerns. The handsome BT70 features an all-metal body, fully multicoated 70mm achromatic objective lenses, Porro prisms made of BaK-4 (barium crown) glass, and removable eyepieces. The BT70’s integrated 90° prism assemblies make viewing near the zenith a pleasure. I really appreciate this feature.

The joy of two-eyed stargazing

Under the early winter sky, my first stop was the Orion Nebula (M42). The nebula put on a beautiful display. Image sharpness impressed me. The 20x magnification, combined with the BT70’s excellent optics, proved just enough to crack the Trapezium into four tightly packed stars, not an easy test for this size instrument.

Each subsequent port of call proved equally breathtaking. I was especially impressed by views of the Pleiades (M45) in Taurus and the Double Cluster (NGC 869 and NGC 884) in Perseus.

During my optical testing, I found only a tiny bit of pincushion distortion, surprisingly little chromatic aberration (even while viewing a crescent Venus and the Moon), and no ghost images.

The view through the BT70 was sharp across the inner 80 percent of the field of view. Contrast and brightness also were excellent, with the clear, round exit pupils indicative of properly sized prisms and full-field illumination.

Enterprising owners might want to attach a red-dot finder to the BT70. I was able to sight along the handle fairly accurately, but a finder would make aiming easier. Although the handle’s mounting shoe is not the same size as those used with many finders, an industrious observer could find a way of affixing a finder to the handle. Be sure to locate it far enough forward so your forehead doesn’t hit it while viewing.

The Orion BT70 binocular telescope produced some of the most aesthetically pleasing views I’ve had in quite some time. If you’re searching for a well-thought-out design with excellent optics, Orion has a winner here. In the end, two eyes are still better than one.

ORION INCLUDES a foam-lined, aluminum case for transporting and storing the BT70.

WEB EXTRA Want to make the BT70 a go-to binocular? See www.Astronomy.com/toc for details.

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