Meade’s affordable large refractor

When artists want an image to scream “telescope,” all they need to do is draw a sleek tube, put it atop a tripod, and point it at the heavens. Refractors embody the idea of the telescope. And for observers, what’s not to like? Besides the fact that refractors are sleek and compact, they offer crisp images and fewer collimation troubles compared to large reflectors.

If you yearn for a large-aperture refractor without having to take out a second mortgage, consider Meade’s LXD75-series AR-6 AT achromatic telescope. Like any achromatic refractor, the AR-6 AT’s objective lens — a 6-inch f/8 achromatic doublet — does not correct color distortions as well as pricier apochromatic telescopes. However, this scope, along with its popular LXD75-series equatorial mount, delivers solid performance at a price that won’t bust your equipment budget.

Commanding presence

The AR-6 AT’s optical tube and mount arrive in separate boxes. Included, you’ll find the LXD75-series mount and tripod, the tube cradle and rings, two 10-pound counterweights, an 8x50mm finder, a 26mm Plössl eyepiece, a 1¼” star diagonal, a battery pack for 8 D-cell batteries, an Autostar controller, all needed cords and cables, and documentation. The mount’s spreader bar features holes for three 1¼” eyepieces. Unpacking and assembling the equipment takes approximately 20 minutes.

The telescope’s sheer size gives it a commanding presence. Its multicoated objective lens sits in a mount whose adjusters are easy to reach when collimating. As you would expect with a refractor, the lens was already well collimated.

The focuser is a lockable 2” rack-and-pinion movement with 4½” of focus travel and 1½”-diameter focus knobs. A locking metal collar rotates the diagonal. Dual set-screws hold accessories in place. The focuser, although lubricated with thick grease, moved freely even in sub-zero temperatures and had a smooth but firm feel. The dew shield is removable, but not retractable. I found the shield, extending only 4” from the lens, too short to be truly effective on humid nights.

The tube measures 8” by 51” (20 by 130 centimeters) and weighs 27 pounds (12 kilograms) with the rings, finder, and diagonal attached. The mount and counterweights add 65 pounds (29 kg), raising the total system weight to 92 pounds (42 kg).

I could carry both the telescope and mount, but most users will probably transport the telescope and mount separately.

Acceptable correction

I found the optics to be slightly undercorrected but detected no evidence of astigmatism or other aberrations. As you would expect with an achromatic refractor — whose objective lens only partially corrects for chromatic aberration — color fringes appeared around bright objects.

For example, when observing Vega, I saw purple and green fringes. However, I found the fringing surprisingly unobtrusive for most objects. Lunar shadows showed a fair amount of purple, but with a lot of detail still present, even up to 300x.

In addition, I easily split the Double Double in Lyra at 95x and came close to a...
clean divide at 72x. A split of double stars at low power indicates high-quality optics.

One after another, globular clusters, double stars, nebulae, and galaxies fell prey to the big refractor. I often observe with a 4-inch telescope, and I had forgotten what a difference just 2 more inches can make. The Hercules Cluster (M13) revealed dozens of pinpoint stars swarming across an unresolved glow. A partially resolved M15, a globular cluster in Pegasus, put on an excellent show, and the Ring Nebula (M57) was an ethereal oval floating at the bottom of a deep, dark well. With a 2” diagonal and wide-field eyepiece, the Merope Nebula (NGC 1435) in the Pleiades was simply jaw-dropping, and I had no trouble spotting it. The Dumbbell Nebula (M27) lay bare its distinctively shaped apple core.

With the tripod legs fully extended and the scope pointed at the zenith, the eyepiece stood a mere 29 inches (74 cm) off the ground, a convenient height for seated observing. I could easily view in any direction, and the scope never hit the tripod.

The LXD-series mount
As with any telescope system, the optics are only half the story. The mount can make or break a system, so I’m happy to report the equatorial performed like a champ. It tracked well for visual use. With only a rough polar alignment and using moderate eyepiece powers, the drive kept objects in the field for 15 to 20 minutes. The Autostar’s go-to function placed more than 95 percent of the targets in a 2” low-power eyepiece, and kept objects in the included 26mm Plössl around 85 percent of the time.

Because of the optical tube’s length, it took slightly longer to damp down vibrations than I prefer. But overall, the mount performed quite well, and I consider it a major strength of the system. Also, because the mount uses a standard dovetail, you can quickly and easily connect several different telescopes. Compatibility with many other telescopes is a feature potential purchasers should value highly.

Big-aperture bargain
The LXD75 AR-6 AT system provides lots of light-gathering bang for your buck and also delivers a good out-of-the-box experience, especially when you consider how much a 6-inch refractor would have cost just a few years ago. If you’re on a budget but dreaming of owning a big refractor, consider Meade’s offering. It might just make those dreams come true.
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