



## Equipment review

# Zhumell's 25x100 binoculars capture lots of light

*These impressive binoculars provide brilliant, high-power views of celestial objects.* **by Phil Harrington**

Over the past year or so, I've seen a lot of buzz in online astronomy forums about the 25x100 Tachyon binoculars by Zhumell. These monsters boast a pair of 3.9-inch (100 millimeters) objective lenses, fully multi-coated optics, and BaK-4 prisms — all for an average street price of \$230. Having paid more than twice that for my premium 16x70 binoculars, I wondered how good they could be.

I found out when my wife, Wendy, gave them to me for my birthday. After unwrapping the ribboned present, I was initially struck by Zhumell's care in packaging. A foam-lined hard case cradles the binoculars and holds them snugly during transport. I later learned that Zhumell's careful packaging keeps the binoculars in perfect collimation.

### A high-quality unit

Right out of the box, one thing was clear: These binoculars are heavy. They tilt the scale at a little more than 10 pounds (4.7 kilograms), which is more than double my 16x70s. No hand-holding these; a solid mount is a must. For me, that means my parallelogram mount and heavy-duty tripod. Bear this in mind if you are considering purchasing this or any large binoculars: A sturdy mount may end up costing more than the binoculars themselves.

As I examined the Tachyon 25x100s, it became apparent that just because they are inexpensive does not mean quality is lacking. Popping off the objective and eyepiece dust caps, I found that each lens' greenish multicoatings appeared uniform. Holding the binoculars up to the sky also showed circular exit pupils, confirming that the Porro prisms are made from the preferred BaK-4 glass. Porro prisms made of BK-7 glass,



which is found in lower-quality binoculars, require that one aluminized surface reflects light through and out to the eyepieces. The resulting light-falloff produces diamond-shaped exit pupils.

The exit pupils in 25x100 binoculars should measure 4 millimeters across, which I confirmed with calipers. The individually focusing eyepieces, which have threads to accept standard 1¼" filters, turned smoothly.

Zhumell overlaid the barrels with a ribbed layer of rubber armor, which I found comfortable to grasp during the few times I hand-held the unit and when I adjusted the eyepiece spacing.

A bridge between the barrels includes a tripod mount that can slide along the bridge's rail when you need to balance the binoculars. While the mount fastens to a tripod head securely, some side-to-side rocking remained where the bridge rail attaches to the binoculars. In practice, I didn't find this to be a big problem, but I still would prefer a tighter fit.



**The padded, lockable aluminum case allows owners to safely transport Zhumell's Tachyon 25x100 binoculars to and from their observing site.**

### Contact information

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◀ **Each objective lens** of the Tachyon binoculars measures 3.9 inches (100 millimeters) in diameter. All optics receive full multicoatings. All photos: *Astronomy: William Zuback*

▶ **A ribbed layer** of rubber armor adds protection to the Zhumell binoculars. The unit is waterproof, and the company purges the interior with nitrogen.

◀ **Zhumell's Tachyon 25x100 binoculars** offer high power and a 3° true field of view. The unit's exit pupils measure 4 millimeters in diameter.

## Under the sky

My first view through the Tachyon 25x100s was that of the crescent Moon in conjunction with Venus low in the western sky. One word: magnificent!

The binoculars' 3° true field of view was just wide enough to squeeze both in, with earthshine lighting many lunar features against the darkening twilight sky. Faint fringes of false color from residual chromatic aberration bordered both objects, but it did not distract from the otherwise dramatic sight.

After the sky fully darkened, my first stop was the Orion Nebula (M42). That view alone was worth the price of admission. Intricate details in the nebula's greenish tendrils were readily apparent, producing a faux 3-D effect against the surroundings. The binoculars cleanly resolved all four stars in the Trapezium.

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Adding to the visual impact was each eyepiece's 62°-wide apparent field of view.

Open star clusters like the Pleiades (M45), the Double Cluster (NGC 869 and NGC 884), and the Salt and Pepper Cluster (M37) are made for instruments like the Tachyons. The magnification is high enough and the aperture is large enough to resolve myriad stars across a field that leaves one at a loss for words.

Star images appeared pinpoint across all but the outer one-quarter of the field, where some distortion was evident. Like the residual chromatic aberration seen earlier, however, it certainly was not enough to diminish the view. Indeed, even though I have viewed these celestial objects for decades, observing them through the Tachyons was almost like seeing each one anew.

And while other binoculars with lower magnifications don't work well on planets, the 25x of the Tachyons was able to resolve the phase of Venus, the rings of Saturn, and even the presently lone equatorial belt across Jupiter.

## Product specifications

### Zhumell Tachyon 25x100 binoculars

**Aperture:** 3.9 inches (100 millimeters)

**Magnification:** 25x

**Exit pupil:** 4 millimeters

**Field of view:** 3°

**Dimensions:** 15.4 inches by 10.8 inches by 5.5 inches (391mm by 274mm by 140mm)

**Weight:** 10.3 pounds (4.7 kg)

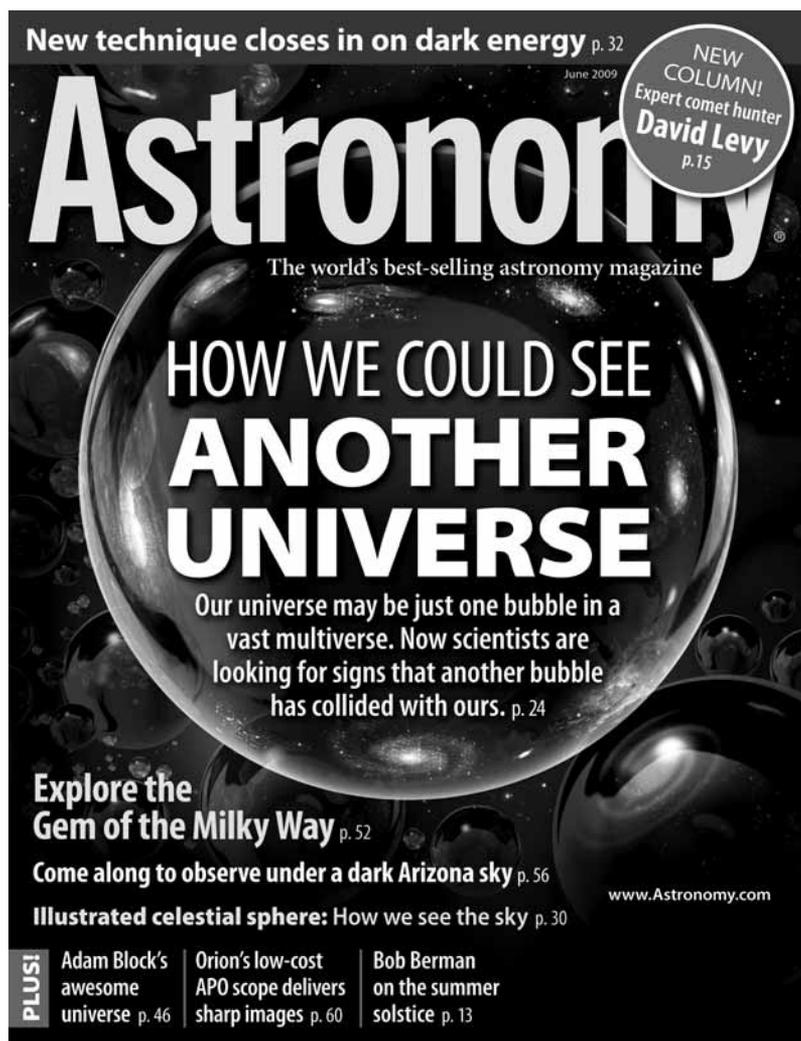
**Price:** \$230

But despite the wide field, the Tachyons can prove difficult to aim if all you do is sight along the barrels, as I did. I found no provision for attaching a red-dot finder, but a clever user probably could affix one. That's my next project.

## Great unit at a great price

The bottom line is this: Images through the Tachyons may not be as sharp or as contrasty as those through my high-end 16x70 binoculars, but the 25x100's larger aperture and higher magnification translate to greater deep-sky penetration. After using them for several months, the Zhumell 25x100 Tachyon binoculars represent one of the best buys today. And they're also one of the best birthday gifts I've gotten in years. ☺

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