

We test *Select these eyepieces to enhance your observing without ruining your credit.* by Tom Trusock

Tele Vue's DeLite eyepieces



Tele Vue's DeLite eyepiece series offers significant savings over other high-quality eyepiece lines. The company launched the DeLites with three focal lengths.

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Eyepieces are a visual astronomer's window to the universe. And history shows that Tele Vue led the revolution in high-quality wide-field eyepieces with its introduction of the Nagler line in the early 1980s. Company founder Al Nagler was the driving force and principal optical designer on all eyepieces until the introduction of the Ethos line, when protégé Paul Delechiaie stepped up to the plate. Delechiaie went on to design the Delos line and, most recently, the DeLite line.

Tele Vue targeted the DeLites, introduced just before the 2015 Northeast Astronomy Forum convention, at observers looking for an economical high-end eyepiece that's small and light yet provides diffraction-limited performance, high contrast, and generous eye relief.

Details

These 1¼" eyepieces are initially available in three focal lengths: 7mm, 11mm, and 18.2mm. Priced at \$250 each, they feature a 62° apparent field of view, 20mm of eye relief, an adjustable locking eye guard, and compatibility with Tele Vue's astigmatism correction system, the Dioptrix.

The DeLites are well suited for use in large binoculars or binoviewers due to their reasonable weights, 7.3, 7.1, and 7.6 ounces (207, 201, and 215 grams, respectively). All feature the Tele Vue barrel safety undercut

Tom Trusock loves testing new equipment, attending star parties, and observing for the fun of it from his home in Uby, Michigan.

to help prevent an errant eyepiece from falling to the ground.

When I test eyepieces, it's important to me to use them in a variety of telescopes so I can understand what aberrations the telescope adds to the design. Through the years, I've seen amateurs blame specific aberrations on eyepiece design that were the fault of the telescope. Always remember, we deal with an optical system. Because of this, I'm careful to review eyepieces in various telescopes I am already familiar with. For this review, I used an 18-inch f/4.5 Newtonian reflector (equipped with the Tele Vue Paracorr), a 3.6-inch f/7 apochromatic refractor, and a 6-inch f/15 Maksutov reflector.

My testing showed all three scopes performed similarly, so the comments in general apply to all. My initial views came during the daytime, and they impressed me. When I scanned a field of view with objects at the same distance, the entire field was in focus, implying little, if any, field curvature. Using conveniently placed local landmarks, I found both rectilinear and angular distortion to be well controlled, meaning parallel lines remained parallel and objects kept their proportions throughout the field.

Because of the 20 millimeters of eye relief, the eyepieces were comfortable to view through, and with proper use of the eye guard, I experienced no blackout. Through the years, I've found some eyepieces to be warm (yellow bias) and others cool (blue bias). Here, each DeLite eyepiece particularly impressed me by its decidedly neutral color tone.

As I get older, I'm losing some of my visual accommodation. This difficult admission ironically makes it easier to check if eyepieces are parfocal (whether each holds focus without touching the scope's focuser). After establishing critical focus with the 7mm, I found that I could



Paul Delechiaie designed the DeLite eyepiece line for Tele Vue Optics. His previous credits include the company's popular Ethos and Delos eyepiece lines. COURTESY TELE VUE OPTICS

interchange eyepieces without touching focus. The DeLites are a good choice for use in daytime spotting scopes.

Under the sky

At night, contrast was superb, enabling me to make out fine detail within the planetary bands of Saturn. And in the rings, the Cassini Division was obvious through the two smaller scopes. The eyepieces showed no sign of scattered light or ghost images, and transmission was quite good. Also, I noted no glare or internal reflections. Although I tend to prefer using single eyepieces to achieve desired magnifications, that's not always possible. So, it was good to learn that these eyepieces worked well with Barlow lenses.

I then moved to other targets. Through the 6-inch, the gold and blue of Albireo (Beta [β] Cygni) simply popped. Through the 18-inch, the Hercules Cluster (M13) was a jellyfish of suns against a deep-black background, and stars were pinpoint out to the edge of the field.

Staying with the big eye, the Ring Nebula (M57) was a frosted doughnut, nicely showing striations in the center with barred spiral galaxy IC 1296 a fairly easy catch off to the side. The Blinking Planetary (NGC 6826) was also a treat. Distinctly bluish-green in color, both the inner and outer shells were well defined.

If you've never seen planetary nebula NGC 7027 in a large scope, I highly recommend it. Viewing through the 18.2mm DeLite eyepiece, the object appeared small,

blue, and twin-lobed, somewhat reminiscent of the Little Dumbbell Nebula (M76), although the emphasis was on the lobes rather than the center.

Finally, I took the time to check the contrast with the Fetus Nebula (NGC 7008). With a bright star just off the edge of this planetary nebula, its large size and low surface brightness can make it difficult to pick out the distinctive shape, but it was in clear view through the DeLites.

Comparing sizes

These are excellent eyepieces. But which one did I prefer? I found that my favorite eyepiece depended greatly on the telescope I used it in. Overall, each DeLite performed similarly, so I matched magnification to sky conditions. I typically wound up using between 100x and 200x for a given telescope. In the two short focal length scopes, I preferred the shortest focal length eyepiece and vice versa.

Tele Vue lists the field stops for each eyepiece as 19.1mm (for the 18.2mm DeLite), 11.7mm (for the 11mm), and 7.5mm (for the 7mm). This is important if you want to find the true field of view (in degrees). For any eyepiece/telescope combination, divide the field stop diameter by the focal length of the telescope (in millimeters) and multiply the result by 57.3. So, an 8-inch f/10 Schmidt-Cassegrain telescope that has a focal length of 2000mm will yield true fields of view around 0.55°, 0.34°, and 0.21° for the 18.2mm, 11mm, and 7mm eyepieces, respectively.

Bottom line

With the departure of the Tele Vue Radian line — a lightweight eyepiece with tons of eye relief — many observers were hoping for something to fill that void. With excellent contrast, great eye relief, and a decent apparent field of view, the DeLites do just that. The only caveat is that they are currently available in only three focal lengths.

While the range is well chosen for an initial offering, users of shorter focal length scopes will need to use a Barlow lens if they want to obtain high magnification. However, I'd be surprised if the company doesn't address this down the road.

Tele Vue has once again created a line of all-around excellent eyepieces, good for both planetary and deep-sky work. Selling points are long eye relief, a small and light design, and the relatively inexpensive cost. The DeLite line should be on your must-view-through list of eyepieces at the next star party. ☛

PRODUCT INFORMATION

Tele Vue DeLite eyepiece line

Focal lengths: 7mm, 11mm, and 18.2mm

Eye relief: 20mm

Apparent field of view: 62°

Price: \$250 each

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