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Baader Planetarium Q-Turret Eyepiece Set

An Affordable Kit That Delivers!

By Erik N. Wilcox

I generally view eyepiece kits with a certain degree of skepticism. After all, who can forget the “all-in-one” plastic sets – complete with a case! – and that mostly consisted of a bunch of under-performing eyepieces, a cheap 3x Barlow, and colored filters of limited usefulness. Occasionally, there have been eyepiece kits that contained a gem or two, but for the most part, I’ve always been a firm believer in buying eyepieces individually and in only the needed focal lengths.

However, the Q-Turret eyepiece set from Baader Planetarium is different. Rather than include a bunch of focal lengths that no one needs – does anyone really use a 4-mm Huygens eyepiece with a 30-degree apparent field of view (AFOV)? – the Baader Planetarium Q-Turret set contains four 1.25-inch eyepieces with *f*/lengths that are usable in just about any amateur telescope. Included is the 32-mm Baader Classic Plössl (the widest true field of view possible in a 1.25-inch barrel), and Baader’s new Classic Orthos in focal lengths of 18-mm, 10-mm, and 6-mm. All are reported to be fully “HT” multi-coated and each features an AFOV of 50 degrees. Also included is the 2.25x Q-Barlow with a dual-factor lens, which I’ll discuss in greater detail shortly.

Initially, what was most intriguing to me about this set was the Q-Turret eyepiece revolver. As soon as I opened the

Astro-Box padded metal case (which is very colorful and stylish I might add; it has a nice photo of the Andromeda Galaxy and a see-through display window!), I wondered why an accessory such as this eyepiece revolver wasn’t more popular. It features a lightweight aluminum and heavy-duty plastic design and allows the observer to have all four eyepieces installed at once.

To change eyepieces (and thus magnification), the user simply rotates the revolver so that the desired eyepiece is over the focuser. No more fumbling around in the dark with setscrews and trying to find the right eyepiece; it’s already at your fingertips! A nice firm “click-stop” at the end of each eyepiece position travel ensures that the eyepiece is exactly where it needs to be. Best of all, the eyepieces are parfocal with each other so little or no further adjustment in focus is needed when changing magnifications. Being that this was such a simple solution, I was interested to see how it would work in the field.

I was able to get my first light the very same day I received the Baader Planetarium Q-Turret eyepiece set. Shortly after dark, I brought my 80-mm *f*/7 refractor and my 8-inch *f*/5 Newtonian outside for some observing. I would also test the eyepieces in my 16-inch *f*/4.5 Dobsonian later that evening and on following nights.

As is often the case from my backyard at 4500-foot elevation on the southern



slopes of Mauna Loa, conditions were spectacular. It was a moonless night and Orion stood high in the south with the Milky Way prominently displayed across most of the otherwise black sky. I first decided to observe Jupiter, which I’d been spending a lot of time with recently. Unfortunately, the first hurdle came when I realized that the eyepieces wouldn’t quite reach focus in my little refractor with the eyepiece revolver installed in the 2-inch diagonal. Though the eyepiece revolver



16-inch scope without any modifications whatsoever and suspect that if I'd had a 1.25-inch diagonal, which would be shorter than the 2-inch diagonal I was using, I wouldn't have had any issue reaching focus in the refractor.

It should be noted that the Q-Barlow lens assembly can also be threaded directly onto any 1.25-inch eyepiece that accepts filters for an effective magnification increase of 1.3x.

With the 32-mm Plössl and Barlow lens loaded up into the turret and ready to go, I excitedly pointed the little refractor at Jupiter. With this combination, the gas giant showed a crisp and well defined disk and two bands were clearly visible. Jupiter's four Galilean moons appeared as tiny pinpoints. I moved Jupiter just outside of the field of view to see if there was any stray light or scatter, and there was none.

Eye relief was comfortable, and the 32-mm, as well as the 18-mm (8-mm), 10-mm (4.5-mm), and 6-mm (2.7-mm) snapped to focus perfectly in the 80-mm refractor. I observed several deep-sky gems including M42, M35, M41, M36, M38, the Beehive Cluster, the Double Cluster, the Pleiades, and a few others. Though I normally spend most of my observing time using wide-fields (none of my mounts are driven, so I often find wide-fields to be most convenient), I found the 50-degree AFOV to be comfortable and expansive in the 80-mm refractor. As a side note, I did notice slight vignetting through the 32-mm Plössl due to using the Barlow lens, but this was leveled out by the excellent image quality.

With scopes around $f/7$ and faster, a consideration with any low-power eyepiece is edge correction. I found the 32-mm Plössl to be nearly flawless in that regard with the Q-Barlow lens installed in my 80-mm refractor. In the 8-inch $f/5$ and 16-inch $f/4.5$ (both with a Paracorr coma corrector installed and without the Barlow lens), I found the 32-mm to have very good edge correction. I did note a slight amount of astigmatism near the field stop

(maybe the outer 10 to 15 percent) as well as a tinge of violet false color on bright stars right at the field stop, which I've noticed through most eyepieces. During daylight hours, I could also see a slight green ring around the perimeter of the field stop in the 32-mm, as well as in the 18-mm and 10-mm to a lesser degree. These are small qualms, however. Overall, I would say that the 32-mm Baader Classic Plössl has excellent optics.

Speaking of excellent optics, the same could be said for the 18-mm, 10-mm, and 6-mm Baader Classic Orthos. The 10-mm in particular is extremely comfortable to use. The recessed "volcano top" allowed me to place my eye right up to the eyepiece without any blackout whatsoever. The 18-mm and 6-mm Baader Classic Orthos also feature this volcano top lens design, and all three have eye lenses much larger than what you might expect in a traditional orthoscopic design.

Orthoscopic eyepieces often have a narrow AFOV, and given that the Baader Classic Orthos feature a wider 50-degree AFOV, I was concerned about the edge correction. However, the edge of the field of view in these Orthos was nearly perfect, even in my fast $f/4.5$ scope with the coma corrector installed. Like the Baader Classic Plössl, there was no scatter or ghosting

whatsoever in any of the Baader Classic Orthos. Though the 6-mm was a bit too much magnification in the 16-inch (351x) on the nights I tested it, it performed well in both the 80-mm and 8-inch scopes. The 10-mm Classic Ortho turned out to be my favorite eyepiece in the set. It provides a nice magnification in my 16-inch Dob (210x) and performed admirably.

I installed a couple of other eyepieces of similar focal lengths in the eyepiece revolver – (1) an inexpensive 10-mm Plössl, (2) a cheap 9-mm wide-field, and (3) a high-quality 9-mm wide-field – and compared the views of Jupiter. The Baader 10-mm Classic Ortho showed a brighter image than sample one, the 10-mm Plössl, and a crisper image than sample two, the low-end 9-mm wide-field. The view was also much "whiter" in the Classic Ortho than it was in sample three, the high-quality 9-mm wide-field. Additionally, I could see slightly more detail in Jupiter's cloud bands in the 10-mm Baader Classic Ortho when compared to sample one, the 10-mm Plössl.

I did some comparisons with the 32-mm, 18-mm, and 6-mm as well. Though double-stars aren't really my main area of interest, I split a few for the sake of comparison. Starting with Castor, I found the 6-mm Baader Classic Ortho to be well up

to the task, and when compared to an inexpensive 6-mm wide-field, the difference was quite apparent; at 210x (with the Barlow lens through the 80-mm refractor) the 6-mm Baader Classic Ortho showed a crisper and noticeably better defined split.

This trend repeated itself with several other doubles. Aside from the excellent optics, the other thing that really impressed me was light transmission. It is very difficult to detect a difference in light transmission as the human eye requires a variance of about 10 percent in order to actually see a difference. But in a couple of cases (like the comparison mentioned in the last paragraph), I could notice a small difference. With simpler four-element designs, such as Orthoscopes, there is less light loss (assuming equal quality in coatings) due to the fact that fewer lens elements are used than in more complex designs. Some widefield designs can employ eight or more lens elements, each of which may lose up to two percent or more of their light throughput.

The coatings on these eyepieces are absolutely superb. Viewed at an angle, the coatings appear slightly greenish to my admittedly somewhat color challenged eyes. Looking straight into the barrel, the glass almost disappears – one can only see flat black with no shiny surfaces. The Baader Classic Plössl and Classic Orthos are advertised as being "fully HT multicoated," and this means that every air-to-glass surface is coated (in this case, two different oxides e-gunned onto the glass in six layers) to reduce reflections and allow more light to pass through. The "HT" means high-transmission, and these eyepieces definitely have nice high-transmission coatings.

The 32-mm appears to feature a blackened baffle/field stop, and I admire the fact that the threads on this eyepiece seem to go all the way up the barrel past the field stop. This is nice because textured or rough surfaces (like these threads) tend to stop stray light better than smooth surfaces. It's often de-



tails like these that can make a difference in performance.

Admittedly, I'm not a big fan of the winged eye-guards included on these (and many other) eyepieces. I suppose they are useful in blocking out ambient light sources, but as I most often observe from dark skies, I find them to be a bit cumbersome. I just flipped them down so they were out of the way, but because of this I did notice a touch of kidney beaning (blackouts) in the 32-mm and 18-mm when using the Barlow lens. A standard fold down eye-guard would alleviate this issue, and it would be great to see Baader Planetarium offer that as an option with this set in the future.

After corresponding with Thomas Baader via email, I realized I'd completely overlooked the useful extension tube for the 32-mm Plössl, which is included in the Q-Turret eyepiece set. This handy little device attaches directly to the 32-mm Plössl and allows users who don't wear eyeglasses to comfortably take in the en-



BAADER PLANETARIUM Q-TURRET EYEPIECE SET

tire field of view without any blackouts or kidney beaming. Additionally, the winged eyeguard can also be attached to the extension tube if desired. In later observing sessions, I found the extension tube to be useful enough that I simply chose to leave it installed on the 32-mm Plössl.

I was also impressed with the 2.25x Q-Barlow. It is threaded and appears to feature a flocked baffle inside the barrel, which I thought was a very nice touch. The Q-Barlow performed very well with no noticeable degradation in image quality versus using the eyepiece by itself. Using the 2.25x Q-Barlow gives the observer a wide range of effective focal lengths: 32-mm, 18-mm, 14-mm, 10-mm, 8-mm, 6-mm, 4.6-mm, and 2.7-mm.

The “dual factor” Barlow lens is also designed to be removed easily and threaded onto the bottom of any 1.25-inch eyepiece for an effective magnification increase of 1.3x, which allows for even more possible focal lengths. For example, the effective focal length of 24-mm when the lens was paired directly with the 32-mm Plössl in this manner was especially useful during my observing sessions. Also, attaching the Q-Barlow lens to the bottom of the eyepiece revolver (for a magnification increase of 2.25x) allows for an additional 25-mm back-focus to accommodate scopes with limited inward focus travel.

The Q-Turret eyepiece revolver is itself a great and inventive piece of gear. It is lightweight, precise, and the assuring “click-stop” system works perfectly. Though it is partly constructed of plastic, it feels rugged and durable. There is a Phillips screw in the center of the unit (which, by the way, threads into a brass nut, not directly into the plastic body) that can be adjusted to modify the “feel” and torque needed to move the eyepieces from position to position. This is a nice feature, because should the unit “loosen up” a bit with prolonged use, the user could theoretically make adjustments to compensate for this. Although I did try tightening and loosening the adjustment screw for the

sake of this review, I found it to be perfectly adjusted right out of the box.

I was initially concerned that the eyepieces may be spaced too closely together when installed in the Q-Turret and would interfere with the observer during use, but that simply wasn't an issue. Although that could be the case if bulkier eyepieces were installed, I didn't find that to be a problem with the included Baader eyepieces or any other 1.25-inch eyepieces of similar size that I used to during my observing sessions.

One of my favorite aspects about the Q-Turret eyepiece set is its convenience. It's perfect for “grab and go” use, and I often found myself just leaving the entire set attached to the focuser on my little refractor. This allowed me to be outside observing in one trip; no eyepiece case necessary!

In many ways, these are the ultimate “sleeper” eyepieces. When I first opened the box, my initial thought was “starter set,” but it appears that in this case, Baader put a high emphasis on the functional design and optical performance of this set and a bit less on the cosmetics and outward appearance. This is positively refreshing as it allows this high-performance eyepiece set to be had for a surprisingly low price without any sacrifice in optical quality.

Don't get me wrong, the anodized black barrels with readable white letters are functionally practical and certainly look nice enough. But there are no fancy knurled grips on the eyepieces, and the eyepiece revolver uses simple setscrews rather than the setscrews with brass retaining collars that are often common on higher priced accessories. Fancy knurled grips don't make stars look any better, so I'd rather have excellent views through the eyepiece than when I look at the eyepiece!

If you're looking for spectacular optics, a wide range of effective focal lengths and a convenient device (the Q-Turret eyepiece revolver) to use them in, look no further than the Baader Planetarium Q-Turret Eyepiece Set. You will surely not be disappointed.

The Baader Classic Orthos are of an Abbe-orthoscopic design. They use the actual optical design of the famed Zeiss Jena orthos – Baader now owns rights to that design. Because the Abbe-ortho design is maximized for an AFOV of 45 degrees, these Baader Classic Orthos start to lose edge-offield sharpness past 45 degrees. Nevertheless, the AFOV of these eyepieces was intentionally extended beyond the optimized 45 degrees to provide users an extended true field of view to aid in locating objects when viewing at high power. There are few things more frustrating than knowing that your target is oh-so-close, but still finding yourself struggling to “find it” in the field of view. This more than 10-percent increase in true field of view can make the difference between quickly locating an object ... or continuing to mumble to yourself in frustration. As for the cosmetic aspects of the eyepieces, Thomas Baader explains, “Well, what can I say. Whoever saw a real Carl Zeiss 0.965 Ortho Eyepiece made 50 years ago will see that these eyepieces really try to resemble the original – not just inside, but also outside. What we try to express is modesty/ conservatism in every regard.”

