

CN: Sneak Peek - William Optics ZenithStar 66 ED

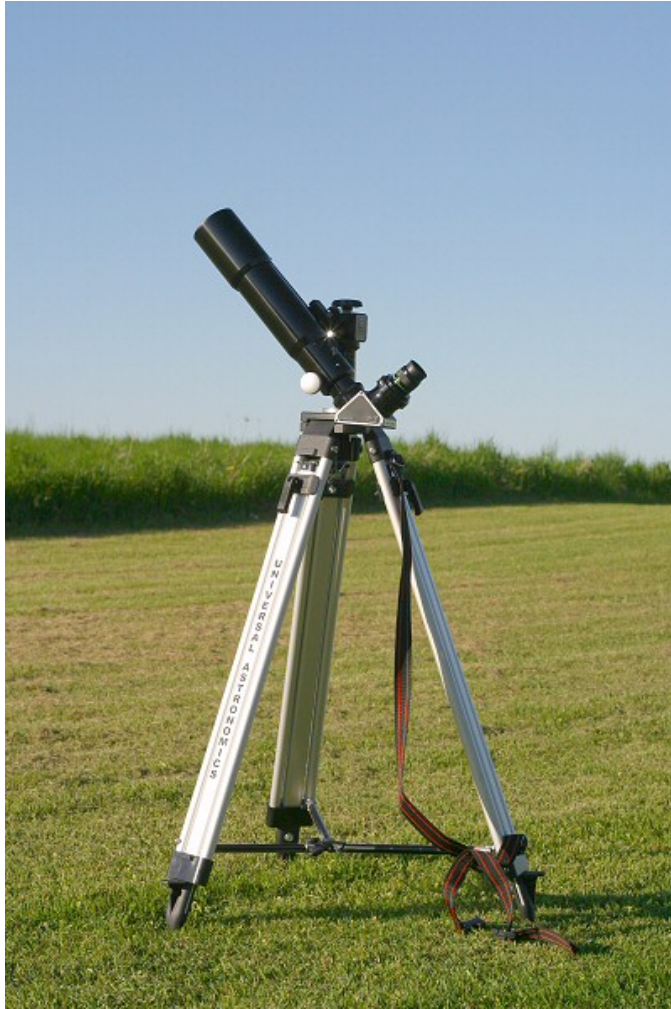
Coming soon to a dealer near you...

[Tom Trusock](#) – 5/2005

I was recently fortunate enough to be given a sneak peek of one of the Williams brother's latest creations – the ZenithStar 66 ED semi-apo. What a cool little package! For a mere \$299, you get a very high quality extremely portable telescope sporting an anodized finish, rotating crayford focuser, 1.25" diagonal, soft case and eyepiece.

With its dew shield collapsed, the ZenithStar is right around 12.5" in length, and weighs around 5lbs. Its light weight and standard 1/4-20 L bracket means that it's easily mountable on nearly any tripod. This is a HUGE advantage for travelers.

It has a focal length of 400mm, giving it a focal ratio of f6. While its 66mm of aperture is a bit on the small side, don't count it out as a serious travel scope or imaging platform. It's amazing what you can see in a very small telescope – but I'll get to that a bit later. It also sports an astounding maximum TFOV – nearly 6.5 degrees (13 full moon diameters!) when coupled with the appropriate 2" eyepiece! Talk about a wide field scope!



My first impressions were pretty typical of the William Optics equipment I've been looking at lately. This is a heck of a scope – especially for the meager pittance they're

Hots	Notes
Price point Great optics Petzval design WO mechanics Included options	Umm – it's not an 18" scope?

asking for it (but maybe I shouldn't say that too loudly...). Fit and finish is held to their typical high standards. The mechanics work very well, and overall the scope is a sheer joy to hold and use. While the metal dust cap on the review scope is black, I've been told that they are switching to a silver color for regular production.



The diagonal that ships with the standard ZenithStar 66 is a 45 deg erect image diagonal, but one of the coolest things about this little scope (one that astrophotographers will appreciate) is that the diameter of the drawtube matches that of an SCT, and thus the 66 will take SCT accessories. For us visual folks, this is a windfall as well. If you really have to have that 2" eyepiece with the 66 – you can do it – simply attach their SCT

diagonal. Be aware that their SCT diagonals apparently have a shorter light path than some from other companies – reports in the forums are clear – not all diagonals – either 1.25 or SCT will work. If you are using another vendors 1.25" mirror diagonal, you may need to pick up an extension tube to get it to focus. Check with WO for their recommendations. In my case, the Williams brothers were also generous enough to send me home with one of their new 2" dielectric SCT diagonals as well, and this was the configuration I tested the scope in.

The design is a bit different from what we usually see in a small telescope – rather than a doublet or triplet, the design is a petzval. A petzval uses 4 lenses in two groups – a doublet up front that typically has a slow focal ratio, and then another set of lenses in the back that act as a focal reducer and speed the telescope up. One thing that is nice about this design is that it provides an extremely flat field. Till this point, one company had a virtual lock on the commercial petzval – Tele Vue. Tele Vue has been producing them for years as the companies' flagship telescope – from the original Genesis all the way up to the current flagship, the Tele Vue NP101.

The WO petzval now gives amateurs another opportunity to experience what that design can do for you, and at an EXTREMELY low price.

I've had opportunity to spend some time now with the 66, and I can tell you that in use, the 66 is a wonderful little scope for astronomy or birding.



While pundits may decry the use of the term semi-apo – I'd have to say this scope qualifies for that title as well as or better than anything else I've seen. Technically, I suppose you'd class it as achromat, but for most users that does not adequately describe the situation. How do they do this? Well, first off its small aperture and focal length are working for it – at least in comparison to an 80mm f5. Second, somewhat similar to an early progenitor in the petzval arena, it sports one ED element in the rear lens group for improved color correction. Color is reduced – but it's not current apo quality. To give you an idea of how the correction rates - I'd say the color correction isn't on the same level as a good ED doublet, but its loads better than your typical short tube 80. The point is that the levels of false color were lower than expected – the edge of the Moon shows a purple fringe, but lunar shadows remained crisp – surprisingly so. During the daylight, the brightest objects also show a purple fringe, but I didn't find it objectionable at lower powers or for casual use. It's certainly in line with what you would expect from an achromatic petzval design.

For the planets, false color was basically a non-issue. There was a noticeable but not overly objectionable amount on Jupiter, and nearly none on Saturn.

Saturn showed banding, the shadow of the planet on the ring, and the Cassini division

I found it to be well baffled, and thought it delivered excellent contrast. It's amazing the amount of detail that one can see on ole Luna in a high quality scope – even one as small as this. Subtle color/contrast differences on the lunar Maria stand out quite well, and shadows are nearly pitch black with a small amount of purple.

Coupled with a 26mm Nagler (5 deg, 23min TFOV) or 40mm Tele Vue UltraWide, (6 deg, 34 minutes) I nearly felt I could see behind me!

At a recent star party, the scope showed the same amount of detail on Jupiter as a neighboring 25" dob.

Yup.

Really.

No, I'm not kidding.

Well, not much anyway. There is a BIT more to the story.

Both scopes basically showed three bands and the GRS. However - the 25" had a 2" thick mirror that wasn't remotely cooled down. Nor was it



collimated. Additionally, the truss flexed, fighting against what collimation existed. But still, it was quite surprising all the same.

It would only be fair to note that once those issues were resolved, the universe returned to normal and the 25" blew the 66mm out of the water. To say it was an interesting lesson for all present would be an understatement. (However, I think it sold a few small refractors on the spot).

The area where WO 66mm petzval excels is in low power, wide field views of large clusters and bright DSO's. Clusters like Mel 111, Collinder 70, Upgren 1 or Collinder 69, are probably best viewed in a small richest field scope, and if you've never cruised the summer milky with a nice flat field refractor – you're in for a treat.

But don't count it out on other DSO's more traditionally reserved for larger apertures. For such a tiny scope, it's truly amazing what you can see – with averted vision, M13



began to show some resolution at 50x, and the Ring was just that – a tiny tiny ring with the center hole barely visible, while the wide double zeta lyra sparkled in the night.

If you can't tell, I was very pleased with the optics. They held up quite well to 100x and a bit beyond, with my best lunar and planetary views coming through the Nagler 3-6 zoom and the TMB supermonos. For those of you interested in the math, this works out to over 40x + per square inch.

Probably the coolest thing about this scope (to me) was it's extremely small size. Smaller than my camera case, the carry on bag presented absolutely no problems for air travel, and I could always find room for it (and a mount) in the truck when traveling with the family.

If any of you have been reading my articles for any length of time, you know I'm a sucker for small refractors. The sharp views, the quick cool down times, the flat field, the minimal collimation issues, the extreme portability – all these things come together to make a wonderful viewing experience. This tiny scope embodies this philosophy in a huge way. If you're looking for an ultra portable travel scope, super high quality finderscope, or wide field astrograph that's a MASSIVE leap above a Short Tube 80 in both optical quality and mechanics, and yet doesn't break the bank – do yourself a favor and check out the WO 66 Petzval.

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The ZenithStar 66 Petzval in this article is shown mounted on a TeleVue Gibraltar and Universal Astronomics Microstar (on Bogen 3001 and UA Light Surveyor tripods).