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Canadian Invasion: Antares SWA

18mm, 14mm, 10mm, 7.5mm, 5mm – 8mm Variable Focal Length

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If you've ever looked through a Nagler, odds are you've fallen in love with those expansive fields of view and the whole spacewalk experience. For most folks, there's nothing quite like it. You almost feel able to turn around and look behind you, all the while simply floating in space.

But there's one big drawback. Price. Uncle Al's creations are not inexpensive.

I've long been on a quest for a cheap eyepiece that provides a well corrected, super wide field of view, and up to this point every super wide non-Nagler eyepiece I've looked through has had some trade offs – usually they require long focal ratios to perform well – heck – even acceptable in some cases.

Enter Canadian optician Glenn Speers and Sky Instruments. Something of a northern version of Tele Vue, Sky Instruments is relatively unknown in the States – and that's a pity. Speers has created a worthy contender to the ultra-wide throne in the Antares SWA, and priced it at a fraction of the cost of the Tele Vue Naglers. (Please note: these eyepieces are also known as Speers-WALERS - Wide Angle Long Eye Relief. In fact many folks including vendors still refer to them that way. On the Sky Instruments home page however – they are referred to as the Antares SW series. You might want to keep that in mind if you choose to order.)

Thanks to the generosity of Tim Hagan and Helix Mfg, I received the entire line – 18mm, 14mm, 10mm, 7.5mm and the 5-8 variable focal length for testing. In this article, mainly using my 15" f5 and my TV102, I'll compare them to the vaunted Naglers head to head and answer the question: How well did they hold up?

Let me introduce you…

Sky Instruments states the fixed focal length eyepieces each have 8 elements, weigh around 8 oz and provide 82 deg fields of view, while the specs for the 5-8mm affirm it sports nine elements with a stated 82 to 89 deg AFOV.

These are rather unusual eyepieces – Odds are the form factor is like nothing you have seen before. While they are all 1.25" eyepieces, the 10, 14 and 18mm eyepieces stand nearly 5" tall, while the 7.5mm, 6" and the 5-8; 6" to 8"! While this looks a little odd, I found that in general it presented no serious problem for standard monocular use.

Take this into account and be aware, however, that these guys may give you a bit of a fight if you try to stick them in a typical eyepiece case. Think that one through carefully – it may be more of an issue than first appears. For size comparisons: even the three smaller eyepieces (18mm, 14mm and 10mm) are as tall as a 17mm T4 Nagler – but MUCH skinnier and lighter.

Additionally, being on the large size, you probably won't want to stick them in a 1.25" focuser, or on a small scope. Personally, I've never felt very comfortable using large eyepieces in a 1.25" diagonal. And as for small scopes, well, when using the 5-8mm variable focal length on a short tube 80, I nearly looked through the wrong end!

You've probably heard reports of in-focus issues (or lack thereof) – namely some focusers didn't have enough in-travel to allow these eyepieces to reach focus. Indeed, in years past, I'd owned a 10mm and experienced that myself. However, somewhat surprisingly, I had very few issues with these eyepieces coming to focus in my scopes. Curious about this, I called up Tim Hagan, and he mentioned that Glenn Speers had redesigned these eyepieces just this year (2004) to help address the in-focus travel requirements. In any case, while some users may have issues, they now appear to be far better than ever. If

you DO have focus travel issues, there are several possible solutions, the easiest being either switching to a 1.25 diagonal on or using an AstroSystems Ultra Low Profile adapter (also available through Helix).

Don't let the old WALER (**W**ide **A**ngle **L**ong **E**ye **R**elief) tag fool you – while they have a comfortable 12mm of eye relief, they aren't exactly 82 deg Radians. Eyeglass wearers may wish to look elsewhere.

Finally, I'm while I'm no longer seeing signs of the quality control issues I ran into with these eyepieces in the past, I suspect a large portion of this is due to a vendor who is more diligent in regards to quality control. If you have QC problems with these eyepieces, you should be aware that Canadian based Sky Instruments offers a lifetime guarantee.

Ok, ok enough already! – How do they work?

Here's my baseline. Given that their number one competition seems to be the Tele Vue Naglers, I decided to compare the following head to head:

- 18mm Speers vs. 17mm T4 Nagler
- 14mm Speers vs. 13mm T6 Nagler
- 10mm Speers vs. 9mm T6 Nagler
- 7.5mm Speers vs. 7mm t6 Nagler
- 5-8 Speers Zoom vs. 3-6 Nagler Zoom

In addition, I've been a long time user of the 7mm t1 and the 9mm t1 Naglers – eyepieces that were recently only replaced in my kit with the t6 versions.

In short - the Speers performed amazingly well. Outside of the Naglers and Panoptics, I'm not sure I've seen comparable wide field performance that holds up this well in a fast scope – at least in the shorter focal length eyepieces. There were some very minor internal reflections and a fair amount of lateral chromatic aberration but contrary to popular belief, I've never found the Naglers to be 100 percent color free either. In fact, when compared to the Speers I found the Naglers to be slightly sharper with just a tad less chromatic aberration.

Overall, throughput was similar with a slight nod to the newer Naglers.

Eyepiece Specific Notes - Fixed focal lengths

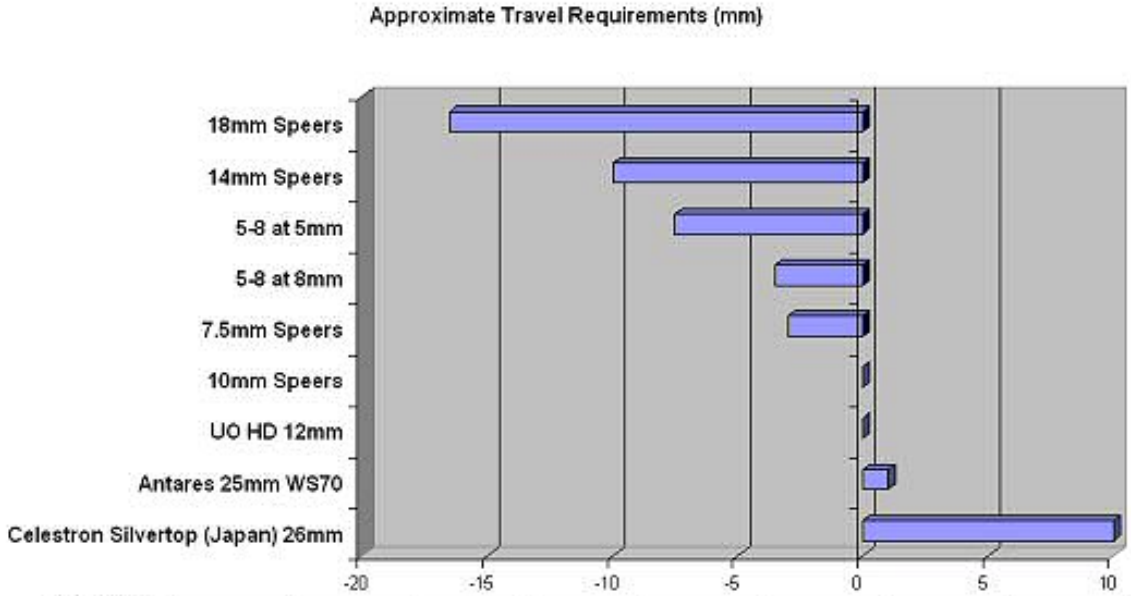
7.5mm Speers – Critically tested at f5, this is an excellent eyepiece, very comparable to the 7mm Nagler t1. The field is sharp and flat out almost to the edge. On the moon, false color began to be obtrusive once you got about 80% off axis. This eyepiece came to

focus in a TV102, 8” F5 Starbucket, Edmund Astroscan and 15” F5 StarSplitter without the need for any special adapters or tricks.

10mm Speers – Critically tested at f5, and like the 7.5mm, I found it a wonderful eyepiece and very comparable to the 9mm Nagler t1. 80% of the field is quite sharp, and the remaining distortion is nearly undetectable under normal use. On Luna, false color began to be obtrusive about 80% off axis. This eyepiece came to focus in a TV102, 8” F5 Starbucket, Edmund Astroscan and 15” F5 StarSplitter without the need for any special adapters or tricks.

14mm Speers - This eyepiece came to focus in a TV102, 15” f5 StarSplitter, and 8” f5 Starbucket. It did not reach focus in the Edmund Astroscan. At f5, it showed a fair amount of astigmatism and the lack of a flat field. I judged the inner 50% of the field to be useable by a fairly critical observer, and 70% of the field to be acceptable for deep sky. The outer 10% of the field was, IMO, bad with stars resembling seagulls. On Luna, false color became noticeable about 50% off axis.

18mm Speers - This eyepiece came to focus in a TV102 and 15” f5 StarSplitter without using any special means. It required an Astrosystems ultra low profile adapter to come to focus in an 8” f5 Starbucket, and did not reach focus in an Edmund Astroscan. At f5, I found the inner 30-40% of the field sharp, but as your reach for the edge, stars turned into lines and then seagulls. On the moon, false color became noticeable about 40% off axis.



	Celestron Silvertop (Japan) 26mm	Antares 25mm WS70	UO HD 12mm	10mm Speers	7.5mm Speers	5-8 at 8mm	5-8 at 5mm	14mm Speers	18mm Speers
mm	10	1	0	0	-3	-3.5	-7.5	-10	-16.5

(A - denotes in travel required. The UO H, Celestron Silvertop and Antares WS are provided as references, with UO being used as the arbitrary zero location.)

In general, while the 10mm wasn't "quite" the equal of a modern T6 Nagler, I'd say it was pretty dang close. It was certainly comparable to the 9mm T1 (no longer available on the new market, but currently running around $175 used). In all, I found the 10mm to be the best of the fixed focal lengths. I also felt that the 7.5mm was extremely comparable to the 7mm t1 Nagler, but if I had to pick one of these four as being the sweet spot, it would be the 10mm.

While we optically preferred the Naglers in the fixed focal lengths, let me be clear – it wasn't a night and day difference – especially in the shorter focal lengths. When you factor price into the equation: $129 vs. $240-$280 for a t6 Nagler, or $330 - $385 for a 17mm t4, one thing is immediately obvious – these eyepieces are a heck of a deal.

Eyepiece Specific Notes – The 5-8mm

When it came down to the nine element 5-8 variable focal length versus the 3-6 Nagler Zoom, there was a bit of a surprise in store.

The first iteration of this eyepiece (Antares SW 5-8) was quite popular, and prices soared in the used market when it was discontinued. Like a phoenix from the flames, it was recently reincarnated. This is an amazing eyepiece. Spec's rate it at a massive 82 to 89 deg AFOV, but to me it seems slightly smaller than that – it feels like it's somewhere around 80 deg through most of it's range perhaps. But that's quibbling. The bottom line is, it's a wonderfully immersive FOV. I tend to find that once I get a little above 68-70 degrees, the views suddenly go from watching TV to being there – and this is one eyepiece that does just that.

By no stretch of the imagination is it par focal throughout its range – but that's all right – it really does not need to be. Let me explain:

I'm a planetary nebula nut, and one thing that most plneb observers will tell you is that most of these little guys can take amazing amounts of magnification – well into what many folks term "stupidly high". Quite frequently I use my Nagler 3-6 zoom on my 15" scope to yield magnifications from 365-730x. The 3-6 zoom, while being a spectacular eyepiece, can be a little narrow in terms of its FOV – when its used at 730x on an undriven dob anyway. The 5-8 Speers gives me a range of 273x – 438x, and for the same focal lengths, it provides a field of view some 250% larger! Its wide AFOV makes stupidly high powers a bit easier to take. Now why do I think it's not necessary for it to be par focal? Focus is close enough from one end of the range to the other that I can still make out the image of what I'm observing through the eyepiece – this can be crucial at higher powers to make certain the images stay centered. If I can do that, a little refocusing does not bother me.

Optically, how does it compare to the Nagler zoom? Well, neither eyepiece exhibits significant amounts of distortion or pincushion. Both are high in contrast, but I'd say the Nagler zoom may have a touch more throughput. The Nagler certainly has less lateral color. The Nagler zoom is also much closer to being par focal than the SW, and it's MUCH smaller and lighter.

The 5-8 was sharp to nearly 90% of the field, and came to focus in the TV102, 15" f5 StarSplitter and 8" F5 Starbucket. At f5, I found the inner 95% of the field sharp at all settings, and false color became intrusive somewhere around 80% off axis.

While the fit and finish was excellent on both eyepieces, there is a design issue with the Speers-Zoom that you should know about – this is the only eyepiece I've ever seen that has a slit in the side. Surprisingly, long term users say that there does not seem to be much of a problem with dust contamination, and so far, I'd agree. The only real drawback is that the slit can catch stray light if you aren't careful about how it's pointing.

For lunar and planetary use, I found I preferred the Nagler zoom, but for deep sky work, the Speers won hands down. This is an awesome eyepiece. The Speers zoom does what Nagler made famous; it disappears and leaves you floating in space.

You'll put your eye out kid!

Like every other eyepiece on the planet there are some tradeoffs.

First let's take a look at the entire line. The form factor can be a huge drawback for some users. Make sure you know where you are going to put these rather large eyepieces before you purchase them. Note the picture above – the fixed focal length Speers tower over the 10mm Celestron plossl. I wouldn't consider them really suited to a small scope with a 1.25" diagonal.

While others may disagree, I want to be clear on one thing. I don't consider the Speers (fixed focal length or the variable focal length) to be planetary eyepieces. Certainly they can give good – even great – views of the moon and planets, but, IMO planetary

observing is a game of inches, and with the large number of elements in these eyepieces, I'm not surprised they fall a little behind here.

When looking at the 5-8mm in particular: Some users have expressed concerns about its mechanics – namely the tension can be a bit stiff. There is a version – slightly more expensive - that offers a variable tension adjustment.

Probably its biggest drawback is its sheer physical size. Even larger than the rest of the Speers, this is a BIG eyepiece. To get an idea of just how big it is, try this; print out the first page of this article. See the picture of the zoom? Now cut it out and hold it up next to your telescope. Yep. No fooling.

This is perhaps not an eyepiece that I would consider purchasing for use in a small scope. The simple act of changing focal lengths could easily be enough to throw the scope off target if you are using a lightweight scope on an alt-az mount.

Summary…

The bottom line is that these are VERY sweet deep sky eyepieces - for the price – IF you can deal with the rather odd form factor. While it's true the modern Naglers surpass them in performance, it's not by leaps and bounds. The 10mm and 7.5mm compare very favorably to the old t1's. Overall performance is excellent down to f5 in the 10 and 7.5mm, good in the 14mm, and decent in the 18mm. I found performance of the 14 and 18 to improve with longer focal ratios.

Finally, consider this. I took the 5-8 zoom to a "gathering" this summer and passed it around. Of the three folks who spent some serious time with it, two of them ordered one within a week. The review sample I was sent never did make it back to Helix. Even though I have a 3-6 Nagler zoom, a 7mm t6 and a 9mm t6, I found I just couldn't part with it. It's simply wonderful in my 15" f5. (I just have to watch out and make sure I don't put my eye out…)

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