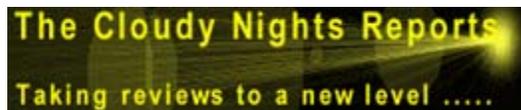


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## Antares W70 Series– *Inexpensive Wide Field Nirvana?*

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11/2004



**I**'m at it again.

You'd think I'd have learned by now. We all know there's no such thing as the perfect eyepiece – at least without paying an arm and a leg. This fact is not lost on binoviewer owners who often have to resort to paying TWO arms and legs....

And yet.... And yet... I keep looking. Sometimes it pays off.

Enter the W70's from Sky Instruments. These eyepieces are purportedly designed by Glenn Speers, the optics fabricated in China and shipped to Canada for quality control and final assembly. The line consists of five different 1.25" eyepieces - 5.8mm, 8.6mm, 14mm, 19mm and 25mm each containing between 4 to 8 elements depending on the specific eyepiece. Sky Instruments advertises eye relief is around 15mm eye for all. While Sky Instruments does not list an apparent field of view for the series, it appears to be in the neighborhood of 65 +/- degrees for the majority of the eyepieces.

Thanks to the generosity of [Tim Hagan at Helix-Mfg](#) I recently received not one, but two complete sets for testing.

There's been a lot of talk on the net about the optical relationship between the Synta UltraWides and the Antares W70's. I can say that they perform very similarly – I've used the 9 and 15mm Syntas, and side by sided the 15mm Synta with the corresponding W70. Outside of the comparison below, I'm not going to get into their similarities or genealogy except to say that while the shorter focal length Synta and Antares offerings are rumored to have exceedingly similar optical designs, the samples I've seen of the

Antares W70 Hots	Antares W70 Nots
<ul style="list-style-type: none"><li>• Good Mechanics</li><li>• High Quality Control</li><li>• Reasonably Priced (25mm \$79.95, the rest available for \$55.95)</li><li>• Excellent price performance ratio – particularly in the 19 and 8.6mm sizes</li><li>• Good performance above f6</li></ul>	<ul style="list-style-type: none"><li>• Kidney bean in the 8.6mm</li><li>• Poor off axis performance in the 25mm</li><li>• Not for fast scopes (Especially the 25mm)</li></ul>

two respective sets show the Antares units to be superior in quality control, mechanics and fit and finish. From what I've been given to understand the 25mm W70 has been in production longer than the rest of the line and was initially sold under the Speers-Waler tag.

## Methodology

I tested these eyepieces in a variety of scopes over a period of several months, and overall was impressed with their performance – especially for the price. I tried them in f4, f4.5, f5, f7 and f8.6 scopes. After trials, I determined that these eyepieces are best suited to scopes which operate at f6 and above, and the comparisons below reflect that.



Instead of comparing these against Naglers and Panoptics as usual, it was suggested that I compare them to somewhat more common eyepieces. With that in mind, I selected a rather eclectic mix of comparison eyepieces, while trying to keep things cost competitive. I wound up with the following; a 26mm Meade Super Plossl (Taiwan), a 20mm GSO SuperView, a 15mm Synta UltraWide, a UO Classic 9mm Ortho and a 6mm Japanese Keller.

## Test Results and Field Notes



**W70 25mm – 26.8mm Field Stop (measured)**

**Rating (out of 5\*): \*\***

The 25mm performs acceptably in longer focal length scopes, but tends to go to pieces in a hurry. This eyepiece exhibits varying but significant amounts of astigmatism (more than the other eyepieces in the line), significant pincushion and off axis color. It's also the only one of the set to not have a safety undercut in the barrel. It was my least favorite of the set, but if someone is looking for an inexpensive wide field

finder eyepiece, this one bears some consideration.

*F7 80mm ED Triplet Refractor and Field Notes* – Astigmatism becomes objectionable in this eyepiece around 80% of the way to the field stop. Lateral color becomes noticeable around 40% of the way to the field stop. When comparing to the Meade 26mm SP, they are both equally sharp on axis, but based on a degree by degree off axis evaluation the Meade is a clear winner. Some minor amounts of false color are also noticeable in the Meade, particularly in the daytime.

*F8.6 102mm ED Doublet Refractor Field Notes* - Astigmatism still becomes objectionable around 80% of the way to the field stop, and the eyepiece exhibit severe pincushion distortion. Overall the Meade Plossl exhibited less pincushion, less false color and less astigmatism. The Meade additionally provided a noticeably smaller and less immersive field of view. For nearly everything except immersion, I preferred the Meade Plossl.

**W70 19mm – 23.35mm Field Stop (measured)**

**Rating (out of 5\*): \*\*\*\***

The 19mm holds up much better in shorter focal lengths, exhibiting less astigmatism, lateral color and pincushion than the 25. This was one of my favorites in the line up. Eye relief was comfortable and there was little to no issue with kidney bean. All in all, this is a very nice eyepiece in this focal range, and would make a nice inexpensive option for your binoviewer.



*F7 80mm ED Triplet Refractor Field Notes* - Astigmatism becomes objectionable around 80% of the way to the field stop. When compared to the 20mm GSO SuperView, the GSO clearly has more false color off axis but has similar edge performance. TFOV is very very similar.



*F8.6 102mm ED Doublet Refractor Field Notes* - Astigmatism becomes objectionable around 90% of the way to the field stop and the eyepiece exhibits mild pincushion distortion. In daytime use, the 19mm exhibited off axis color flares, but these were not evident at night, even when inspecting bright targets like Luna. During the day, I also experienced slight kidney bean with this eyepiece, but again, it was not significant at night. The GSO has less pincushion, similar

off axis astigmatism, similar amount of false color and a nearly identical TFOV. Contrast, color rendition and image quality seemed a touch better in the Antares. Overall, I preferred the Antares to the GSO in this focal length.

**W70 14mm – 17.1mm Field Stop  
(measured)**

**Rating (out of 5\*): \*\*\***

The 14mm is a step below the 19mm in edge correction, while being about the same in regards to lateral color and pincushion. Again, eye relief was comfortable (although shorter than the 19mm) and I detected no issues with kidney bean at all.



*F7 80mm ED Triplet Refractor*

*Field Notes* - Astigmatism becomes objectionable around 90% of the way to the field stop. When compared to the 15mm Synta, no significant performance differences were noted.

*F8.6 102mm ED Doublet Refractor Field Notes* - Astigmatism becomes objectionable somewhere around 90% of the way to the field stop, and this eyepiece showed evidence of minor lateral chromatic aberration and pincushion distortion. Again, when compared to the 15mm Synta, no significant performance differences were noted.



**W70 8.6mm – 15mm Field stop  
(measured)**

**Rating (out of 5\*): \*\*\* 1/2\***

The 8.6mm is an interesting eyepiece. It appears to be an internally barlowed eyepiece, with the Barlow portion located inside the 1.25" barrel. As far as on-axis sharpness, lateral color, pincushion and useable field goes – it's the best of the bunch. Unfortunately, there is a caveat – this eyepiece suffers from rather extensive kidney bean blackout. I should note that in my experience this is an issue which has to do a lot with personal

tolerances. What I find bad, another might not even be bothered by. With that in mind, I found it annoying in mono use, and somewhat worse when it was in the bino use. Even taking this into account – this is probably the nicest eyepiece in the line up, and is highly recommended assuming you can deal with the blackout.

*F7 80mm ED Triplet Refractor Field Notes* - The eyepiece is sharp nearly to the edge – residual astigmatism is not significant. It's quite sensitive to eye placement and exhibits a significant amount of kidney bean. Compared to the 9mm UO Classic Ortho the 8.6 is, somewhat impressively, just about as sharp, but the W70's field is obviously larger. The UO Ortho was a bit more comfortable to use, but the field size is a noted draw.

*F8.6 102mm ED Doublet Refractor Field Notes* – Again, this eyepiece is sharp nearly to the edge – residual astigmatism is not significant (over 95% of the field seems to be free). The eye placement / black out issue persists, and in the day this eyepiece exhibits some lateral chromatic aberration. Compared to the 9mm UO, the 8.6 is amazingly sharp. There is no blackout in the Ortho, but there is a bit better throughput. The images in the Ortho seem to have slightly more contrast and slightly better throughput. Because of the kidney bean issue, the Ortho is a bit easier to use, but if you are looking for a wide field eyepiece, the 8.6 is an amazing value.

### **W70 5.8mm – 8.5mm Field Stop (measured)**

**Rating (out of 5\*): \*\*\***

As with the 8.6, this also appears to be an internally barlowed eyepiece, with the barlow portion located inside the 1.25" portion. Performance wise, it's very close to the 8.6 in terms of on-axis sharpness, lateral color and pincushion. It's just ever so slightly behind the 8.6 in off axis astigmatism (and thus edge correction), but noticeably ahead of the rest of the pack. Unlike the 8.6mm, I had only slight issues with kidney bean – not enough for me to consider it a problem.



*F7 80mm ED Triplet Refractor Field Notes* - Eyepiece is sharp nearly to the edge – residual astigmatism is not significant. This eyepiece is semi-sensitive to eye placement and exhibits a minor amount of kidney bean blackout. It's not nearly as sensitive as the 8.6mm. Compared to the 6mm Kellner, there really was no contest. The 5.8 had a much larger AFOV, TFOV and overall sharper field of view.

*F8.6 102mm ED Doublet Refractor Field Notes* – Again, this eyepiece is sharp nearly to the edge – residual astigmatism is not significant (distortion becomes significant around 95% of the way to the edge). There is a very slight amount of pincushion distortion, and very minor blackout. During daytime use, I noted an intrusive amount of lateral chromatic aberration, but this was not much of an issue at night. Compared to the Japanese Kellner, again the 5.7 was sharper, had less false color and a much larger field. In this case, the 5.7 was an obvious clear winner.

## **Binoviewers and the W70's**

Binoviewer owners tend to be the hardest hit eyepiece junkies on the planet – not only do they have to buy one eyepiece in a particular focal length – they've got to pick up two! Thus, the eyepiece cost tends to double. With that in mind, many binoviewer owners are even more desperately searching for an inexpensive wide field solution.



How did the W70's perform in a binoviewer? Well, somewhat unsurprisingly, very similar to how they performed in mono mode – but a little better. It's been my experience using a binoviewer with a scope tends to make it a bit more forgiving as in regards to eyepiece selection, but its still not a miracle worker. Overall they performed fairly well, but I did note that head/eye placement induced blackout / kidney bean was a bit more severe in binoviewer mode.

The only mechanical I had was with the position of the safety undercut in compression ring eyepiece holders on one the binoviewers I was using. On one eyepiece (out of both sets) the undercut fell exactly underneath the compression ring, and while the holder fastened tight enough to keep the eyepiece from sliding out, there was a bit of play in the fit. For me, this had little effect. I should note, this was not a problem with the other binoviewer I had on hand, and suspect it was more of an issue with the binoviewer than the eyepieces.

In particular, the 5.8, 8.6, 14 and 19 represent good value for the money, and I'd recommend them to anyone looking to pick up some binoviewer eyepieces.

## **Summary**

False color was really significant only in the 25mm. While the 8.6 suffered from kidney bean, I still viewed the 19mm and 8.6mm as the “Best of Breed”, with the 19mm being

W70Series

my personal favorite. I wouldn't recommend these eyepieces for use below f6, but above that they represent a good value to anyone looking for an inexpensive wide field eyepiece. They provided a nice combo of a decently sharp on axis views with wide fields, and their price ensures that you will have money for life's other little necessities like lunch and diapers (either for you or the kids). Although I'd personally prefer to go with UO Orthos at this price point for high power planetary work, the W70's will undoubtedly have an attraction for dobsonian users. Performance wise, the only one that noticeably fell behind the comparison eyepiece was the 25mm, and that still provided a wider, more immersive view.

For someone with a longer focal length scope looking for a decent quality wide field deep sky eyepiece that is also capable of providing pleasing lunar and planetary views – all at a price that won't break the bank, the Antares W70's are a good choice.

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