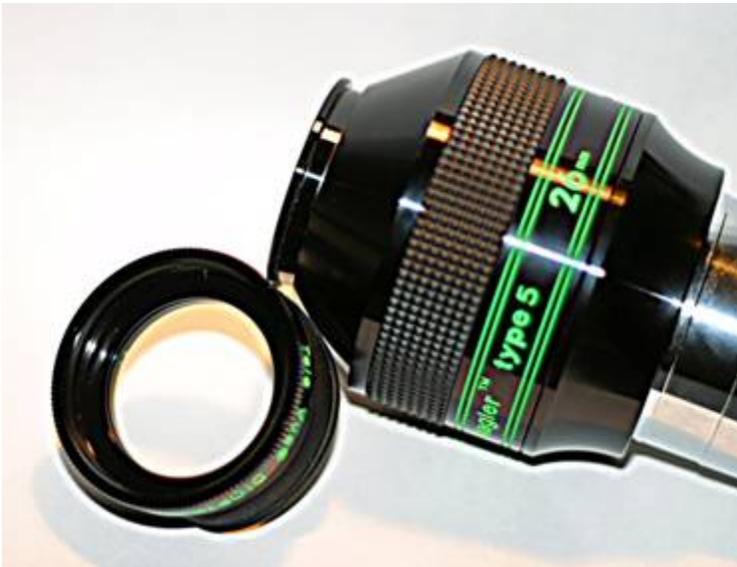


Tele Vue Dioptrx – *the End of Astigmatism?*

[Tom Trusock](#) – 8/05

TeleVue's finally gone the last mile. Leave it to Al. First the Naglers made certain that the amateur astronomer had access to wide, well corrected fields of view, then the Paracorr (and the visual Paracorr) did away with the major reflector bane. Next Al dealt with glasses, aging eyes and comfort – especially in the short focal lengths - when he introduced the Radians. At every step TeleVue's mission has been to improve the man / telescope interface.

Is the end in sight?



Yup! (Well, the end of astigmatism anyway...)

At NEAF this year (2005), TeleVue introduced the Dioptrx. This nifty little gadget fits on the top of certain (TeleVue) eyepieces and greatly reduces or effectively eliminates astigmatism inherent in your own vision.

I spent some time with Al and among other things, we took a look at his latest piece of optical wizardry.

Before I get into the meat of the article, let me say this: my astigmatism is fairly minor – around .25 diopter in my observing eye, and both my eyes are otherwise well corrected (20/13 in the right eye and 20/15 in the left) – so I don't wear glasses. However, depending on the evening, I sometimes notice a touch of astigmatism through long focal length eyepieces. I'd actually been somewhat disappointed with my 26mm Nagler. Oh, not for any fault of its own, it's just the stars weren't as pinpoint in my 18" f4.5 as the other, shorter focal length Naglers I've owned. Younger eyes have oft described the awesome edge to edge pinpoints the eyepiece offers, but frankly, some nights I had a hard time telling. Clearly the increased exit pupil is revealing the astigmatism present in my own eyes. Not a huge amount, but enough that I'd been very dissatisfied with its performance.

Dioptrx Executive Summary

- *Effectively eliminates astigmatism*
- *Attaches to certain TV Eyepieces*
- *\$98 US*

But what to do? Commercial solutions were few and far between, and I really didn't want to go purchase a set of glasses for one or two eyepieces.

Al and the DioptRx to the rescue! This nifty little gadget attaches to the top of many of the longer focal length TeleVue eyepieces and all of the radians to go the last mile and correct the user telescope interface.

It's easy to attach – simply remove the eyepieces rubber eye guard, loosen the DioptRx, place it over the eyeguard retaining ring on the eyepiece and tighten. The DioptRx attaches to the eye guard lip with a compression type arrangement. Leave the DioptRx loose enough so you can rotate it to adjust for the particular viewing angle and that's it.



In use, it's simply a matter of rotating the DioptRx to minimize or (hopefully) eliminate the amount of astigmatism present in the view.

Does it work?

Yes, within it's specifications it works quite well. On my 26 Nagler it's really sharpened up the field of view. I have a very slight amount left, I suspect I really had more than .25 diopters of correction. The view is noticeably improved. The 26 Nagler no longer sits in the case, but makes it out every observing session. It's been turned from an expensive paperweight into one of the best eyepieces in my collection!

Drawbacks? Well, there are a couple. It does not work with all TeleVue eyepieces – but to be fair, it doesn't need to – many users will noticeably suffer from astigmatism only in the longer focal lengths.

Once the exit pupil decreases in size, the degree of the problem lessens. If you really need it at all focal lengths, you should either consider wearing your glasses for observing or investing heavily in the Radians (which it will work on all focal lengths).

The compatible eyepieces are:

Nagler T4: 22, 17, 12 (all)

Nagler T5: 31, 26

Panoptic: 41, 35, 27, 22

Plossl: 55, 40 32

Radian: 18, 14, 12, 10, 8, 6, 5, 4, 3 (all)

So if yours isn't on the list...

Also consider that it is an element that's placed between the eyepiece and your eye, and as such reduces the effective eye relief. I find my eyelashes brush the Dioptrx lens when using it with my 26mm Nagler.

Finally, there's the question of sharing the view. Having someone look through a correcting lens is like using someone else's glasses. My astigmatism is very minor, and not one person out of the 5 who have had a chance to view through my Nagler / Dioptrx combo saw anything other than pinpoints, but your mileage may vary. I'd probably recommend removing them for public star parties.



You do need to know your prescription, and should be aware that the Dioptrx only corrects for increments of .25 diopters up to a total of 2.5 diopters (but they can be stacked for added correction). That should be close enough for nearly everyone.

So, how many should you purchase? Well, they are pretty easy to put on and take off, but I'd be tempted to purchase one for each eyepiece that needed it – at \$98, it's certainly affordable enough to do just that.

When you've made a \$\$\$\$ investment in scopes and equipment it's a no-brainer to spend that last \$ to obtain perfection.

Yet again, Al's done good.

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