

THE DENKMEIER DUAL POWER x SWITCH FOR BINOVIEWERS

3/29/05

AVAILABLE FROM DENKMEIER OPTICAL WWW.DEEPSKYBINVIEWER.COM
PRICE APPROXIMATELY \$200



INTRODUCTION

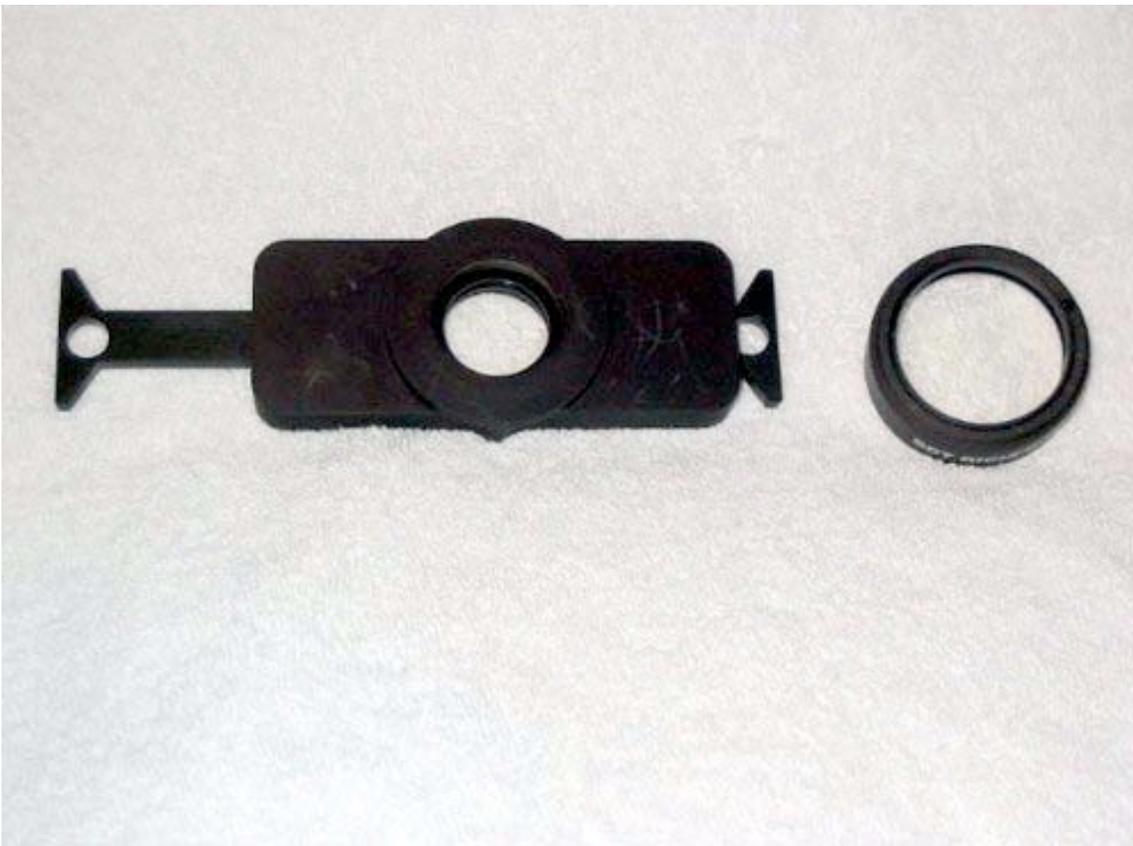
I've been an enthusiastic binoviewer user for some time. I've owned four different kinds and have found all of them pleasant to use; they give me a level of observing comfort I can't seem to match any other way. For a time I gave in to the temptation to acquire multiple pairs of premium eyepieces just for bino use - at one point the bino case contained two pairs of Panoptics, two pairs of TV Plossls, and two pairs of Naglers. About the time I acquired my first Denkmeyer binoviewer they introduced the StarSweeper module, which acted as a focal reducer in my SCT's, giving me double duty with each eyepiece pair. When they added the 2X module, I figured things were about as good as they were going to get. I don't enjoy taking things apart to add reducers or multipliers but it seemed worth it when doubling or tripling the usefulness of two eyepieces instead of just one.

More recently, the good folks at Denkmeyer have added another option to their accessory lineup - the Power x Switch. It's available in single and dual arm models, and can be configured for refractor, Newtonian, or SCT operation with either the Denkmeyer Standard binoviewer or the premium Denkmeyer II. A corrector is also usually required for use with limited-focal range devices such as standard

telescopes which are designed to provide the extra required in-focus range. Several refractor manufacturers are now offering short-tube versions of their instruments designed to accommodate binoviewer use.

WHAT IT DOES

The single arm version operates either straight-through or with a focal reducer effect. The dual Power x Switch offers both reduction and multiplication, plus straight-through operation. I promptly acquired the dual-arm SCT version and will share my experiences and observations about it combined with my Denkmeier Standard and 12" Meade LX200. In SCT use, the nominal effect is the same as the StarSweeper modules, either 2X, 1X (neither optic engaged), or .5X. The refractor and Newtonian versions are closer to 1.5X, 2X, and 3X with the effect varying with the type of telescope and corrector in use. Unlike the 2" StarSweeper, the optical cell is the approximate size of the binoviewer rear cell opening.



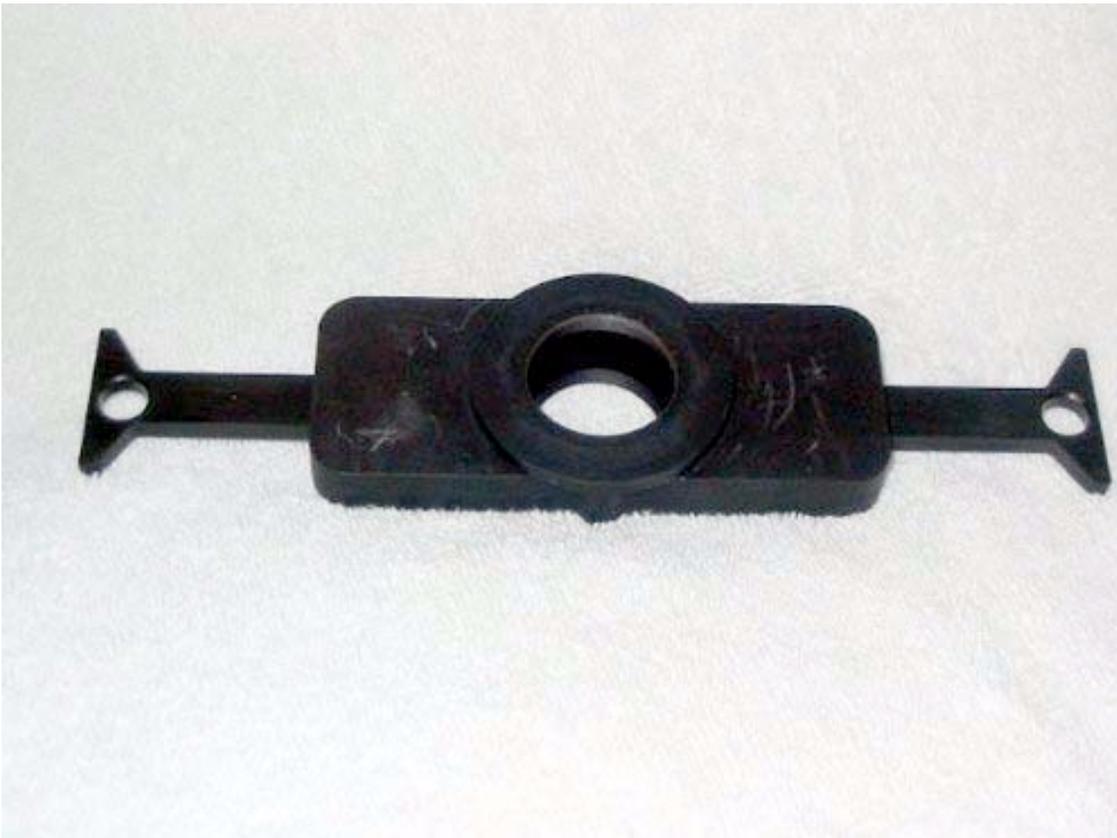
DUAL x POWER SWITCH BESIDE A 2" STARSWEEPER MODULE

WHAT YOU GET

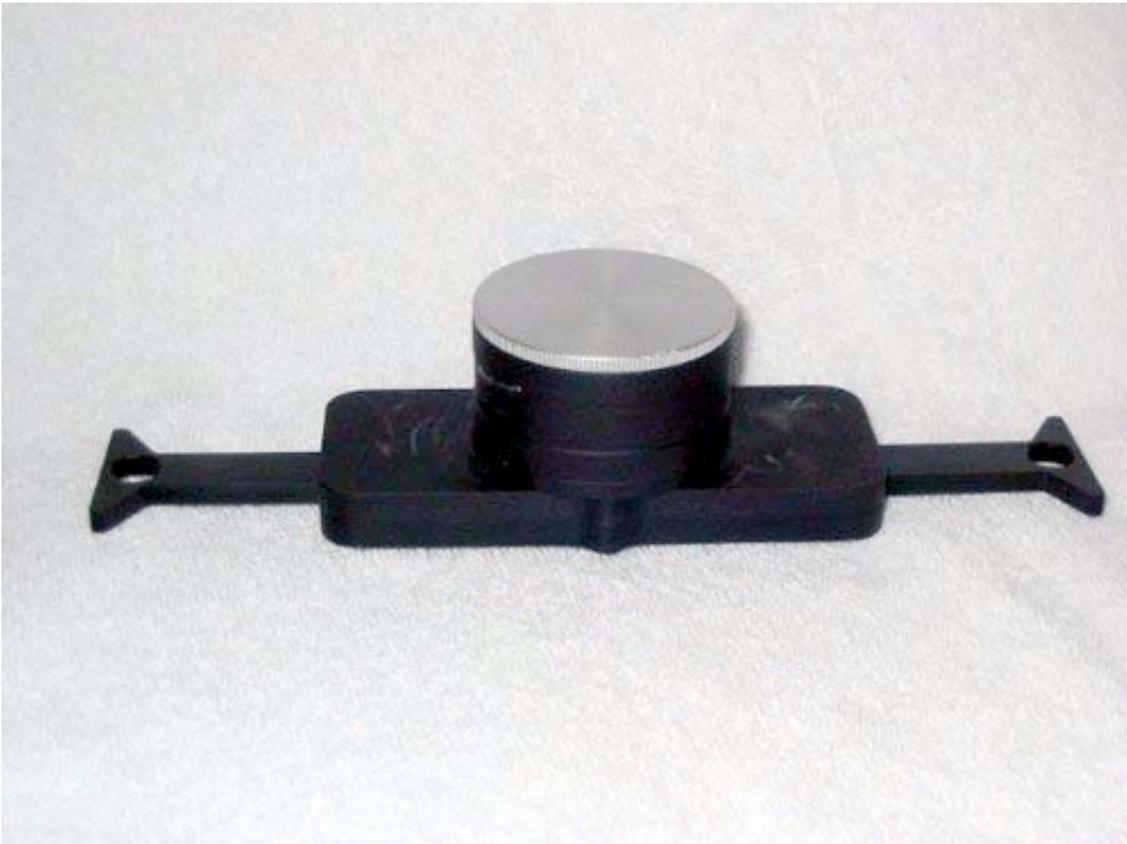
The unit is shipped as seen below; it has a threaded fitting on the output side to attach directly to a Denkmeier binoviewer (either model) in place of the nosepiece and another on the input side to accept the same nosepieces (either 1.25" or 2") as the binoviewers themselves.



OUTPUT SIDE OF DUAL-ARM POWER x SWITCH



INPUT SIDE OF POWER x SWITCH READY FOR NOSEPIECE



POWER x SWITCH WITH 2" NOSEPIECE INSTALLED



POWER x SWITCH ATTACHED TO DENKMEIER BINOVIEWER



POWER x SWITCH INSTALLED ON BINOVIEWER AND READY FOR USE

The Deluxe Binoviewer Case supplied by Denkmeier has a slot pre-cut to accept the Power x Switch installed on the binoviewer, but it looks as though it should be easy enough to add a slot to an existing case. I leave mine assembled and ready to go.



So - what do you get for the approximately \$200 price? It's a nicely-machined piece of gear. The slides work smoothly and require only modest pressure to switch them in and out, but they stay where they are put without problems. I found the multiplication and reduction factors to be just about nominal, and the image quality and brightness to be the same as when using the larger (2") separate StarSweeper multiplier and reducer modules. That makes sense, as the back of the binoviewer chokes the lightpath down to the size of the Power x Switch optics anyway. The change in focus when switching modes is greater than a Crayford focuser can accommodate; it's necessary to use the primary mirror focuser.

USING THE DUAL ARM SCT POWER x SWITCH

With both arms pulled out, the Power x Switch has no effect on binoviewer operation. To switch magnifications, either the reducer lever or the multiplier lever is pushed in. In my 12" Meade SCT, it takes about three turns clockwise on the built-in focuser to refocus when switching to a higher magnification, either from .5X to unity, or from unity to 2X. The same three turns are required in the opposite direction when going down in magnification, of course. It wasn't too long before this became automatic, and refocusing became very little effort.

I hadn't used the Power x Switch for a while (I'm not much of a Winter visual observer) so I took advantage of a brief clear period this evening to remind myself how much I enjoy this device. I started with Saturn and a pair of 15mm GSO Superviews (a heckuvalot cheaper than the `16mm Nagler T5's they replaced!). In straight through mode everything looked just as it should: fairly sharp (the SCT

wasn't cooled down) and bright. With the low power arm pushed in, the field of view seemed about double. Everything stayed nice and clear, and no vignetting was observed. Switching to high gear gave a predictable result; between cooldown and seeing, Saturn wasn't so pretty any more. FOV appeared to about half. Then on to M42. Straight through, four easy stars in the Trap and plenty of visible nebulosity. Switching to .5X mode opened it up nicely. I switched to a pair of 20mm Superviews (again, much less expensive than the 19mm Pans were). Same results except Saturn held up better in high gear this time. I don't see any vignetting in .5X mode with these, though I'm sure I remember seeing someone report it. Maybe it's time to move back up to some premium eyepieces if it's this easy to get triple use out of them. We'll see if there are any bargains at NEAF!

To demonstrate the effect of the dual Power x Switch, I placed a Meade LPI imager into one of the eyepiece holders on the Denkmeier binoviewer. Because of the very small chip in the LPI and it's limited exposure time the only available objects were Saturn and Jupiter so I imaged each of them at all three possible magnifications provided by the Power X Switch and Denkmeier binoviewer combination. I didn't do the math, but these were taken at whatever effective focal length a Meade 12" SCT has with a Crayford focuser and a William Optics 2" diagonal installed plus the length of the binoviewer. Please allow for the fact that these are NOT shown to demonstrate what good images they are, but to show the Power x Switch in action. It was windy, the seeing wasn't very good, I had a cold, the dog ate my homework, and so forth...



The convenience and economy of switching magnifications without removing or adding hardware would be difficult to overstate. I see the Denkmeier crew have addressed the needs of non-binoviewer users by offering a customized version of the popular William Optics 2" diagonals with a Power x Switch built in! That version uses the same 2" optical elements as the original StarSweeper modules and sells for just under \$400.

Likes:

- Installs in minutes; no tools required
- triples the usability of eyepiece pairs
- Introduces no obvious aberrations

- extremely easy to use
- looks very well manufactured; should last a long time
- the folks at Denkmeier are very easy to talk to

Dislikes:

- necessity of refocusing when switching magnifications

Recommended?

YES!

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The binoviewer and Dual Arm Power x Switch pictured and described in this article were purchased at retail by the author. I have no commercial relationship with Denkmeier Optical or any of its dealers beyond that of a satisfied customer. All photographs are the property of the author and permission is granted to Cloudy Nights for their use in conjunction with this article.