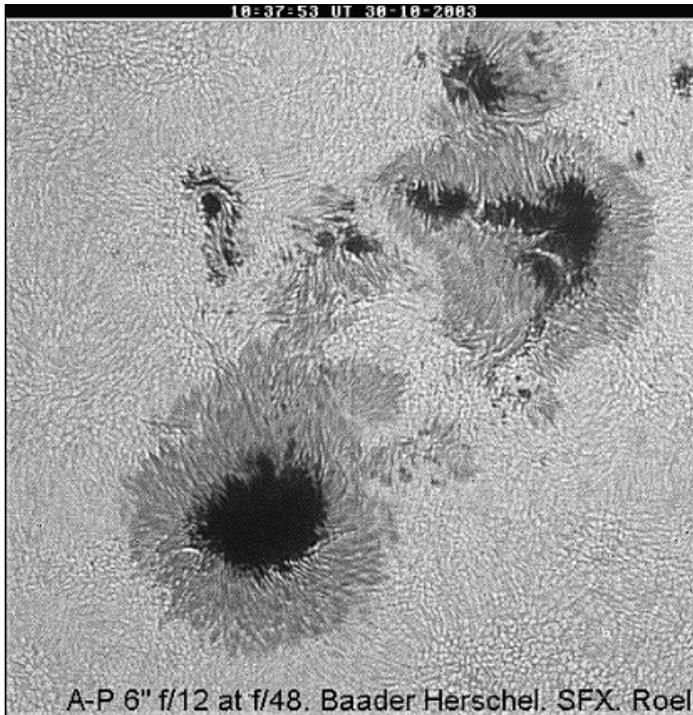


# THE 2" BAADER HERSCHEL PRISM



## ATTENTION

this is a customer endorsement from 2004. Meanwhile we have improved the Herschel Prism so that you can mount two filters together in the housing. AND there are now two versions of Herschel Prism available:

**Herschel Wedge "V"** is mainly for visual observing. It contains the 2" housing equipped with prism, 2" eyepiece clamp and 2" chrome sleeve. Built in is a ND 3.0 neutral density filter and our new "Solar Continuum Filter" for maximum contrast and sharpness.

**Herschel Wedge "P"** is equipped like Herschel Wedge "V" but has additionally three more neutral density filters (D=1,8 and 0.9 and 0.6) for reaching the shortest possible exposure time at every magnification

(Note: the 2"/1,25" reducer is not included in the basic outfit)

“Some time ago when I did review the Baader Mark-IV Coronagraph, I also mentioned the Baader “Herschel”, a fantastic accessory that I think needs a sole review.

Since I bought the “Herschel Prisma” as Baader names it, one wonders what a “Prisma” or prism has to do with solar observing, well as a matter of fact, the Herschel is a peculiar type of prism that reflects about 4.6% of the light you pass through one of the prism faces that is flat to 1/10 of a wave, the rest that is 95.4% of light and heat goes into the prism and exits through the other face and the backdoor of the housing, thus the excess light and heat is dispensed and not used for observing.

Ever wondered why they also call this accessory the “Herschel Wedge”, well it is because this prism has a wedge form, it is a very narrow angled prism around 23°, compared to the common 90° prisms used as Star diagonals, so that is why it is called a “Herschel Wedge”.

This particular “Prisma” or prism, is made with a proprietary glass and was made by Zeiss as described by Herschel, the reflecting face is as I said before, 1/10 of a wave flat, that means that it is a very precise optical surface and therefore it does not distort the image reflected from it. The exit face of the prism is antireflection coated so it does not reflect back any light that could produce ghosts in the eyepiece or heat inside the telescope tube.

Some people think that a Herschel Wedge is a very dangerous accessory to observe the Sun due to the UV and IR radiation, with but I think they are wrong because you have to remember that the deep UV radiation does not pass through a refractor lens because it is absorbed by the glass, but lets assume that a small percentage could get through, well that is taken care of by the type of glass used in the prism and also by the eyepiece, the same happens with the IR radiation.

It is important to say, that the Herschel Wedges are not intended for use with Schmidt Cassegrain Telescopes or Newtonians if you do not use extra UV and IR filters like the Baader UV/IR, the reason is that those optical systems have primary highly reflecting surfaces that also reflect the UV and IR radiation that could be harmful if you do not filter them, Maksutov designs on the other hand, have a thick Meniscus corrector lens that absorbs those radiations as an objective lens does too.

Aside of the almost null radiation concern when using a refractor telescope or a Maksutov, Herschel Wedges are known to be dangerous too, because on the exhaust side, that is the backdoor of the housing, the light and heat comes out to a focus and yes, you guessed it, it can burn just like a magnifier lens when pointed at the Sun. As a matter of fact, I have burnt the cable of my focus control handpad several times, not too bad in my case because it just has been on the rubber jacket of the cable and the dark smoke warns you quickly, but if not taken care of, it can burn and could start a fire in the worst scenario.



Here Baader has come with an elegant and simple solution, no more light and heat out the backdoor, ¿how? With a “Light trap” that Baader designed, I have tried it and believe me no heat and no light reflected to harm or burn out of the housing. That finishes with the fire hazard and related problems that plague the Herschel wedge, you can even glimpse inside the exhaust port and you see nothing that can harm you.

With the hazard problem being resolved, now let me explain, what comes with the Baader Herschel Prism kit.



1. A very nicely made almost cubic housing that contains the Herschel prism, built of metal and beautifully crafted, sporting a shroud opposite to the 2" outside diameter chromed plated tube that connects to the telescope.  
At 90° from the connecting tube you will find the 2" diameter eyepiece or accessory holder that has 2 knurled screws situated at 60°. Inside the eyepiece end of the housing, you can also find the ND-3 filter screwed to it. (This filter is obligatory to use, except on special situations).
2. Four 2" optically flat to ¼ wave neutral density filters (the obligatory ND-3 is already mounted inside the HW-housing), an ND-2, an ND-0.9 and the ND-0.6

Optional: reducer adapter from 2" to 1.25" (#15 / 2408190)

The eyepiece end of the Herschel housing as I said, comes with 2 knurled screws situated 60° apart, you can insert an 2" eyepiece or any 2" accessory and it stays incredibly tight with no wobble at all, even the optional 2" to 1.25" adapter sports the same type of set screws, it is a delight to use.

Now lets see how the "Herschel Prisma" should be used.



1. Without pointing the scope at the Sun connect the Herschel to the telescope, making sure that the ND-3 is screwed in place.
2. Insert your picked 2" eyepiece on the eyepiece holder, screwing on it the ND-2 or ND-0.9 filter, or if using an 1,25" eyepiece you can screw the filter to the 2" to 1,25" adapter, depending on the aperture of your telescope.
3. Point your telescope at the Sun using a safe solar finder, and make sure that your finder and our guidescope have their covers on.
4. Focus the Sun and enjoy the vista. If you find that the image is too dark, take off the ND-2 and use either the ND-0,9 or the ND-0.6.
5. Now, if you have at hand a single polarizing filter (cheap and easy to get in a camera store), insert it instead of the ND-2 or the ND-0.9 or the ND-0.6 ¿why?, because you can benefit with another of the Herschel prism properties, it reflects polarized light, so if you rotate a single polarizer filter fitted to the 2" or the 1,25" adapter, you can dial the Sun brightness until the image suits your taste, really another incredible feature, just make sure before observing the Sun, that you rotate the polarizer up to the point where the Sun looks darker looking at the eyelens from a few inches back.

What I do when visual observing with the 6" f/12 A-P triplet refractor at full aperture, is to use the obligatory ND-3 filter, plus the polarizing filter and sometimes instead of the polarizer, either the ND-2 or the ND-0.9 depending on the contrast I want.

Now, if you want to use a Barlow or a Powermate, then you have to install them after the ND-3 filter, that is at the eyepiece end of the Herschel Wedge.

For imaging, I use the obligatory ND-3 and an "Solar Continuum 540nm" filter for granulation detail, the Sunspot shown was taken with this setup using a 4X Powermate.

Baader has come up with a new redesigned foolproof "Herschel Wedge", that aside of sporting the "Light Trap" as a standard feature, it also has a non removable ND-3 filter, so there can not be an accidental burnt Retina if you try to look at the eyepiece end with no filter on. (Remember that 4.6% of the light and heat of the Sun is reflected and that amount can burn a Retina)

By the way, I have never needed to take off the ND-3 filter, so the newer version of the Herschel is safer than the old one in this respect.

So as you can see, by itself the Herschel Prisma is not a hazardous accessory to use to observe the Sun in white light, but we have not to forget that the Sun is a dangerous object to look at even baresighted, so if you take care to use the Herschel as directed and use just plain common sense to observe the Sun, you will not have a problem at all.

I can say that Baader has come up with a design that makes the Herschel Wedge the safest one available.

You may ask, ¿why? use a Herschel if I can use the Baader film or any other type of solar filter made of glass or Mylar film?, well, because if you are a serious solar observer or want to be treated to the best possible Solar image in white light, then the Herschel Wedge is the way to go.

Eric Roel, Mexico, 2004



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