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HOW TO build your own SOLAR FILTER for Telescopes, Binoculars and Cameras

planeoptically correct mounting of BAADER AstroSolar® Safety Film 5.0 in DIY filter cell



BAADER SOLAR FILTER

THE ALTERNATIVE:
PRE-MOUNTED SOLAR FILTER

What you need:

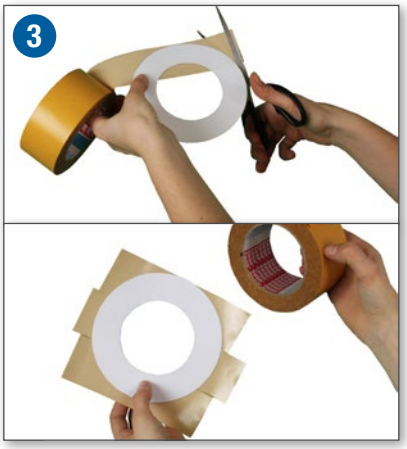
- Baader AstroSolar® Safety Film 5.0
- two sheets of white stiff cardboard
- pair of scissors
- compass to draw circles
- Some pieces of "Kleenex"- tissue
- double-faced adhesive tape
- Paper glue





RESULT:
Self-made Solar Filter
attached onto Celestron AstroMaster 70mm refractor







1. Using the compass, draw two circles on pieces of stiff cardboard. The inner diameter should match the full aperture of the objective lens, the outer diameter should be 10cm (~4") larger. Cut the two disks from the cardboard.
2. In order to minimize the volume of air between the filter and objective lens, it is advisable to mount the ready made filter directly onto the tube of the telescope / binocular, rather than onto an additional dew cap. If the dew cap cannot be removed from your telescope, its outer diameter will provide the minimum size of the outer ring of your cardboard disk.
3. Cover one full face of each cardboard-ring with sticky tape. Cleanly cut away any inner and outer excess tape, so that only the two cardboard faces of both rings are covered with the sticky tape.
4. Stretch out a square piece of "Kleenex" or similar facial tissue flat on a hard, plane surface (a table) and secure the four corners of the tissue with clear adhesive tape. The tissue must be free of any wrinkles.
5. Cut a square piece of AstroSolar® Safety Film 5.0 a little larger than the outer diameter of the stiff cardboard rings.
   The Film must be mounted into the filter cell without any of the protective layers of plastic or paper. However, for cutting AstroSolar® Safety Film 5.0, always keep it protected between the included two sheets of protective layers (white silk paper and/or transparent or white plastic). This "sandwich" is easily cut without creasing the film or getting fingerprints on it. The latest version of AstroSolar® Safety Film 5.0 comes with protective layers already on both sides.
6. Gently place the cutout of AstroSolar® Safety Film 5.0 onto the flat tissue and secure the four corners with tape – **but do not stretch it!** At this time carefully **remove the protective layer facing upwards**.

   AstroSolar® Safety Film 5.0 must not be put under tension in order to retain its precision optical property.

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7. Hold one cardboard ring, with the sticky side facing downwards, 10 millimeters above the film and let it fall down onto the AstroSolar® Safety Film 5.0, so that the ring touches the film all around at the same time.



8. Turn over the cardboard ring with the film-covered side facing upward and lay it back down onto the Kleenex. **Now remove the second protective layer,** and then stick the second cardboard ring against the AstroSolar® Safety Film 5.0 with the other ring already attached to the bottom side. You have created a round film-holder with AstroSolar® Safety Film 5.0 cleanly and securely fastened, without creases and wrinkles – but, most of all: without stressing the film!



9. Now put a 50mm (2") wide stripe of strong cardboard around the objective lens or telescope dew cap and tape the ends with double-faced adhesive tape. Repeat this procedure 3 times between each layer to produce a stiff 50mm long cardboard cylinder that precisely fits onto your optical instrument.



10. Finally, securely glue the holder containing the AstroSolar® Safety Film 5.0 onto the 50mm cylinder while the cylinder is still mounted at the front end of your telescope.



Your homemade solar filter for visual and photographic use is now ready! Store it properly!

Important note: The eye safety norm EN ISO 12312-2:2015-11 for naked eye solar viewers does not apply to front aperture filters, covering long-range optics. AstroSolar® Safety Film 5.0 is not authorized to be used for naked eye solar observation or production of solar viewers. For direct solar viewing without telescope, binocular or camera optics, inquire for our EN ISO 12312-2:2015-11 certified eclipse shades equipped with AstroSolar® Silver/Gold Film.

Use AstroSolar® Safety Film 5.0 for...

... Telescopes & Spotting Scopes | **... Telelenses** | **... Binoculars**

