

# Baader AstroSolar™ Safety Film



**Optical quality:** This highest precision film consistently produces strehl ratios of 94 to 96 percent at interferometric tests – thus it performs optically like a Fluorite Triplet Lens by Carl Zeiss or Astro Physics (Interferometric test results). Unfortunately we have a hard time ourselves to see any difference in performance between AstroSolar™ and 1/20 wave precision optical windows which we are stocking here from Zeiss. Our stock of precision polished plates runs into tenths of thousands of \$ – all stocked in for the 1999 eclipse – but AstroSolar™ was so good in fact, that these plates are hard to sell. Our Safety Film shows notably more sharpness and contrast than any competitive product we know of, especially including all affordable US-Glass Objective Filters.

**What is even more important – with AstroSolar™ the Sun appears in it's real color, neutral white.**

**Other films and most glass filters produce a blurry bluish or reddish Solar image, thereby cutting part of the spectrum. Especially with an orange sun, it is very hard to see faculae regions which are visible predominantly in the blue wing of the spectrum.**

Due to it's neutral color balance, AstroSolar enables the use of various color (or interference) filters which allows the observer to concentrate on certain spectral passbands for investigations of different layers within the solar "atmosphere".

**Eye safety:** AstroSolar™ is essentially free from pinholes, since – other than with even the most expensive glass filters – it is coated on both sides, so that the chance of two pinholes overlapping each other is extremely faint. Pinholes do appear, but to 1 out of 10000 only in optical density 2.5 . Baader AstroSolar™ safety film has been approved for eye safety by the National Bureau of Standards in Germany, the PTB.

Unlike any other Solar Filter on the market, AstroSolar™ is CE-tested according to EG-Norm 89/686 and EN 169/92.

All processes connected to this product have been thoroughly tested. Coatings are inspected constantly for consistency to ensure your eye safety!

**History and goal of AstroSolar™.** Baader Planetarium delivered solar safety film for 19 million eclipse viewers that were used throughout Europe for the August 11. Eclipse. Not one user of our films has suffered from eye damage. We produce solar safety films for over 17 years and have reason to claim a high degree of competence for all aspects of solar observation. With Baader AstroSolar™ we are set out to show you the Sun's hidden grandeur at a fraction of the cost for comparable equipment. Real professional solar work was always restricted to a few hardnecked amateurs who would put up the \$ 700,- or more for a real precision 1/20 wave glass filter or 2" Herschel wedge.

Now you can get an equally precise AstroSolar™ filter to fit an 8" aperture for \$ 50,- (or much less even, if a whole group of people shares a larger roll of 100x50 cm size film). **Not longer will solar observation be a "so la la" experience**, where you look into your telescope through an "economy priced" glass filter and wonder what this kind of amateur activity is all about. Many of our customers have pushed out their older filters to use their filter cells for AstroSolar™ – all they were in for a completely new, crisp and incredibly esthetic sun. All of a sudden, the telescope has the same performance during the day that it has at night. Always we were amazed how easily amateurs would accept mediocre sharpness during observation of our nearest star, while they can be extremely critical if the telescope would not perform perfect on other stars.

**Production:** The development of AstroSolar™ was only possible due to the incredible demand during the 1999 eclipse. Dozens of miles of film were destroyed during tests to produce the tooling and process techniques to receive an absolutely uniform molecular structure for the substrate. Not to speak of the related treatments, annealing and dual side coating that the film undergoes until it has attained the desired properties. In essence we can offer you two film products which do not at all distort the performance of your telescope; 1. AstroSolar™ for solar observation and photography, 2. TurboFilm™ – as night time protection of your valuable optical equipment; to shield it against dirt, scratches, coating defects, humidity inside open tubes and on mirror surfaces – **and last not least, to stop air currents (tube-seeing).**

**AstroSolar™ Photofilm:** We offer two densities of AstroSolar™, since passionate Solar photographers have always criticised that the optical density of OD = 5 would be too dark for highest magnification eyepiece projection work. Accordingly we manufacture brighter "AstroSolar™ Photo Film" with density OD = 3.8, to provide short exposure times when using eyepiece projection.

AstroSolar™ OD = 3.8 Photofilm offers short exposure times up to 1/5000 sec.

**Do not use AstroSolar™ PhotoFilm for visual observation.**

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|----------|------------------------------|------------------------|---------|
| #2459282 | AstroSolar™ Safety Film D=5  | (100x50 cm/39x20 inch) | € 75,-  |
| #2459281 | AstroSolar™ Safety Film D=5  | (29x20cm/11x8 inch)    | € 25,-  |
| #2459284 | AstroSolar™ Safety Film D=5  | (117x117cm/46x46 inch) | € 275,- |
| #2459280 | AstroSolar™ Photo Film D=3.8 | (100x50cm/39x20 inch)  | € 75,-  |

Please note the detailed instructions on how to make your own filtercell.

## TurboFilm™ - guards your optics -

This is the essence of AstroSolar™ safety film. A highest precision, crystal clear material (not "Mylar"). It is a monomer film which we found after thoroughly testing more than 200 different film samples on our Zeiss autocollimator. This film was used in German Science Institutes as optical membrane for nuclear and particle physics experiments. The basic substrate has been further refined and homogenized by a proprietary annealing process that was developed exclusively for us. Due to these treatments Turbo Film attains perfect homogeneity and performs equal to a 1/10 wave plane parallel optical window. In fact it has the lowest wedge error of any existing optical window.

TurboFilm™ will protect your valuable optical equipment, close telescope tubes against dust and humidity, greatly reduce air currents – all without reducing the optical quality of your telescope.

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|----------|----------------------------|-------------------|--------|
| #2459350 | TurboFilm™ Telescope Guard | (size 47x50 inch) | € 29,- |
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protects your optics day and night



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