

Hi-quality low cost Solar Filter

Materials:

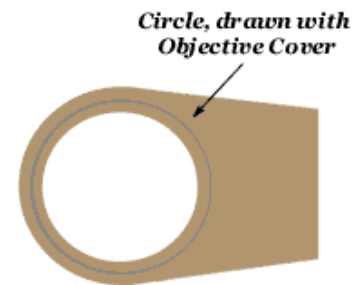
- 1 piece of sturdy corrugated cardboard.
- 1 cereal box.
- 1 piece of Baader AstroSolar Safety Film

Equipment

- Pencil
- Scissors
- Tape – *electrical* and/or *masking*
- Stapler



Cut the corrugated cardboard into faceplates, (right) allowing one side to be extended past where the eyepiece would sit in the telescope. This will act as a shade to the viewer's eyes while looking through the eyepiece. Note that only one of the two faceplates need be lengthened.

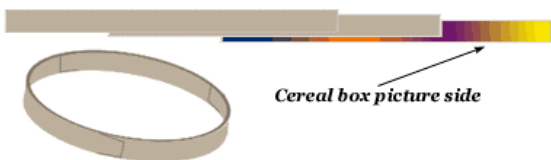


As an option, you may wish to cut the faceplates from the corrugated cardboard perpendicular to each other so that the “grain” of the faceplates is perpendicular to one another, as shown above.

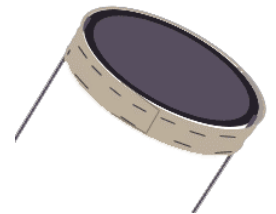
To size the rings, use the cover to your main objective to draw a circle at the ring-end of the faceplate. Cut the outside edge about ½” – 1” outside of the circle. Cut the inside edge, about ½” smaller than the ring drawn with the Objective Cover.

Cut the cereal box into 3 three strips 1” – 2” wide. The length should be slightly larger than the circumference of the outside of the telescope main objective tube.

The key ingredient is the Baader AstroSolar Safety Film. This should be cut about ½” – 1” in diameter wider than that the holes cut in the corrugated cardboard.



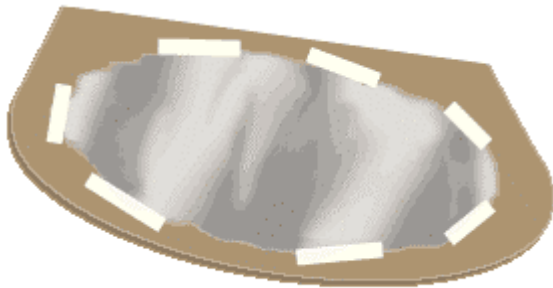
Next, tape the three strips of cardboard together, as shown to the left, overlapping each piece 2/3's over the previous piece. Note the last piece shows the picture-side of the cereal box is flipped up. When this long strip is wrapped around the telescope objective tube (right) this will hide the picture side completely.



Wrap the ring around the telescope tube and tape the ring closed. Remove the newly formed ring and staple all around the top edge of the ring. Using the three strips and the staples will ensure the ring holds its shape. A single strip, with the ends taped together will tend to look like this:



Attach the ring to the long faceplate. This should line up quite well with the circle drawn with the objective cover. Hold it in place with pieces of black tape. Seal the connection with a strip of black tape. Do not use clear tape, or masking tape. The seal should be completely opaque as to block excess light from finding its way into the scope.



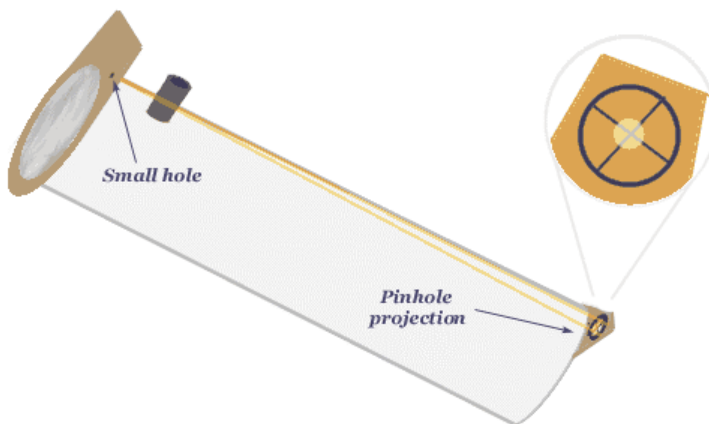
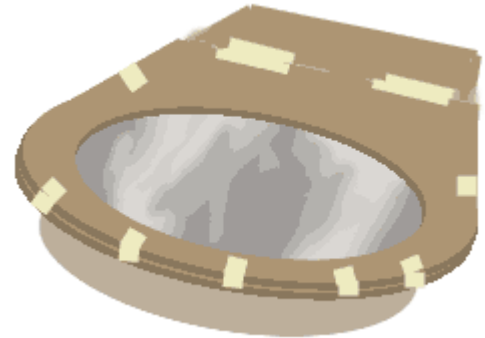
Attach the Baader material to the short faceplate with tape. Do not tighten the material so it's flat. Leave the material loose and "wrinkly" as it will be less likely to tear if touched – and you KNOW someone will touch it. Be sure the Baader material covers the entire opening in the faceplate.

VERY IMPORTANT: Use enough tape to ensure no part can flip up, exposing the opening to direct sunlight.

Tape the two faceplates together, with the Baader sandwiched in between the two faceplates. This completes the structure of the hi quality low cost solar filter.

As an option, you may wish to cover the whole cardboard section with decorative paper or paint the cardboard to make it look nicer.

Small scope owners should keep in mind that this filter could prove to put the scope out of balance. A counterweight of some sort may be needed.



Lastly, put a small hole in the faceplate. Attach a small piece of cardboard or sturdy paper to the other end of the scope. This will allow a beam of sunlight to project itself onto a target, acting as a pointing device.