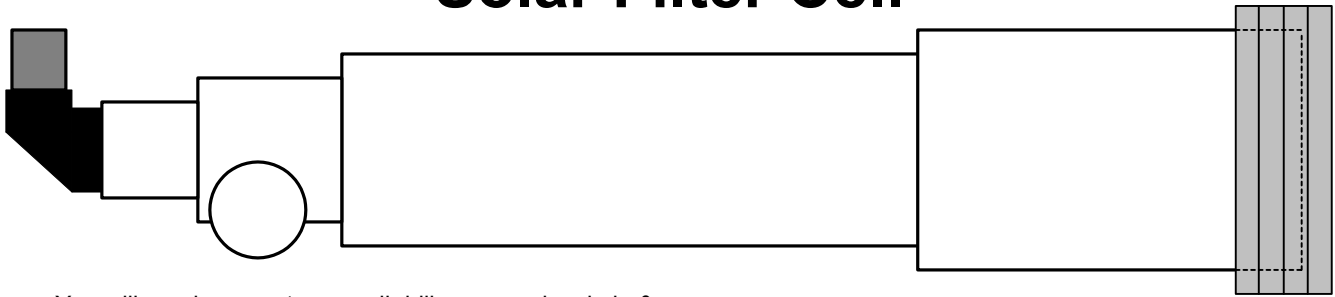


Solar Filter Cell



You will need access to a small drill press and a circle & wheel cutter (available from Woodcraft in Clearwater) or at least a circle cutter (available from Lowe's), but the latter will also require a way to trim the excess from the outside of the cell (I used a router and a flush trim bit).

4 pieces of oak 1/4" thick and 1-1/4" larger diameter than the outside of your tube.

A notebook with a thin plastic matte black finish on one side.

A appropriately sized piece of Badder Solar Film (available from www.astro-physics.com)

Stick-on felt

A drill bit to pre-drill the holes

A tube of Outdoor Goop. This is used to hold the solar film to the plastic notebook cover and wood.

Cut the OUTER four circles first. Then clamp the circles to a base and cut the inner circles of the three pieces that go over the tube (practice this first on some cheap, soft wood like Poplar and leave room for the felt). The front piece has a center about 1/2" smaller diameter than the other three. Cut the notebook cover so that it is slightly hidden by the front ring when viewed from the front.

Carefully glue and clamp the three matching rings with the grain going in different directions (home-made plywood). After drying use the template on the next page to mark and drill five holes for the screws to hold the glued rings to the plastic, solar film and front ring. Countersink these holes so the screw head is hidden and the screws penetrate the plastic ring and the front wood ring without going through it.

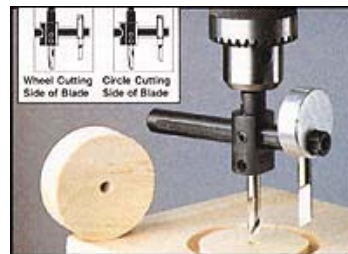
Urethane the wood (not too much on the inside or it will become too narrow for the scope). Attach the felt to the three rings and do a final check on the scope. Remove the felt and sand if it's too tight.

CAREFULLY Cut the solar film to match the outside diameter of the plastic ring. Then put it away

Using a small amount of glue, glue the solar film loosely (don't pull tight) to the plastic ring and let the glue dry. Place the front ring against the solar film with the black plastic face up. Position the three rings on the plastic, align the screw holes and screw the pieces together. Using screws allows us to replace the solar film later, if needed.



The finished Solar Filter Cell (front)



Circle & Wheel Cutter



Circle Cutter leaves a lip



The cell after drilling and coating



Final fit before adding the solar film



The finished solar cell (back).

