

You can get sample boxes from Uline by calling customer service at 800-295-5510. Ask Uline for two 36 inch sample boxes (S-4367). Tell them to NOT fold The boxes when shipping.

Buy the College of Charleston lens set L14941 from Surplus Shed (\$11.50)

The 36in x 6in x 6in box is easiest to handle. The solar image produced is around 3.5 inches in diameter.

Step 1 The box should look like photo below prior to putting on the hardboard. Tape the **INSIDE** of the bottom of the box with wide painters tape. (not the outside of the box) Neatly cut off the four top flaps along the fold line using scissors or utility knife.

36 x 6 x 6" Long Corrugated Boxes - 25/bundle



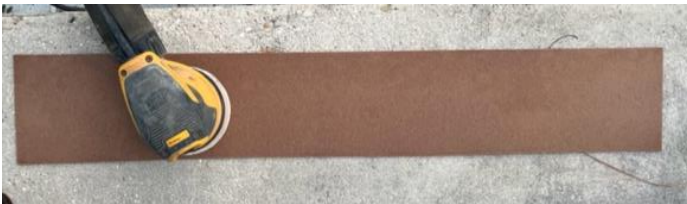
Price Each

Model#	25	100
S-4367	\$1.98	\$1.92

Step 2 Cut out hardboard (48 x 24) into 36in x 6in strips. Home Depot (\$6.49)



Step 3 Sand the strip of hardboard side that will be glued to the bottom of the box.

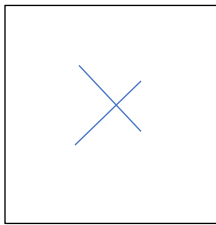


Step 4 Evenly cover the sanded side with wood glue, Spread the wood glue to cover the entire surface. Place the hardboard strip on the bottom of the box. Add weight to the top of the hardboard and let dry.



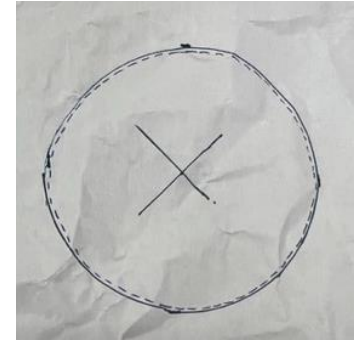
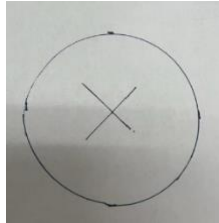
After the glued dries, you can remove the painters tape and replace with box tape from UHAUL.

Step 5 Determine the MIDDLE of the end of the box where you will put your objective lens.



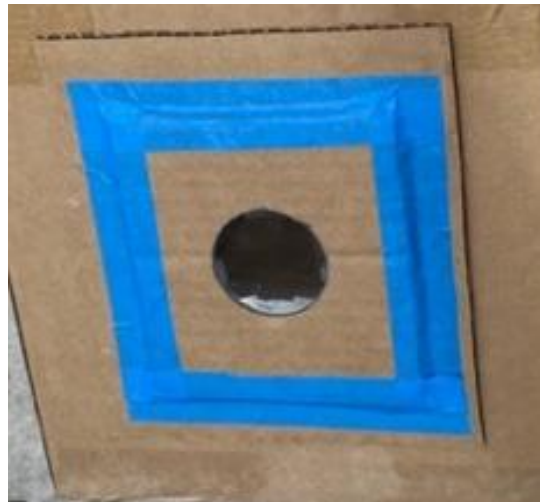
Short end of box

If the diameter of your lens is 51mm then put a mark at 25.5mm on four sides. Place the lens on the box, line up the marks, trace around your lens



Step 6 With your exacto knife, cut just INSIDE the lens trace you made. (dotted line) Be careful and keep your off hand away from the blade

Step 7 Repeat Step 5 and 6 using a smaller square piece of cardboard. The square piece of cardboard will be glued on the front of the box. Line up the two holes. Since the achromat is a double lens the cardboard has to be two layers thick. The objective lens should fit snugly in the two layer hole in the middle of the short end of the box.



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Steps 8 To prepare the achromat lenses:

Crown and flint when put together produces a coated achromatic objective lens 51mm diameter with a focal length of 360mm. Place the crown (double convex) with its strongest curve against the negative side of the flint. Use a couple pieces of painters tape on the edges to hold them together. **The crown side faces the sky or the object you plan to look at.**

Using very small pieces of Magic tape (2mm x 4mm) place the tape on the edges of the lens 120 degrees apart. The tape should be on one of the lenses between the crown and flint. Use painters tape to tape the lenses together. Leave some space that does not have tape.



Step 9 Place the objective achromat lenses in the double layer hole in the front of the box. Be sure it is a snug fit.



Step 10 To prepare the barlow screen.

Using another U-line 36 in box, cut the box so it is 13 ½ inches long. Carefully cut the flaps off in a straight line.



Step 11 Measure 5 15/16in in the middle of your rectangular piece of cardboard. And draw two vertical lines on the cardboard



Step 12 Once the lines are drawn, score the cardboard along the lines with the exacto knife. DO NOT cut through the cardboard. The cardboard should fold along the scored line.





Step 13 Be sure the barlow screen fits inside the box. Hopefully the flaps on each side are of equal length. Hold the screen in place with the medium binder clips.

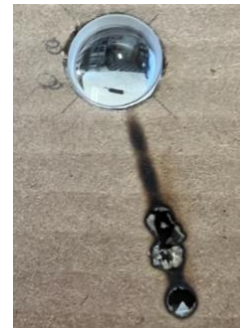


Step 14 Determine the center of the barlow screen and follow the same procedure as Step 5 and 6. The barlow is 28mm in diameter. Be sure to cut just on the inside of the barlow circular trace. Glue another piece of cardboard on the barlow screen. You line up the holes. Place the Barlow in the circular hole. Be sure the Barlow is a tight fit.

Step 15 Using double stick tape add your white screen at the end of the box. Although it is not shown here, I would be sure the white screen covers the entire inside end of the box.



Step 16 The sun's rays, when concentrated, are intense. The barlow cardboard screen will start to burn. Using double stick tape, place aluminum foil on the entire barlow screen. Carefully cut out the aluminum foil around the barlow lens. Add a second layer of smaller size near the barlow so that there is NO cardboard showing.



Step 17 You are ready to setup your solar viewer. You will need to use a tripod. A cinder block works well. A plastic crate with a couple weights or bricks to hold down the crate can also be used.

You will MOVE the barlow screen to focus the image.

36 in box



42 inch box



For a larger solar image, use the 42in x 8in x 8in box. I recommend the L14940 lens set from Surplus Shed (\$12.50) For this box..