

## Making a Solar Filter for a Telescope, camera, spotting scope or pair of binoculars.

### Materials Needed:

- 1/8" Foam Core
- Piece of black tag board
- Scotch Tape
- Solar Filter
- Glue Stick

### Tools:

- Metal Ruler or metal edged ruler
- Scissors
- Pencil
- Compass or circle gage
- #1 Craft Knife

It is not safe to look at the sun directly or through a lens. The sun can damage your eyes and the lens on your camera, telescope, cell phone and other devices with lens. Imagine what happens when sunlight focused through a magnifying glass eyes also magnify light! So do lens! This activity uses solar filter and will help you view the solar eclipse safely.

### Step 1:

Measure the outside diameter of your lens (Figure 1). You need two square pieces of foam core that will allow for a minimum of 1" border around your lens (Figure 2). Find the center of the foam core square by drawing lines across the board corner to corner (Figure 3).



Figure 1

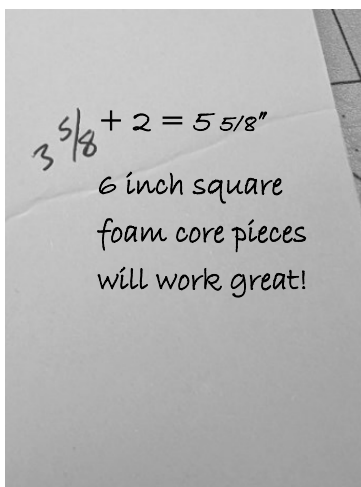


Figure 2

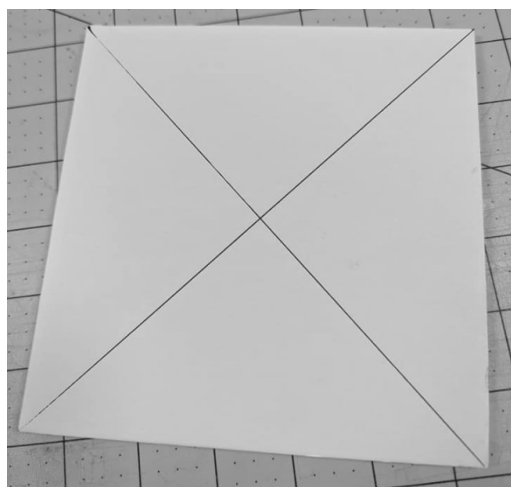


Figure 3

### Step 2

Use a compass to draw a circle the size of your lens (Figure 4). Using a craft knife, carefully cut the circle out of the two foam core pieces (Figure 5). Tape the filter shiny side out between the two pieces of foam core (Figure 6).

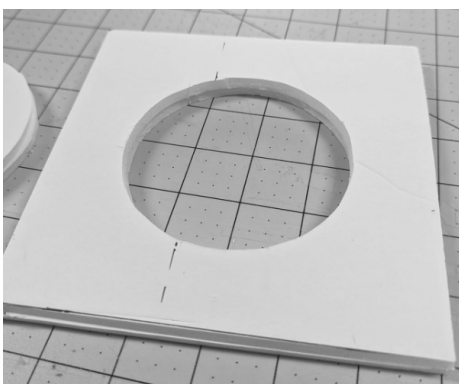


Figure 4

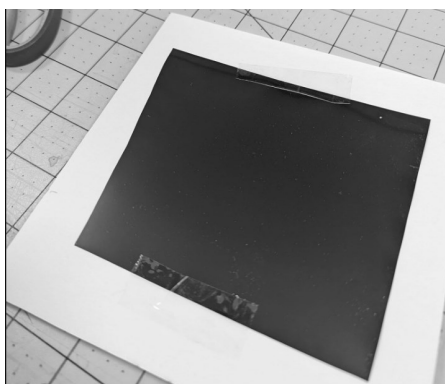


Figure 5



Figure 6

Making a Solar Filter for a Telescope, camera, spotting scope or pair of binoculars.

Step 3:

Cut a 3 to 4 inch wide strip of black tag board or construction paper long enough to wrap around the outside of the lens (Figure 7). Draw a line half inch above the long edge of the tag board strip (Figure 7). Fold along this line (Figure 9). Cut tabs along the fold (Figure 10).



Figure 7

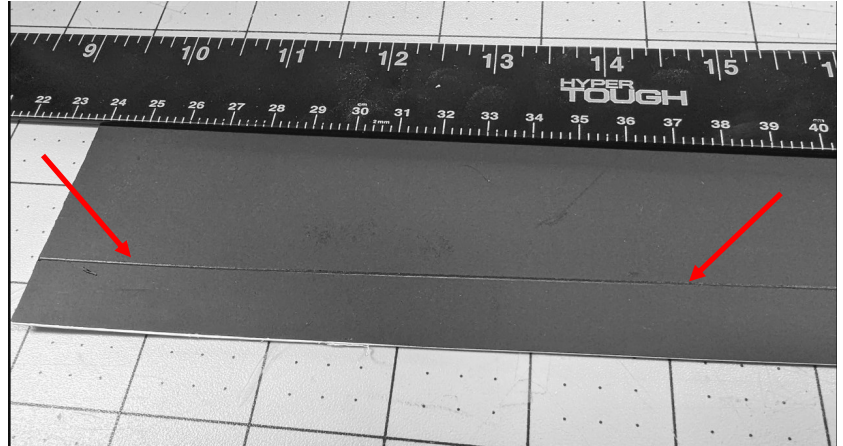


Figure 8



Figure 9

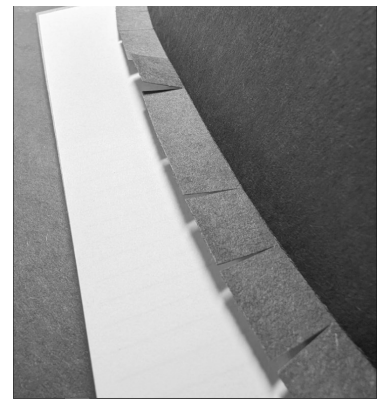


Figure 10

Step 4

Wrap and tape the black tag board loosely around lens, it should be loose enough to pull off with out shaking or knocking the alignment. (Figure 11). Tape the tag board collar in about four places around the hole on the dull side of the filter. (Figure 12). Check your fit and completely secure tag board hood (Figure 13). Filter is now ready to use (Figure 14)!

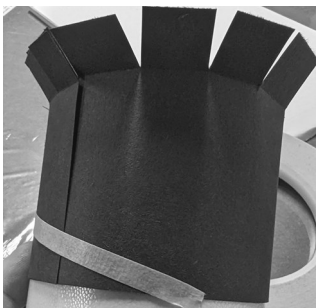


Figure 11

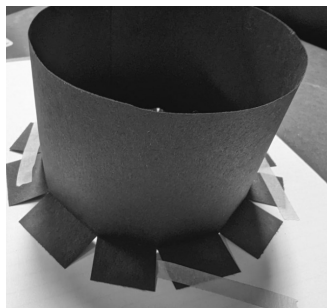


Figure 12

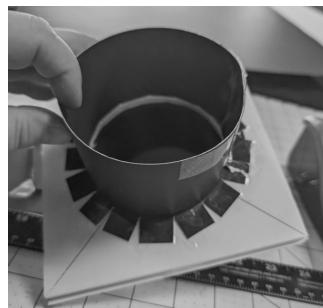


Figure 13

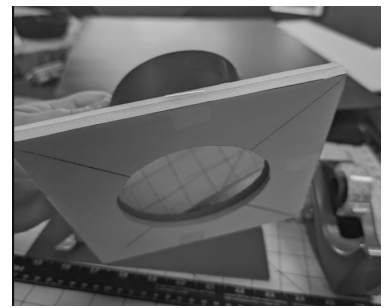


Figure 14

Telescope users: Remove or cover your spotting scope to avoid accidental solar viewing. Before the eclipse practice locating the sun using the shadow of the device you are using.