

# How to Make a Homemade Solar Pinhole Viewer

Step 1: Find a long box (or tube) and cut a portion out of each end.

Make sure the cut outs line up well. And the longer the box, the bigger the image!

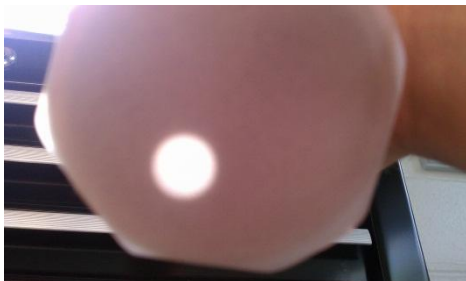


Step 2: At one end, place a piece of aluminum foil over the cut out and put a piece of transparent/translucent paper over the cut out at the other end.

Try and make sure both covers are flat over the openings.

Step 3: Use a needle, thumbtack, or some other small circular point to make a pinhole in the center of the aluminum foil.

If the cut outs and the pinholes are centered well, the image should also be centered. Also, the smaller the pinhole, the better the image quality.



Step 4 : Point the foil at the Sun or bright object and an image of your bright object should appear on the transparent paper.

Don't look at the Sun directly or through the pinhole!

Step 5: Using a ruler/meterstick, by measuring the diameter of the Sun's image and the length of your solar pinhole viewer, you can calculate the actual diameter of the Sun!

$$\frac{\text{Diameter of Image}}{\text{Length of Viewer}} * \text{Distance to Sun} = \text{Diameter of Sun}$$

$$\text{Distance to Sun} = 1.496 \times 10^{11} \text{ meters}$$