

# INDIRECT ECLIPSE VIEWING METHODS

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An easy, safe way to view the eclipse can be made in just 5 minutes using materials laying around the house. Essentially, it involves making a simple pinhole camera.

## **MATERIALS:**

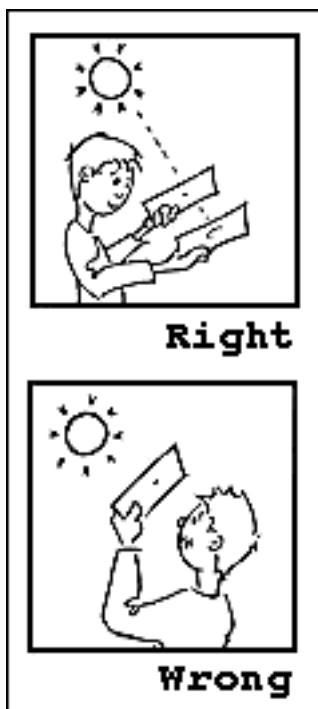
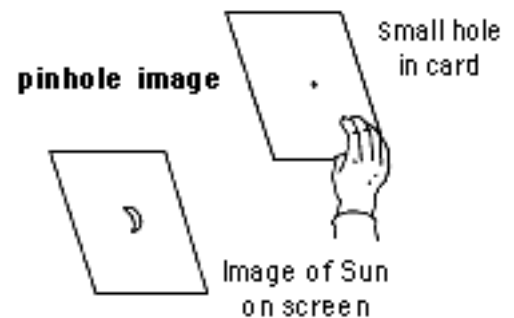
- Two flat pieces of cardboard or posterboard at least 1 foot (30 cm) square
- a small piece of aluminum foil about 2 inches (5 cm) square
- tape (masking, electrical, or duct. It should be opaque)
- a pin, needle, or pushpin
- a sissors, boxcutter, or hobby knife

**STEP 1:** Cut a hole in the center of one of the pieces of cardboard. It should be about an inch or two across. The shape of the hole doesn't really matter.

**STEP 2:** Completely cover the hole with the piece of aluminum foil and tape it down. Try to make it nice and flat.

**STEP 3:** Use a pin or needle to make a TINY hole in the foil. Make it as small and circular as possible. If you make a mistake, cover it with a small piece of tape and try again.

**STEP 4:** Hold the pieces of cardboard as shown in the pictures. The piece of cardboard without the hole in it will be the screen. If the cardboard isn't white, tape a plain white sheet of paper to it.



## **DO NOT LOOK THROUGH THE HOLE DIRECTLY AT THE SUN!**

You will not need to focus the image.

The farther apart the pieces of cardboard are, the larger the image of the Sun will be. However, the larger the image, the dimmer it will be.

To find the size of the image, multiply the distance between the hole and the screen by the number 0.0873. If that distance is 1 meter, the image will be 0.0873 meters (or 8.77 mm) in diameter. If the distance is 5 feet (60 inches) long, your solar image will be  $60 \times 0.0873 = 0.52$  inches in diameter. If you want to round things off, the size of the image is about 1/100th the distance between the two pieces of cardboard.

# ECLIPSE VIEWING BOX

Try making an eclipse viewing box like the one shown above. It operates exactly the same as using two pieces of cardboard. The advantage here is that the sun is completely hidden from direct view. The inside of the box is much darker. Thus, the image of the Sun on the paper will have greater contrast and be easier to see. Also, it is safer for small children to use.

Teachers and parents can have their children decorate the eclipse viewing boxes. Draw on them with crayons and markers, or glue on pictures cut from magazines.

Remember that the size of the image will be about 1/100th the length of the box. If you can't find a long box or tube, you can tape together two or more boxes to make a longer one and thus increase the size of the image.

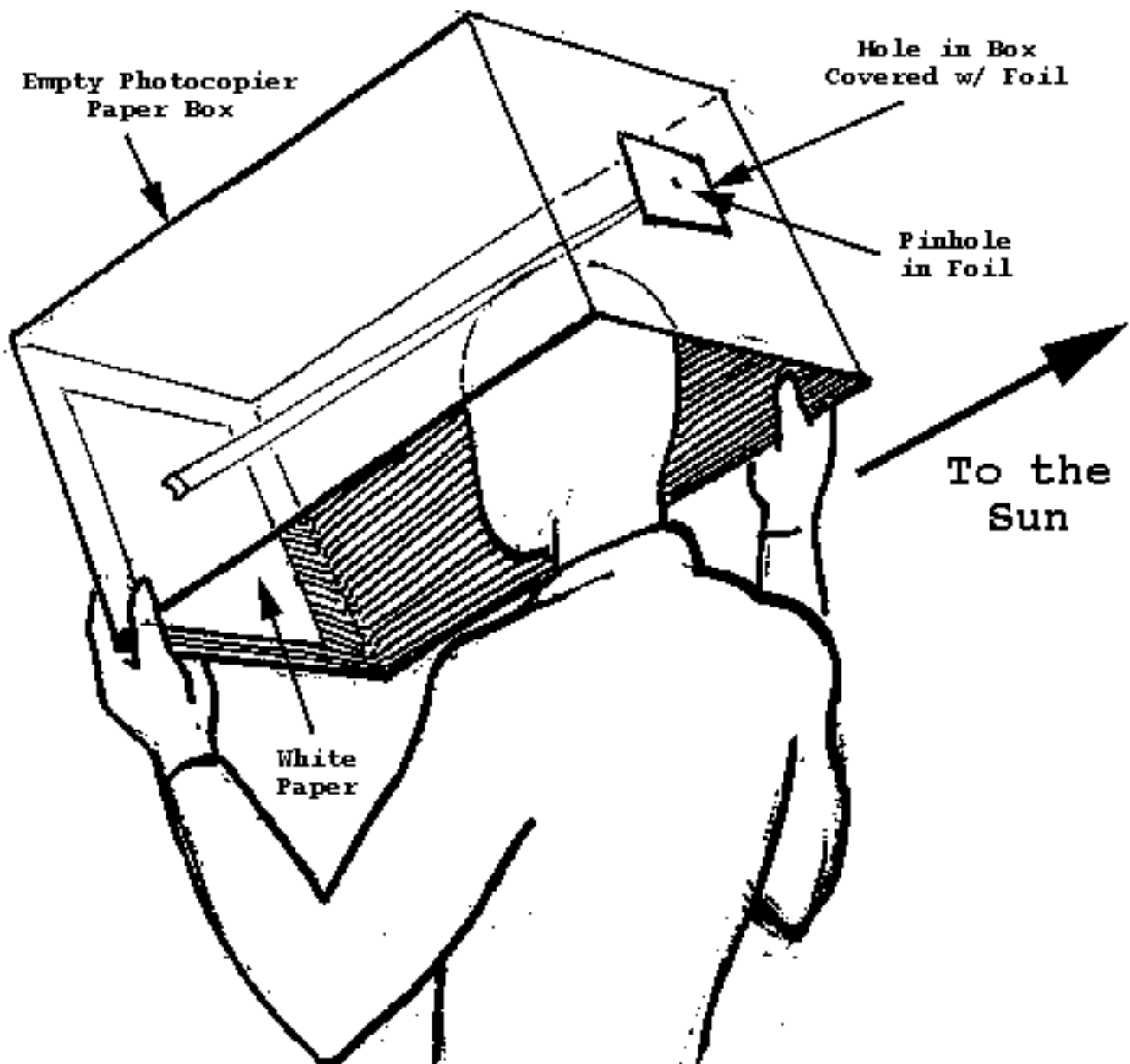


Image by Eric G. Canali