

# How to make a pinhole projector for a solar eclipse

## Project with 2 pieces of card

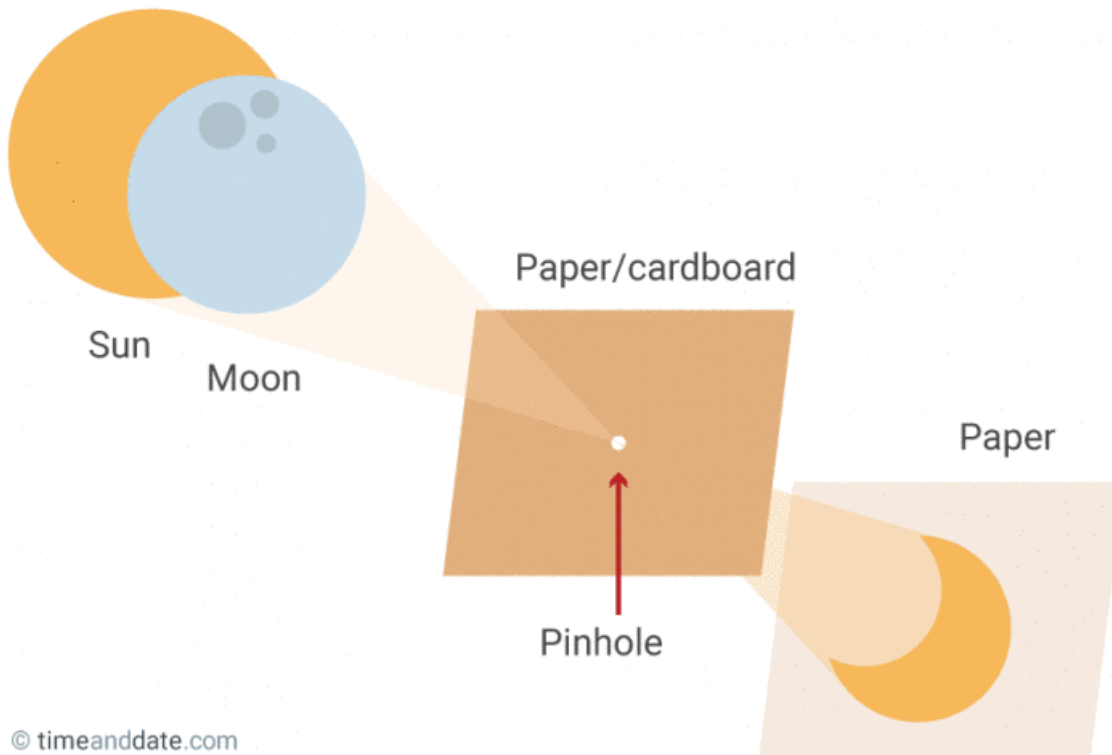
When using any kind of pinhole projector, you should stand with your back towards the sun. [Do not look at the Sun](#) through the pinhole or through the paper.

### You need:

- 2 pieces of stiff white cardboard, like two paper plates.
- Or, 2 sheets of plain white paper - the kind you use for printing is perfect.
- A thumbtack or a sharp pin.

### What to do:

1. To make a quick version of the pinhole projector, take a sheet of paper and make a very small hole in the middle of it using a pin or a thumbtack. Make sure that the hole is round and smooth.
2. With your back towards the Sun, hold one piece of paper above your shoulder allowing the Sun to shine on the paper.
3. The second sheet of paper will act as a screen. Hold it at a distance so that an inverted image of the Sun is projected on it through the pinhole.
4. To make the image of the Sun larger, move the screen further away from the pinholed sheet.



## Keep safe

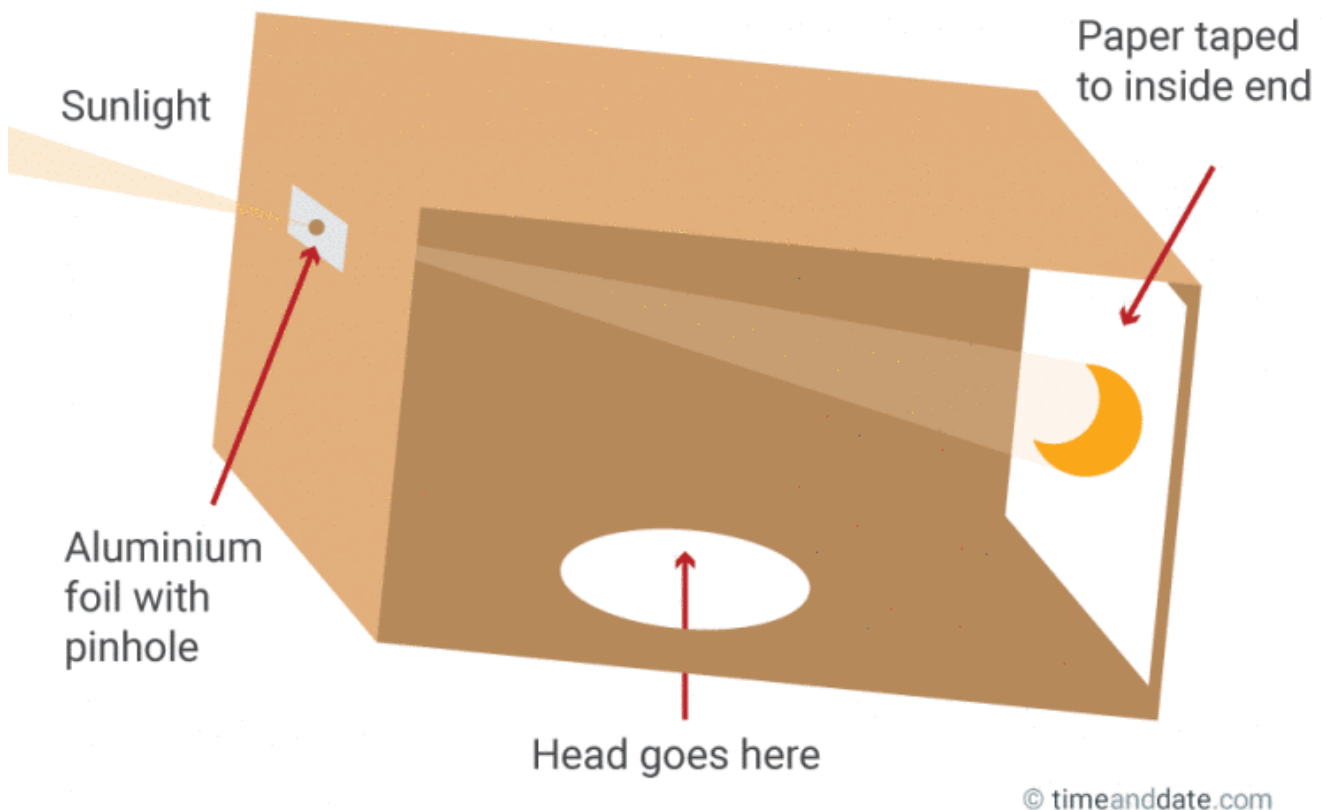
Never look at the Sun directly without protective eye gear. Even sunglasses cannot protect your eyes from the damage the Sun's rays can do to them.

Always keep your back towards the Sun while looking at a pinhole or a binocular projection.

Do not look at the Sun through the pinhole or through the binoculars.

When using binoculars or the telescope to project the image of the eclipse, do not keep anything flammable close to the lens.

## Pinhole projector using a box



View an eclipse with a DIY box pinhole projector. View an eclipse with a DIY box pinhole projector.

This type of pinhole projector works on the same principle as the basic one, except it is much sturdier, easier to set on a surface (no more aching arms holding out 2 sheets of paper) and requires a few extra items to construct.

### You need:

- A long cardboard box or tube. You can tape two together to make one long box. The longer the box, the larger the projected image.
- Scissors.
- Duct tape.
- Aluminium foil.
- A pin or a thumbtack.
- A sharp knife or cutter.
- Sheet of white paper.

### What to do:

1. Cut a rectangular hole on one end of the box using the sharp knife.
2. Using the scissors, cut an equally-sized rectangular piece of the aluminium foil. Make sure it is not crinkled.
3. Tape the foil over the rectangular hole you just made in the box.
4. Use the pin to poke a hole in the center of the foil.
5. Place or tape the sheet of paper at the other end of the box.
6. Stand with your back towards the Sun. Place the box on your head with the hole towards the Sun. Adjust your position until you see the Sun's image reflected on the paper inside the box.
7. **Using a tube?** If you are using a tube or taping two tubes together, cut the end of the tubes and tape the foil with a pinhole on one end. On the other end, tape a piece of white paper that has been cut to the shape and size of the end of the tube. This will act as the screen. Close to this end, cut a rectangular hole using the sharp knife. This will be your viewing window. With your back towards the Sun, point the end with the foil towards the Sun, angling the box along the Sun's rays. Look into the box through the viewing window and you'll see a small projection of the eclipsed Sun on the "screen".