

How to Build Your Own Solar Pinhole Projector

Before you begin, understand that you should *NEVER, EVER LOOK DIRECTLY AT THE SUN*, not with sunglasses, not through a telescope, not through a tiny hole, never. There are solar glasses, solar telescopes, and solar filters that may be used to look at the Sun, but these are *NOT* the same as regular sunglasses, telescopes, and filters. Looking at the Sun with anything but genuinely safe devices may result in blindness. This project is safe because you are looking at an *image* of the Sun projected onto a piece of cardboard or paper. In a solar eclipse, this is a safe way to view the Sun.

MATERIALS NEEDED:

- two pieces of cardboard, ideally one of them non-corrugated (without the ripples and ridges), or two pieces of plain white paper
- a pin, a sharp thumbtack, or a needle

WHAT TO DO:

- Stand one piece of cardboard or paper on the ground by leaning it against a wall or pole. Make sure it is facing the Sun so that the entire surface is opposite the Sun and is illuminated in sunlight. This will act as the screen for your projector.
- Use a pin, thumbtack, or needle to puncture a small round hole in the other piece of non-corrugated cardboard or paper.
- Sometimes puncturing a hole will make little “flaps” that cast rough-edged shadows in the beam of sunlight. Use a finger or thumb to press down any rough edges of the hole you made. You want the hole to be as round as possible.
- Hold the piece of cardboard or paper with a hole in it between the Sun and the screen. Make sure the beam of sunlight going through the hole is shining onto the screen.
- See what happens when you move the piece of cardboard or paper with a hole in it closer and farther away from your screen.

