Pin-Hole Projection

What is Pin-Hole Projection?

Pin-Hole Projection is using a pin-hole in a piece of cardboard to project an image on a second piece of cardboard.

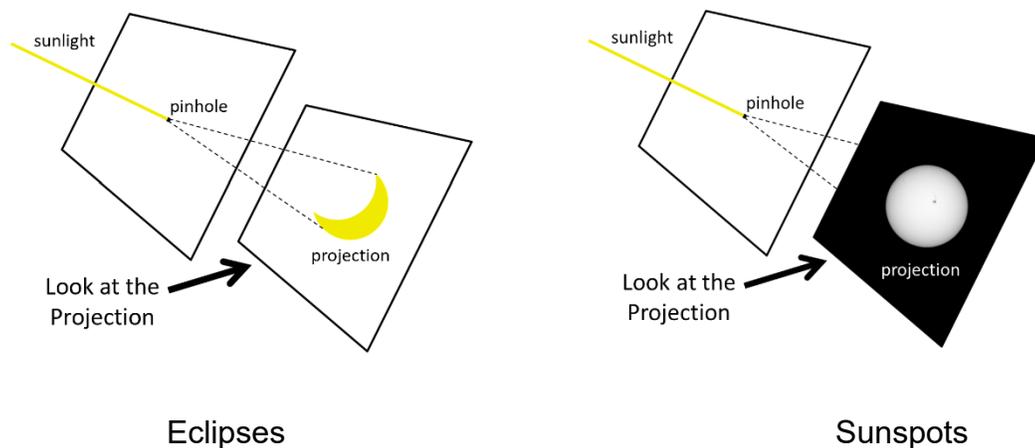## Why would I use Pin-Hole projection?

Observing the Sun is the only dangerous activity that amateur astronomers do. Filters to make it safe to look at the sun must filter out 99.999% of the light. **Never look at the Sun without proper protection.** Using equipment makes it even more dangerous. Permanent blindness could result. If you do not have proper protection, your only option is to use pin-hole projection.

When would I use Pin-Hole Projection?

This technique can be used to safely observe the Sun without looking directly at it. It may also be used to observe the Moon at night.

How do I do Pin-Hole projection?

The process is quite simple. You only need two pieces of poster board: one for the pin-hole and the other for the image screen, and a pin to make a hole. The set-up looks like this:

Eclipses   Sunspots

The steps:

1. Make a tiny pin hole in the center of one of the poster boards.
2. An even better solution is to cut a hole in one of the poster boards, cover it with aluminum foil, and put the pin hole in the foil.
3. Hold the two poster boards so that they are parallel to each other (think of it as two sides of a cardboard box – see story below).
4. If needed, the lower poster board can be placed on the ground.

5. The further apart the two poster boards, the larger the image will be. But it will also be fainter.
6. Shade the sides from sunlight to make the image easier to see.

A Story:

When I was six years old, living in the Boston Massachusetts area, I lived my first astronomy memory. My sister, who is 10 years older than I am, made me a solar observatory to observe a partial solar eclipse. She used a cardboard refrigerator box, cut a hole in it, covered it with aluminum foil, and put a pin-hole in it. She then put white paper on the opposite wall of the box, on the inside. Then she put me in the box. It was awesome, and safe!