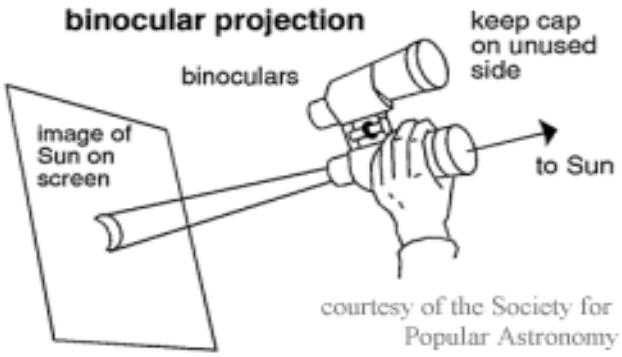
Viewing the Sun Safely

Caution: <u>Never</u> – ever- ever – look at the Sun directly with your naked eyes or through binoculars or telescopes that do not have solar filters.

One safe way to observe sunspots or eclipses is to project an image of the Sun through a telescope or binoculars onto a white surface. We will be using binoculars for this safe Sun viewing activity. When using binoculars, keep the cover on one of the two tubes. Never look through a telescope or binoculars to point them at the Sun - partial or total blindness could result very quickly. It is safe to study the Sun's surface if you use binoculars to project the Sun's image onto a piece of white poster board.



What You Need:

- Binoculars
- Square piece of white poster board
- Pencil
- Tracing paper

What to Do:

- Lay your piece of white poster board on the ground.
- Holding your binoculars over the poster board and standing aside so that you are not blocking the Sun, focus the image of the Sun onto the poster board, taking care not to put any part of your body in the way of that image (to avoid burns). You may need to alter the distance between the paper and binoculars.
- If the distance and focus are correct, on the poster board you should see a circle of light (the Sun's image) that is brighter at the center and darker around the edges. Inside the circle you should see some small dark spots which are sunspots.
- Trace the Sun and any sunspots that you see on the tracing paper.

Parent Prompts:

What does your child observe?

Is the Sun the same everywhere in the image or does your child see differences?
Do they see small spots on the image? (Sunspots)

Are all the sunspots the same shape? Are they the same size?

Note that Sunspots increase and decrease depending on where we are during the cycle! Sunspots grow and diminish in number in a cycle that is 11 years long.

A few more words about Sun spots…

- Sunspots are dark because they are colder than the surface of the Sun around them.
- A cold object gives off less light than a hot object.
- You could put two Earths in a large sunspot and still have enough room for the Moon as well!
- Small sunspots can come and go in a few hours.
- Larger sunspots can last for many weeks.