


Eclipse

April 8, 2024

Central California won't experience the Eclipse's totality. We will be in the moon's **penumbra**: a partial shadow of the moon with only part of the sun appearing to be covered.



During a Solar Eclipse, the **moon** passes between the **Earth** and the **Sun**.

During an Eclipse, some parts of the Earth are in the direct, focused shadow of the moon, called the **umbra**. Those places experience the Eclipse in **totality**, when the moon appears to completely cover the sun.

Never, ever look directly at the Sun, even during an Eclipse, without Eclipse Glasses that are ISO-certified! Join MoChiMu at libraries and community locations around the county during the Eclipse on April 8 for a free pair of Eclipse Glasses, made possible by Sutter Health!

Try it together: Build a simple **scale model**, showing the relative sizes of and distance between the Earth and its moon.

Solar Scale

What you'll need...

- A tennis ball
- A basketball
- A 25' measuring tape

Extra credit!

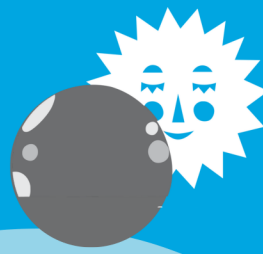
The sun is about 400 times bigger than the moon... but it's also about 400 times as far from Earth. That's why, to us on Earth, the relatively small moon appears about the same size as the very large sun!

What to do...

1. **Set the basketball on the ground.** Use your imagination to pretend that the basketball is our planet, Earth.
2. **Use the measuring tape** to measure a distance of 23 feet, 6 inches (282 inches) from the basketball.
3. **Set the tennis ball on the spot you measured to.** If we scaled our solar system down so that Earth was a basketball, the moon would be about this size, and this far from Earth!
4. **Crouch down by the basketball** for a scaled-down view of the "moon" from our scaled-down "Earth." Can you see it?
5. **Imagine...** On this same scale where Earth was a basketball and the moon was a tennis ball, the sun would be as tall as the front of Modesto Children's Museum, and 1.7 miles away!

Extra credit!

The sun is a star! Sure, it's *huge* compared to Earth... but it's "medium-sized" compared to other stars. We know of some stars 100 times bigger than our sun!



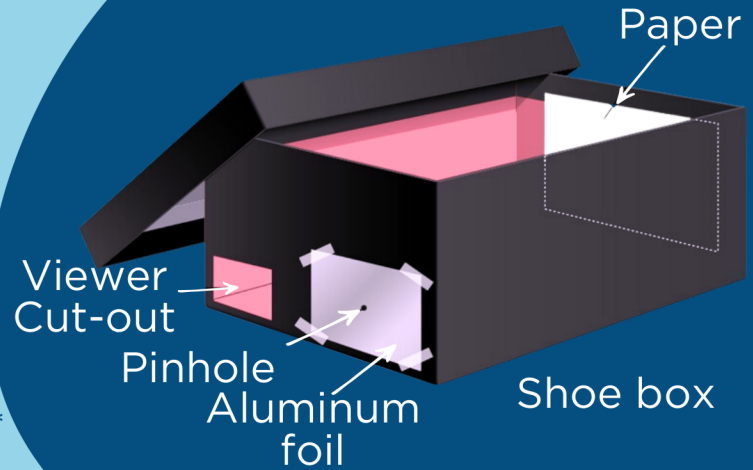
MODESTO CHILDREN'S MUSEUM

Try-it together: Build a Solar Viewer

Remember, **you should never, ever look directly at the sun** - even during an Eclipse. Instead, an indirect Solar Viewer can allow us to project the unique effects of an eclipse on paper!

What you'll need...

- A shoe box
- Aluminum foil
- White paper
- Scissors* or box cutter*
- Pin* or sharp pencil
- A roll of tape



* Adult supervision is required when using these tools!

How to build...

- 1 Open the shoebox. **Cut a piece of white paper** just large enough to fit on the small end of the box and **tape it inside**.
- 2 Using scissors or a box cutter, carefully **cut two square openings** on the small end opposite the white paper as shown.
- 3 **Tape a rectangle of aluminum foil over one of the openings**, then **use a pin to poke a tiny hole in its center**.
- 4 **Replace the lid** of the shoebox and **test your viewer** before the Eclipse to understand how it works!

How to use...

Holding the box & looking into the open cut-out, stand with your back to the sun.

Adjust your view downward until you see the sun "projected" through the pinhole and onto the paper.

If you can't see anything, your head may be covering the pinhole!

