

# ECLIPSE



2023 THROUGH THE EYES OF NASA

SATURDAY, OCTOBER 14, 2023

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ANNUULAR ECLIPSE THROUGH THE EYES OF NASA SATURDAY, OCTOBER 14, 2023



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## SAFETY INFORMATION

When watching a partial or annular solar eclipse directly with your eyes, you must look through safe solar viewing glasses ("eclipse glasses") or other safe solar filters at all times. Eclipse glasses are NOT regular sunglasses; regular sunglasses, no matter how dark, are not safe for viewing the Sun. Safe solar viewers are thousands of times darker and must comply with the ISO 12312-2 international standard.



SEE INSIDE COVER FOR ECLIPSE ACTIVITIES

## NASA STUDIES ECLIPSES

Eclipses aren't just beautiful – they're great for science. In addition to inspiring artists and musicians, eclipses have driven numerous scientific discoveries. For over a century, solar eclipses helped scientists decipher the Sun's structure and explosive events, find evidence for the theory of general relativity, and discover the element helium, among other things. Suborbital sounding rockets and high-altitude scientific balloons are just a few ways NASA studies eclipses. They carry instruments to study a variety of phenomena including the Sun's impact on Earth's upper atmosphere. Both will be launched during upcoming eclipses.

Find More: [solarsystem.nasa.gov/eclipses/science/nasa-research/](https://solarsystem.nasa.gov/eclipses/science/nasa-research/)



Credit: NASA



## Eclipse Glasses DIY Safety Activity

Make solar viewing safe, easy, and fun with this hands-on, art-infused, 25- to 30-minute activity for learners of all ages.



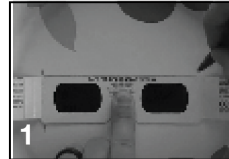
### Materials:

- Solar Eclipse Glasses (ISO 12312-2 Safety Standard)
- Paper Plate or Cardstock
- Ruler
- Scissors
- Optional Supplies: hole puncher, stapler, tape, markers, crayons, glitter glue, feathers, adhesive gemstones, stickers, ribbon, etc.

### Notes:

- Have learners decorate plates prior to inserting the glasses to preserve the lenses, or cover the lenses with paper to protect them as you decorate your glasses.
- Do not view the Sun with glasses that have been scratched or damaged.
- Optional: Modify your paper plate/cardstock design to make a crown, flowers, or any shape of your choice.

### Steps:



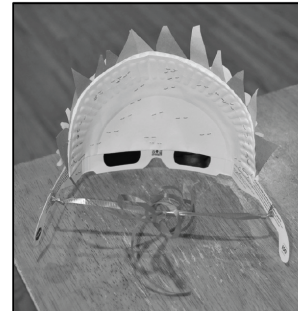
1. Outline the eyepiece of the glasses on the center of the plate or cardstock.



2. Use scissors to make slits into the paper plate or cardstock, on each side of the traced eyepiece (for the ear pieces to slide into).  
3. Use a small ruler to draw two lines, down from the nosepiece of the glasses to the edge of the plate, matching the angle of the nose piece.



4. Cut out the triangle.  
5. Slide the earpieces into each slit in the paper plate/cardstock and adhere with staples, tape, or glue.  
6. Observe! Use the glasses to safely observe the Sun during a solar eclipse, or at any time!



Optional: Learners can hold the mask up to their face, or you can punch holes in the earpieces and attach ribbon to secure the glasses onto the learner's face.

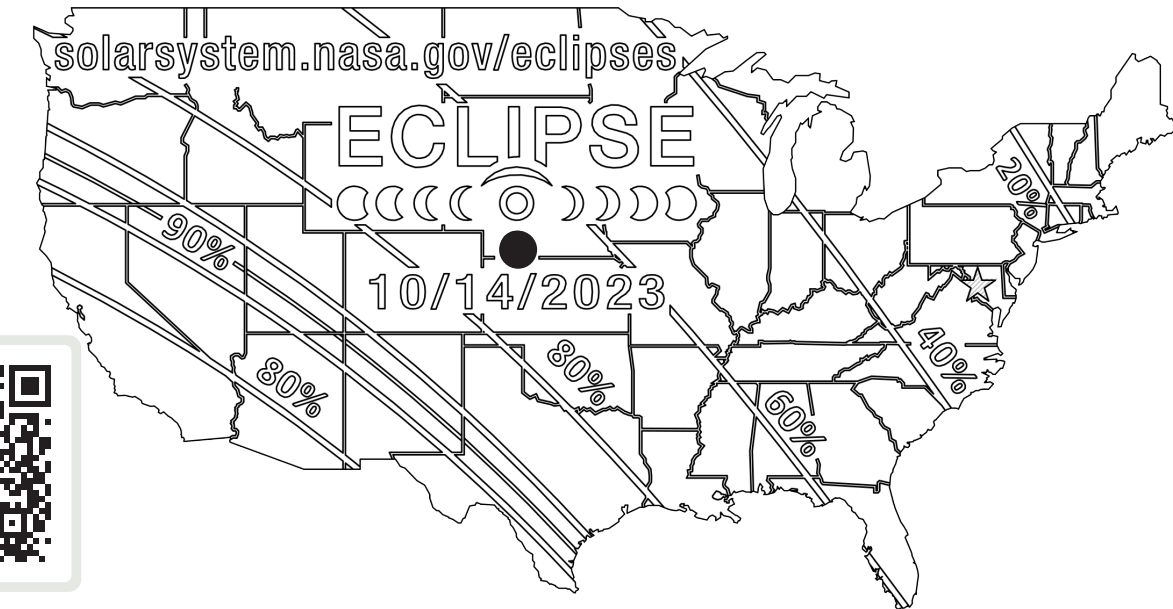
This product is supported by the NASA Heliophysics Education Activation Team (NASA HEAT), part of NASA's Science Activation portfolio.

## 2023 Annular Solar Eclipse US Pinhole Projector Activity

Pinhole projectors allowed early scientists to view the shapes of illuminated objects, like the Sun, by shining the light from the object through a very small hole, projecting the image of the object onto the ground, wall, or other flat surface. These are a great method for safe solar viewing. Be sure that when using, the Sun is always behind you.

### Instructions:

Standing with your back toward the Sun, hold the folder approximately one meter above the ground, out in front of you, to allow sunlight to shine through the hole in the folder onto the ground.



[nasa3d.arc.nasa.gov/detail/usa-eclipse-2023](https://nasa3d.arc.nasa.gov/detail/usa-eclipse-2023)  
Explore the 2D paper cut and 3D printed versions of the annular eclipse pinhole projectors and activity.

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