

Make a handheld fan to cool off and enjoy the partial phase of the total eclipse!

National Aeronautics and Space Administration



EXPERIENCE
THE 2017 ECLIPSE
ACROSS AMERICA
THROUGH THE EYES OF NASA
<http://eclipse2017.nasa.gov>

MONDAY • AUGUST 21, 2017

www.nasa.gov

Credit: S. Habbal, M. Druckmüller and P. Antio

Materials: (you provide)

- Scissors (to cut out the fan template)
- Hole Punch (to punch out pinhole)
- Two Pieces of Thick Stock Paper
- Printer
- Glue
- Stapler
- Stick (approx. 7" in height)
- Small Thermometer (height 6" or smaller)
- Black Permanent Marker

Construction:

- Print the handheld fan template on thick stock paper (FRONT and BACK)
- Cut out the fans
- Place the stick in between the stock paper
- Glue the fan on the stick
- Staple the stick and paper together for more support
- Punch a hole for the pinhole (red dot located in the middle of the fan)



To Do: (during the eclipse)

- Use the pinhole in this fan to project an image of the sun on the ground.
- Turn so the sun is to your back, and hold the fan 3-4 feet above the ground. (The small hole will make an image of the sun on the ground. We found this provided the strongest and clearest pinhole projection of a partial eclipse.)

More Science Fun: (temperature gauging)

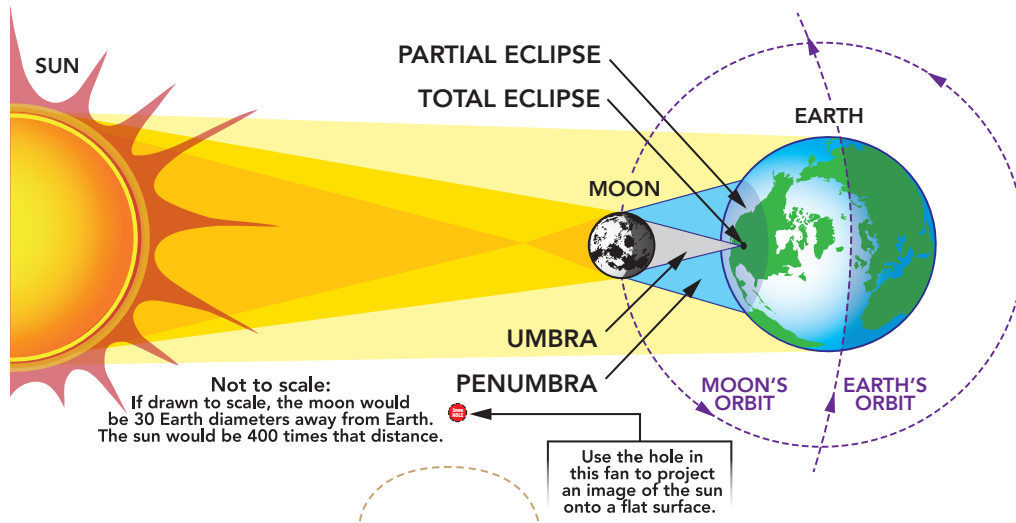
- On the **BACK** of the stick, glue the thermometer onto the stick
- On the **FRONT** of the stick, use the permanent marker to draw three vertical lines (top to bottom) and label the lines: 1) Start _____ 2) Max _____ and 3) End _____
- Using the thermometer on the back of the stick, read the temperature and record it on the appropriate line on the **FRONT** of the stick.
- **Enjoy the partial phases of the eclipse!**

SAFELY observing THE SUN

WARNING: Never look directly at the sun without proper eye protection. You can *seriously* injure your eyes.



Purchase an ISO 12312-2 compliant pair of these special shades!



HOW TO WATCH

Keep your glasses on at all times, except during totality. With your back toward the sun, hold this fan pinhole projector 2 to 3 feet above the ground.

More on eclipses

<http://eclipse2017.nasa.gov>
<http://www.nasa.gov/eclipse>

HOW LONG WILL IT LAST

The total eclipse, when the sun is completely blocked by the moon, will last up to 2 minutes and 40 seconds, depending on your location.

More on safe viewing of eclipses

<http://eclipse2017.nasa.gov/safety>
<http://go.nasa.gov/2evRZBG>

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WARNING:

NEVER look directly at the sun without proper eye protection. **NEVER** look directly at the sun or through optical devices such as pinhole projectors, binoculars or telescopes! You can *seriously* injure your eyes.

BACK

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