AMERICAN ASTRONOMICAL SOCIETY | AMERICAN ACADEMY OF OPHTHALMOLOGY | NATIONAL AERONAUTICS AND SPACE ADMINISTRATION | AMERICAN ACADEMY OF OPTOMETRY | NATIONAL SCIENCE FOUNDATION

How to View the 2017 Solar Eclipse Safely

A solar eclipse occurs when the moon blocks any part of the sun. On Monday, August 21, 2017, a solar eclipse will be visible (weather permitting) across all of North America. The whole continent will experience a partial eclipse lasting 2 to 3 hours. Halfway through the event, anyone within a 60 to 70 mile-wide path from Oregon to South Carolina will experience a total eclipse. During those brief moments when the moon completely blocks the sun's bright face for up to 2 minutes 40 seconds, day will turn into night, making visible the otherwise hidden solar corona (the sun's outer atmosphere). Bright stars and planets will become visible as well. This is truly one of nature's most awesome sights.

Looking directly at the sun is unsafe except during the brief total phase of a solar eclipse ("totality"), when the moon entirely blocks the sun's bright face, which will happen only within the narrow path of totality.

The only safe way to look directly at the uneclipsed or partially eclipsed sun is through special-purpose solar filters, such as "eclipse glasses" (example shown at left) or handheld solar viewers. Homemade filters or ordinary sunglasses, even very dark ones, are not safe for looking at the sun. To date three manufacturers have certified that their eclipse glasses and hand-held solar viewers meet the ISO 12312-2 international standard for such products: Rainbow Symphony, American Paper Optics, and Thousand Oaks Optical.

- Always inspect your solar filter before use; if scratched or damaged, discard it. Read and follow any instructions printed on or packaged with the filter. Always supervise children using solar filters.

- Stand still and cover your eyes with your eclipse glasses or solar viewer before looking up at the bright sun. After glancing at the sun, turn away and remove your filter — do not remove it while looking at the sun.

- Do not look at the uneclipsed or partially eclipsed sun through an unfiltered camera, telescope, binoculars, or other optical device. Similarly, do not look at the sun through a camera, a telescope, binoculars, or any other optical device while using your eclipse glasses or hand-held solar viewer — the concentrated solar rays will damage the filter and enter your eye(s), causing serious injury. Seek expert advice from an astronomer before using a solar filter with a camera, a telescope, binoculars, or any other optical device.

- If you are within the path of totality, remove your solar filter only when the moon completely covers the sun's bright face and it suddenly gets quite dark. Experience totality, then, as soon as the bright sun begins to reappear, replace your solar viewer to glance at the remaining partial phases.

An alternative method for safe viewing of the partially eclipsed sun is pinhole projection. For example, cross the outstretched, slightly open fingers of one hand over the outstretched, slightly open fingers of the other. With your back to the sun, look at your hands' shadow on the ground. The little spaces between your fingers will project a grid of small images on the ground, showing the sun as a crescent during the partial phases of the eclipse.

A solar eclipse is one of nature's grandest spectacles. By following these simple rules, you can safely enjoy the view and be rewarded with memories to last a lifetime.

For more information visit www.aas.org and http://eclipse2017.nasa.gov

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National Aeronautics and Space Administration

Safety Tips for the 2017 Solar Eclipse

Extreme heat safety
http://bit.ly/28LXx6e

Camping health and safety
http://bit.ly/2eg3dNl

Car safety (Fact Sheet for State and Local Departments of Transportation)
http://bit.ly/2eZZstP

Food and drink safety
http://bit.ly/1gh22Bu

Protection against distracted driving
http://bit.ly/2eBRdp0

Preparing for hazards
http://bit.ly/1K9LC2u

Safeguard against biological hazards
http://bit.ly/2eg2lYQ

Crowd safety
http://bit.ly/2eZXOZa

Stay safe in the sun
http://bit.ly/1hz2dsF

Tips for hikers
http://bit.ly/2eg14Bf

Join our eclipse email list:
http://bit.ly/Eclipse2017
For more information and techniques:
http://space.rice.edu/eclipse

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