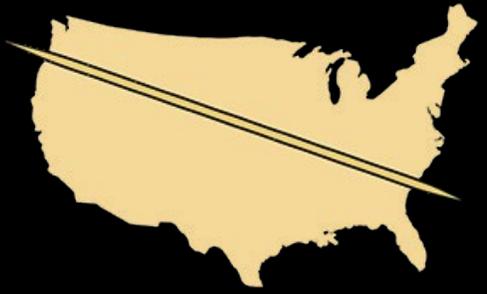


total **Eclipse**

AUGUST.21.2017





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



Credit: Marla Hladiuk

WHAT IS A SOLAR ECLIPSE?

A solar eclipse happens when the moon casts a shadow on Earth, fully or partially blocking the sun's light in some areas.

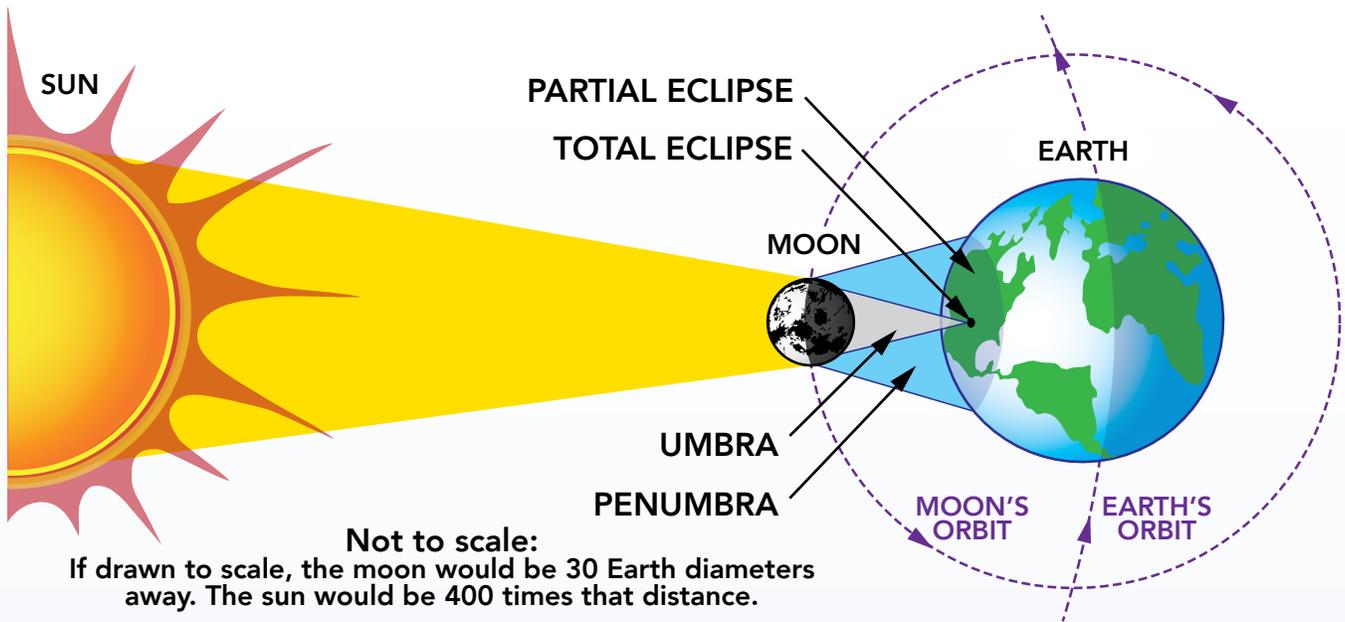
Observers within the path of totality will be able to see the sun's corona (weather permitting), like in the images above and left. Observers outside this path will see a partial eclipse.

THE NEXT ECLIPSE

After the 2017 solar eclipse, the next total solar eclipse visible over the continental United States will be on **April 8, 2024.**

TOTAL SOLAR ECLIPSE: Monday • August 21, 2017

This will be the first total solar eclipse visible in the continental United States in 38 years.



In this series of stills from 2013, the eclipse sequence runs from right to left. The center image shows totality; on either side are the 2nd contact (right) and 3rd contact (left) diamond rings that mark the beginning and end of totality respectively.



WHERE TO WATCH

Find a nice, clear spot with a good view of the sky.



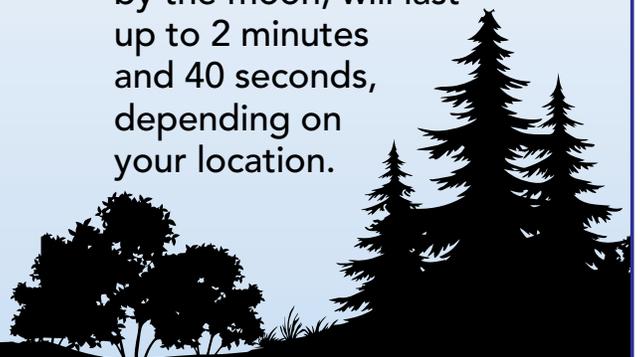
HOW TO WATCH

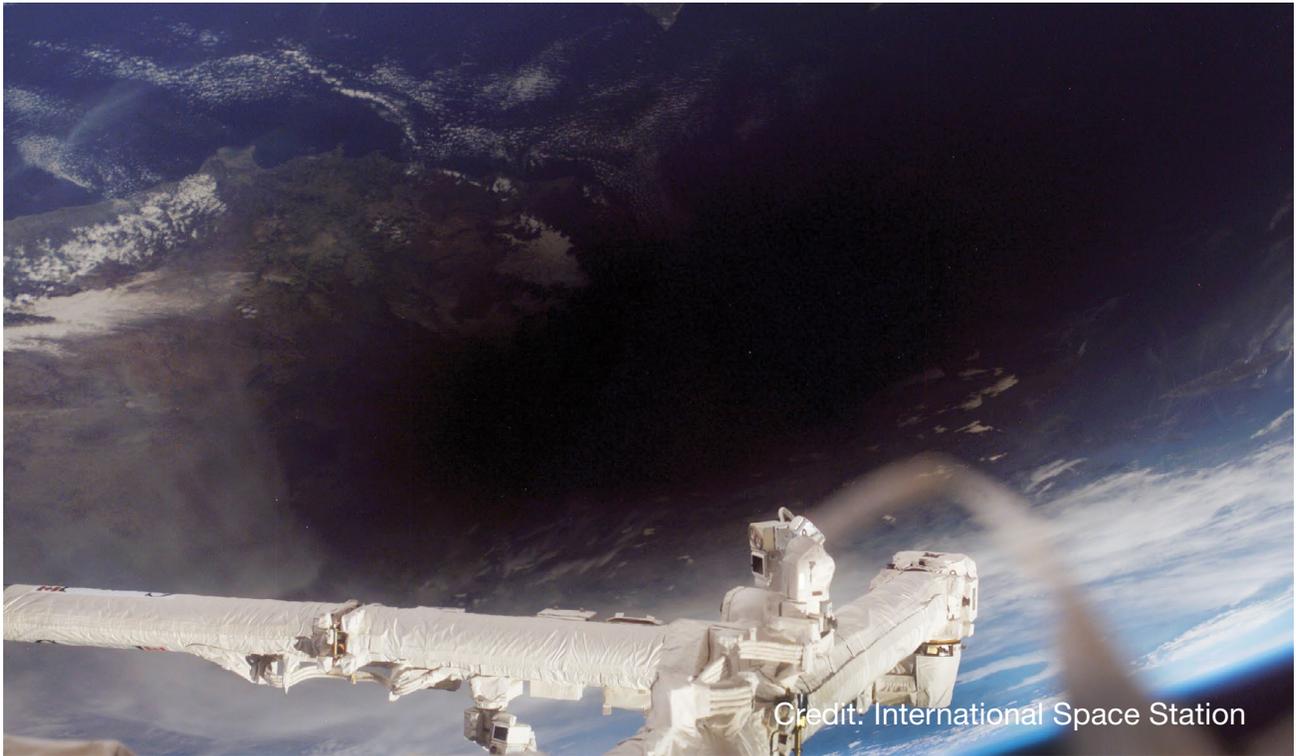
You can see the sun and the eclipse with special eclipse glasses. **NEVER** look directly at the sun without appropriate eyewear. More: <http://eclipse2017.nasa.gov/safety>



HOW LONG WILL IT LAST

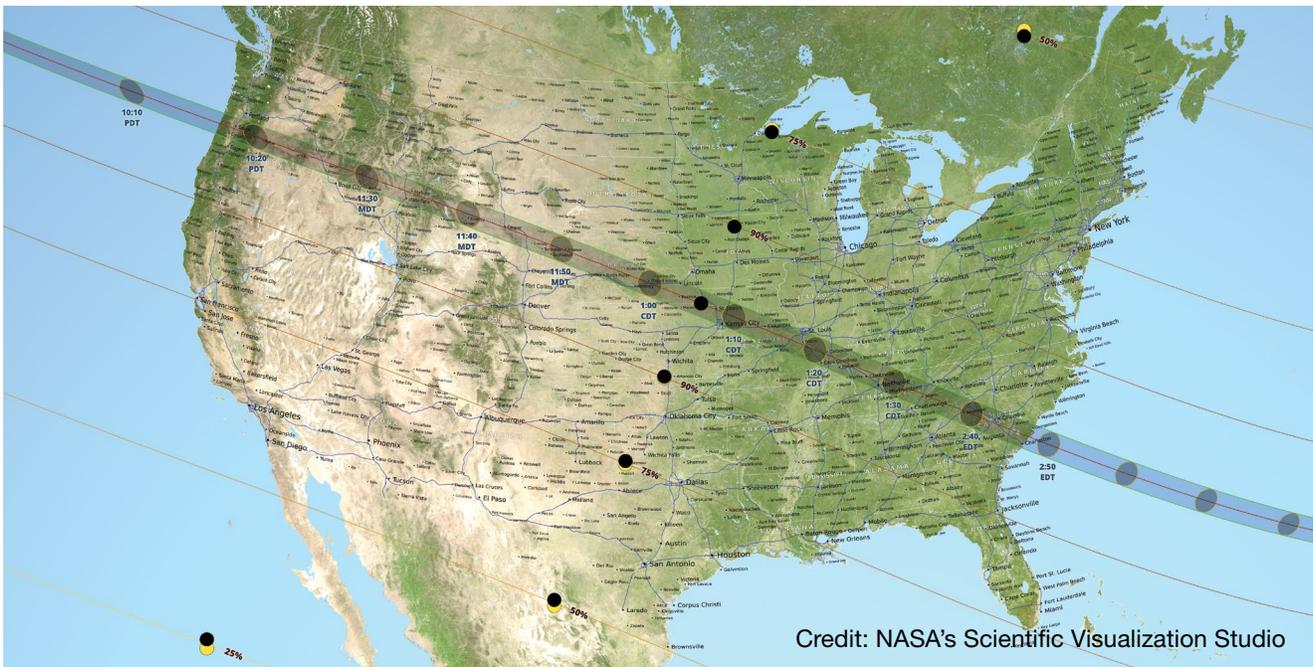
The total eclipse, when the sun is completely blocked by the moon, will last up to 2 minutes and 40 seconds, depending on your location.





Credit: International Space Station

This photo taken from the International Space Station shows the moon's umbral, or inner, shadow during the total solar eclipse of March 29, 2006.



This map shows the path of the moon's umbral shadow—in which the sun will be completely obscured by the moon—during the total solar eclipse of Aug. 21, 2017. The lunar shadow enters the United States near Lincoln City, Oregon, at 9:05 a.m. PDT. Totality begins in Lincoln City, Oregon, at 10:16 a.m. PDT. The total eclipse will end in Charleston, South Carolina, at 2:48 p.m. EDT. The lunar shadow leaves the United States at 4:09 p.m. EDT. Outside this path, a partial solar eclipse will be visible throughout the continental U.S., and this map shows the fraction of the sun's area covered by the moon outside the path of totality.

SAFELY observing THE SUN

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



Check with local science museums, schools and astronomy clubs for eclipse glasses—or purchase an ISO 12312-2 compliant and CE certified pair of these special shades!

SUN FUNNEL



Inexpensive and easy to build, the sun funnel is a device that completely encloses the light coming from a telescope and projects a magnified image of the sun, large enough for many people to view at once.

<http://eclipse2017.nasa.gov/make-sun-funnel>



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STRANGE SHADOWS!

Sunlight from a partial eclipse funnels through tree leaves to project images of crescents on the ground.

ECLIPSE DETAILS FOR CITIES IN THE PATH OF TOTALITY

	Eclipse Begins	Totality Begins	Totality Ends	Eclipse Ends	
Madras, OR	09:06	10:19	10:21	11:41	PDT
Idaho Falls, ID	10:15	11:33	11:34	12:58	MDT
Casper, WY	10:22	11:42	11:45	01:09	MDT
Lincoln, NE	11:37	01:02	01:04	02:29	CDT
Jefferson City, MO	11:46	01:13	01:15	02:41	CDT
Carbondale, IL	11:52	01:20	01:22	02:47	CDT
Paducah, KY	11:54	01:22	01:24	02:49	CDT
Nashville, TN	11:58	01:27	01:29	02:54	CDT
Clayton, GA	01:06	02:35	02:38	04:01	EDT
Columbia, SC	01:13	02:41	02:44	04:06	EDT

MAKE YOUR OWN CARDBOARD PROJECTOR

You can make this simple eclipse projector with some cardboard, paper, tape and foil.

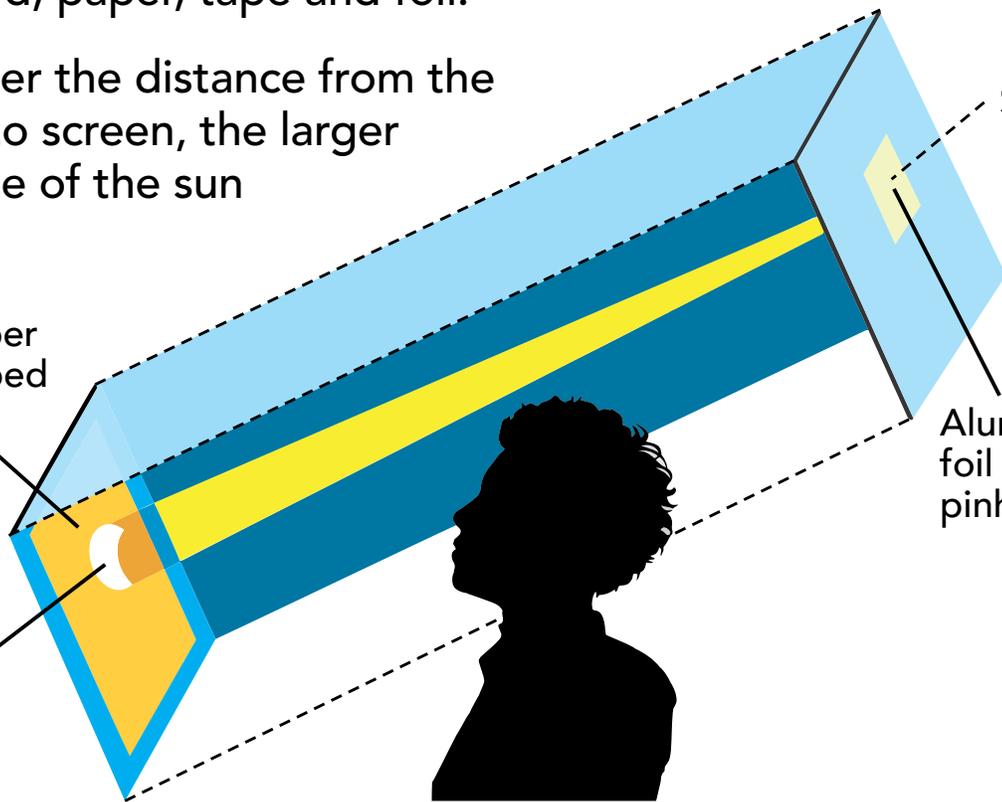
The longer the distance from the pinhole to screen, the larger the image of the sun will be.

White paper screen taped to inside end of the box

Small image of partially eclipsed sun

Sunlight

Aluminum foil with pinhole



MIRROR IN AN ENVELOPE

Slide a mirror into an envelope with a ragged hole about $\frac{5}{8}$ inch (1.5 cm) cut into the front. Point the mirror toward the sun so that an image is reflected onto a screen about 15 feet (5 meters) away. The longer the distance, the larger the image.

**DO NOT LOOK AT THE MIRROR,
ONLY AT THE SCREEN.**

