**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.

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**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. Regular sunglasses are not safe to view the eclipse. More: [http://eclipse2017.nasa.gov/safety](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.

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**TOTAL SOLAR ECLIPSE: Monday • August 21, 2017**

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

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**EVERYONE IN NORTH AMERICA WILL BE ABLE TO EXPERIENCE THIS ECLIPSE.**

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.

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**EVERYONE IN NORTH AMERICA WILL BE ABLE TO EXPERIENCE THIS ECLIPSE.**

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 August 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. 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.

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

MAKING YOUR OWN ECLIPSE PROJECTOR
You can make this simple eclipse projector with almost any cardboard box, paper, tape and foil.
The longer the distance from the pinhole to screen, the larger the image of the sun will be.
NEVER look directly at the sun without appropriate eyewear.

ECLIPSE DETAILS FOR CITIES IN THE PATH OF TOTALITY

<table>
<thead>
<tr>
<th>City</th>
<th>Eclipse Begins</th>
<th>Totality Begins</th>
<th>Totality Ends</th>
<th>Eclipse Ends</th>
</tr>
</thead>
<tbody>
<tr>
<td>Madras, OR</td>
<td>09:06</td>
<td>10:19</td>
<td>10:21</td>
<td>11:41 PDT</td>
</tr>
<tr>
<td>Idaho Falls, ID</td>
<td>10:15</td>
<td>11:33</td>
<td>11:34</td>
<td>12:58 MDT</td>
</tr>
<tr>
<td>Casper, WY</td>
<td>10:22</td>
<td>11:42</td>
<td>11:45</td>
<td>01:09 MDT</td>
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<td>01:02</td>
<td>01:04</td>
<td>02:29 CDT</td>
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<tr>
<td>Jefferson City, MO</td>
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<td>01:13</td>
<td>01:15</td>
<td>02:41 CDT</td>
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<tr>
<td>Carbondale, IL</td>
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<td>01:20</td>
<td>01:22</td>
<td>02:47 CDT</td>
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<tr>
<td>Paducah, KY</td>
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<td>01:22</td>
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<tr>
<td>Nashville, TN</td>
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<td>02:54 CDT</td>
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<td>Clayton, GA</td>
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<td>02:38</td>
<td>04:01 EDT</td>
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<tr>
<td>Columbia, SC</td>
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<td>02:41</td>
<td>02:44</td>
<td>04:06 EDT</td>
</tr>
</tbody>
</table>

MIRROR IN AN ENVELOPE
Slide a mirror into an envelope with a ragged hole about 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.
DO NOT LOOK AT THE MIRROR, ONLY AT THE SCREEN.

More on eclipses: http://eclipse2017.nasa.gov
More on safe viewing of eclipses: http://go.nasa.gov/2eVRZBG

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

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