



An Eclipse to Remember



Where will
you be on
August 21, 2017?

Presented by: Greg Cermak
NASA/JPL Solar System Ambassador Program



Presentation Overview

- Eclipse 101
- How to enjoy a partial eclipse
- What's the big deal about a total eclipse?
- Resources for viewing, holding eclipse parties, and more

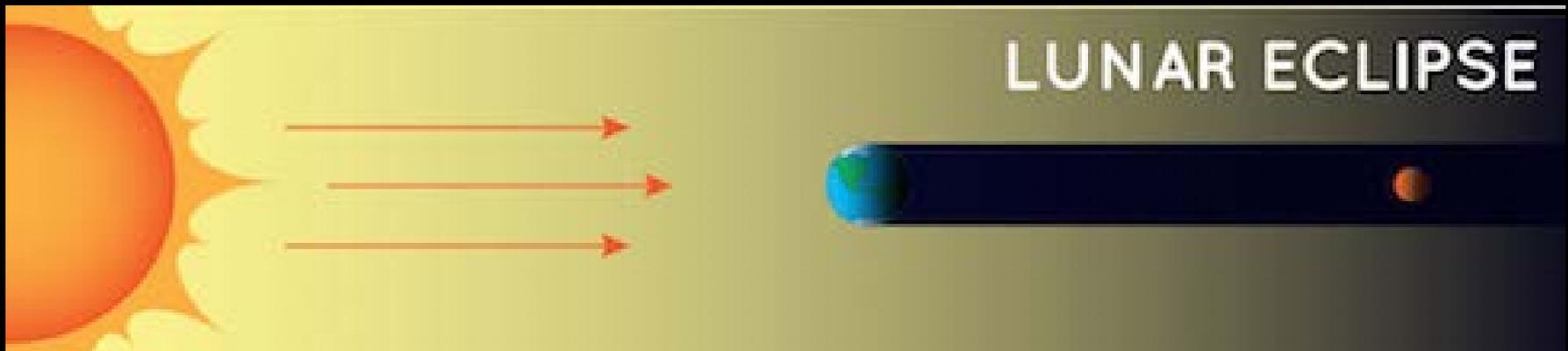
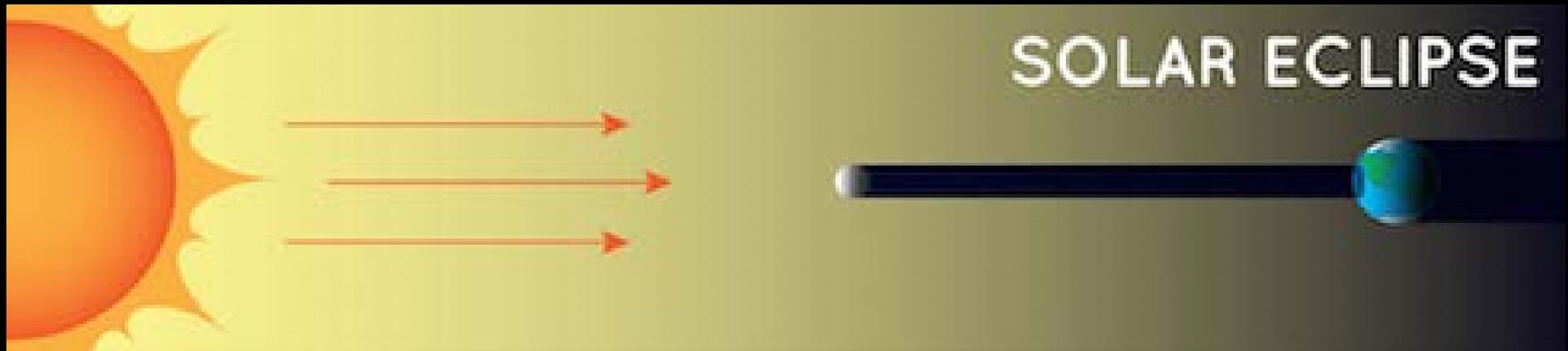
Have You Seen an Eclipse?



What's Going On?

Eclipses happen all the time! There are an average of 2 solar eclipses (left image) and 2 lunar eclipses (right image) every year.

Basic Types of Eclipses



Illustrations not to scale

Remember: Which One Gets Darker?

 <-- lunar eclipse

 <-- solar eclipse

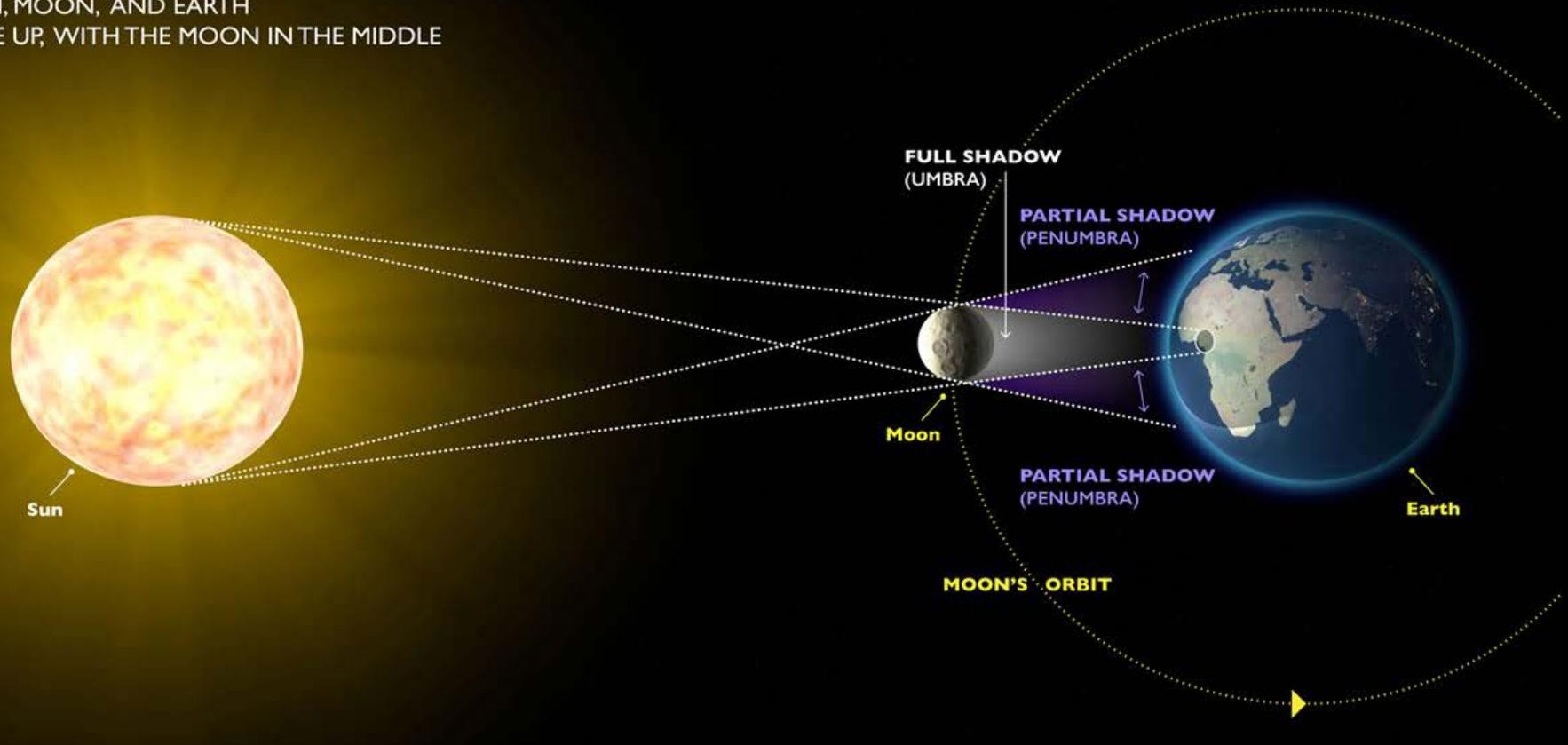
 <-- apocalypse

@AstroKatie
(Katie Mack)



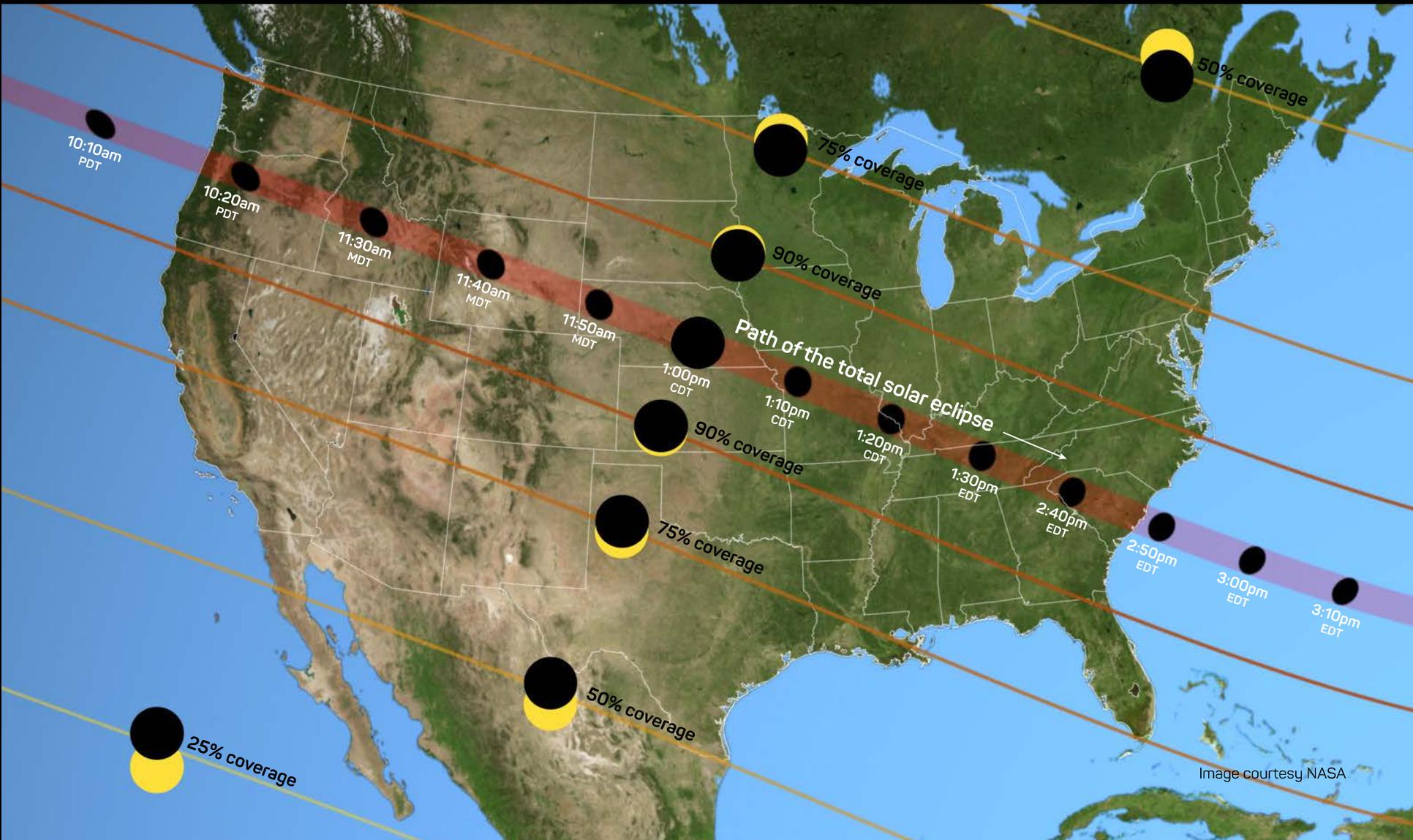
SOLAR ECLIPSE

SUN, MOON, AND EARTH
LINE UP, WITH THE MOON IN THE MIDDLE



Not to scale

© exploratorium.edu



The line through the center is where you'll see a total eclipse – it's called the Path of Totality and it's about 60 miles wide.

A Total Eclipse from Space



CHINA

Moon's shadow

The central shadow of the eclipse will be moving more than twice as fast as the speed of sound — 2,000 mph

The View from Earth



From first contact, where the Moon begins to cover the Sun (left), to when the eclipse ends (right) can take about 2-3 hours.

Pacific Time: 8:00am -10:45am

Everyone Sees a Partial Eclipse



If it's clear out...

Viewing the Partial Eclipse

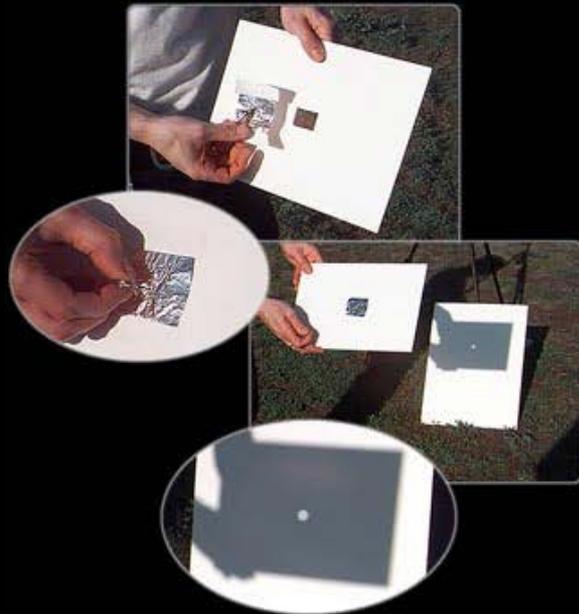
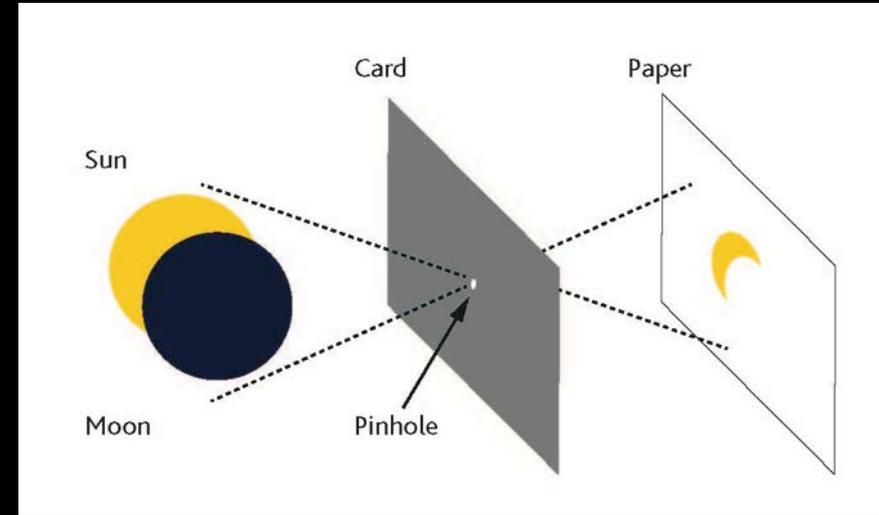
**Do Not Look
Directly at the Sun!**

- Projection of image
 - Pinhole or using tools
- Directly with filter
- Live streaming the event





Watch the Show Safely! Pinhole Projection



Project the Sun with Tools – *and Care*



Use Special Care with Filtered Optics



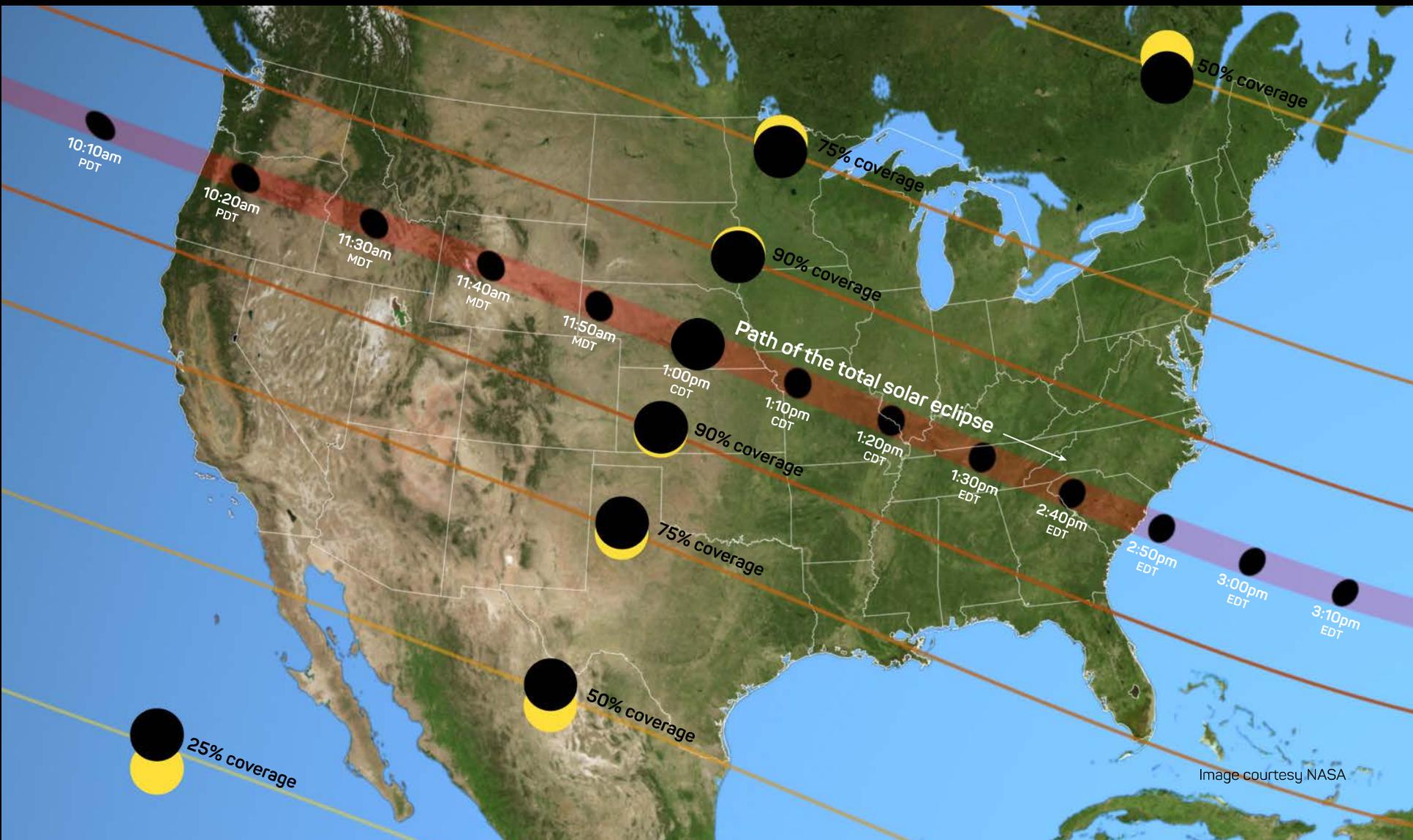


Image courtesy NASA



This is a *Total Eclipse*



Catch it if you can!





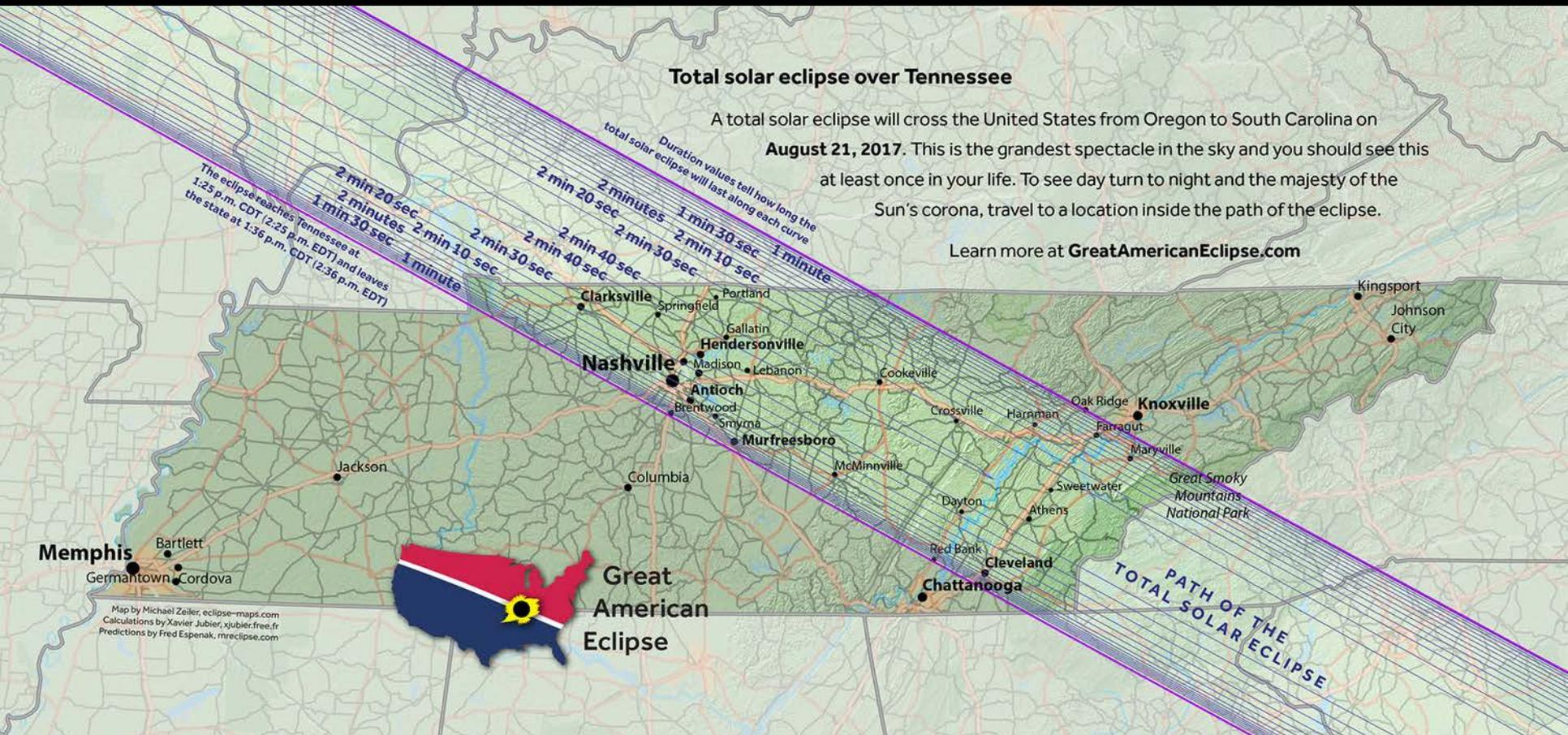
If This Is Your 1st Total Eclipse
and you want to take photos or videos...



Our Advice? Don't.

Plan ahead

Totality lasts about 2 minutes.
In Tennessee is will happen at 2:30pm EDT

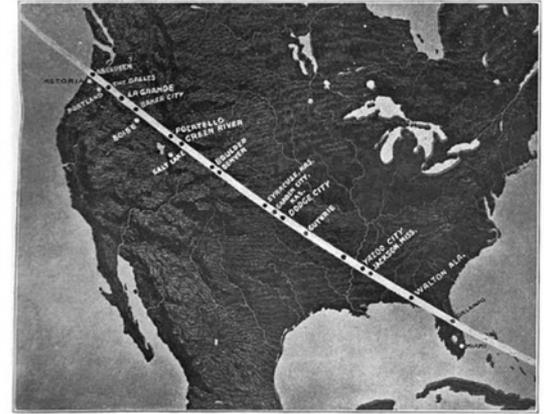


Bring Friends and Family



TOTAL ECLIPSE OF THE SUN JUNE 8, 1918.
Interesting information incorporated this season by Mr. B. R. Baumgardt in his popular astronomical lectures throughout the United States.

THE path of the Total Eclipse in the United States begins at South Bend, Washington, at 2:55 p. m. local standard time; sweeps through Washington, Oregon, Wyoming, Colorado, Kansas, Oklahoma, Arkansas, Mississippi, Alabama and Florida; terminating at the Bahama Islands at sunset. The eclipse reaches Baker City, Oregon, at 3:05 p. m.; Pocatello, Idaho, at 4:12 p. m. (mountain time); Denver, Colorado, at 4:22 p. m.;



Syracuse, Kansas, at 4:27 p. m.; Dodge City, Kansas, at 5:28 (central time); Enid, Oklahoma, at 5:31 p. m.; Guthrie, Oklahoma, at 5:32 p. m.; Warren, Arkansas, at 5:36 p. m.; Jackson, Mississippi, at 5:38 p. m.; Orlando, Florida, at 5:42 p. m.

Note—This article is an abstract by Mr. S. J. Keese of Mr. Baumgardt's circular on the Total Eclipse of the Sun, June 8, 1918. Mr. Baumgardt being too busy to prepare a special article for the Bulletin.



Last time the whole country could see a total eclipse was in 1918! (next time in 2024!)

Involve Your Community



Viewing Resources for Every Place



EXPERIENCE
THE 2017 ECLIPSE
ACROSS AMERICA

AUGUST 21, 2017

<http://eclipse2017.nasa.gov>

bit.ly/NSNEclipse

- Find this presentation plus postcards, activities, connection with your local astronomy club



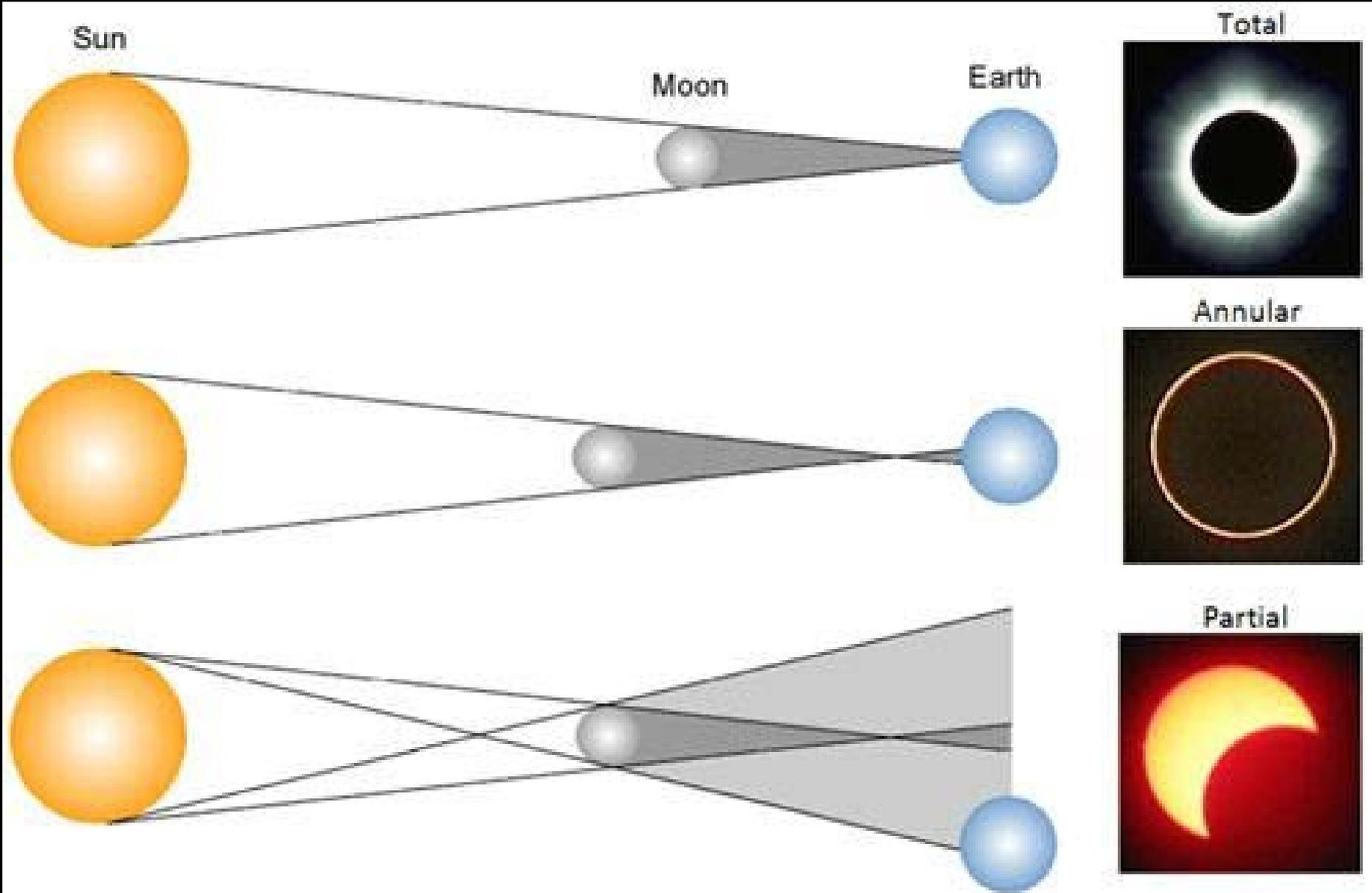
Night Sky Network

Astronomy Clubs bringing the wonders of the universe to the public

Extensions

- Types of Eclipses
- Why Don't Eclipses Happen Every Month?
- Cosmic Coincidence
- Myths and stories

Types of Eclipses

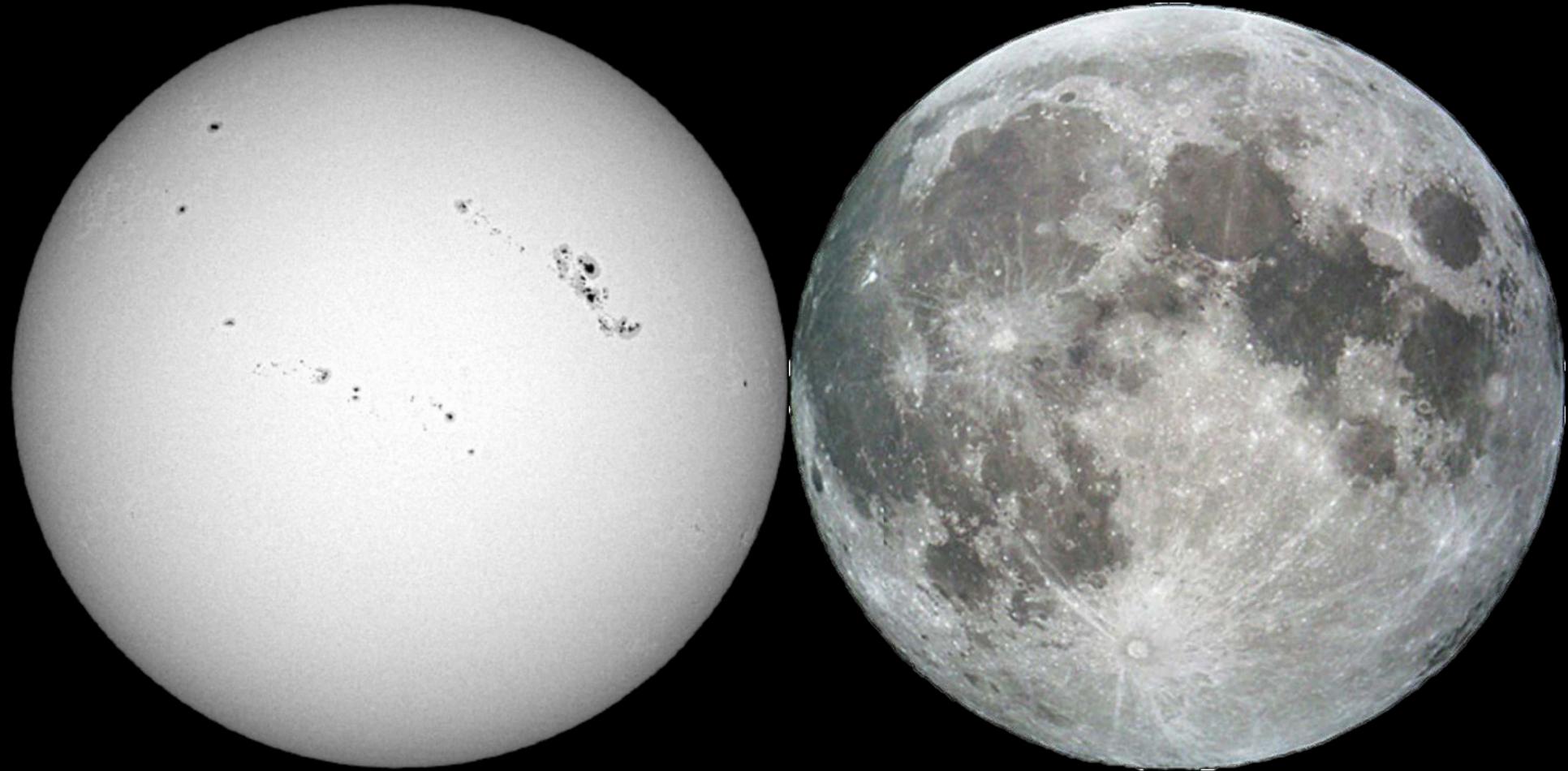


Why Don't Eclipses Happen Every Month?

The moon's orbit is tilted.



Cosmic Coincidence



Sun's Diameter 400% of Moon Diameter
Sun's Distance 400% of Moon Distance



Quarrelling Sun and Moon

According to Inuit folklore, the Sun goddess, Malina walked away after a fight with the Moon god, Anningan. A solar eclipse happened when Anningan managed to catch up with his sister.

The Batammaliba who live in Benin and Togo, used a solar eclipse as a teaching moment. According to their legends, an eclipse of the Sun meant that the Sun and the Moon were fighting and that the only way to stop them from hurting each other was for people on Earth to resolve all conflicts with each other.