

# Block 1: Introduction & Eclipse Overview (continued)

9:50 am PDT / 12:50 pm EDT

Breakout 1.1 (<https://eclipse.aas.org/breakout1>)

**Total vs. Annular vs. Partial Solar Eclipses: How They're Different & Why It Matters**

*Rick Fienberg & Kate Russo*

9:50 am PDT / 12:50 pm EDT

Breakout 1.2 (<https://eclipse.aas.org/breakout2>)

**A Tour of the 2023 and 2024 North American Solar Eclipses**

*Michael Zeiler*

11:10 am PDT / 2:10 pm EDT

**Break**

# Total vs. Annular vs. Partial Solar Eclipses: How They're Different & Why It Matters



Rick Fienberg

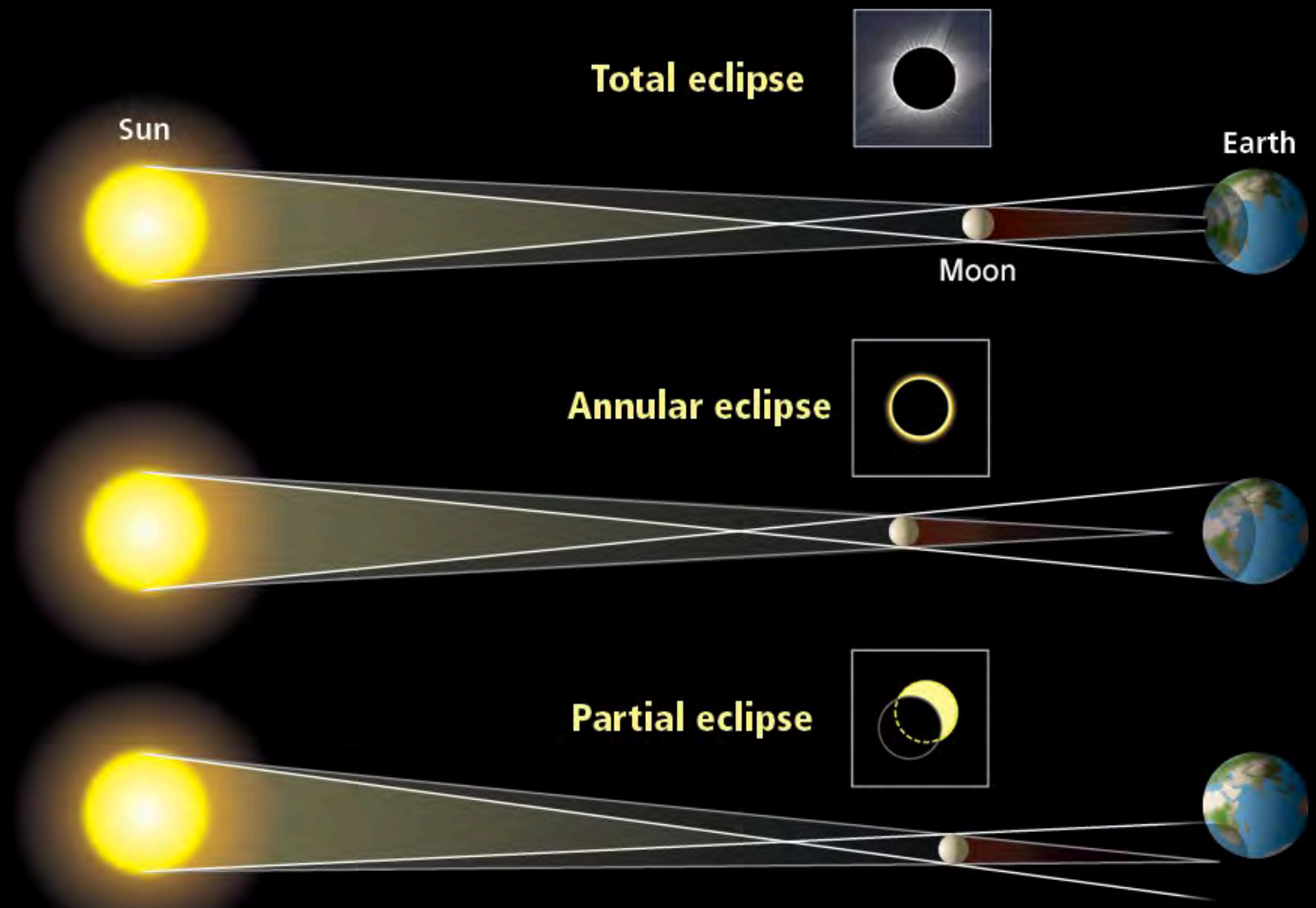
AAS Solar Eclipse Task Force



Kate Russo

BeingInTheShadow.com

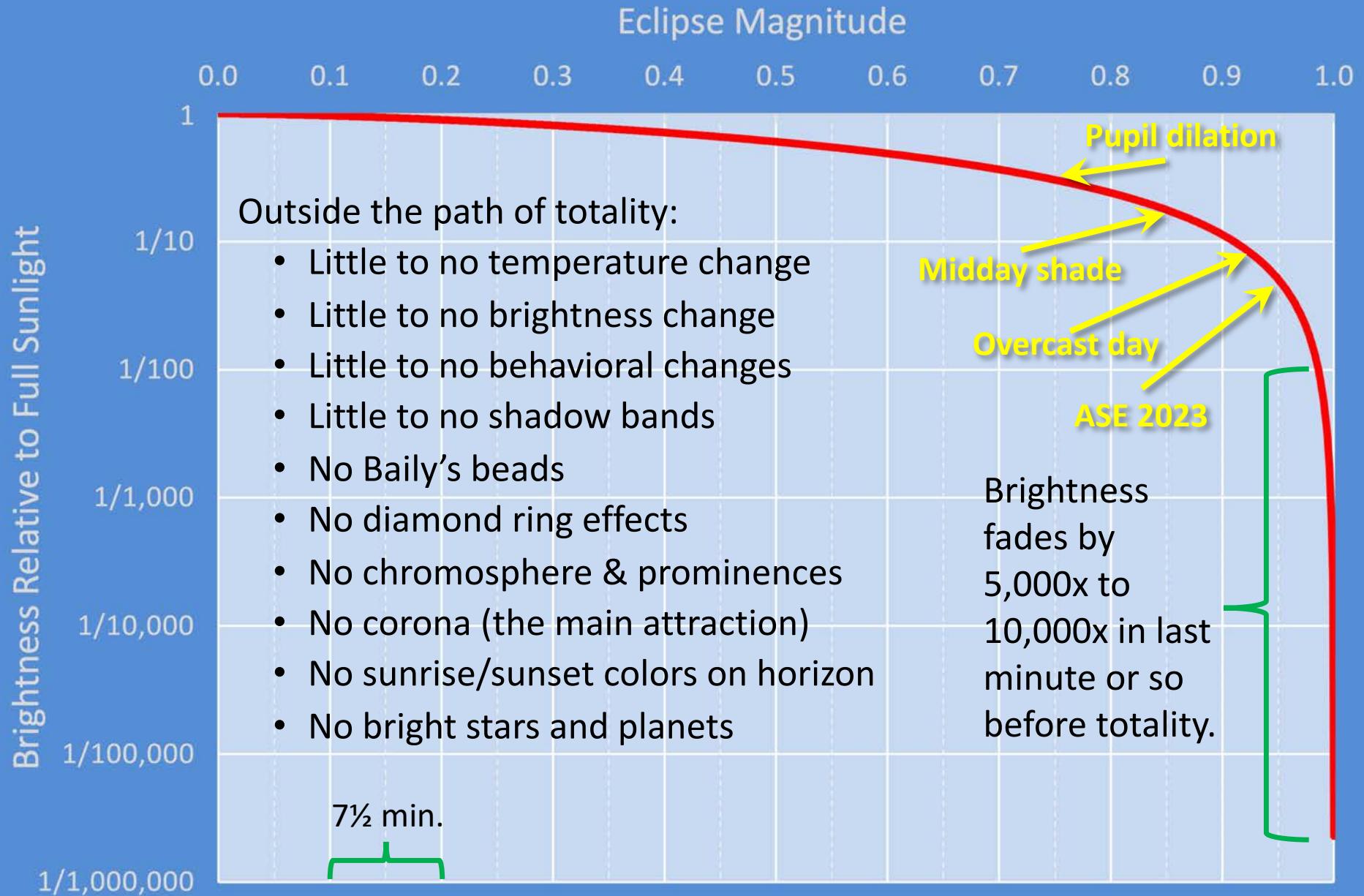




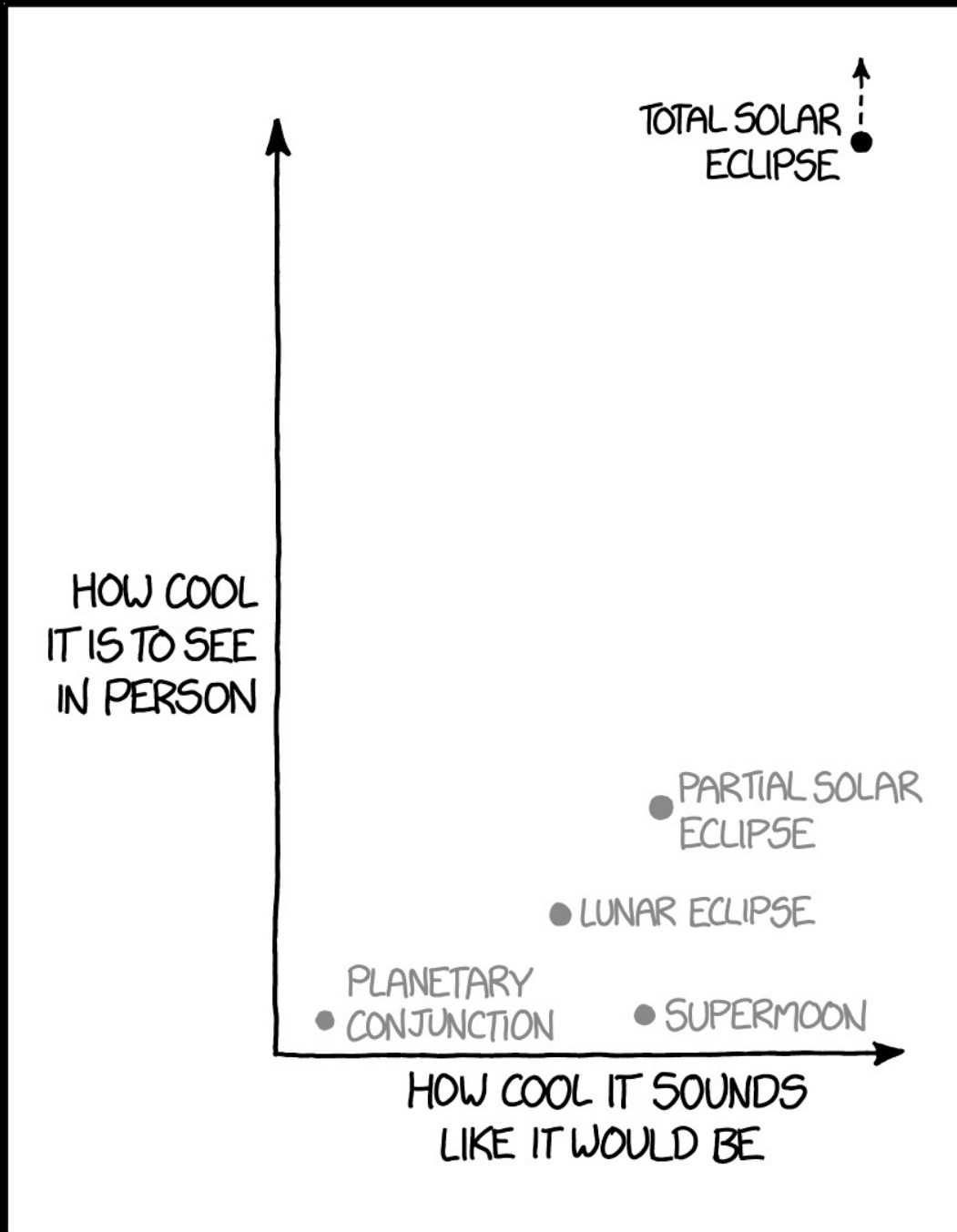


Seeing a partial  
eclipse bears the  
same relation to  
seeing a total  
eclipse as kissing a  
man does to  
marrying him.

— *Annie Dillard*



**Change in Apparent Brightness During a Solar Eclipse**



A total solar eclipse  
is off the charts!  
(but only from within  
the path of totality)

National Aeronautics and Space Administration

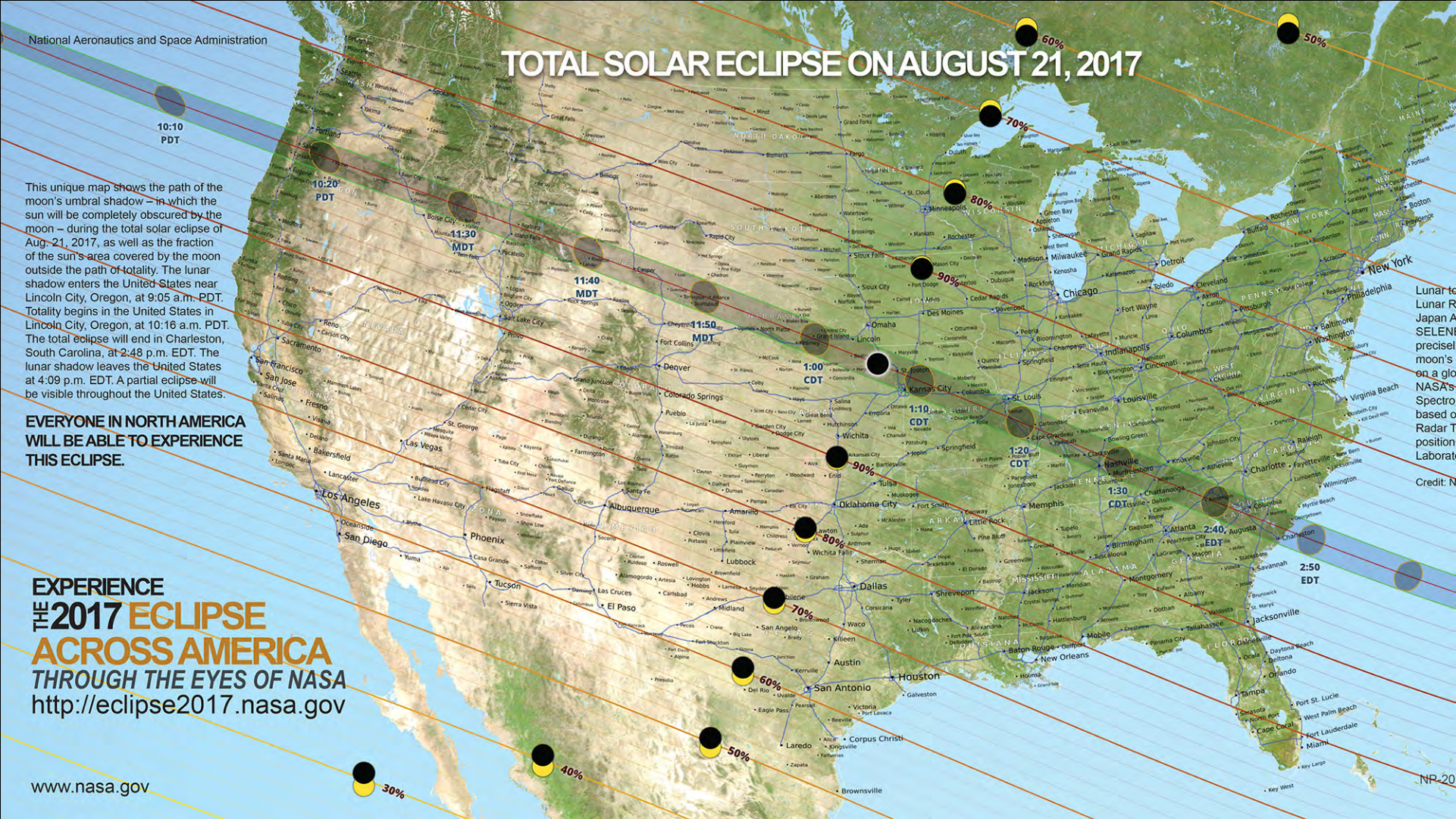
# TOTAL SOLAR ECLIPSE ON AUGUST 21, 2017

This unique 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, as well as the fraction of the sun's area covered by the moon outside the path of totality. The lunar shadow enters the United States near Lincoln City, Oregon, at 9:05 a.m. PDT. Totality begins in the United States 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. A partial eclipse will be visible throughout the United States.

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

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

[www.nasa.gov](http://www.nasa.gov)



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National Aeronautics and Space Administration

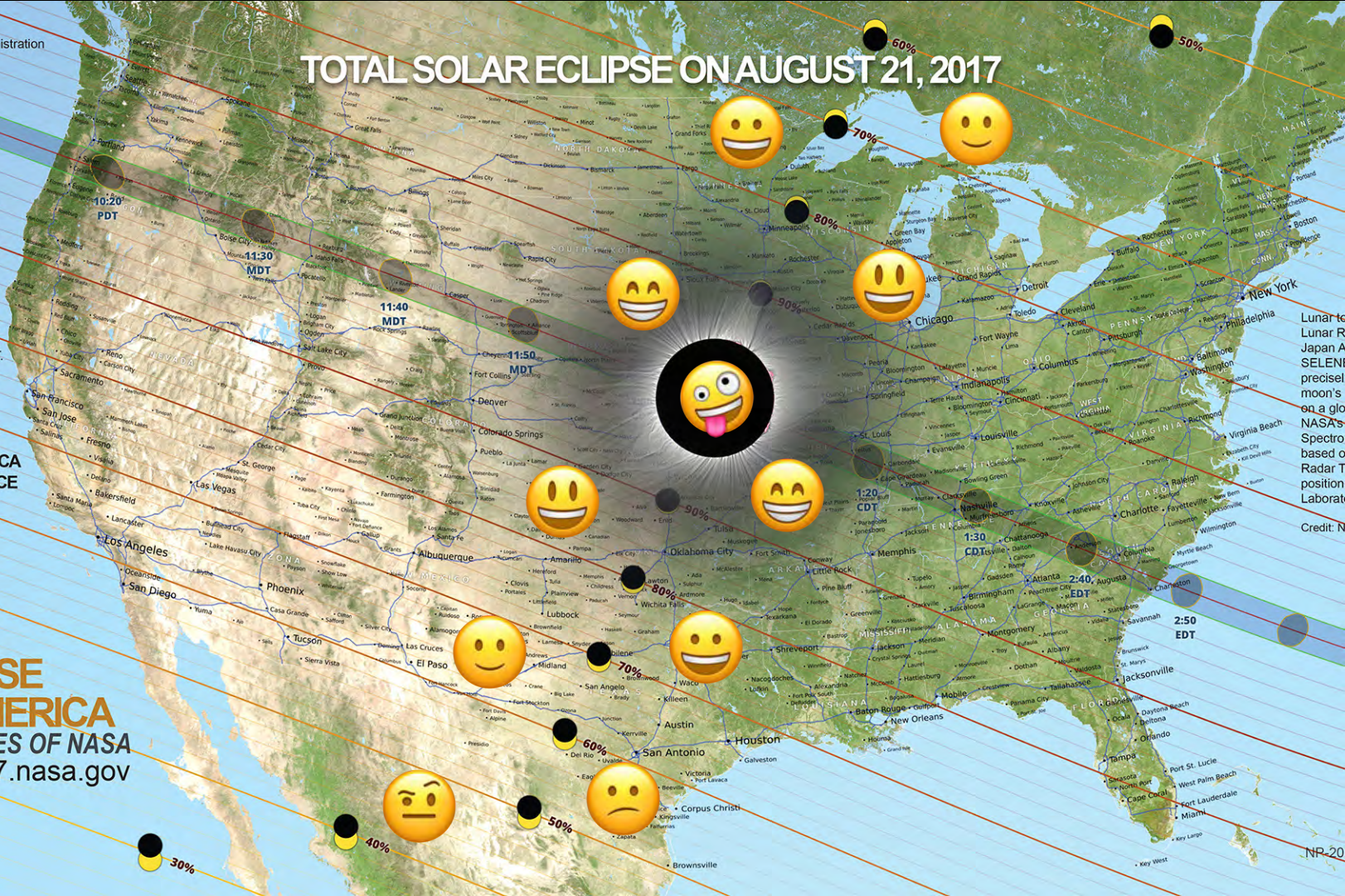
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Dr. Kate Russo: Psychologist, Author, Eclipse Chaser

# Solar Eclipse Safety



← ~ 1 hour 15 minutes →



minutes

← seconds →



← seconds →



← ~ 1 hour 15 minutes →



*A total solar eclipse is about as bright as the full Moon — and just as safe to look at. But the Sun at any other time is dangerously bright. View it only through special-purpose solar filters that comply with the transmission requirements of the ISO 12312-2 international standard for filters for direct viewing of the Sun.*



*Except during the total phase of a total solar eclipse, the Sun is dangerously bright. At all times during an annular or partial solar eclipse, or when no eclipse is occurring at all, view the Sun only through special-purpose solar filters that comply with the transmission requirements of the ISO 12312-2 standard.*

Get your eclipse glasses/viewers *early!*





# SOLAR ECLIPSE ACROSS AMERICA

Monday, April 8, 2024: Sun... Moon... You!



AMERICAN ASTRONOMICAL SOCIETY  
National Science Foundation



ECLIPSE AMERICA ▾

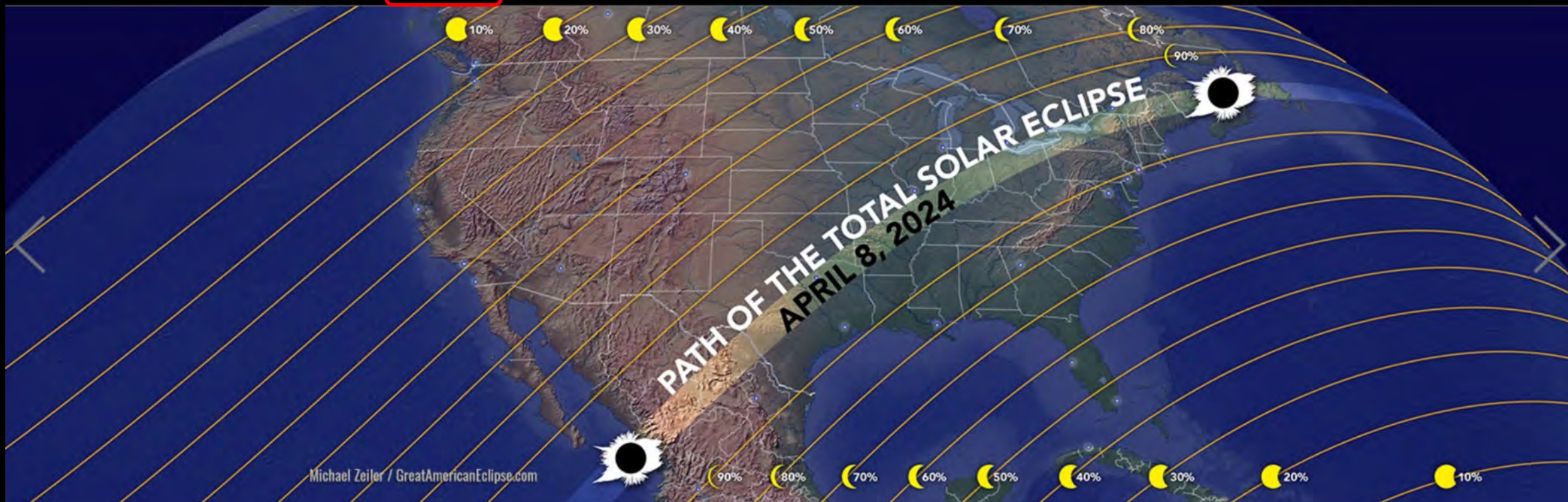
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SOLAR ECLIPSE TASK FORCE ▾

PLANNING WORKSHOPS ▾



# 554

Days to the Next  
U.S. Solar Eclipse

Two major solar eclipses are coming to North America! On Saturday, October 14, 2023, an annular ("ring of fire") eclipse sweeps from Oregon to Texas in a 125-mile-wide path that continues to the Yucatán peninsula and northern South America. Six months later, on Monday, April 8, 2024, a total solar eclipse darkens a 115-mile-wide swath from Mexico to the Canadian maritimes, traversing the U.S. from Texas to Maine in the process. In both cases all of North America will have at least a partial solar eclipse.

# Use only special-purpose solar filters on your precious optics!



These are usually made of metalized glass (*left*) or polyester (*right*).



# Recommended Safe Viewing Plan

## Initial partial phases and beginning of totality:

- Keep your eclipse glasses or other solar filters on until you can't see anything through them, then take them off to marvel at the totally eclipsed Sun, especially the corona.

Yes, you'll miss the first diamond ring, but you will get a terrific view of the breaking up of the thin solar crescent and Baily's beads, and you will avoid getting dazzled with bright sunlight, which would make it hard to see faint coronal streamers.

# Recommended Safe Viewing Plan

## End of totality and final partial phases:

- Wait to put your eclipse glasses or other solar filters on until after you've seen the second diamond ring. *Watch the diamond ring for at most a few seconds.*

This refers to “naked-eye” observing only. If you're using binoculars or a telescope to look at totality, you **MUST** replace your solar filters when the chromosphere appears along the Moon's retreating limb, lest you be harmed by the first bead.