

# Doing Our Best to Counter Misconceptions & Misinformation

**OCTOBER 14, 2023**  
ANNULAR SOLAR ECLIPSE

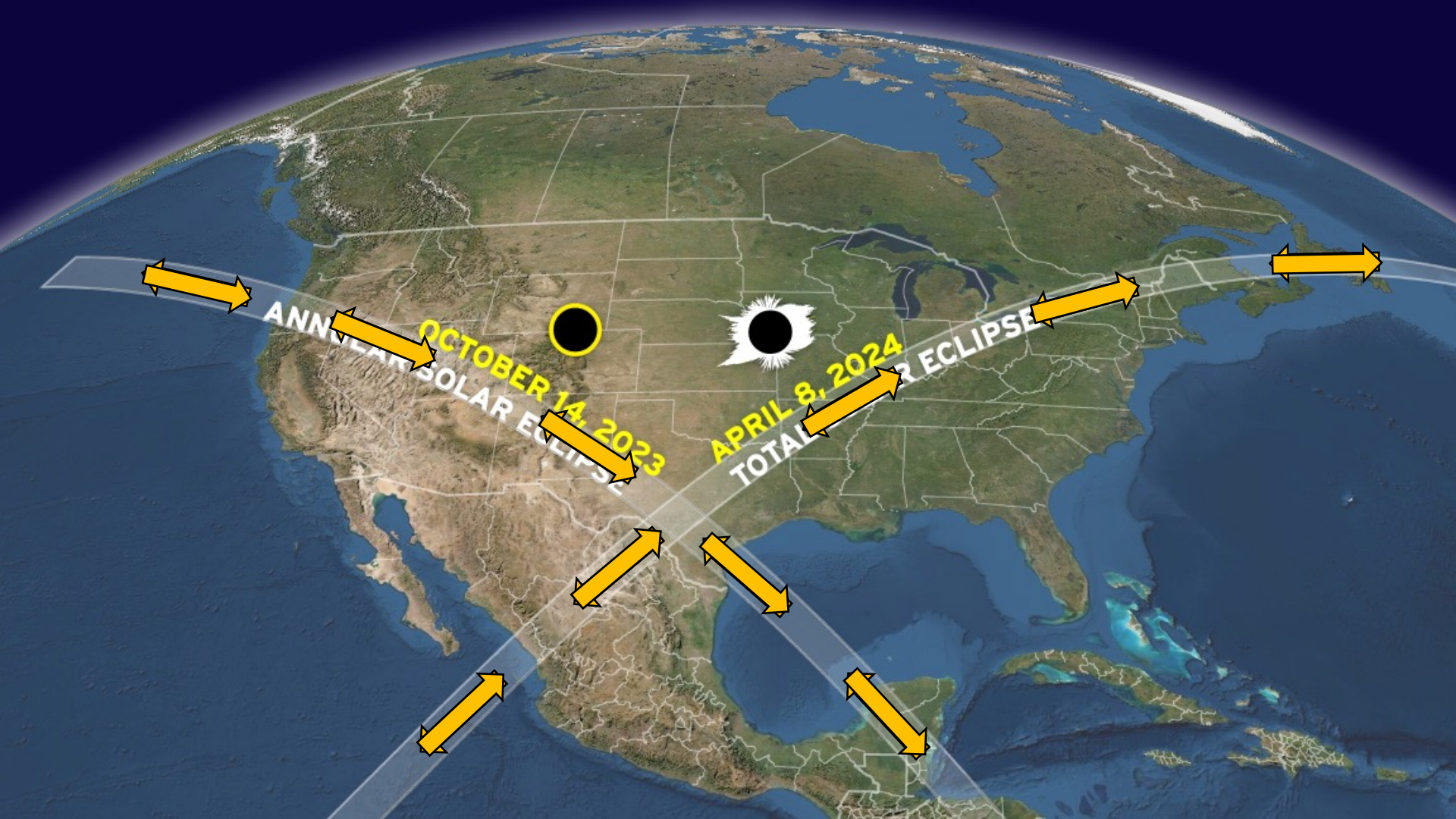
**APRIL 8, 2024**  
TOTAL SOLAR ECLIPSE

**Rick Fienberg**

Project Manager, AAS Solar Eclipse Task Force

San Antonio Eclipse Workshop • September 30, 2023





ANNULAR SOLAR ECLIPSE  
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TOTAL SOLAR ECLIPSE  
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## SOLAR ECLIPSE ACROSS AMERICA

Sat., October 14, 2023: Sun...Moon...You!



AMERICAN ASTRONOMICAL SOCIETY



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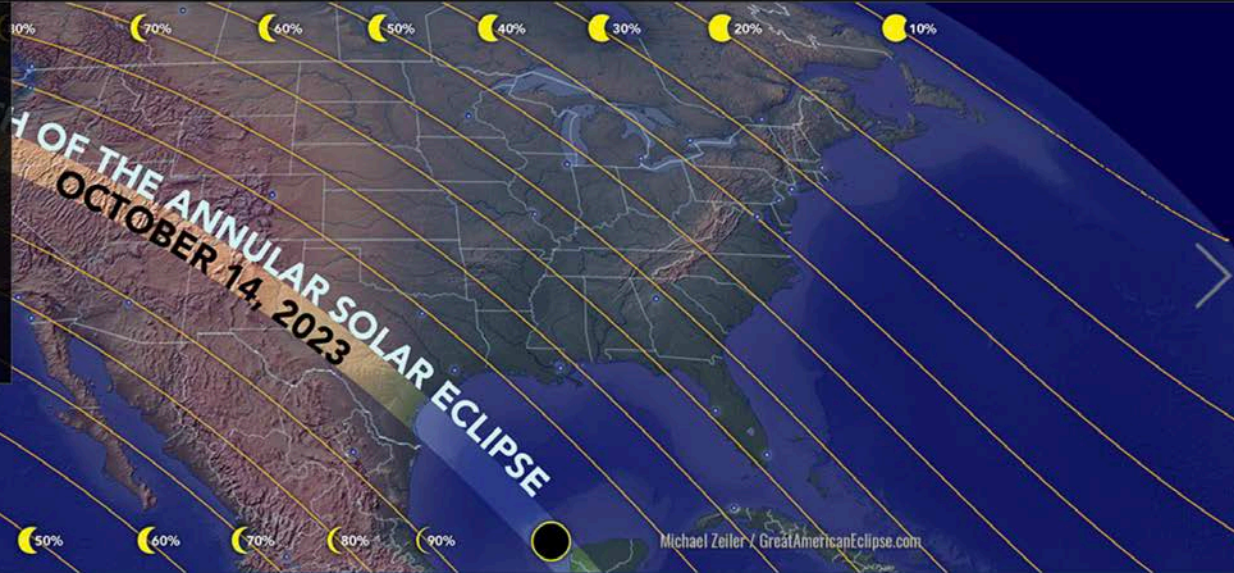
APRIL 2024 SOLAR ECLIPSE

HOW & WHY ECLIPSES HAPPEN

THE SOLAR ECLIPSE EXPERIENCE

A SOLAR ECLIPSE GLOSSARY

SHAPES OF THE SUN & MOON

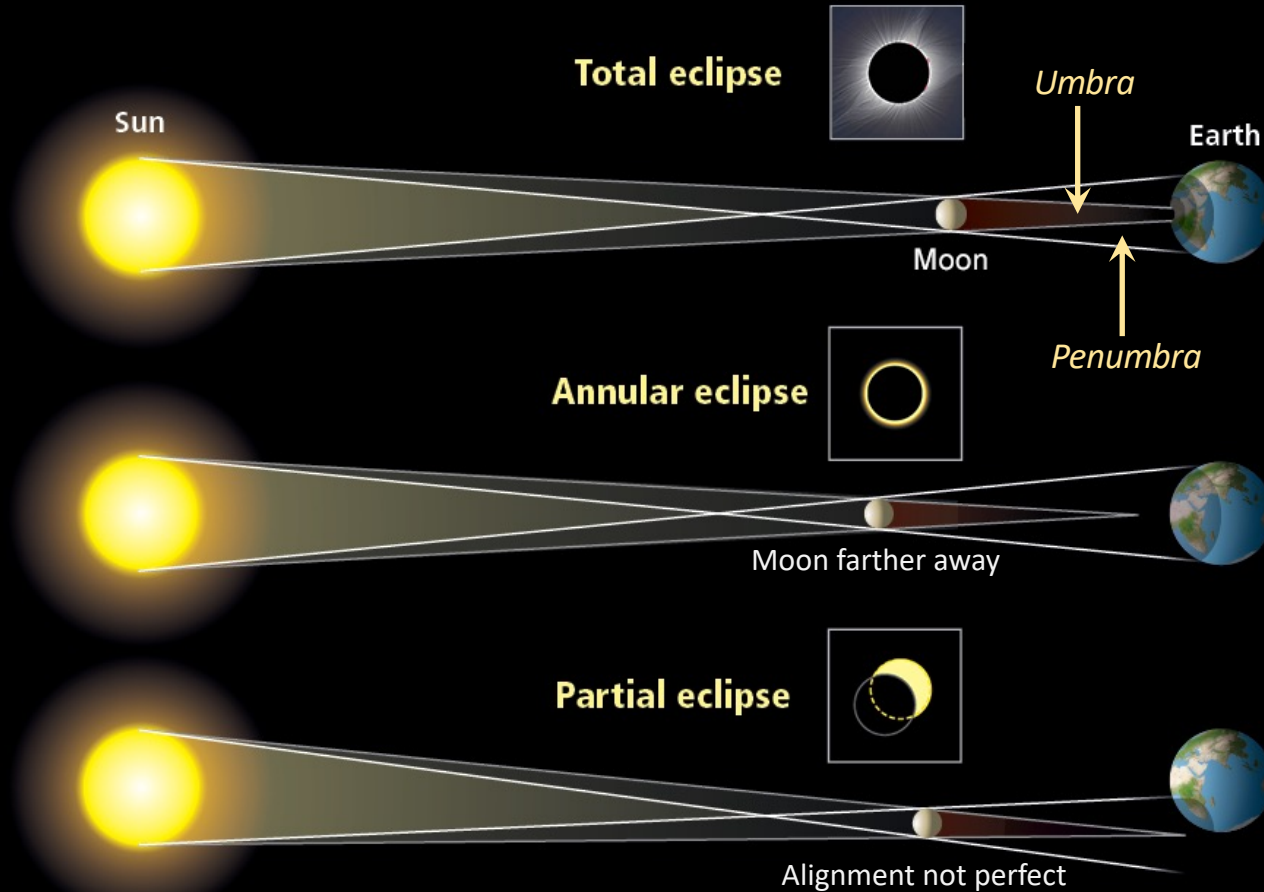


# 18

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 Eastern Canada, traversing the U.S. from Texas to Maine in the process. In both cases virtually all of North America will have at least a partial solar eclipse.

# Three Types of Solar Eclipses







PARTIAL SOLAR ECLIPSE


ANNULAR SOLAR ECLIPSE  
OCTOBER 14, 2023

TOTAL SOLAR ECLIPSE  
APRIL 8, 2024


PARTIAL SOLAR ECLIPSE

PARTIAL SOLAR ECLIPSE


PARTIAL SOLAR ECLIPSE



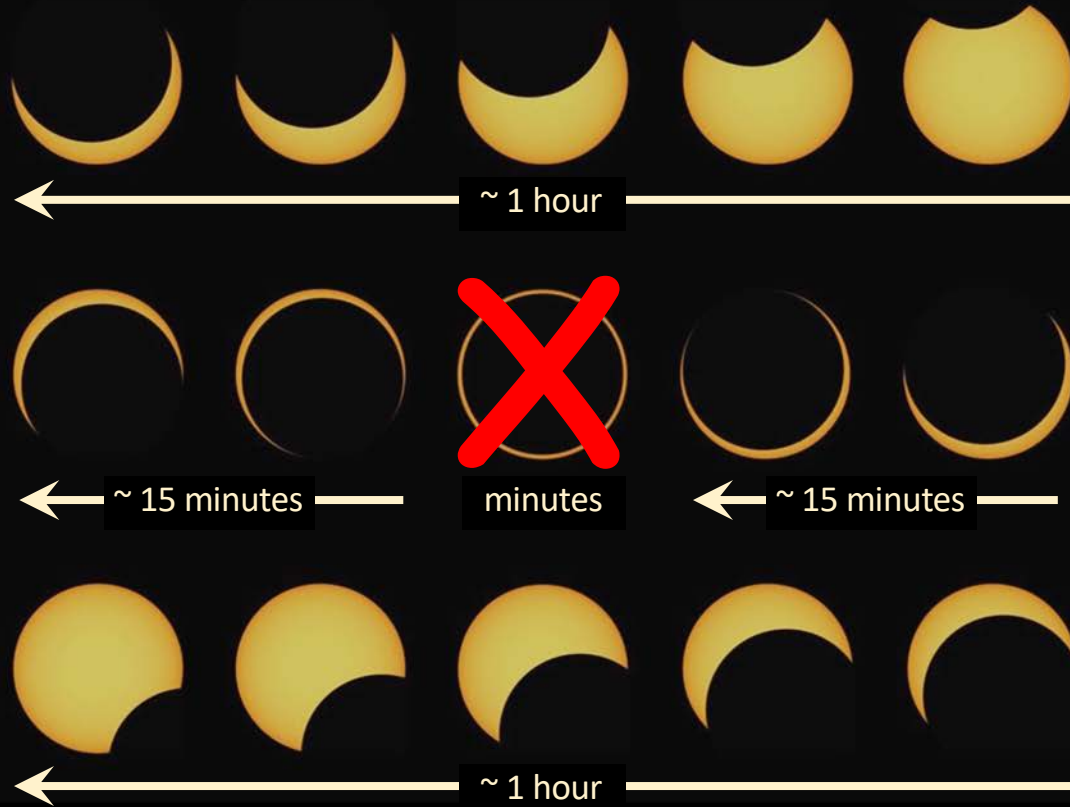
**Don't say, "Outside the path, you'll have a partial solar eclipse. Inside the path you'll have an annular or total solar eclipse."**



**Do say, "Outside the path, you'll have a partial eclipse. Inside the path, you'll have an annular or total eclipse with partial phases before and after."**



# How an Annular Solar Eclipse Transpires




Outside the path of annularity: *No middle image!*





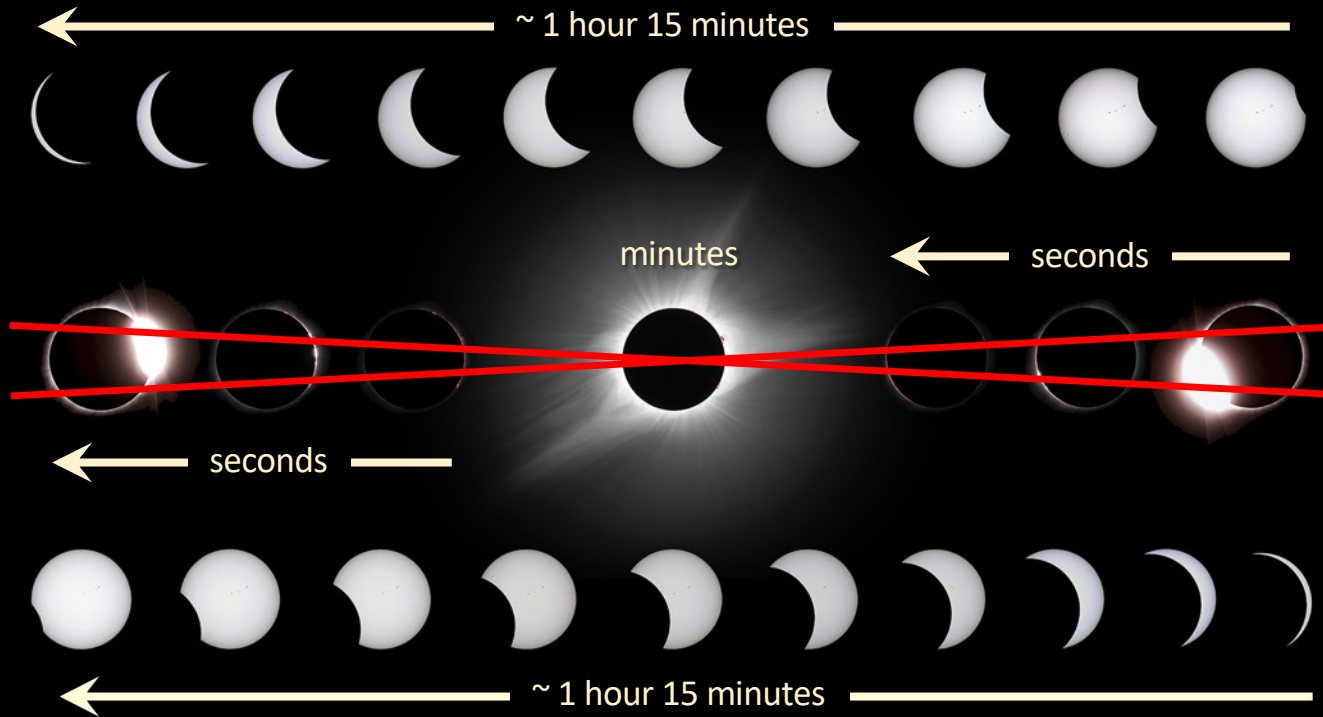
Don't say, "An annual solar eclipse will occur on October 14th."



Do say, "An annular ('ring') solar eclipse will occur on October 14th."



# How a Total Solar Eclipse Transpires



Outside the path of totality: *No middle row!*



*During a partial or annular (ring) solar eclipse, there is no time when it is safe to look directly at the Sun without proper eye protection. View it only through special-purpose solar filters that comply with the transmittance requirements of the ISO 12312-2 international standard for filters for direct solar viewing.*



*A total solar eclipse is about as bright as a 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 transmittance requirements of the ISO 12312-2 international standard for filters for direct solar viewing.*





**Don't say, "*Never* look directly at the Sun without eye protection!"**



**Do say, "*Except during totality*, don't look directly at the Sun without eye protection!"**



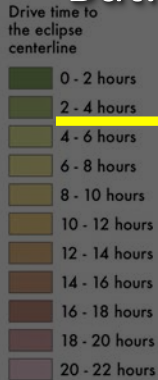
# Drive times to the centerline of the August 21, 2017 total solar eclipse

Use the color key in the lower left to find out how long it takes to drive from your home to the eclipse centerline. The shortest route is shown from each city. These drive times reflect average highway speeds; drive times will differ near the centerline on the day of eclipse.

*Americans and the 2017 Eclipse*, Jon Miller (U. Michigan):

“Nearly 20 million American adults traveled to a place other than their home city to improve their view of the eclipse and to increase the **level of totality** observed.”

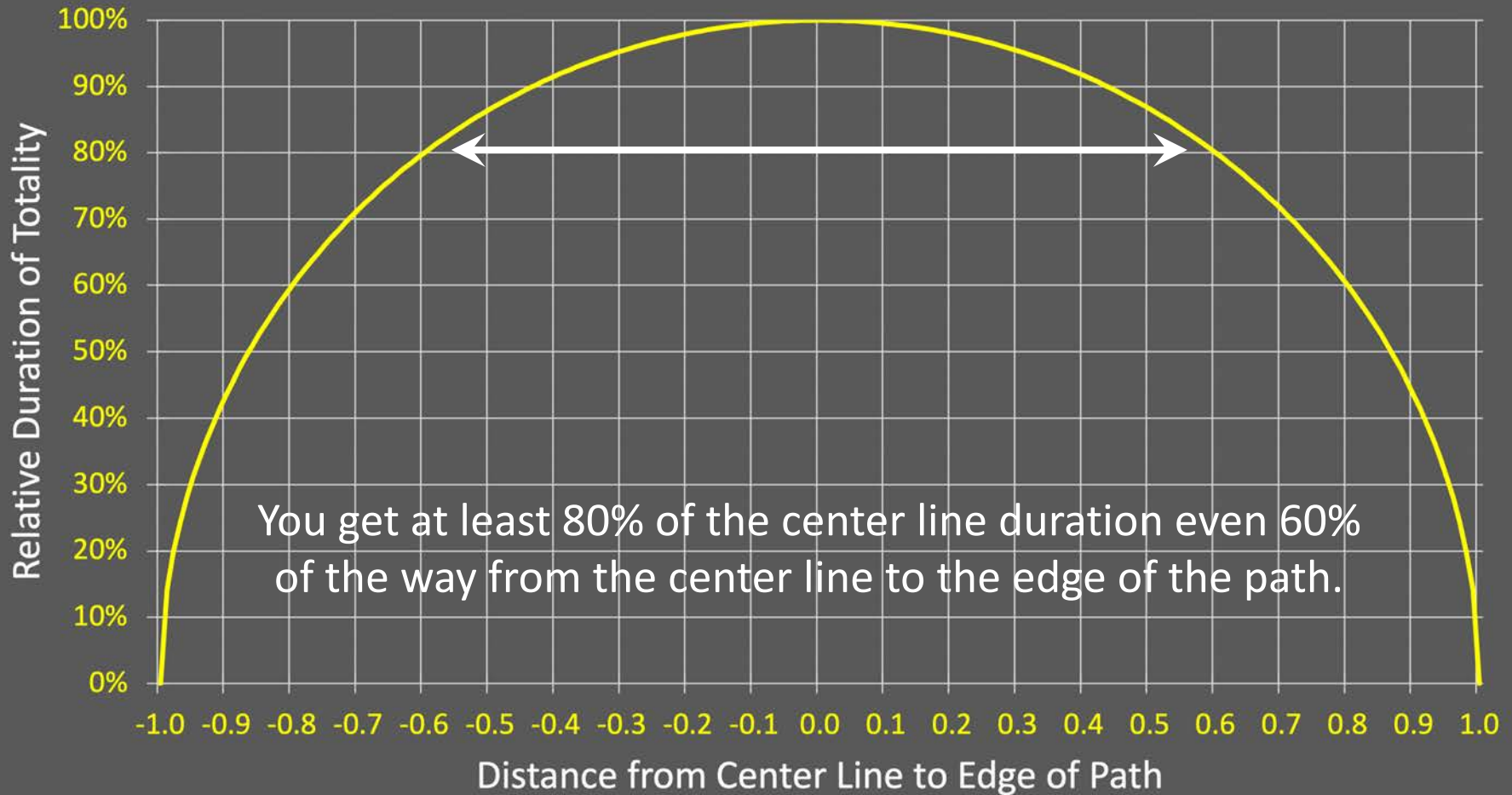
But...only 31% of them traveled into the path of totality.



→ **There is only one “level of totality”!** ←



# Duration of Totality Across the Path







**Don't say, "Outside the path you'll have an X% annular or total eclipse."**



**Do say, "Outside the path you'll have an X% *partial* eclipse."**





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



**Don't say, "An annular or total solar eclipse is a rare event."**



**Do say, "It is rare for an annular or total solar eclipse to occur where you live."**







**Don't say, "A total solar eclipse is a once-in-a-lifetime experience!"**



**Do say, "You should try to see a total solar eclipse at least once in your lifetime!"**





**Don't say, "A total solar eclipse is important scientifically."**



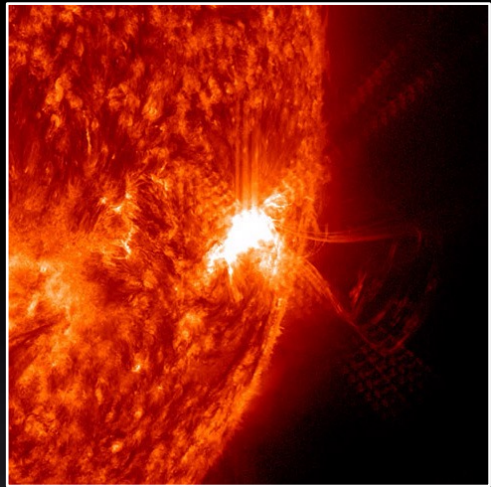
**Do say, "A total solar eclipse is the most beautiful and genuinely awesome celestial spectacle you'll ever experience!"**



~~Flares?~~

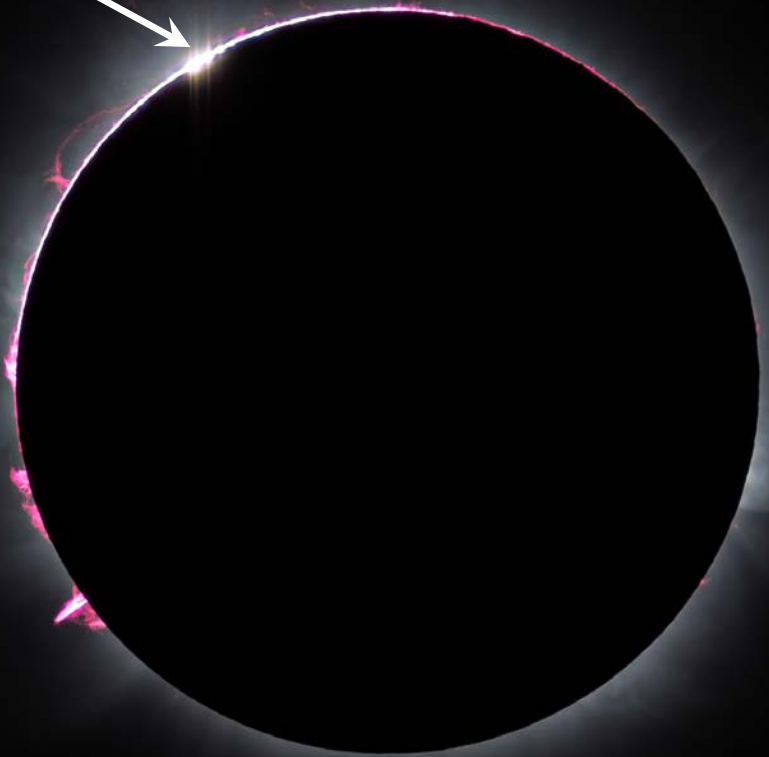
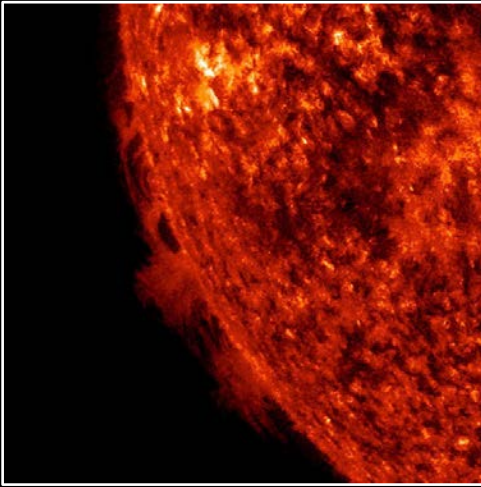
~~Bailey's Beads?~~

Baily's Beads!



Flare

Prominences



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