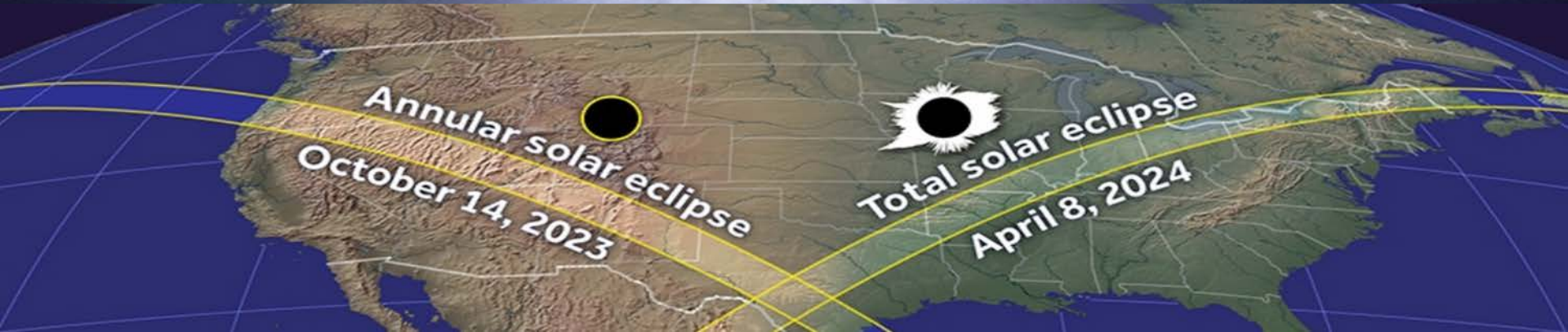
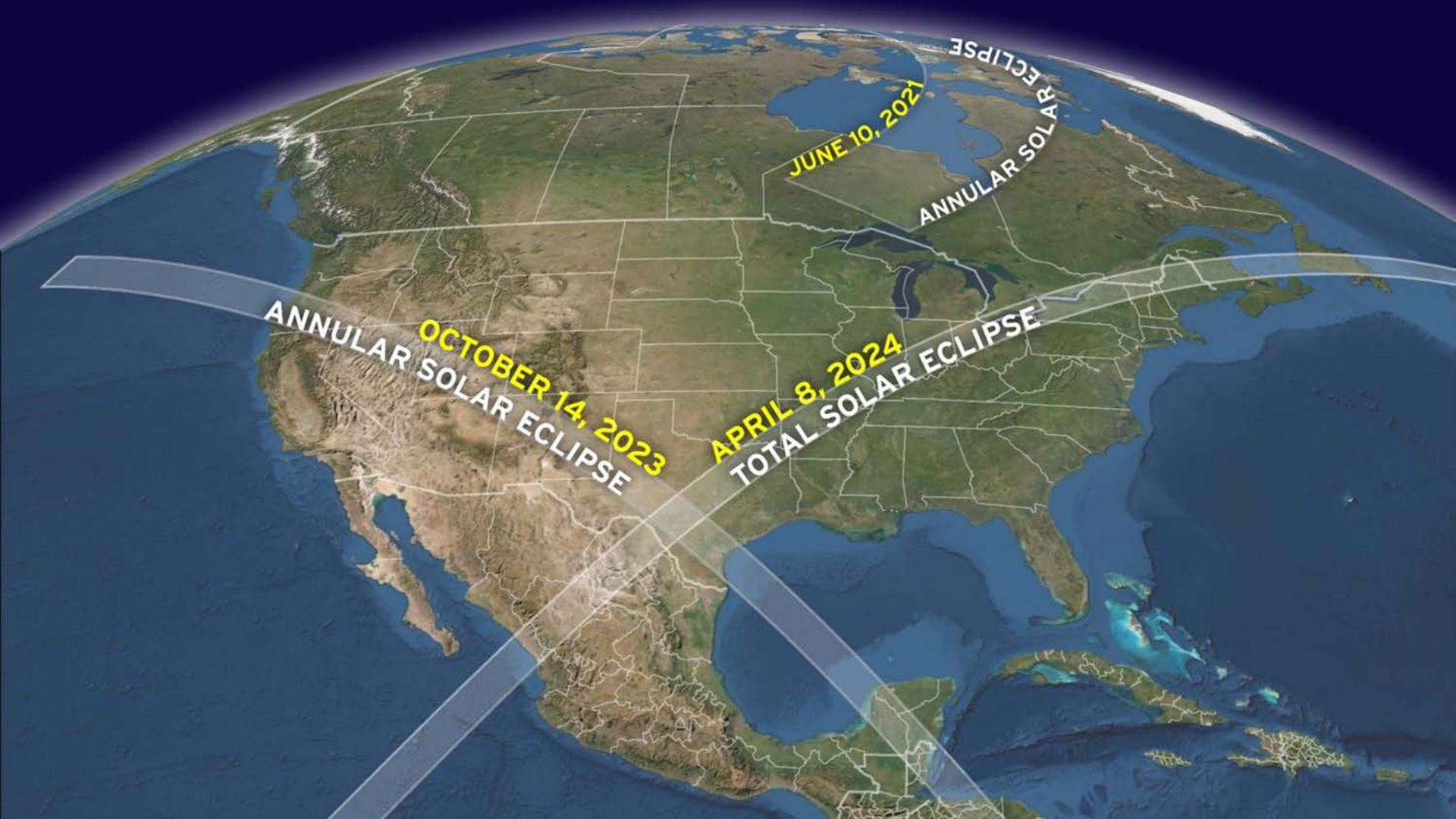


Solar Eclipses in North America in the 2020s

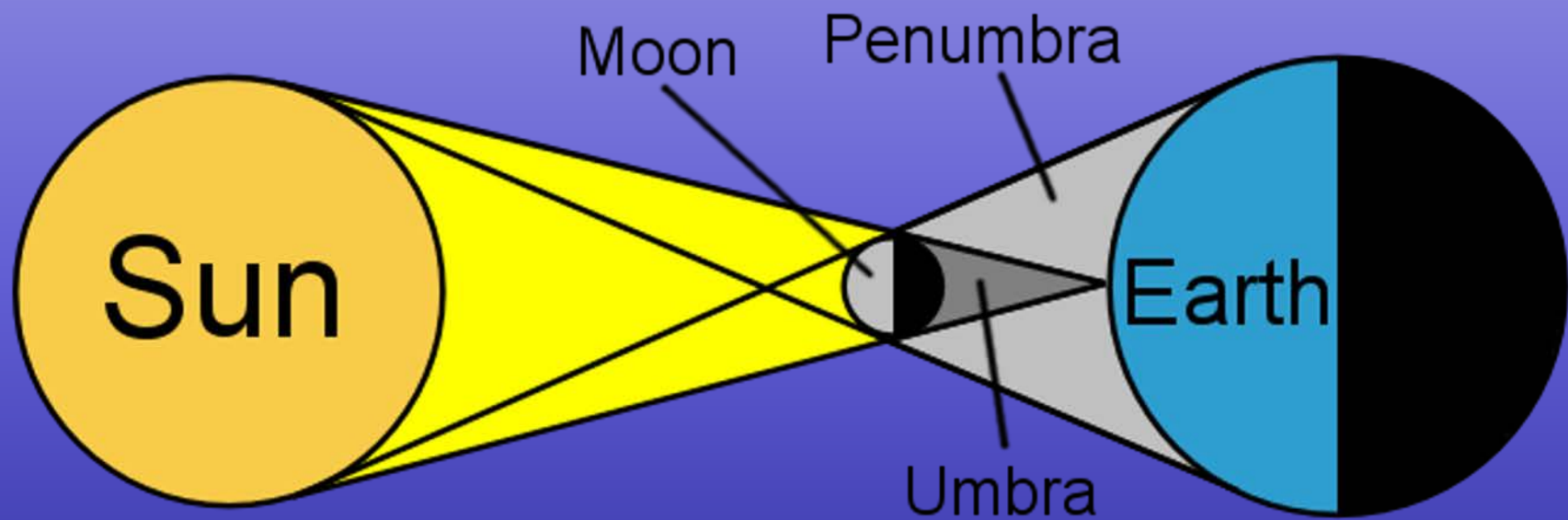




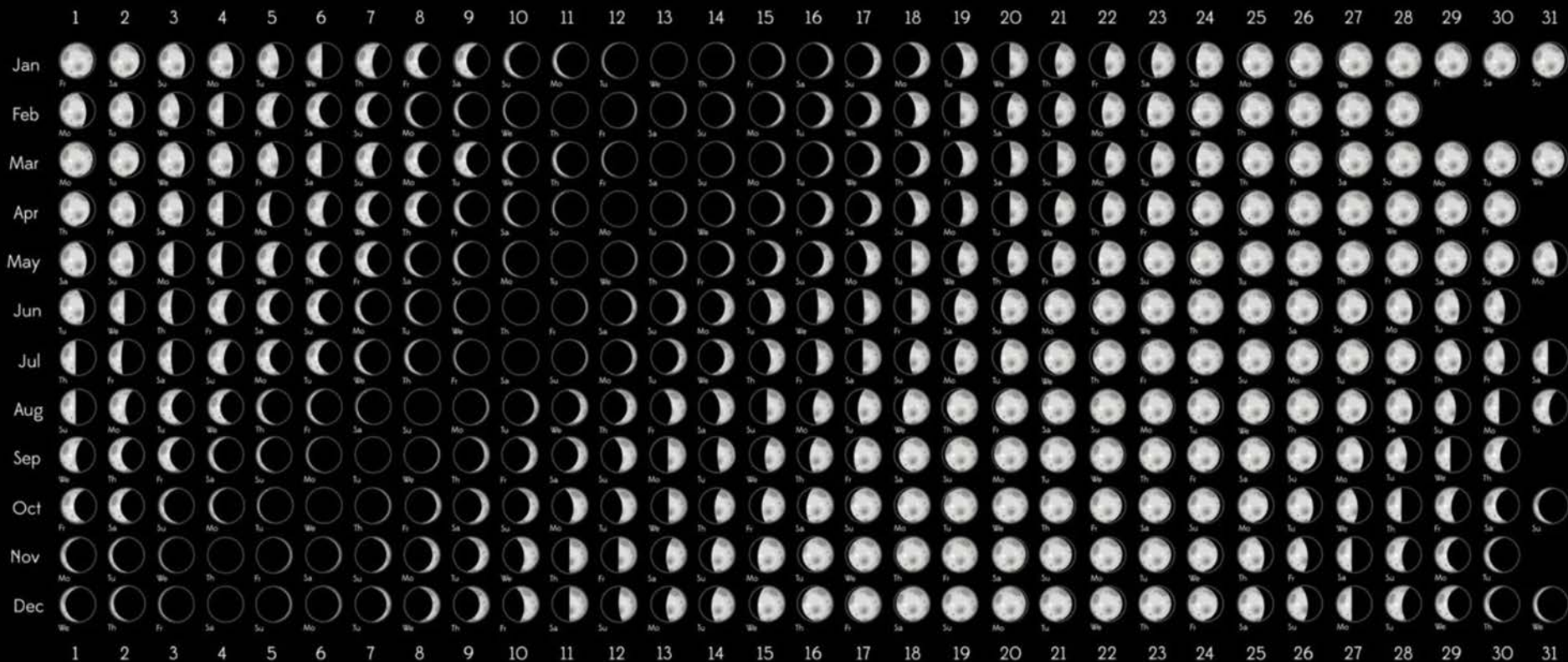
JUNE 10, 2021
ANNULAR SOLAR ECLIPSE

OCTOBER 14, 2023
ANNULAR SOLAR ECLIPSE

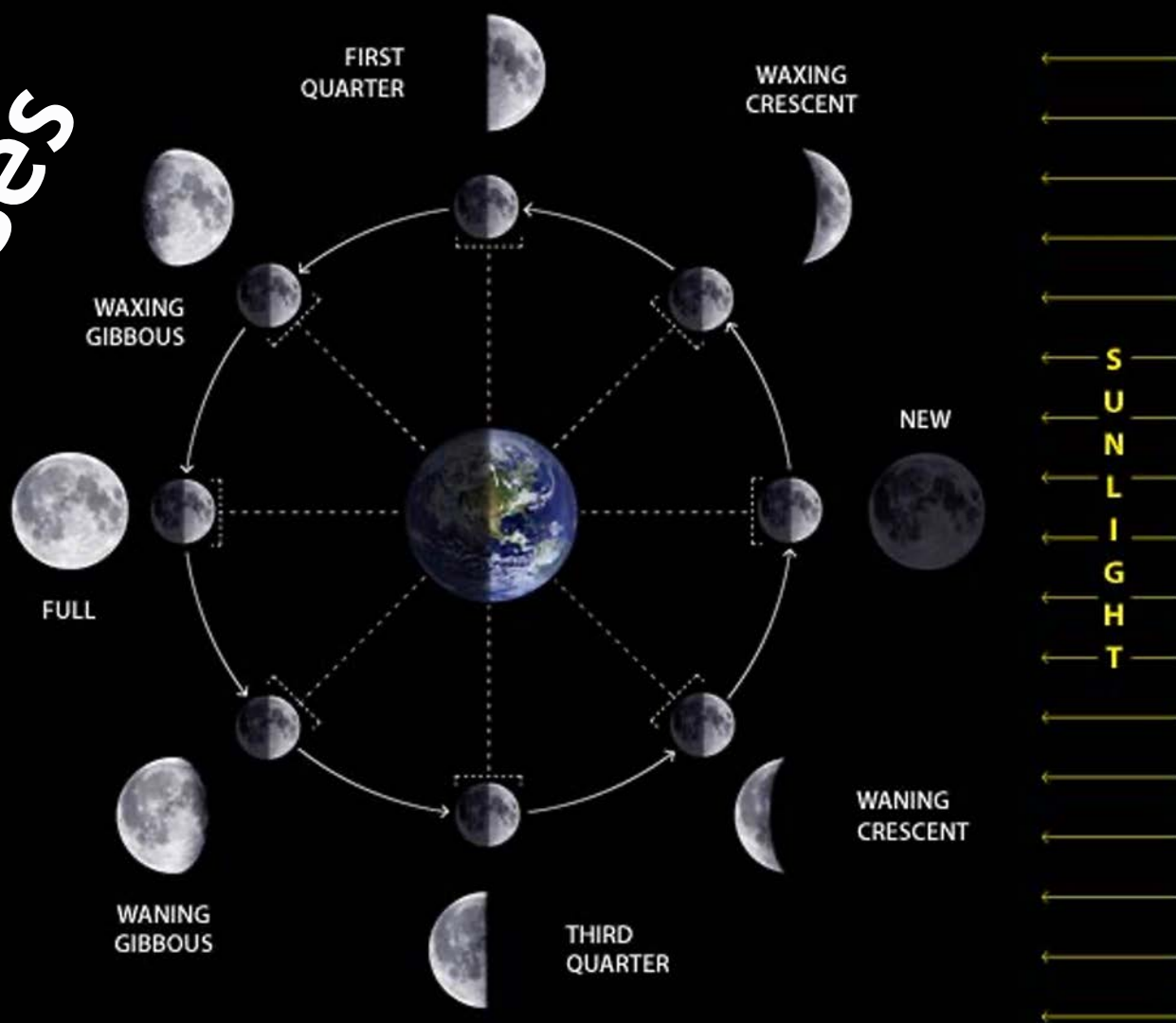
APRIL 8, 2024
TOTAL SOLAR ECLIPSE



MOON PHASES FOR 2021



Lunar phases



Not to scale



NO SOLAR ECLIPSE



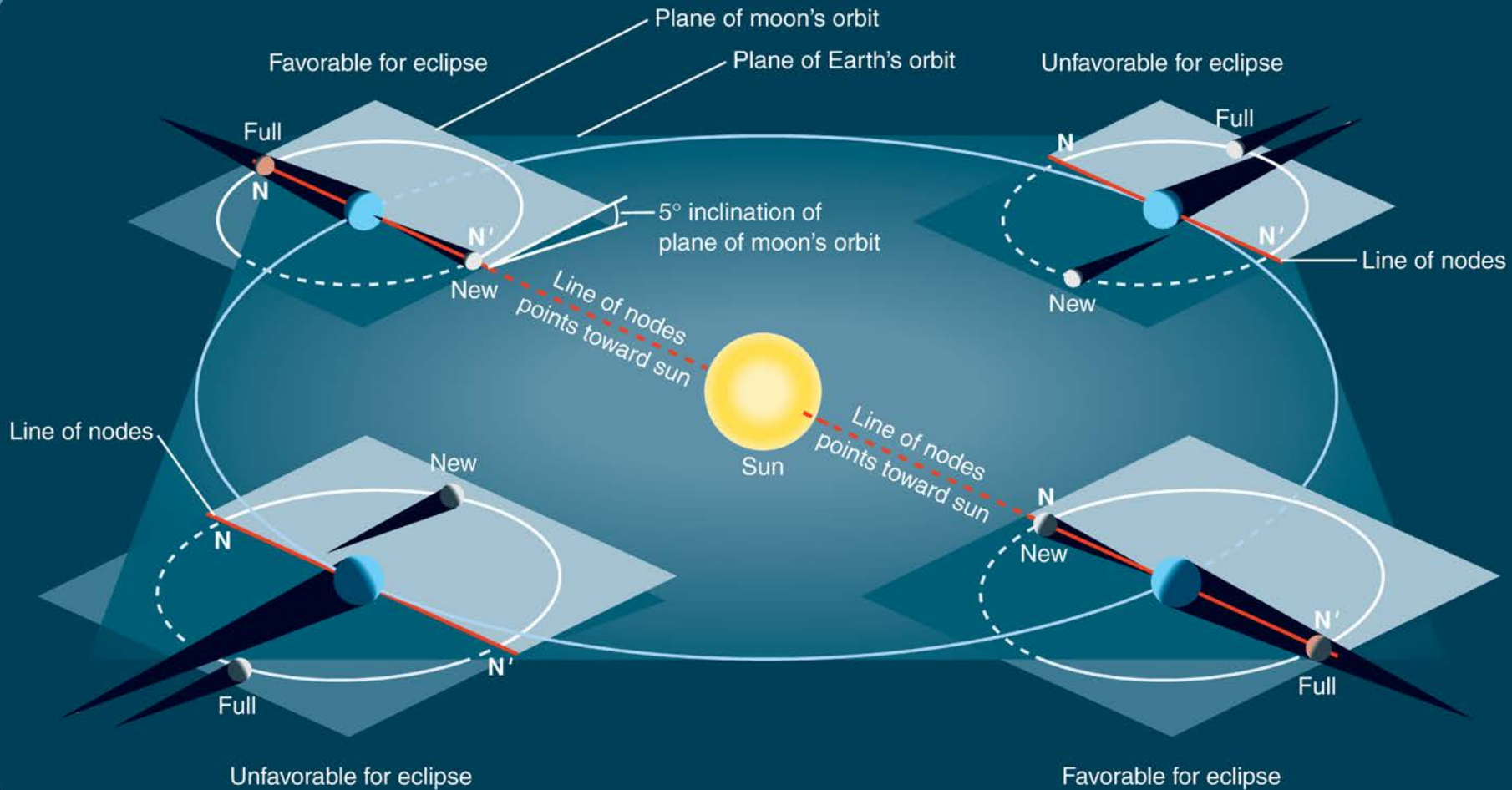
NO LUNAR ECLIPSE

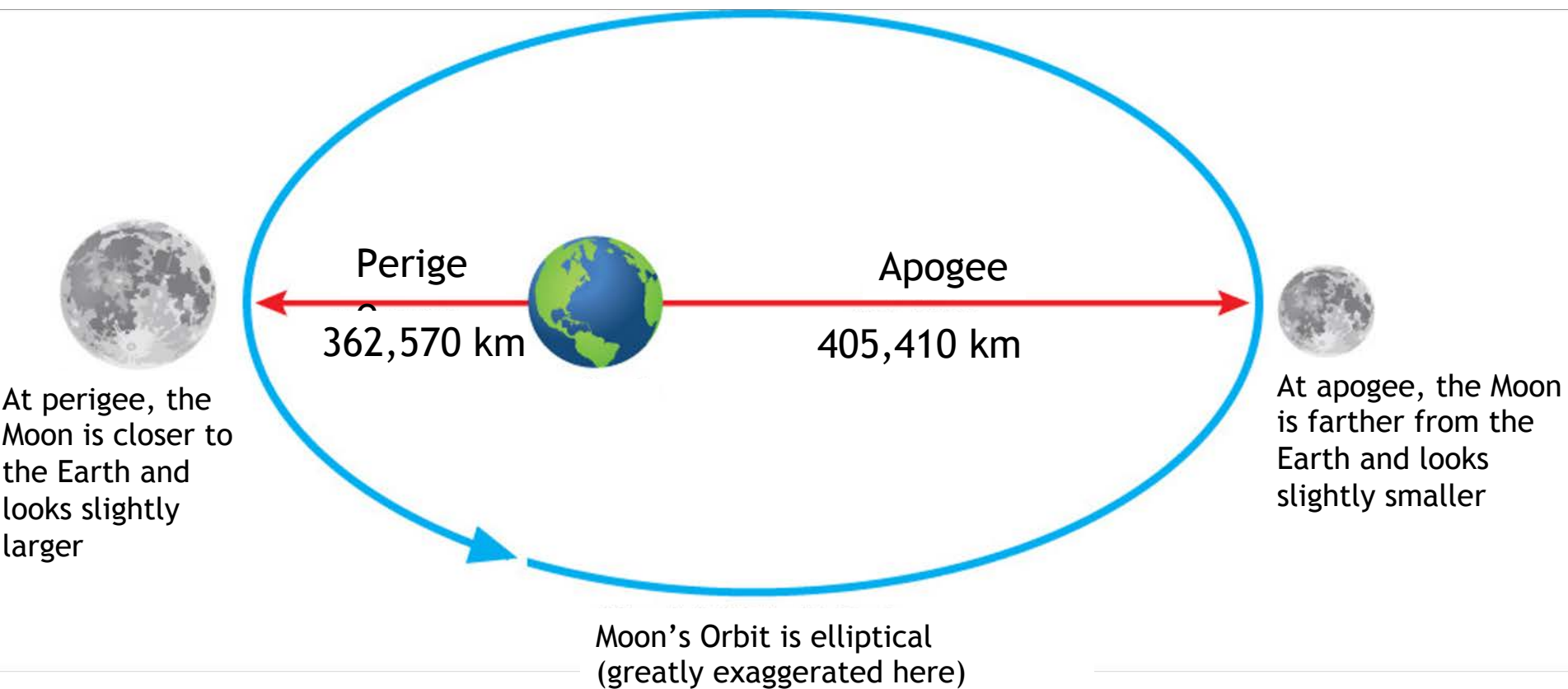
MOST MONTHS

SOLAR ECLIPSE



LUNAR ECLIPSE





Aphelion
(Jul 4)

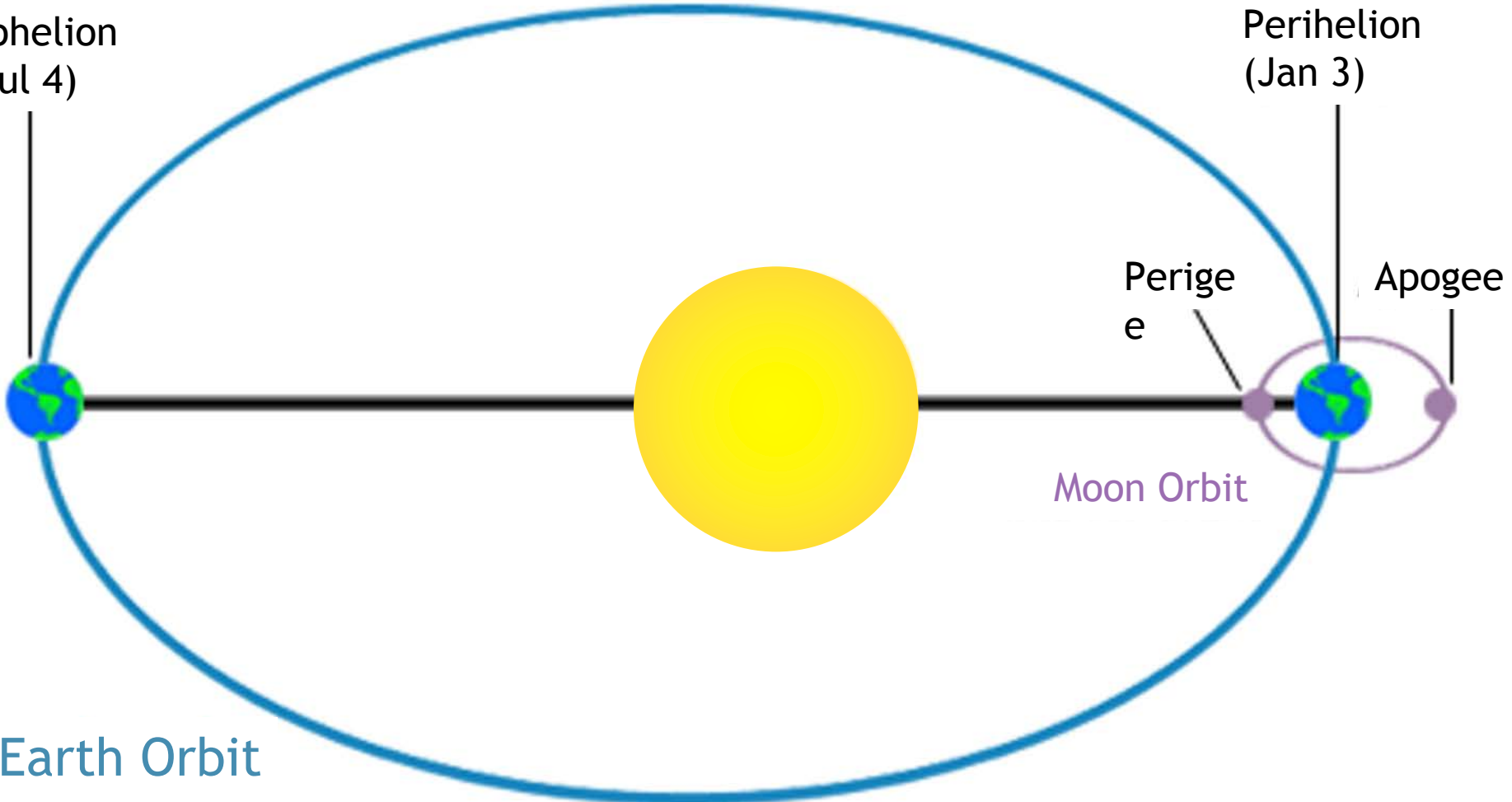
Perihelion
(Jan 3)

Perige
e

Apogee

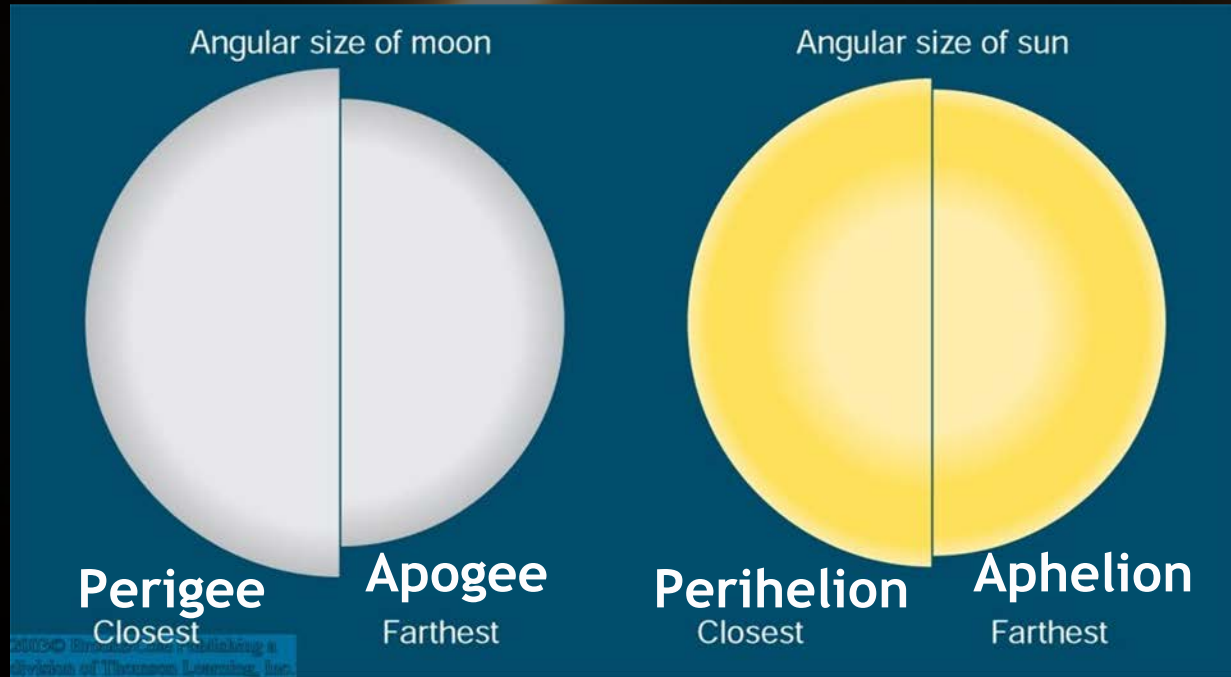
Moon Orbit

Earth Orbit



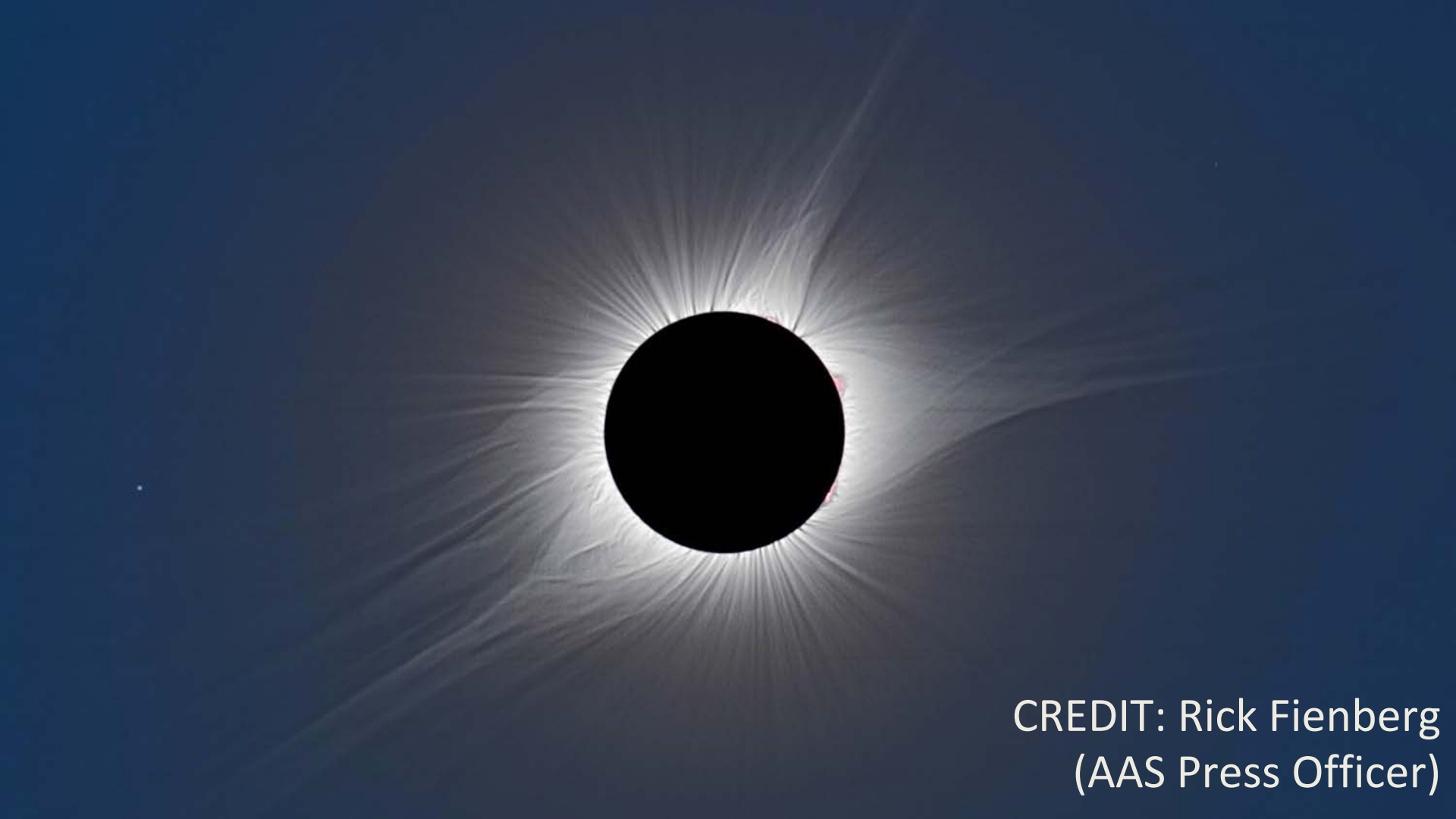
Annular Solar Eclipses

When Earth is near perihelion, and the moon is near apogee, we see an annular solar eclipse.

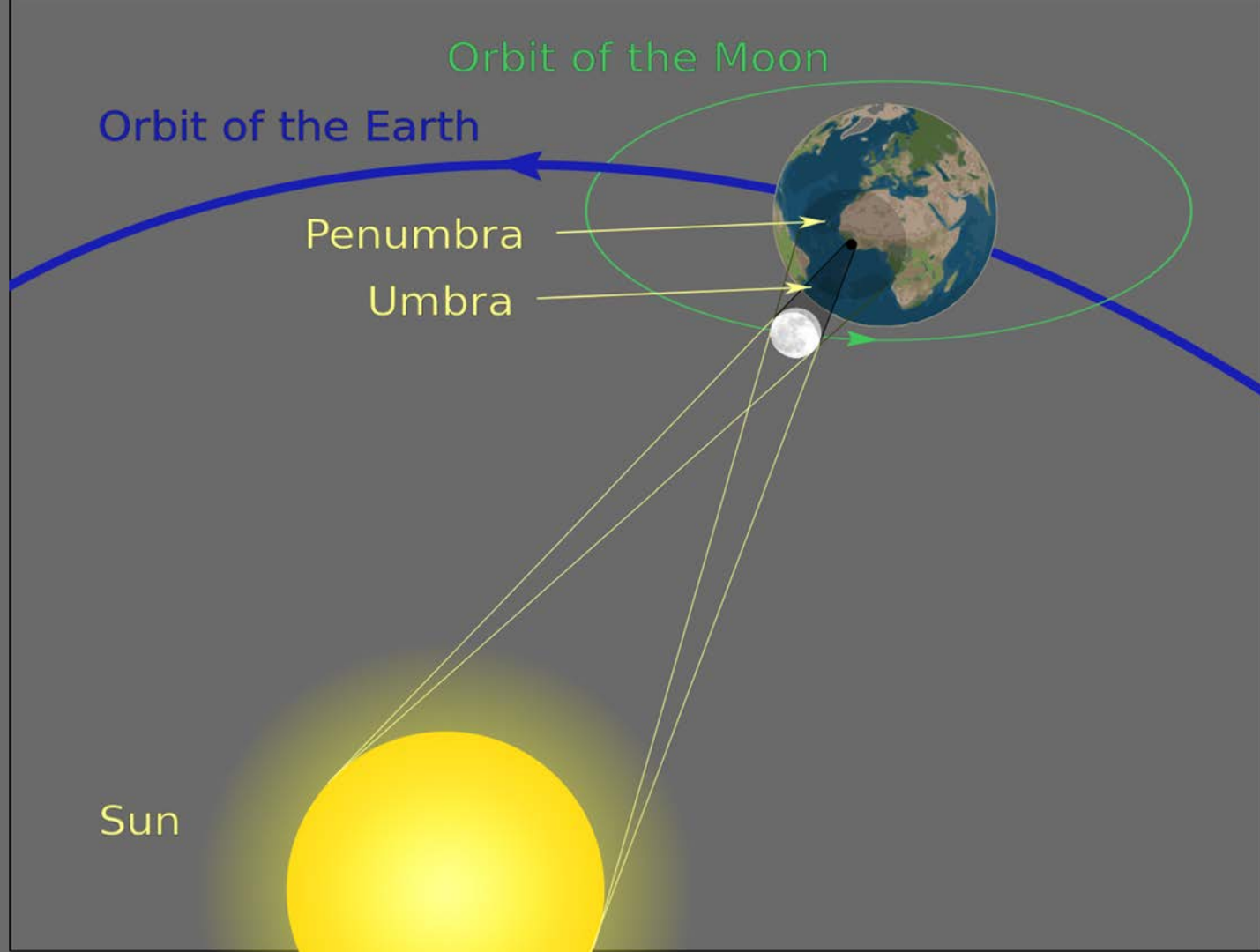


The angular sizes of the moon and the sun vary, depending on the distance from Earth.



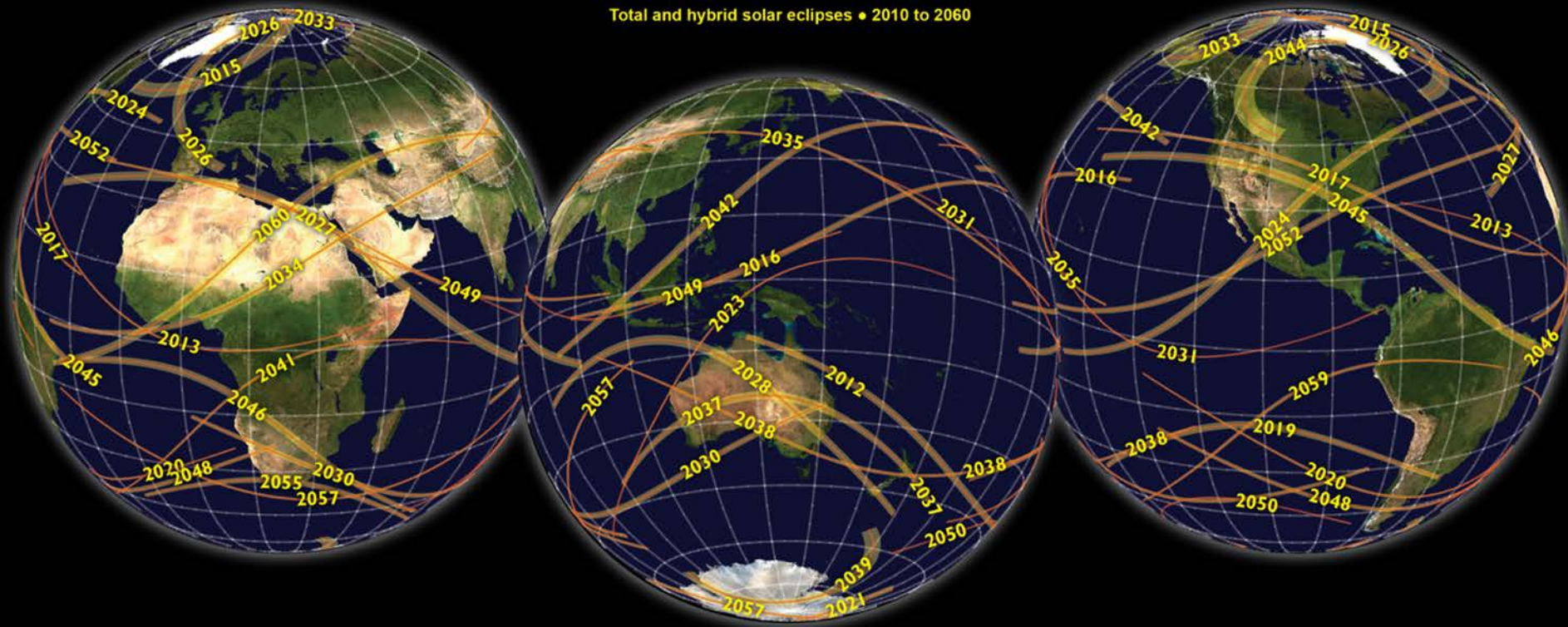


CREDIT: Rick Fienberg
(AAS Press Officer)



Fifty years of solar eclipses

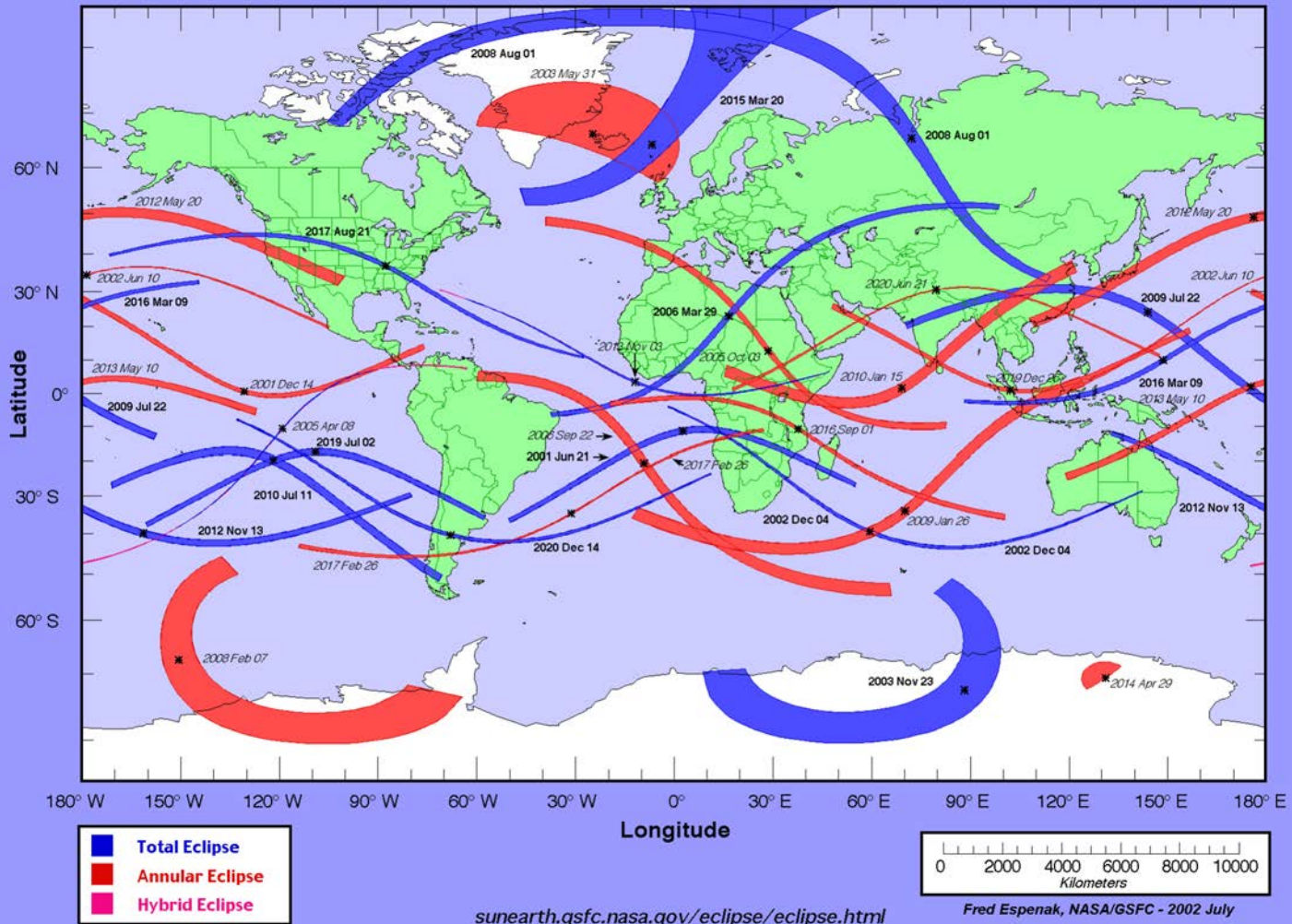
Total and hybrid solar eclipses • 2010 to 2060



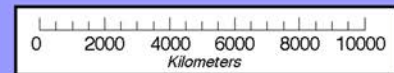
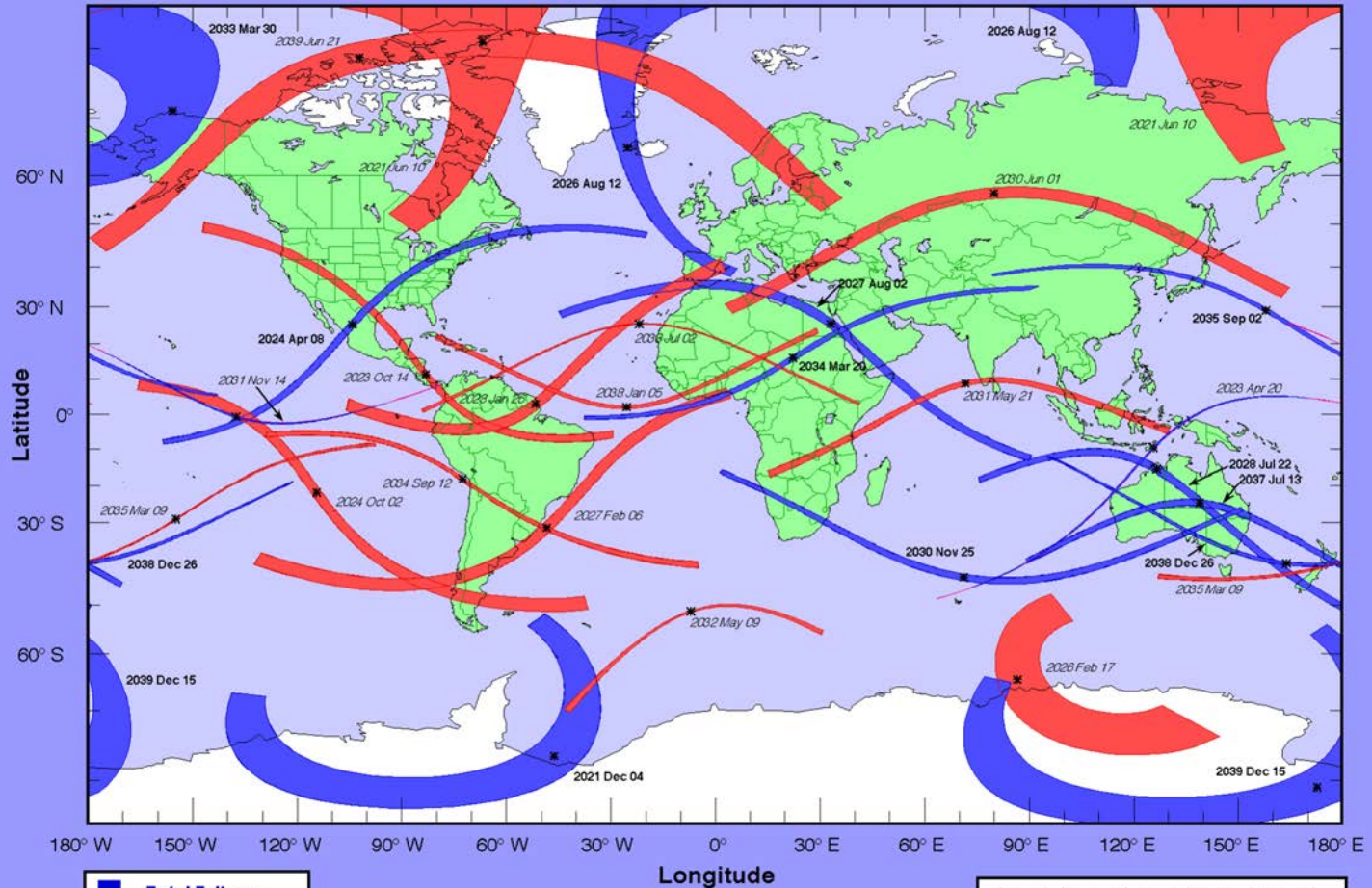
Total solar eclipses over
North America in the
21st century



Total and Annular Solar Eclipse Paths: 2001 – 2020

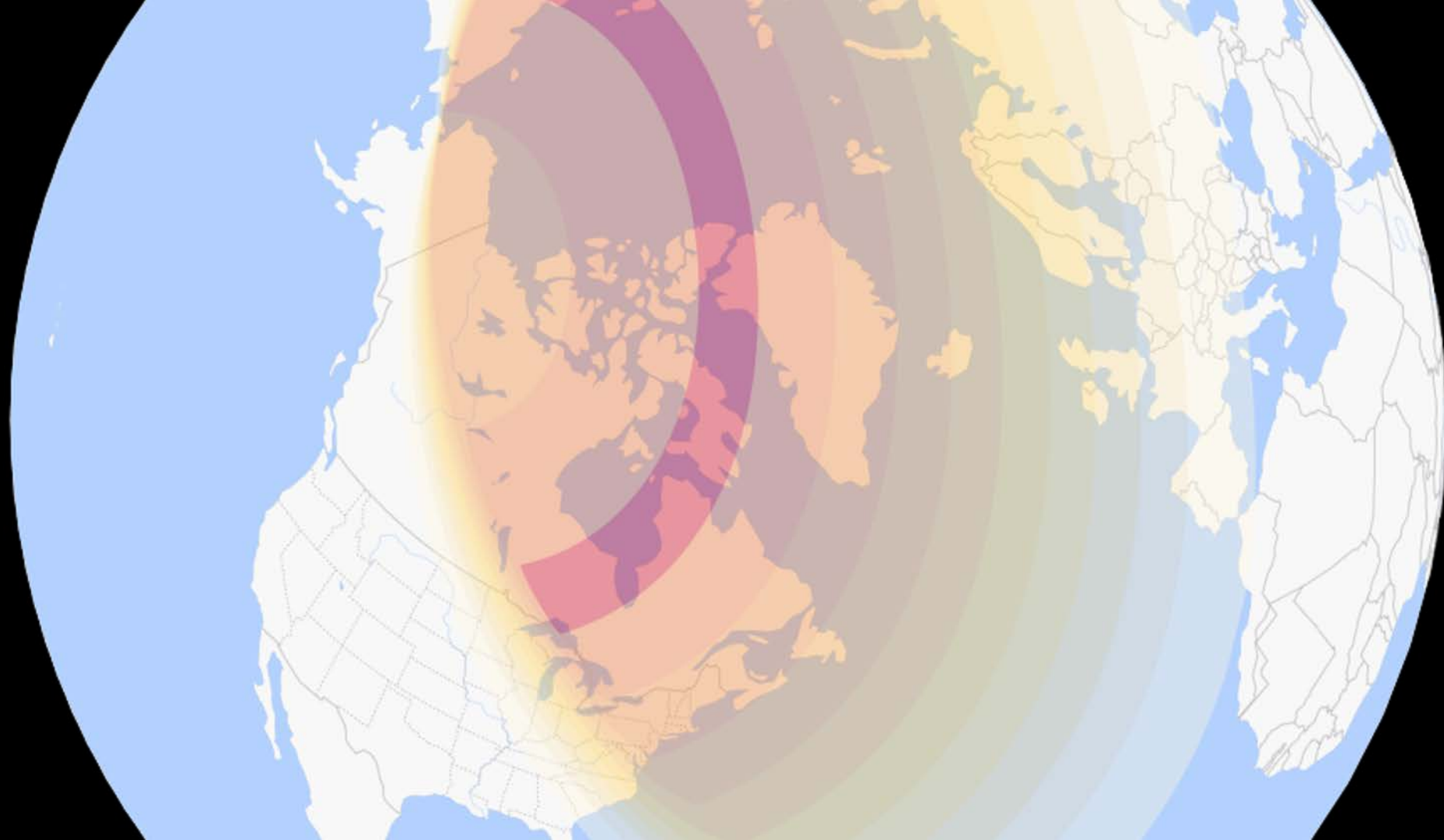


Total and Annular Solar Eclipse Paths: 2021 –2040

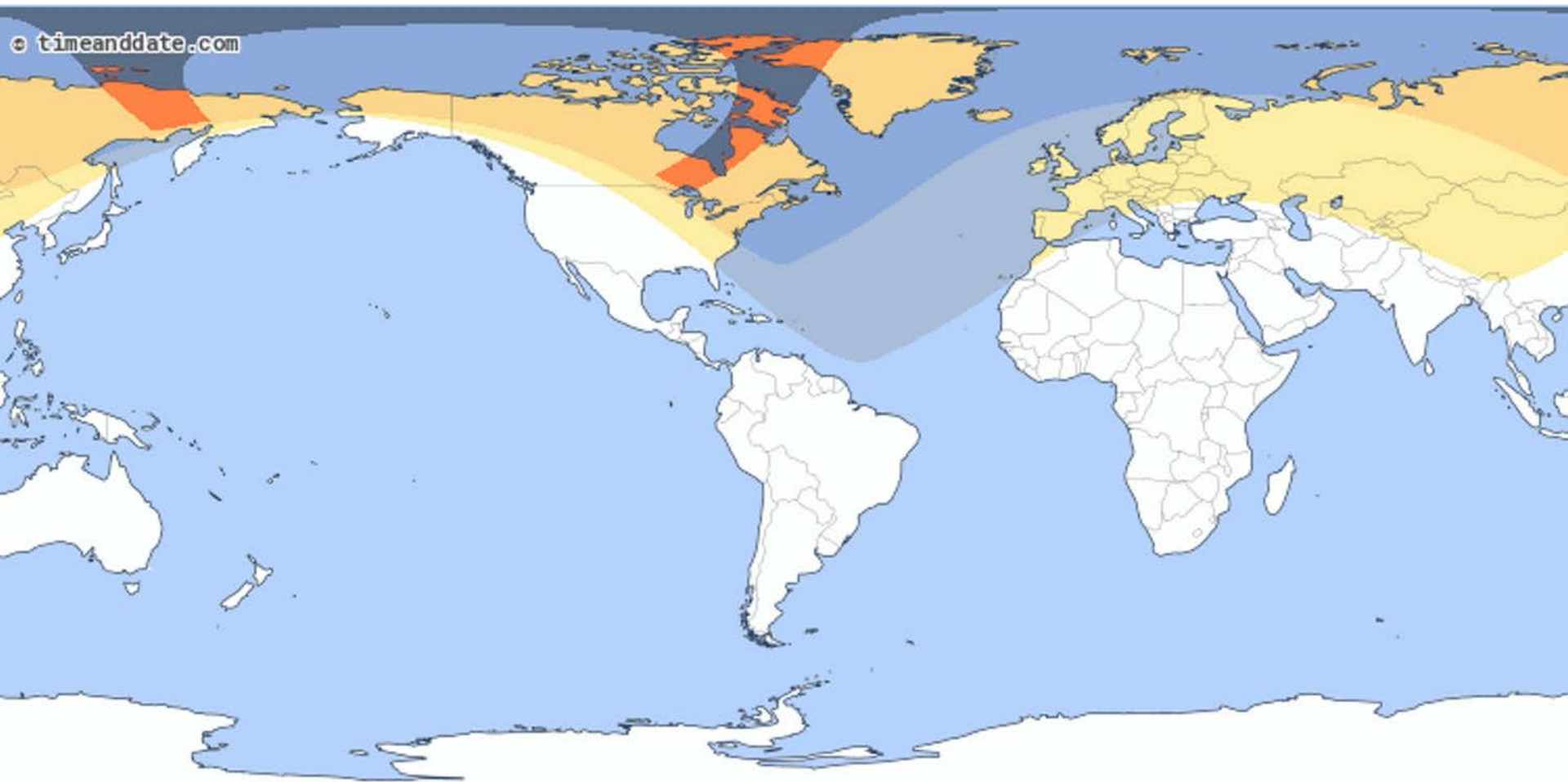


June 10th
2021

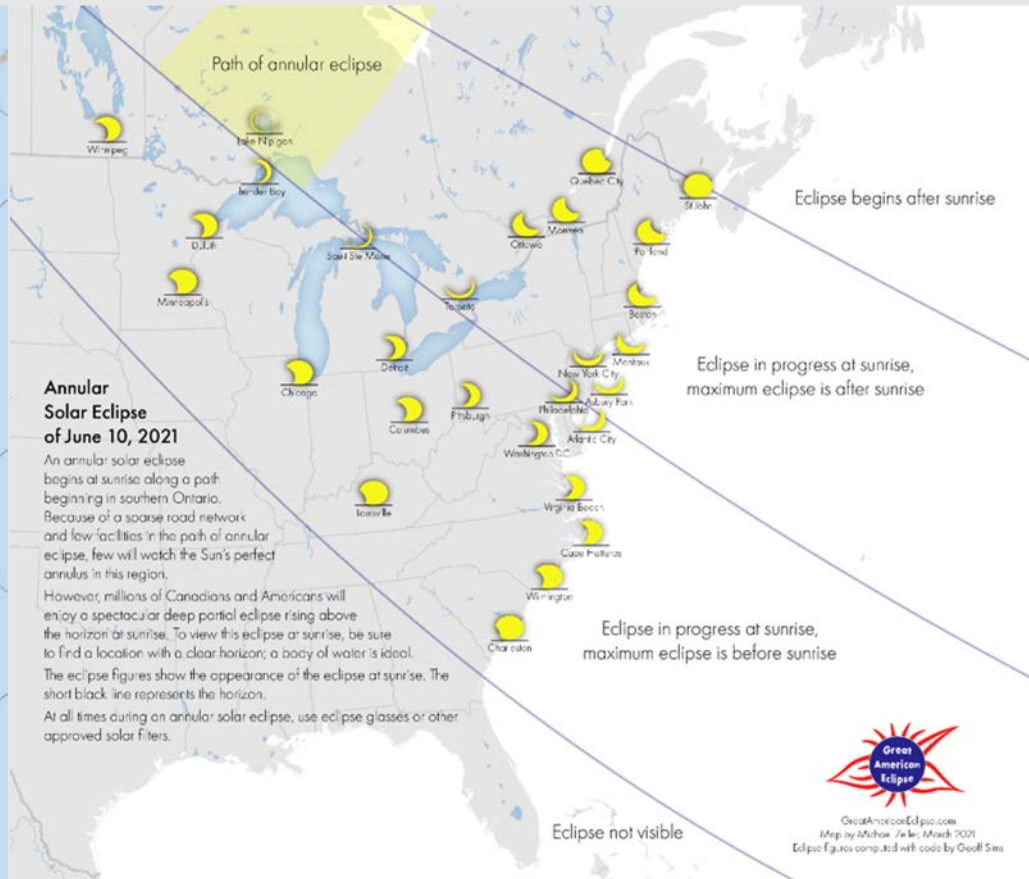
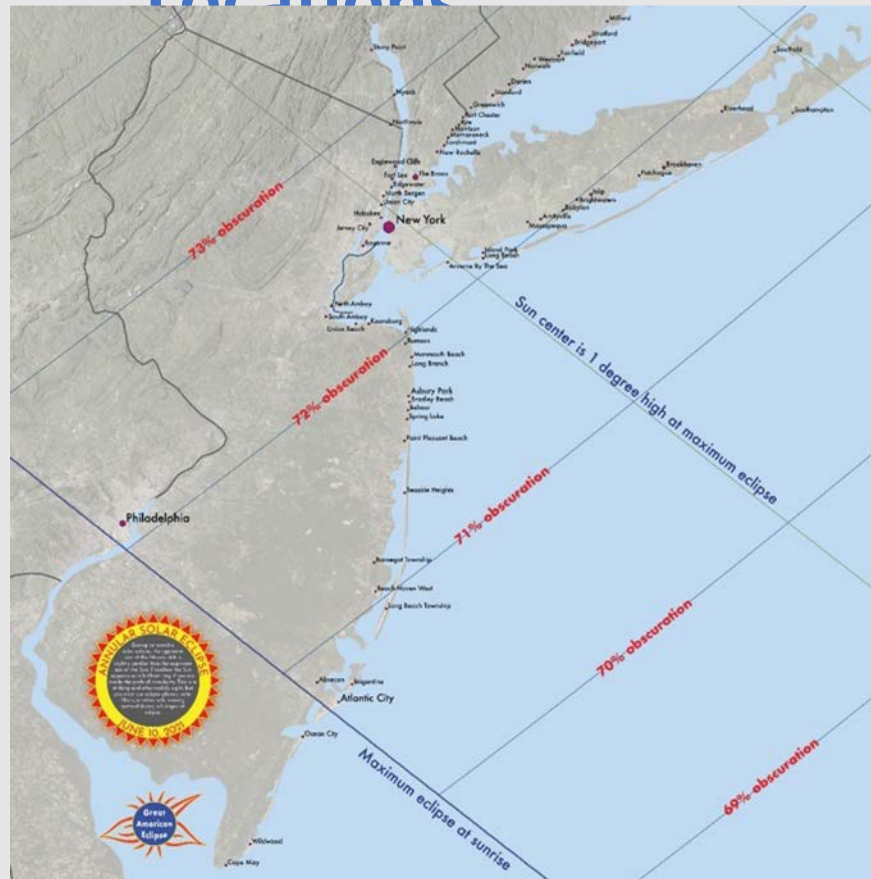




Annular Eclipse – June 10th 2021



June 10th 2021: Annular Eclipse Viewing Locations

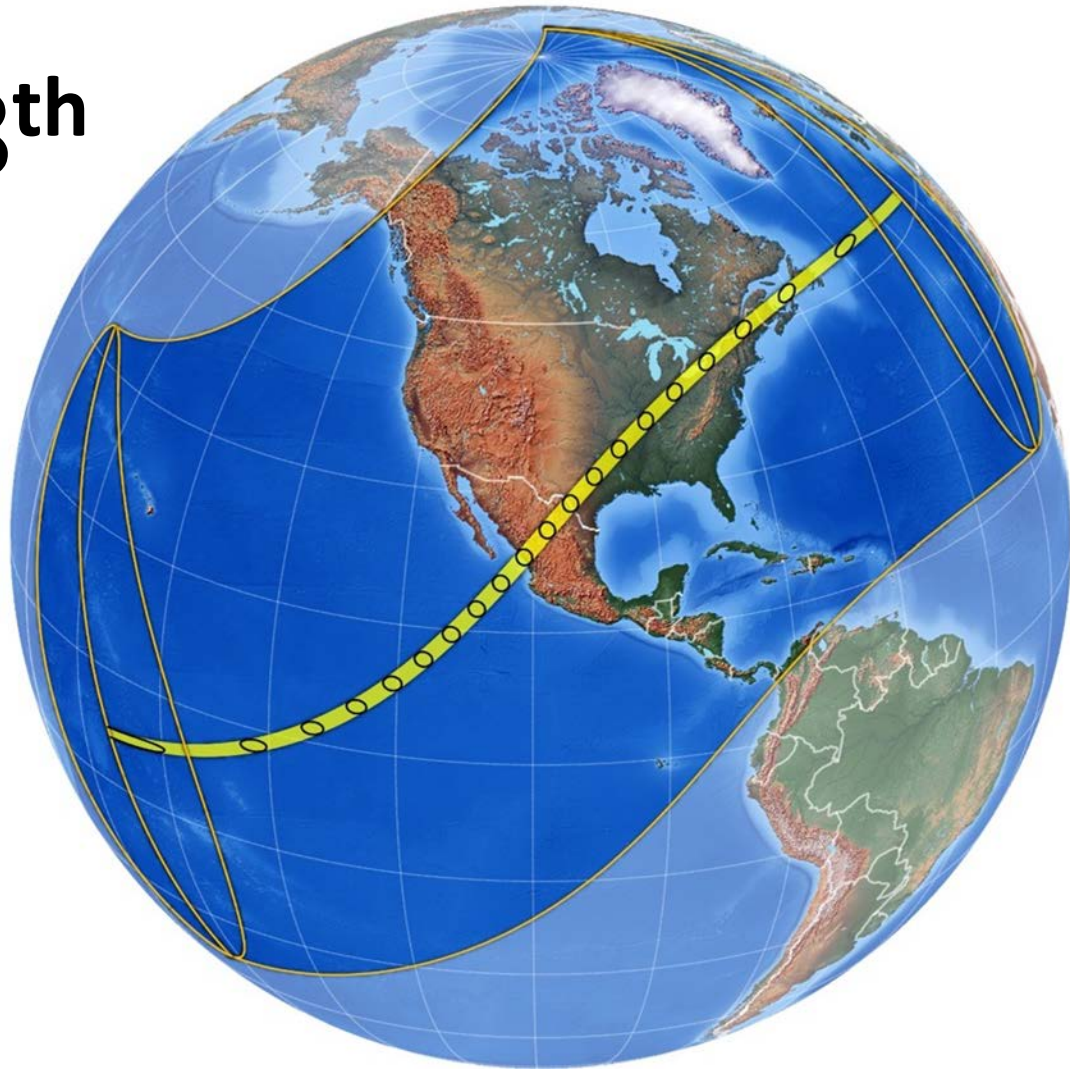


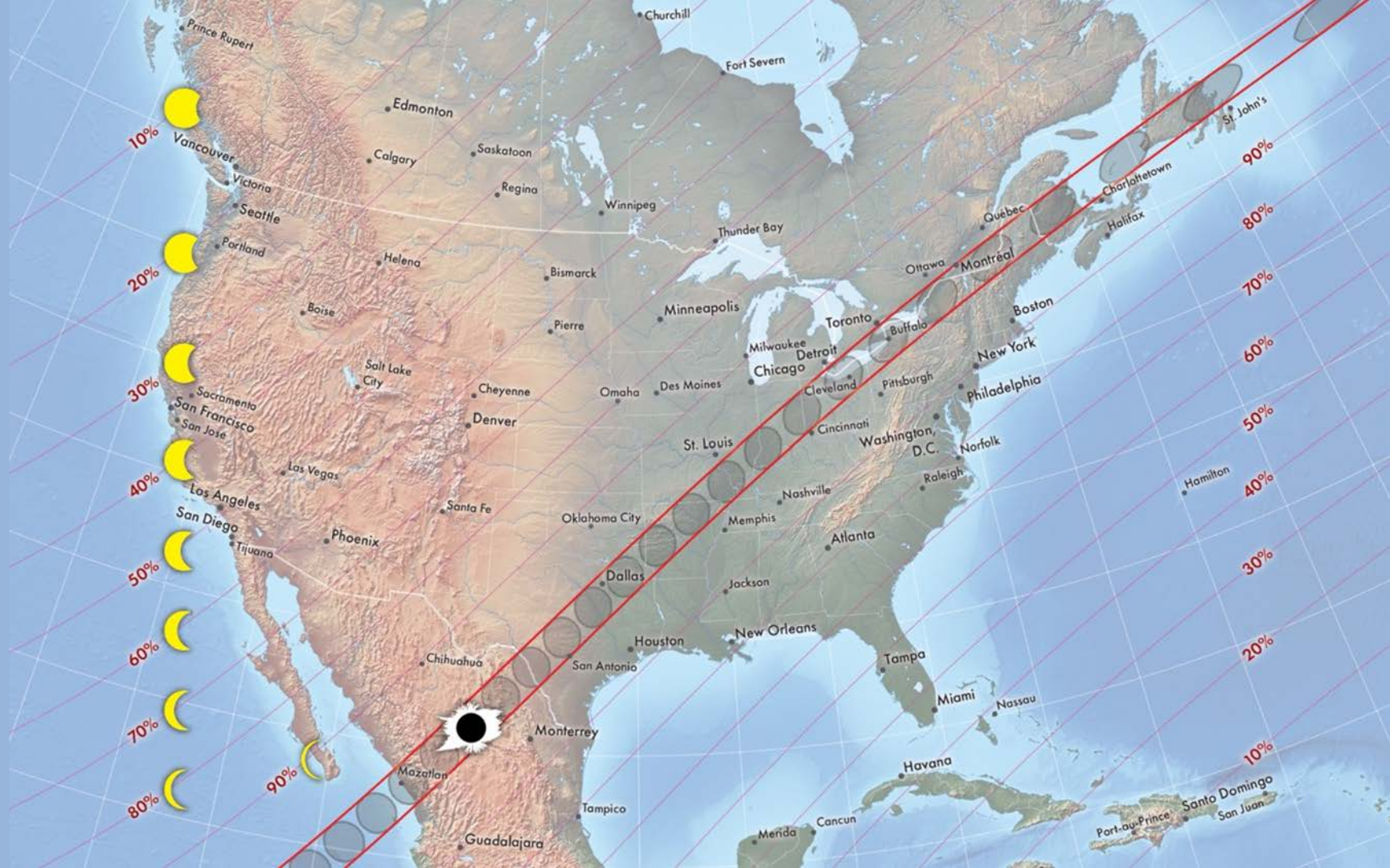
October
14th 2023



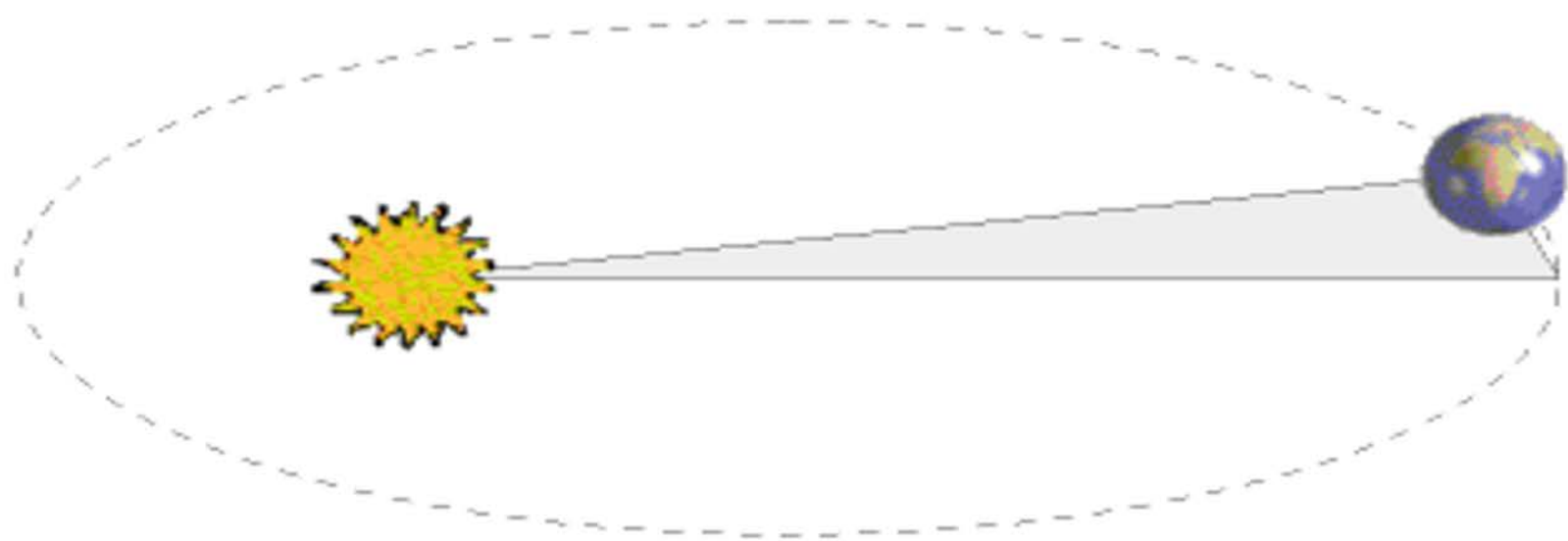


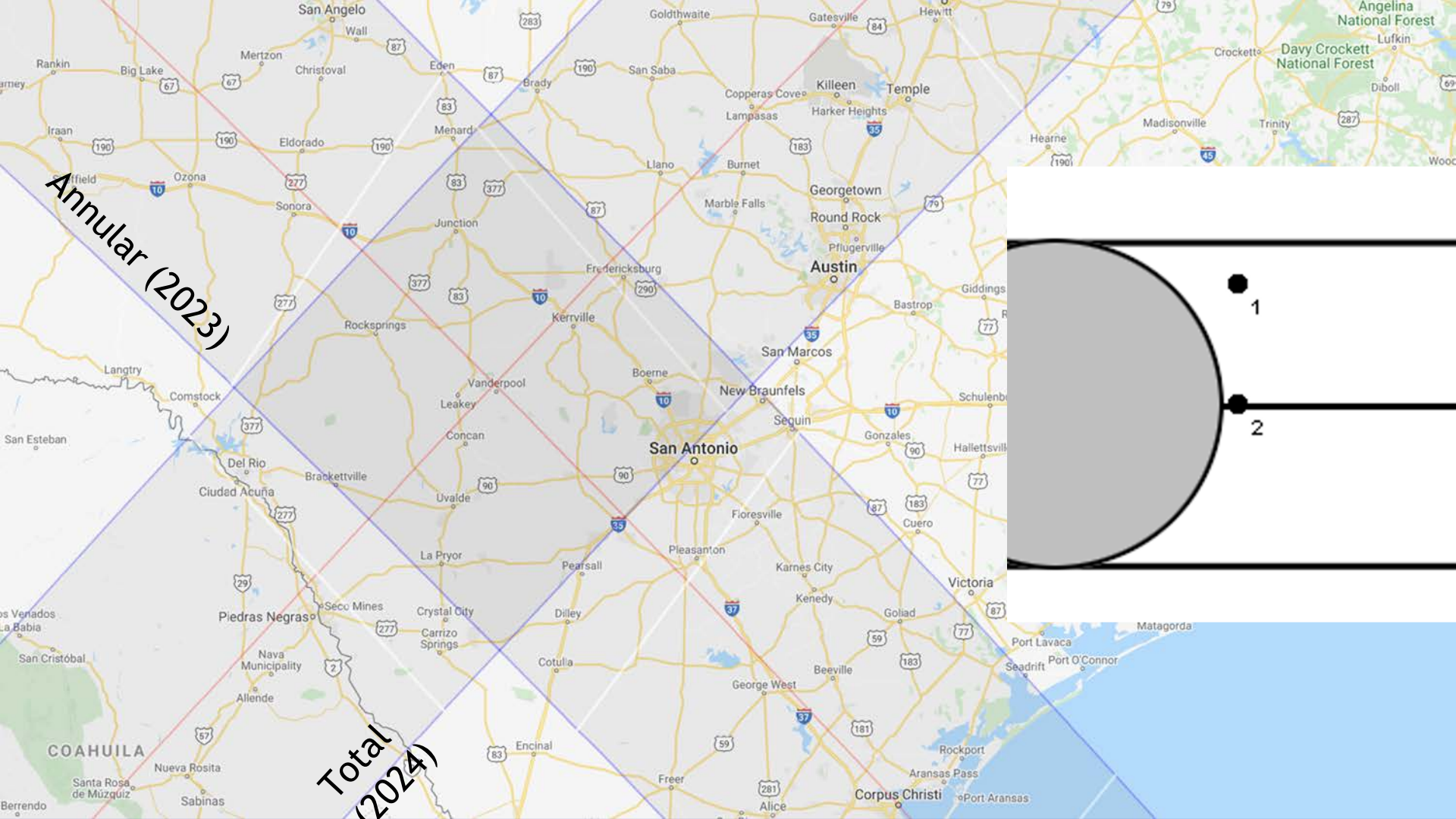
**April 8th
2024**





How long do eclipses last?

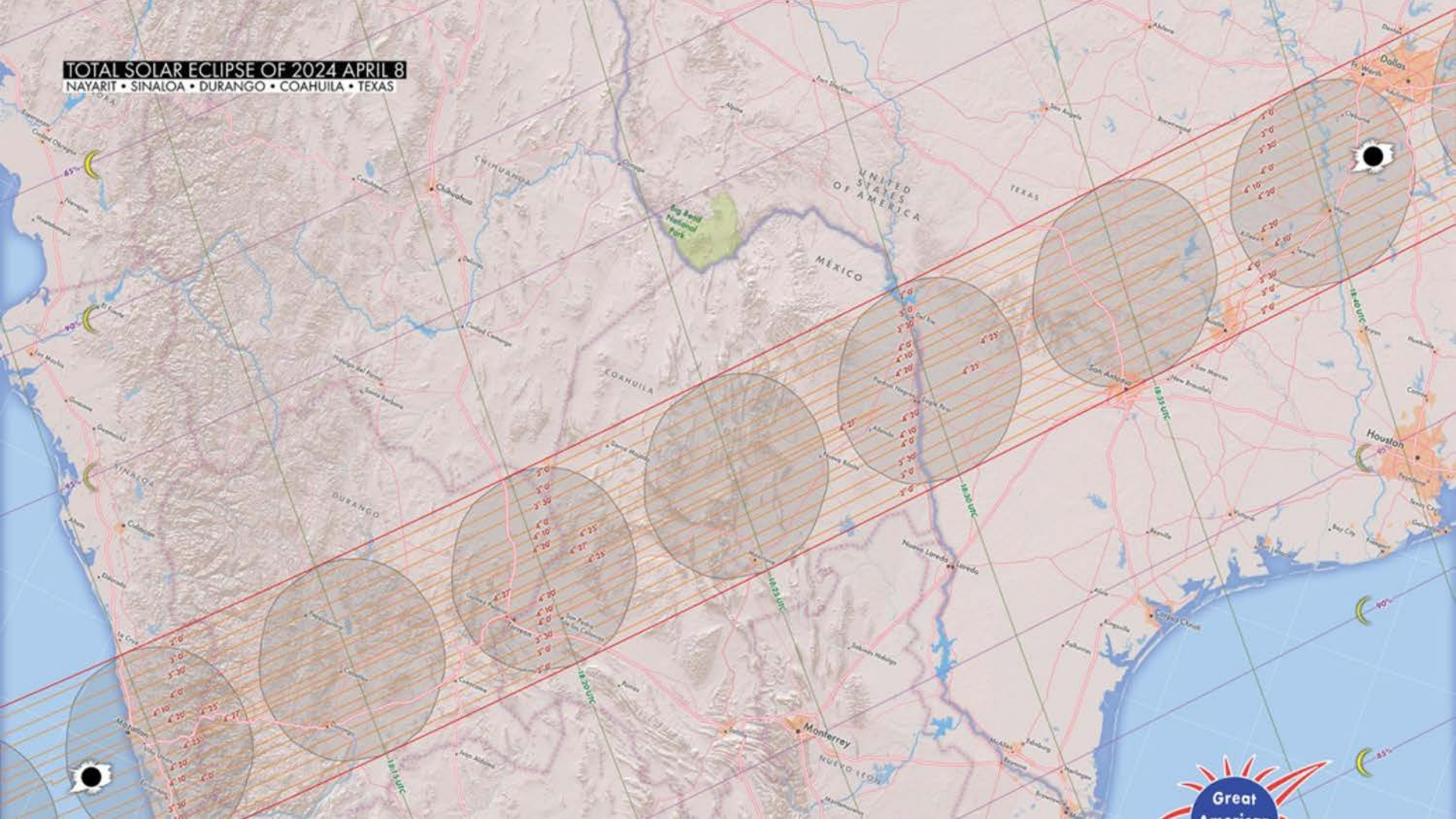




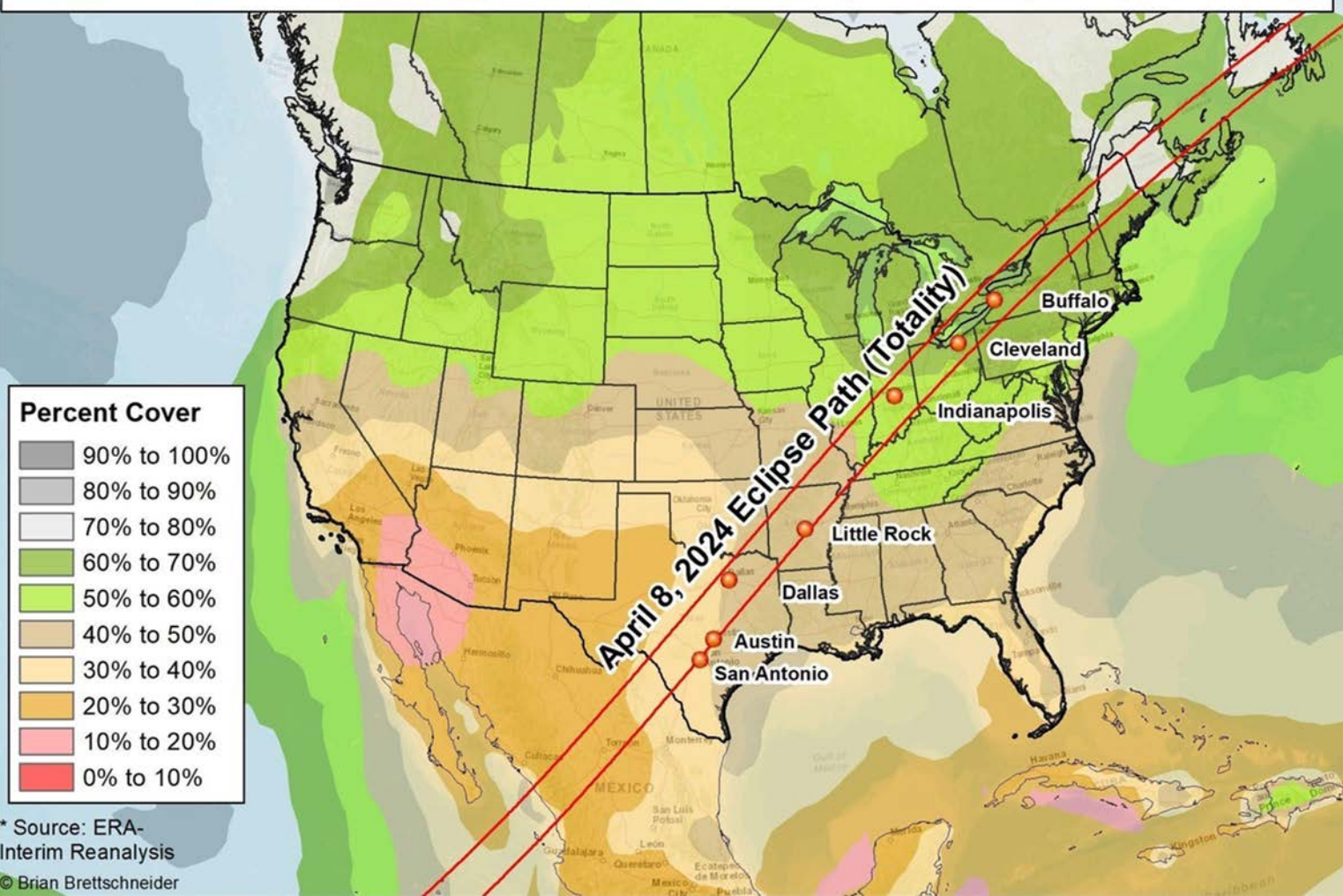
Annular (2023)

Total (2024)

TOTAL SOLAR ECLIPSE OF 2024 APRIL 8
NAYARIT • SINALOA • DURANGO • COAHUILA • TEXAS

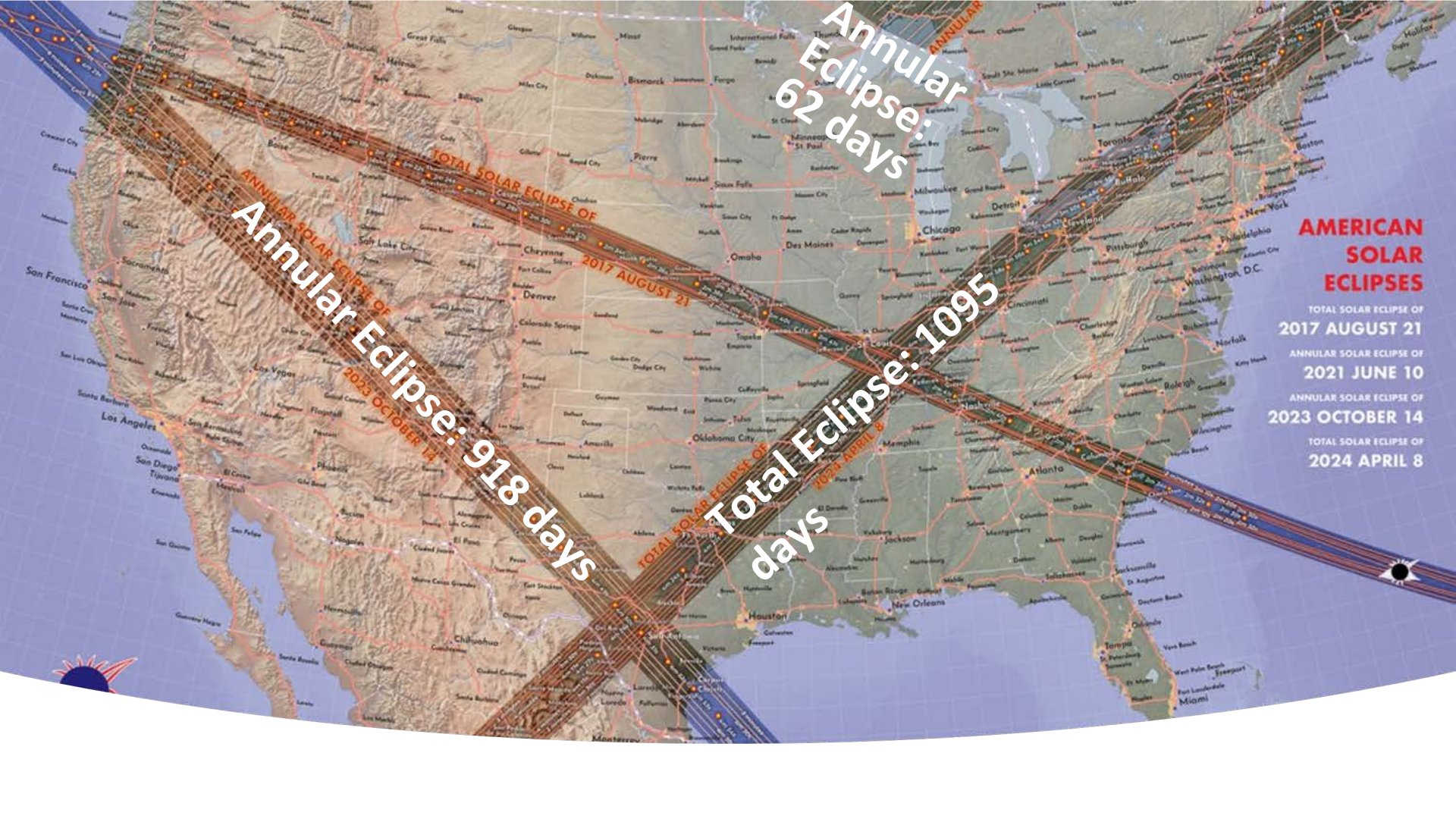


Cloud Coverage Climatology at 18 UTC Between April 3 and Apr 13 (1979-2016)*



* Source: ERA-Interim Reanalysis

© Brian Brettschneider



Annular
Eclipse:
62 days

Annular Eclipse:
918 days

Total Eclipse:
1095 days

AMERICAN SOLAR ECLIPSES

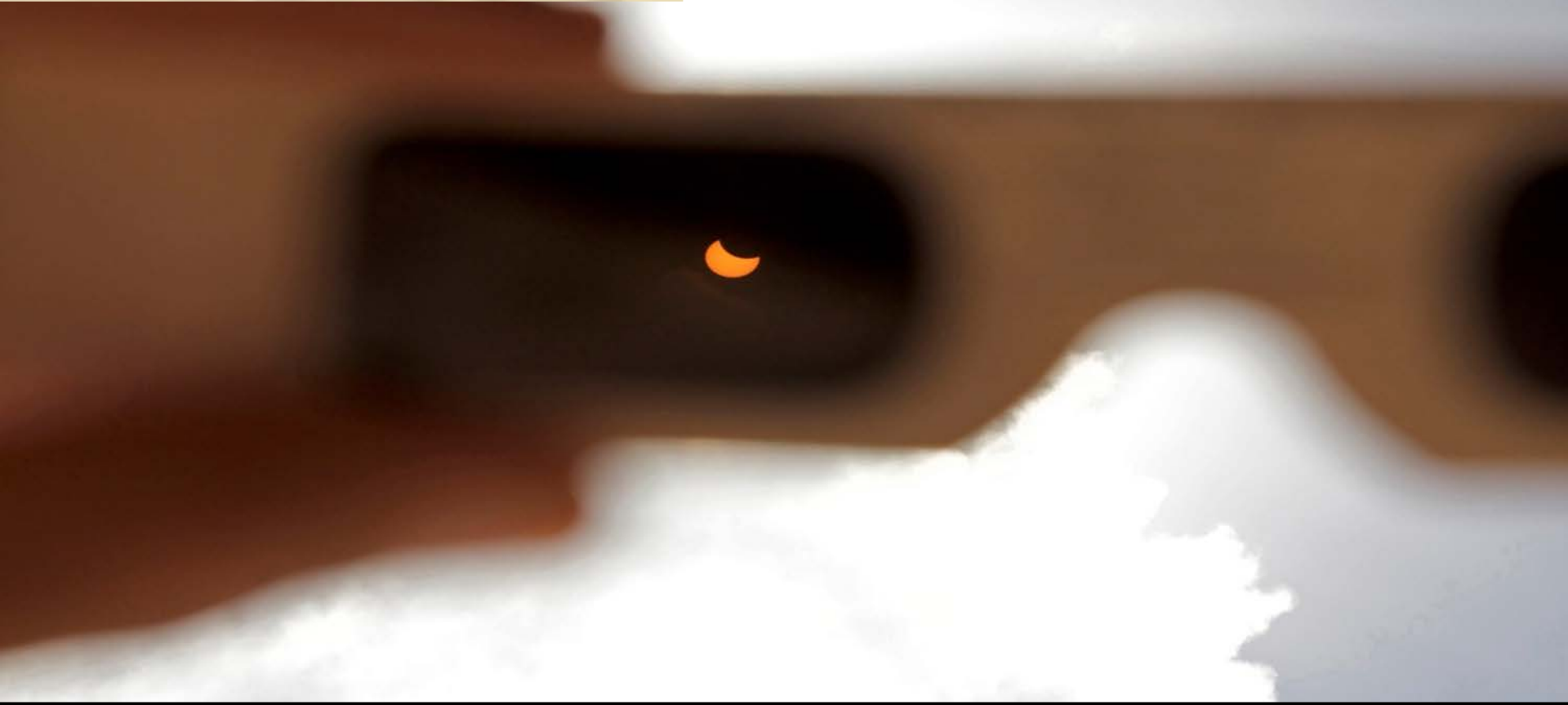
TOTAL SOLAR ECLIPSE OF
2017 AUGUST 21

ANNULAR SOLAR ECLIPSE OF
2021 JUNE 10

ANNULAR SOLAR ECLIPSE OF
2023 OCTOBER 14

TOTAL SOLAR ECLIPSE OF
2024 APRIL 8







AMERICAN ASTRONOMICAL SOCIETY

National Science Foundation



<https://eclipse.aas.org/>

