Solar Eclipses in North America in the 2020s

- Annular solar eclipse: October 14, 2023
- Total solar eclipse: April 8, 2024
Moon phases for 2021

[Image of moon phase chart for 2021]
Lunar phases

Not to scale
At perigee, the Moon is closer to the Earth and looks slightly larger.

At apogee, the Moon is farther from the Earth and looks slightly smaller.

Moon’s Orbit is elliptical (greatly exaggerated here)
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 their distance from Earth.
Annular eclipses
Fifty years of solar eclipses
Total and hybrid solar eclipses • 2010 to 2060

Paths of solar eclipses by Xavier Jubier, xgubier.free.fr
Total solar eclipses over North America in the 21st century
Total and Annular Solar Eclipse Paths: 2021 – 2040

- **Total Eclipse**
- **Annular Eclipse**
- **Hybrid Eclipse**

Legend:

- Blue: Total Eclipse
- Red: Annular Eclipse
- Pink: Hybrid Eclipse

Map credits:

- Sunearth.gsfc.nasa.gov/eclipse/eclipse.html
- Fred Espenak, NASA/GSFC - 2007 July
June 10th 2021
Annular Eclipse – June 10\textsuperscript{th} 2021
June 10th 2021: Annular Eclipse Viewing Locations

An annular solar eclipse begins at sunrise along a path beginning in southern Ontario. Because of a sparse road network and few locations in the path of annular eclipse, few will watch the Sun’s perfect annulus in this region. However, millions of Canadians and Americans will enjoy a spectacular deep partial eclipse rising above the horizon at sunrise. To view this eclipse or sunrise, be sure to find a location with a clear horizon; a body of water is ideal. The eclipse figures show the appearance of the eclipse at sunrise. The short black line represents the horizon.

At all times during an annular solar eclipse, use eclipse glasses or other approved solar filters.
Maximum obscuration of the Sun during eclipse.
April 8th
2024
How long do eclipses last?
TOTAL SOLAR ECLIPSE OF 2024 APRIL 8
NAYARIT • SINALOA • DURANGO • COAHUILA • TEXAS
Annular Eclipse: 918 days
Total Eclipse: 1095 days
Annular Eclipse: 62 days