

## August 21, 2017 Solar Eclipse

A solar eclipse occurs when the Moon passes between the Sun and the Earth. It's a total eclipse when the Sun's light is completely blocked by the Moon. It's an annular eclipse when the moon covers only the center of the Sun, leaving a "ring of fire" surrounding the moon. The eclipse today will be total, but in Silver City, only about 65% of the Sun will be obscured since the arc across North America runs from Oregon through Georgia, far from us.

There's a total eclipse somewhere in the world approximately every 18 months. However, a total eclipse traverses the same point on the earth only once each 375 years. Locate eclipses for the next ten years at <https://www.timeanddate.com/eclipse/list.html>. **FYI, there will be an annular eclipse passing directly over Albuquerque on October 14, 2023.**

The periodicity and recurrence of eclipses is governed by the Saros cycle, a period of approximately 6,585.3 days (18 years 11 days 8 hours). It was known to the Chaldeans as a period when lunar eclipses seem to repeat themselves, but the cycle is applicable to solar eclipses as well.

"Baily's beads" is the effect seen just before and just after totality, when only a few points of sunlight are visible through valleys around the edge of the moon. A diamond ring is the effect seen in the few seconds just before and after totality, when a single point of sunlight brilliantly shines through a valley on the moon, appearing like a giant diamond in the sky. Totality is the period during a solar eclipse when the sun's photosphere -- the bright, visible surface of the sun -- is completely covered by the moon. The Sun's corona, Baily's beads, and the diamond ring effect are only visible near the totality (darkest point) of a total solar eclipse.



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About 70% of eclipses last longer than the August 21 eclipse. This year's total solar eclipse will last a maximum of two minutes, 43 seconds. The longest total solar eclipse from 4000 B.C. to A.D. 8000, a span of 12,000 years, will occur on July 16, 2186, and will last seven minutes, 29 seconds.