



THROUGH THE EYES OF NASA

Experience a Solar Eclipse!

Annular Solar Eclipse – Saturday, October 14, 2023

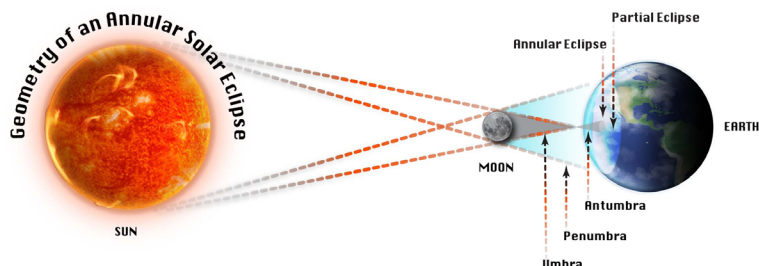
Total Solar Eclipse – Monday, April 8, 2024

WHAT IS A SOLAR ECLIPSE?

Eclipses happen when one object in space passes through the shadow of another object in space. During a solar eclipse, Earth enters the Moon's shadow, with the Moon blocking all or part of the Sun for the viewer.

• **Annular Solar Eclipse**

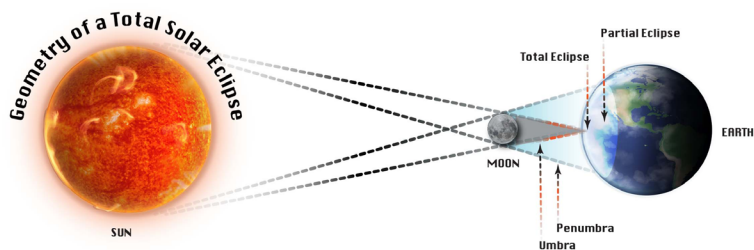
An annular eclipse happens when the Moon is lined up between the Sun and Earth, but at or near its farthest point from Earth. Because the Moon is farther away from Earth than usual, it seems smaller. It does not block the entire view of the Sun. When the Moon is directly in front of the Sun, a ring of sunlight appears around the Moon.



During an annular eclipse, the Moon's inner shadow cone (the "umbra") does not reach Earth's surface. Observers in the "antumbra" see a ring of sunlight around the Moon, an annular eclipse. Those in the outer shadow (the "penumbra") see a partial eclipse. Diagram not to scale.

• **Total Solar Eclipse**

For a total eclipse to take place, the Sun, Moon, and Earth must be in a direct line. The people who see the total eclipse are in the center of the Moon's shadow when it hits Earth. The sky will darken, as if it were twilight. Weather permitting, people in the path of a total solar eclipse can see the Sun's corona, the outer atmosphere of the Sun. A total solar eclipse is the only type of solar eclipse that viewers can briefly watch without their eclipse glasses – and they can only remove the glasses when the Moon is completely blocking the Sun.



During a total eclipse, the Moon's inner shadow cone (the "umbra") touches Earth's surface. Observers in the umbra see the Sun completely blocked by the Moon, a total eclipse. Those in the outer shadow (the "penumbra") see a partial eclipse. Diagram not to scale.

• **Hybrid Solar Eclipse**

Sometimes a solar eclipse can appear as an annular in some places and a total in others as the Moon's shadow moves across Earth's surface. This is known as a hybrid eclipse.

• **Partial Solar Eclipse**

A partial eclipse happens when the Sun, Moon, and Earth are not exactly lined up. Only a part of the Sun will appear to be covered. During a total or annular solar eclipse, people outside the Moon's inner shadow see a partial solar eclipse.

More Ways to Experience the Eclipses

Access more information about eclipses, including downloadable activities, fascinating facts about our Sun, and different ways to safely view the eclipses at solarsystem.nasa.gov/eclipses.



solarsystem.nasa.gov/eclipses

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