

Partial solar eclipse over the U.S. on Thursday, Oct. 23

October 17 2014

People in most of the continental United States will be in the shadow of the Moon on Thursday afternoon, Oct. 23, as a partial solar eclipse sweeps across the Earth. For people looking through sun-safe filters, from Los Angeles, 45% of the sun's diameter will be covered at 3:38 p.m. PDT (local time); from Seattle, 64% will be covered at 3 p.m. PDT; from Denver, 55% will be covered at 4:35 MDT; and in Chicago, 55% will be covered at 5:42 p.m. The sun will set before the eclipse is visible in New York or New England. A tiny bite would be visible at sunset while looking through special sun-safe filters farther south on the Eastern Seaboard.

Jay Pasachoff, a professor at Williams College in Williamstown, Mass., and Chair of the International Astronomical Union's Working Group on Eclipses, points out that "this [partial eclipse](#) visible to people looking through [sun](#)-safe filters on Thursday is a coming attraction for the August 21, 2017, eclipse that will have the moon entirely covering the sun in a 60-mile-wide band across the U.S. from Oregon to South Carolina, with 80% or more of the sun covered from most of the continental U.S." Pasachoff continued, though, "the sun is so bright that even through ordinary sunglasses you can damage your eyes if you stare at it. The special solar filters that are available, which are made of a black polymer, block out all but about a thousandth of a per cent of the sun's brightness, while ordinary sunglasses would dim the sun by only a relatively small bit even in the visible while allowing almost all the hazardous infrared to come through."

For those who don't have time to get inexpensive sun-safe filters, which cost only about a dollar, number 12, 13, or 14 welder's glass is safe to look through at the sun. Also, when a substantial bite appears to be taken out of the sun's disk, a simple projection method works to see that the sun is no longer round-shaped. Simply punch a hole a quarter of an inch or so in a piece of cardboard and use that hole to project the sun's image on the ground or on a wall, with the sun behind you, over your shoulder. Often, the spaces between the leaves of a tree provide this "pinhole" effect, and crescent suns appear on the ground among the shadows of the leaves.

A hundred eclipse enthusiasts—amateurs and professionals alike—will gather at Sunspot, New Mexico, for viewing the eclipse and, the following days, a series of talks near the National Solar Observatory's station there. The 4-day conference in New Mexico is organized by Patrick and Joanne Poitevin. These international Solar Eclipse Conferences are organized every non-central [solar eclipse](#) year. The next one will be in 2018. In recent years, ecotourism has increasingly involved thousands of tourists who travel the world to see solar eclipses, especially the total phases when the Moon entirely hides the sun, allowing the sun's faint outer layers to be seen as the sky grows dark in midday. But this year's partial eclipse will still leave so much of the everyday solar surface visible that the sky will not darken noticeably.

Provided by Williams College

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