

Star Guide: Plan for summer's total eclipse

By Tony Berendsen

There hasn't been a total solar eclipse visible from the contiguous United States since 1979, but on Aug. 21, 2017, from sea to shining sea the long wait will be over, the "Great American eclipse" is coming soon.

Many of us have witnessed a partial solar eclipse, fewer have experienced a total eclipse. Don't confuse the experience because there is no comparison. Partial eclipses are more common and really fun to experience (especially with the right equipment and I'll get to that later in the article) but they are nothing like the experience of a total solar eclipse.



It has been nearly 30 years since a full eclipse of the sun could be seen in the United State. Photo/NASA

So, what's the difference? In a partial solar eclipse the

Earth is in the outer shadow of the moon called the penumbra. The moon is blocking only part of the sun so its light is diminished, but still too bright to look at directly. During a total solar eclipse the Earth is in the full shadow of the moon called the umbra. The moon is blocking the full disk of the sun so light from the disk of the sun is completely blocked and safe to look at directly.

During the eclipse this summer all of the United States will experience a partial eclipse of the sun, except for the path of totality stretching from Oregon to South Carolina. If you are within this 70-mile wide path on Aug. 21 and at the correct time you will experience one of the most amazing wonders of your life.

Years ago in 1997, off the coast of Barbados, while on a Sky and Telescope astronomy tour, I experienced my first total eclipse of the sun. I love to tell the story. "I live in Reno, a Burning Man town, and have never attended, but the day of the eclipse was the closest I've ever come to taking all my clothes off and painting my body."

My wife and I were on the top deck of the Holland American Ryndam about 100 miles off shore. About 11am a roar of amazement went up from the 1,500 or so passengers with us as we saw the moon's shadow approach in the distance, the sky darkened, the air cooled, the sun disappeared behind the moon, and the corona appeared along with three planets and some bright stars.

The eclipse experience was amazingly primal to behold. I say that because some part of my being, a relic of my human history hard wired within me, was touched by the eclipse somehow, remembering experiences of night during day in the past.

Whether you are planning to stay home and experience a partial eclipse, or travel to the path of totality start planning now.

The eclipse shadow will be traveling across the U.S. from west to east so the time of the total and partial phases will be different depending on your location. Here is a link to information about the **eclipse times**.

This eclipse will be very popular, so plan out your trip to the path of totality carefully, many rooms are already taken, and campsites will be full. Don't forget to bring along safe solar viewing equipment too.

Celestron has developed a line of solar viewing products that can be found at www.celestron.com appropriately called **EclipSmart**. Remember, do not look at the sun directly unless it is in full eclipse. In the next Star Guide I'll give some tips on what to look for during the eclipse and how to view a partial eclipse, and do some solar imaging.

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