

May Skies over the Pinnacles

May 2024
by Jeff Hutton

May's Four Principal Phases of the Moon

May 1	Last Quarter	
May 8	New Moon	
May 15	First Quarter	
May 30	Full Moon	



In the early morning of April 8, thirty-five people gathered in the parking lot at Union Church in Berea to join a human migration that was advertised as one of the largest mass migrations in human history. Why? It was a trip to witness an event guaranteed to shake each of us out of the expectation that nothing ever really changes: That the Sun rises somewhere in the east, shines all day (even if its cloudy) and then sets somewhere in the west, bringing back the gloom of night. For every day of life, for almost every person who has ever lived, that has been predictable reality. During the short, eerie period when a bright, sunny day turns to twilight in just seconds, it doesn't matter that this is the natural result of the earthly and lunar orbits lie on almost exactly the same plane, or that the Sun is both 400 times larger and 400 times farther away from the Earth than the Moon. This allows a narrow strip of our planet to occasionally witness a precise alignment of Moon and Sun where the faintly glowing solar atmosphere of the sun to flash out before our wondering eyes.

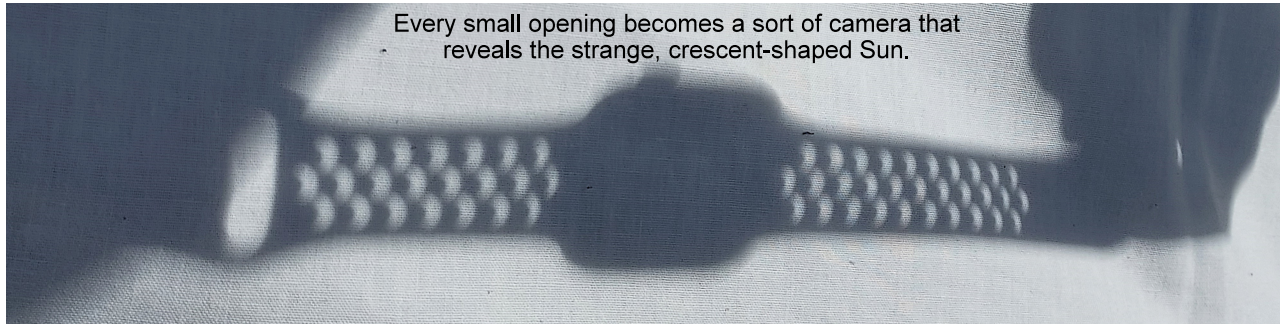
Once the moon's disk just 'kisses' the solar disk it takes about two and a half hours to cover the Sun's disk completely. Our eyes adjust to the increasing gloom so well that the change of light isn't noticeable until the Sun is finally reduced to a thin crescent. The picture above was taken at about noon. It shows Union Church members and guests gathered around a projection screen with an image of the now crescent Sun projected from a special device placed about 60 feet to the rear of the camera.

When just a sliver of the Sun's disk shows in the sky, strange and beautiful lighting effects appear all around. Ordinary shadows become sharp, with almost no 'fuzz' around them.

Each bud and stem is sharply rendered as a sharp shadow on the pavement beneath this potted plant.



Every small opening becomes a sort of camera that reveals the strange, crescent-shaped Sun.



Above, the gaps between links of a watch bracelet each focuses a tiny solar crescent.



At Left, even spaces between fingers reveal this wonder.

Anyone experiencing even a partial solar eclipse can experience the above. But there is nothing like

TOTALITY.



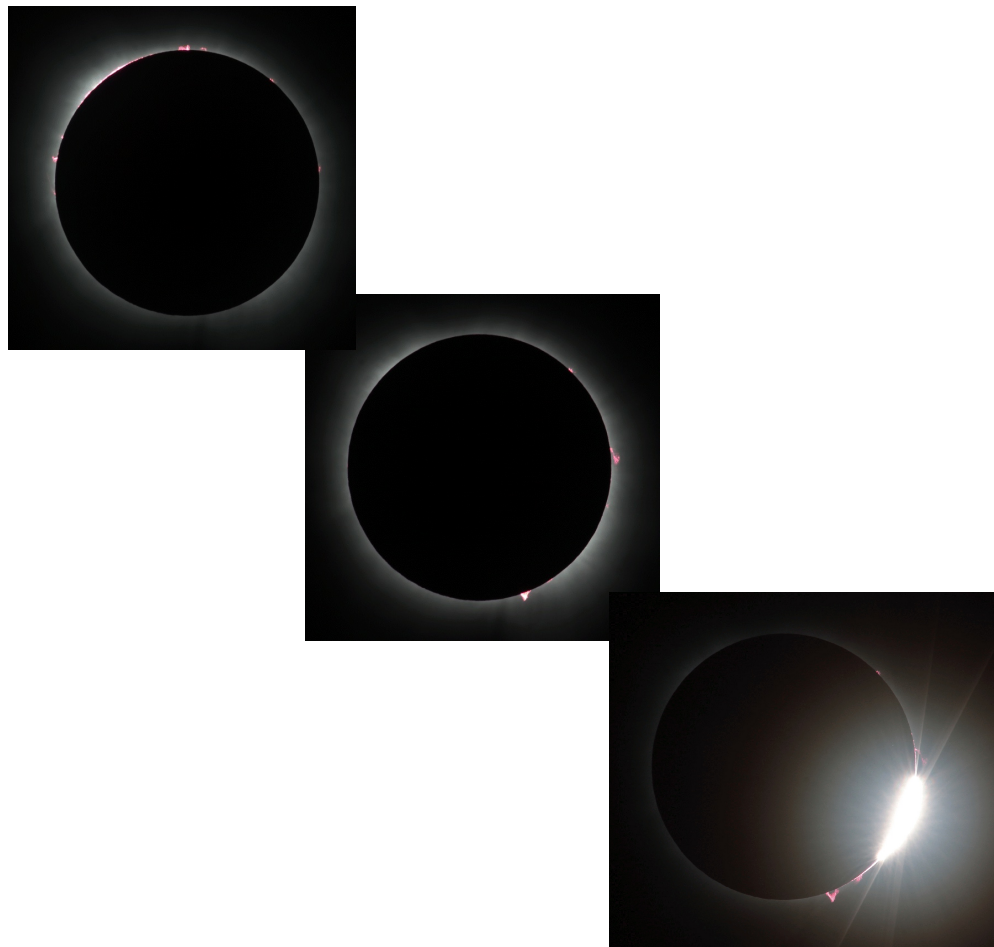
The Scene During Totality

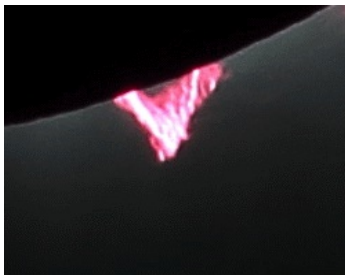
As day turns to twilight in seconds, everyone senses that top-of-the-roller-coaster thrill that something extraordinary is about to happen. Up until this point, looking at the sun required special protective glasses or a projection technique to see the diminishing sun. Once totality finally arrives, you can take in the astonishing view with your own eyes, as if the Cosmos opens for you and you feel you can view eternity, itself. I am a veteran of 4 total solar eclipses. I know what to expect and still got lost in the moment. Above, you see me seated behind my photography equipment, still wearing my regular sunglasses! The corona visible during the time when the Moon completely covers the Sun is only as bright as the Full Moon.



Above is a picture of “first diamond ring” that occurs seconds before totality begins. This image was provided by fellow eclipse-chaser, Steve Rismiller, taken from western Ohio. I managed to miss this shot.

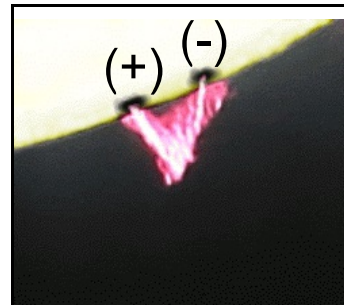
As totality progressed we agreed that most impressive was the large number of pink solar prominences that appeared all around the circle of wispy light that surrounded the Moon. I caught the series of images below over the span of about 3 minutes. The last image is the “second diamond ring” which heralds the end of totality.





Check out that pointy pink thing near the “bottom” edge of the Sun. That’s called a **solar prominence**. Notice the ‘V’ shape? What you are seeing is a sort of bridge of solar **plasma** that likes to ride up and down loops of magnetism that forms pairs of sunspots. Plasma is a state of matter (like solid, liquid or gas) that only exists at very high temperatures, like 30 million degrees Fahrenheit!

Sunspots form near the surface of the sun where a loop of magnetism pierces the Sun’s surface. When you see two sunspots close together, you can bet one of them has positive (+) polarity and the other has negative (-) polarity. At right, I removed the Moon to show you how this might look with two sunspots.



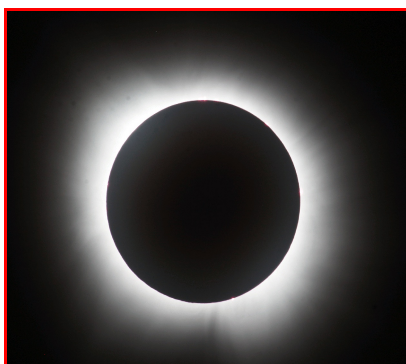
I took this picture when the Moon was about to cover one half of the Sun. Look closely at another pair of sunspots about to be covered by the Moon.

The greatest joy of experiencing this magnificent event was to be surrounded by enthusiastic people who were willing to brave disruption, terrible traffic and a host of other discomforts just to experience a rare demonstration of nature’s power. We were most fortunate to avoid travel problems. Only one slow down on I- 74 outside of Cincinnati briefly delayed our arrival back in Berea. Our group left here at 7:30 AM and returned by 10:30 PM, despite having several vehicles.

Take a close look at the picture at the top of this article. Everyone in the picture is seen happily anticipating the total solar eclipse, then less than an hour away. Look again. How many present appear to be younger than, say, 40? I regret to say, despite my best efforts, I could not convince any young people to join us to see the eclipse. When pressed, it seemed that the reasons given would reflect more of a fear of the unknown than a zest for adventure. Whatever the excuse, the opportunity of an enduring memory has been lost for a lifetime.

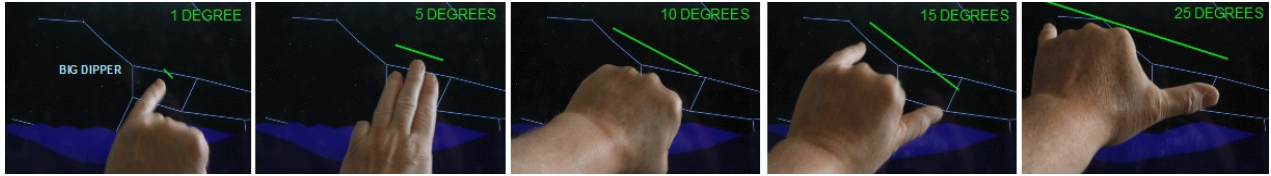
On March 30, I put on a presentation at the Forestry Outreach Center about safely viewing the solar eclipse as it would be seen from Berea. Berea’s Physics Department contacted the local schools about the event and I wrote personally to the Superintendent of Madison County Schools, telling him that I had created safe solar projectors that were to be given away free to interested teachers. Part of the cost of the projectors was borne by the FOC. The Superintendent never responded. Nor did one teacher show up. If our educators don’t show enthusiasm for learning, how can we expect their students to do so?

For 23 years before retirement, I successfully ran a teacher education program for a major university. During that time I stressed that a successful teacher models the behavior that s(he) expects from students. Might there be a connection between students’ reluctance to experience the solar eclipse and behaviors modeled by the adults in their lives?



Attractions in May

When you hold your hand all the way out and hold three fingers out, like the scout's salute in panel 2, your fingers create an **angular distance** of 5 degrees, about the width of the bowl of the Big Dipper. When I talk about the angular distance between, say, the Moon and a star or planet, I'll say that they are separated by a certain number of degrees. Sky and Telescope magazine is my source for most of the following information.



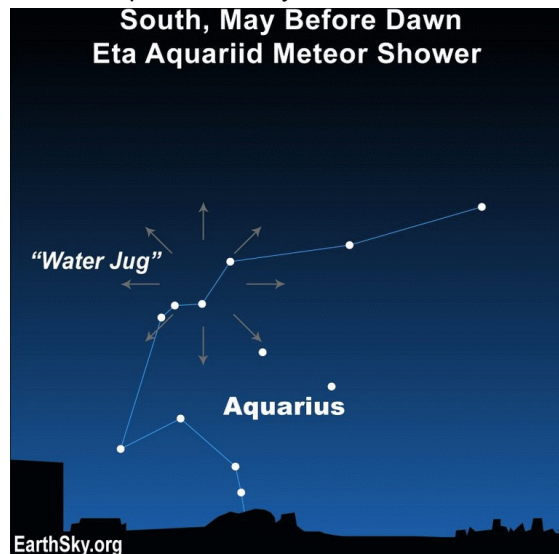
May 3

If you're up early on this Friday morning, check out a nice planetary group in the southeast. Find the crescent Moon, then look a little to the left to spot Saturn and go left and down to find fainter Mars.



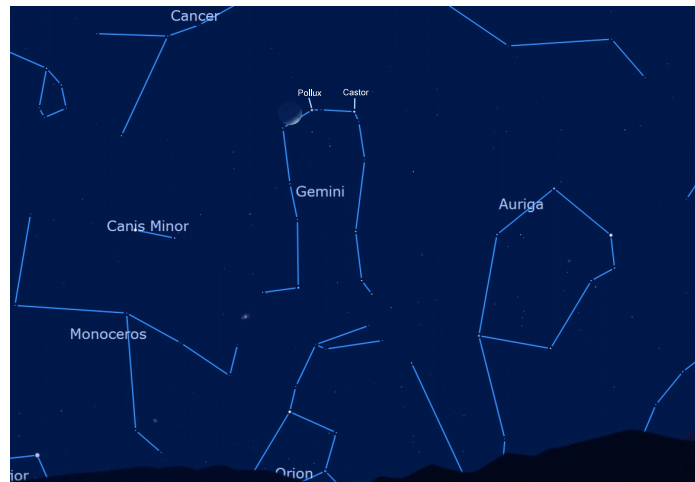
May 5

Towards dawn, you might catch a few meteors from the annual Eta Aquariid meteor shower. The Moon's glare won't be a problem this year.



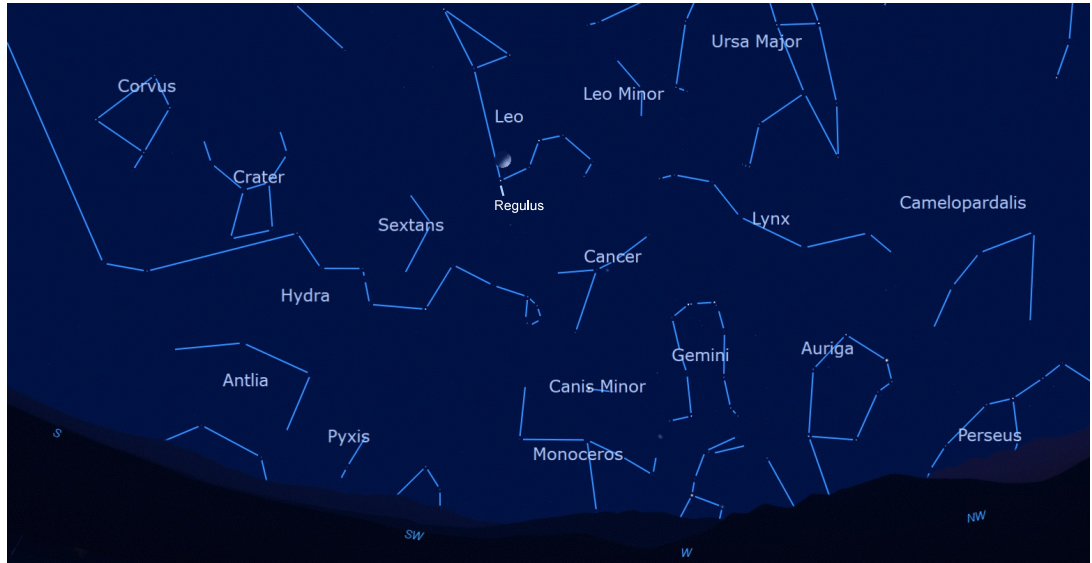
May 12

In high evening western sky, catch the crescent Moon as it snuggles up to the constellation Gemini.



May 15

This evening, check out the first quarter Moon shining just 3 degrees from the brightest star in Leo, Regulus.



May 19-20

The Cosmos is subtle and requires patience to have its secrets revealed. If you have the time (or can't sleep tonight) check out the Moon on the evening of the 19th and the blue star Spica to the lower left. See how much closer they are in the wee hours of the 20th?



May 31

Binocular Alert! The Moon revisits Saturn this morning, passing less than 1 degree below.

