

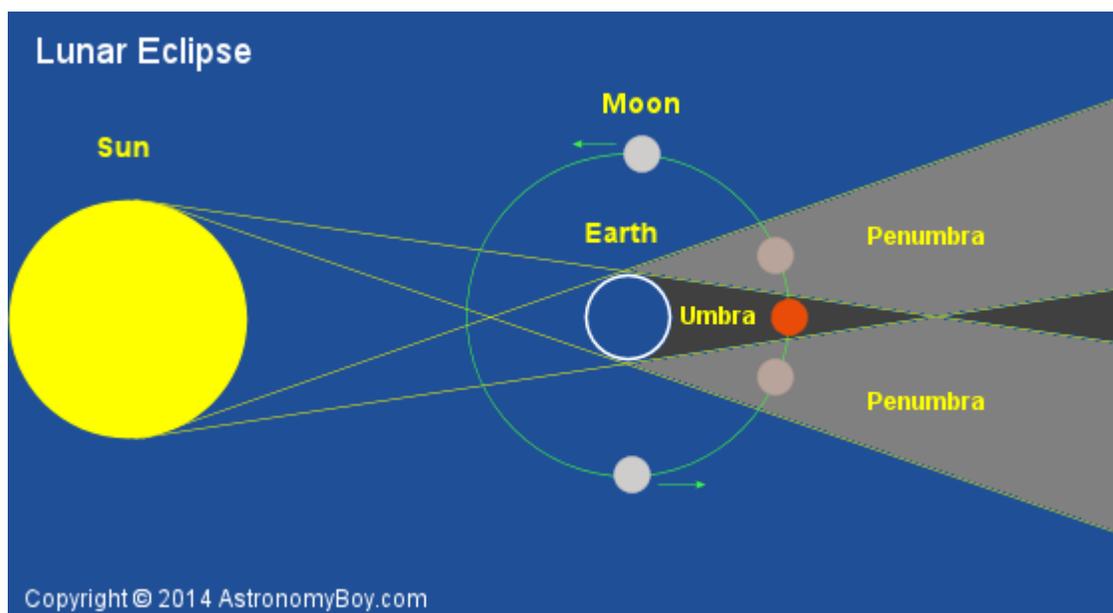


Special Showing of Back to the Moon For Good

We're doing a special showing of Back to the Moon for Good, April 14th at 6:00 p.m., because of the lunar eclipse, sometimes called the Blood Moon! Find out when the eclipse is happening, why the Moon turns blood red, and why Google wants humans to go back to the Moon!

The night of April 14–15 offers one of the most spectacular sky gazing sights of this year—a total eclipse of the Moon. When the Earth, Sun, and Moon are in the proper alignment, we are treated to a lunar eclipse. In simple terms, the Earth is positioned between the Sun and Moon, causing the shadow of the Earth to darken the face of the Moon. All of the continental United States will see this event.

The geometry of a lunar eclipse is shown below.



The Moon produces no light of its own. We see the Moon because it reflects sunlight; the Moon is illuminated by

the Sun. When the Earth blocks the Sun's light from reaching the Moon, we see a lunar eclipse.

A lunar eclipse unfolds slowly over the course of a few hours, so you'll have plenty of time to catch the action. On the night of the eclipse the Moon, in its orbit around the Earth, will first enter the outer portion of the Earth's shadow, the penumbra. This occurs at about 1:20 a.m. Eastern time (ET), 10:20 p.m. Pacific time (PT). Don't expect to see anything dramatic right away. It will take 20-25 minutes before the face of the silvery-white Moon begins to dim to a silver-gray as it moves deeper into the penumbra, and the Earth blocks more and more of the sunlight.

At 12:58 a.m. CT, the Moon enters the darkest portion of the Earth's shadow, the umbra. This is the REAL beginning of the eclipse; everything so far has been just a warmup. It takes a little more than an hour for the Moon to move completely into the umbra, and during this time the appearance of the Moon changes drastically. You'll notice the Moon becoming dimmer and dimmer. More impressively, the color of the Moon starts to change. From its silvery color, the Moon begins to turn a reddish-orange, as shown in the photo on this month's Sky Map.

The actual hue of the reddish coloration varies from one lunar eclipse to another. Sometimes the color is described as that of a copper penny; other times it's more like that of a pumpkin. But why orange and not some other color?

Think about a sunrise or sunset. We've all noticed how the rising or setting Sun takes on a distinctly reddish-orange color when near the horizon. This happens because when the Sun is low in the sky, its light shines through a great deal of our Earth's atmosphere before reaching our eyes. All that atmosphere reddens the sunlight. The same thing happens during a lunar eclipse. As sunlight shines past the edge of the Earth, it passes through the Earth's atmosphere and is reddened, exactly like a sunrise or sunset. The reddened light strikes the Moon and makes the Moon appear reddish-orange.

The Moon moves entirely within the umbra by 3:06 a.m. ET (12:06 a.m. PT) and stays there for more than an hour. It's during this time that the Moon will be at its dimmest and reddest. Then, starting at 4:25 a.m. ET (1:25 a.m. PT), the whole process will occur in reverse. The Moon will slowly move out of the umbra and into the penumbra, turning from reddish-orange back to silver-gray. Eventually, the Moon will move out of the penumbra and return to its normal bright, silvery-white color.

Read more about this eclipse and find other exciting sky gazing events on the [Old Farmer's Almanac](#).