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Find a table with the occultation timings for the Asheville, NC area on page 2.

# A Trio of Lunar Occultations

This month the Moon passes in front of Neptune, the Pleiades, and Spica.



Spica shines just to the east (left) of the first-quarter Moon shortly before being occulted on July 13, 2024. From Duluth, Minnesota, the event occurred during twilight, but the star was easily visible in binoculars before sunset. The crescent Moon will hide Spica again on November 27th during the early morning hours.

be seen. While binoculars may reveal the main stars, a telescope will provide the best view of the event.

From many locations across North and Central America, the Moon will occult several of the cluster's brightest stars, including Merope, Alcyone, Electra, and Atlas. Observers in the eastern half of the U.S. witness this multi-star occultation in the early morning hours, while in the Pacific Time Zone it begins around 10 p.m. local time on the 15th and concludes after 1 a.m. on the 16th.

Due to the Moon's proximity to Earth, it exhibits significant parallax, which causes its path across the cluster to vary depending on your location. To find out which stars you can see occulted, simulate the event using a stargazing app such as *Stellarium* to step through the event with the software set to your specific location.

For me, the peak occultation experience is witnessing a bright star or planet disappearing or reappearing along the smoky, earthlit side of a crescent Moon. Lunar glare is minimal and the ability to clearly see the approaching (or departing) limb adds a three-dimensional quality to the scene. Observers across more than half of both the U.S. and Canada will have this sight delivered on a silver platter on **the morning of Nov. 27th** when the 13%-illuminated waning lunar crescent **blots out 1st-magnitude Spica**. Both the bright-limb disappearance and dramatic reappearance at the dark limb are visible from the Midwest and the Eastern U.S., but even observers as far west as Denver, Colorado, can watch the star reemerge shortly after moonrise.

For full details, go to IOTA's website, [https://is.gd/Spica\\_Nov27](https://is.gd/Spica_Nov27).

You probably don't read this magazine for the latest astrology news. Still, you might be interested to know that aficionados of the subject and other related spiritual beliefs celebrate Occult Day in November. Amateur astronomers can "join in" by watching **the Moon occult Neptune on November 11th, the Pleiades on November 15–16, and Spica on November 27th**.

The fun begins the evening of **Nov. 11th** when the dark limb of the 10-day-old gibbous **Moon eclipses 7.8-magnitude Neptune** for most of the U.S. (except the northwest), eastern Canada, Central America, and Greenland. From many locations it will take the Moon about 6 to 8 seconds to cover the distant planet's tiny, 2.3"-diameter disk. Observers in the eastern third of North America, Central America, and northern South America also get an appetizer: Roughly 90 minutes before the Neptune occultation, the Moon eclipses 5.5-magnitude 20 Piscium.

Despite the brilliance of the 80%-illuminated Moon, a small scope should suffice to extract Neptune from the lunar glare — at least at disappearance. The ice giant's reappearance on the bright limb will be considerably more challenging! Use magnification upwards of 200× to contrast Neptune's bluish disk next to the bone-white lunar landscape. For an extensive list of cities and times for the planet's disappearance and reappearance, visit the International Occultation Timing Association's dedicated web page [https://is.gd/IOTA\\_Neptune](https://is.gd/IOTA_Neptune).

When the full Beaver Moon gleams over frosty forests on **November 15–16**, it'll be concealing a secret. Nearly hidden within its light is one of the sky's most beloved star clusters, **the Pleiades**. But instead of glittering — in the words of Alfred, Lord Tennyson — "like a swarm of fireflies tangled in a silver braid," the dipper-shaped group is awash in moonlight and struggling to

Find the timings for these three occultations in the Asheville area on the next page.

# A Trio of Lunar Occultations Visible in November 2024

## Approximate Lunar Occultation Timings for the Asheville, NC Region

Occulted Object	Date	1 <sup>st</sup> Contact	2 <sup>nd</sup> Contact	Duration	Constellation	Comments
<b>Neptune</b>	Nov. 11	8:58 p.m.	10:10 p.m.	72 min.	Pisces	- a waxing gibbous Moon - Neptune makes first contact on the dark limb
<b>Pleiades star cluster</b>	Nov. 16	1:43 a.m.	5:13 a.m.	3 hrs. & 30 min.	Taurus	- the night of the Full Beaver Moon - mid-occultation is about 3:15 a.m.
<b>Spica</b> - the brightest star in Virgo	Nov. 27	5:34 a.m.	6:41 a.m.	67 min.	Virgo	- a 13% illuminated waning lunar crescent - only 18° above the E-SE horizon at first contact

**Notes: All times are EST. This table prepared by the Astronomy Club of Asheville.**