

## WINTER SKIES OVER THE MIDDLE FORK 2020-2021

Winter is a great time to bundle up and do a little stargazing and the clear, crisp skies above the Middle Fork River Forest Preserve provide the perfect setting. The low horizons yield a wonderful view of the winter sky.

If you look early in the season, you can catch the planets Jupiter and Saturn low in the southwest. On December 21, they'll appear as close as we've seen them since the year 1226 CE! You should be able to see them both in the same low power telescope! After the 21<sup>st</sup>, the pair will separate with the brighter Jupiter moving east of Saturn, but you'll have to catch them in the evening twilight. Mercury joins the pair during the first week of January and all three planets are within a couple of degrees of each other on January 11<sup>th</sup>, though they are very low in the west-southwest. Mercury is separated farthest from the Sun on the 23<sup>rd</sup> of January and then it heads back towards the Sun. It'll be difficult to see by early February. Jupiter and Saturn will appear to pass behind the Sun on January 28<sup>th</sup> and 23<sup>rd</sup> respectively and then they'll emerge in the morning sky in mid-February.

Mars is still a prominent planet in the evening sky this winter, though it was closest to our Earth last October. Mars travels swiftly through a relatively star-poor regions of Pisces and Aries in January and February so you should still be able to find it. Look for a reddish "star" high in the southwest. In March, Mars moves above the V-shape Hyades star cluster and the Moon is nearby on March 19<sup>th</sup>. Though the distance between Earth and Mars is increasing each day and surface features will be all but impossible to see, you can still see the small red disk through a telescope. And NASA's *Perseverance* rover is due to land on Mars on January 3<sup>rd</sup>!

Winter boasts the greatest number of bright stars in our sky, more than spring, summer or autumn. The sky is anchored by our mighty warrior, Orion. Orion's shoulders and knees are marked by four stars that make a large, vertical rectangle. In the middle of the rectangle are the three belt stars in a line. This line can help you find other things. Follow the line to the upper right to a V-shaped group for stars, marked by a brighter reddish star. This is the face of Taurus, the Bull. The red star is Aldebaran, which means "the follower." Aldebaran follows the Pleiades or "Seven Sisters" star cluster across the sky. Look for the Pleiades near the V, especially if you bring binoculars with you. Note how blue the stars appear. The dipper-shaped group consists of very young and very hot stars. Binoculars will show over two dozen stars.

To the lower left of Orion's belt is Sirius, the brightest nighttime star in our sky. Sirius is also called the "Dog Star." It, and a trio of stars below it, mark Canis Major, the large hunting dog. If you have binoculars, look just below Sirius for a star cluster called M41. Note how a line drawn from Sirius to the upper right to Orion's shoulder (the reddish giant star, Betelgeuse) and then back to the left brings you to Procyon, the brightest in Canis Minor, the small dog. Don't look for a dog as the constellation is really two stars! These three stars form our winter triangle.

Above the dogs are two equally bright stars marking the heads of the Gemini twins. They are called Pollux and Castor. High above Orion is a bright yellowish star called Capella. Capella is part of Auriga, the chariot driver, though the entire constellation looks more like a pentagon.

To the northeast on winter evenings, you'll find the familiar Big Dipper. Follow the two stars at the end of the dipper's bowl northward to discover Polaris, our north star.

Though the campground doesn't open until April 1, if you happen to be at the preserve early in the morning, you might catch a glimpse of Venus in the east-southeast. Its altitude declines each day and, in early 2021, Venus is rising after the start of morning twilight. It'll pass behind the Sun on March 26<sup>th</sup>. Mercury makes a nice triangle with Jupiter and Saturn on the morning of February 20<sup>th</sup>, though they are visible just before sunrise. Mercury passes Jupiter by 0.4 degrees on the morning of March 5<sup>th</sup>. The thin waning crescent Moon joins the trio five days later.

Lastly, if you brave the cold, a Dark Sky Park is a wonderful place to watch meteor showers. There aren't many active showers in the winter, but one is worthy of note. The Quadrantid shower peaks the evening of January 3<sup>rd</sup> and the morning of the 4<sup>th</sup>, though you may see a few "shooting stars" from the end of December to the second week of January. The peak of the Quadrantids, though, only lasts a few hours. No instrumentation is needed. Lay out a blanket, look straight up and be patient. You may see up to 25 meteors per hour, and some may be bright. Unfortunately in 2021, a waning gibbous Moon will brighten the sky making only the brighter Ursids visible.

The Champaign-Urbana Astronomical Society has set any dates yet for public viewing sessions at the Middle Fork for the spring. It is more likely that sessions will be planned in the summer months after a vaccine has been widely distributed.