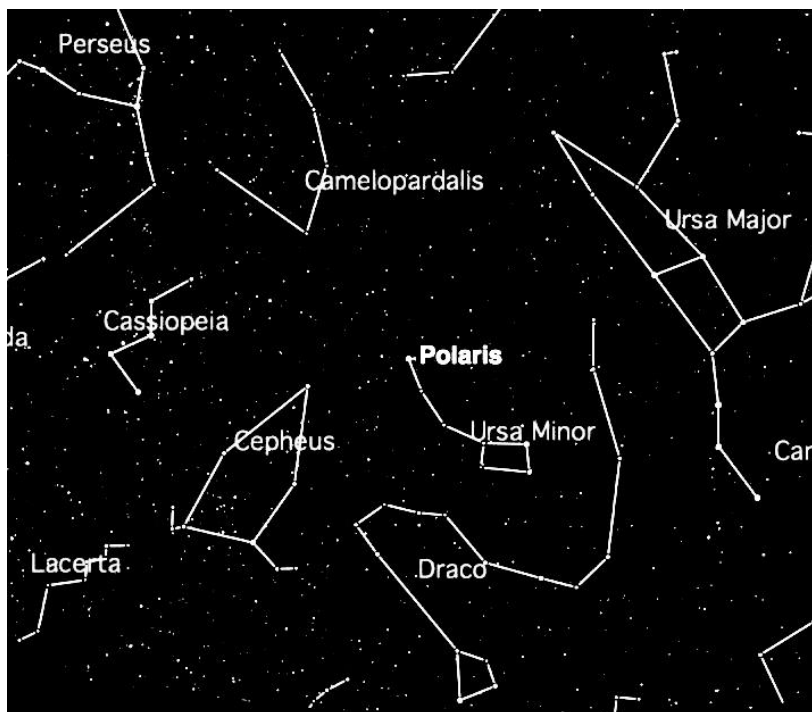


## The December 2023 Chippewa Valley Astronomy Update



**Figure caption:** The stars circle around the celestial pole as the Earth rotates. Depending on your latitude, some stars are always above the horizon and are called “circumpolar stars”. A few constellations are circumpolar as seen from the Chippewa Valley.

Photo credit: Stellarium software

### **Essay: Who is up all night, every night? By Kevin Litten**

Unless you live on the equator, some constellations in your night sky will be there every night. Never dropping below the horizon. They won't be in the same place. Moving throughout the night and moving throughout the year, but they will always be there. These constellations are known as circumpolar; because they appear to circle our planet's celestial poles.

Our North Star, Polaris, is very close to the North Celestial Pole. It resides in a constellation known as Ursa Minor or the Little Bear. Polaris is at one end of an asterism, or small group of stars, that is commonly known as the Little Dipper, in Ursa Minor. The Little Bear never sets.

The Big Dipper is the major asterism of Ursa Major or the Big Bear. The Big Dipper is probably the most recognizable group of stars on Earth. Ursa Major is the third largest constellation of the 88 constellations officially recognized by the International Astronomical Union. The Big Dipper is circumpolar for most of the United States. The Big Bear is almost circumpolar in Wisconsin; it is just too big with parts of it sinking below the horizon.

There are four more constellations that are circumpolar in Wisconsin: Draco the dragon, Cepheus the king, Cassiopeia the queen, and Camelopardus the giraffe. The 5 bright stars of Cassiopeia look like a lop-sided W. The 5 bright stars of Cepheus appear like a house with a pointed roof. Draco snakes around the roof of the sky, covering a huge amount of space being the eighth largest constellation. Camelopardus, well - it is up there. An experienced astronomer can spot it.

Because these constellations are up all night, all year long, astronomers tend to overlook them. They overlook them the same way that Southerners tend to overlook golf courses. If you could golf any day of the year you wanted, would you? So are these constellations overlooked or are the seasonal ones overrated?

Ursa Major has many objects worth looking at in even small telescopes. A section of the Milky Way runs through Cassiopeia which also has numerous interesting objects to look at. Even Camelopardus has Kemble's Cascade, a binocular asterism of 20 colorful stars in a row, well worth looking for. But they are up every night. So you decide.

--Kevin Litten is a member of the Chippewa Valley Astronomical Society