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## **Chippewa Valley Astronomy Update**

Getting Serious about Sirius

**By Kevin Litten**

Beneath and to the left of the constellation Orion “The Hunter” in the Winter sky is the constellation Canis Major “The Big Dog.” The big dog implies there is a little dog, and yes there is one, but this article isn’t concerned with that. In Canis Major is the brightest star in the sky.

To be bright, stars either need to be close or emit a great deal of light. Astronomers make a big deal between apparent and absolute magnitude. How bright we perceive things and how bright they actually are.

To demonstrate this, look back at Orion’s left knee. That very bright star is known as Rigel. Rigel is a blue extreme supergiant 100,000 times brighter than our sun. Now look for the brightest star you can see – that star is Sirius.

Sirius, a member of our local neighborhood at a mere 8.6 light years away, is the brightest star in the sky. Rigel is 860 light years away. Astute readers will notice that that’s a difference of a 100 times. Yes, Rigel is 100 times father away. So how bright would Rigel look if it were only as far away as Sirius? It would be fantastically bright. Full moon bright. Visible in the daytime bright. Yet still as small as any star in the heavens.

Would it melt the snow? No. That is the way things are.

Being the GOAT star (Greatest Of All Time), Sirius has been known forever. Its rising in the morning was used to predict the date the River Nile would flood in ancient times. If you didn’t believe it, you were in denial.

The North Star (Polaris) is a dim bulb at absolute magnitude 2.00 compared to Sirius at magnitude negative 1.47 (smaller or more negative magnitudes are brighter). Rigel isn’t a slacker, but it is only negative 0.12 for comparison.

Sirius is sometimes called the Dog Star because it is in the constellation Canis Major, “the Big Dog.” As Sirius rises in the morning in early Summer, that time of year is often referred to as the “Dog Days.” Sirius doesn’t do it all alone. It has a companion star, Sirius B, which is very difficult to see even in a large telescope. If you have spotted it you may claim to have seen “the pup.”

Dog star, goat star, whatever. Enjoy the show.

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



**Figure caption.** This astrophoto shows the constellation Orion. The 3 stars in a line are called Orion's Belt, and a line extended from them points down toward the brightest star in the entire night sky, Sirius. Two stars above the belt are the shoulders of Orion, and two stars below are considered the "knees". Rigel is seen as one of the "knees". This image was provided by "Astro Bob", found on Facebook as "Astro Bob's Astronomy for Everyone". **Photo Credit:** Bob King