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Chippewa Valley Astronomy Update

What is the Nearest Star?

By Lauren Likkell

Which star is closest to Earth? The correct answer, but not the one I am looking for, is “The Sun”. Yes, the sun is a star, and the next nearest star is more than a million times farther away from us. The sun also wins if you ask “What is the brightest star” (although the brightest star in Earth’s NIGHT sky is the star Sirius).

The star closest to the SUN (See how I rephrased that?) is in the Alpha Centauri star system. I used to say “Alpha Centauri is the star nearest the sun at only 4.2 light years away” but it turns out that it is more complicated.

The star Alpha Centauri is the third brightest star in Earth’s sky, and that is in large part because it is close to us. What looks like one star to the eye is really a three star system. The Alpha Centauri system contains two stars (Alpha Centauri A and Alpha Centauri B) orbiting each other once every 80 years. As of 2016, Alpha Centauri A has its own name, Rigil Kentaurus. But wait, there is a third star named “Proxima Centauri” that orbits that close pair, once every half a million years. Proxima happens to be closer to us than the Alpha Centauri stars. So you now know to say “Proxima Centauri is the closest star to the sun” (and you can also correctly say “The Alpha Centauri SYSTEM is the closest star system to the sun”).

In the last ten years, it was confirmed that there are two planets orbiting that dim red dwarf star Proxima Centauri. Yes, the nearest star to us has two planets! There is also unconfirmed evidence of a planet orbiting Alpha Centauri A (sorry, I should use the new name, Rigil Kentaurus but I keep forgetting to). By the way, since that “nearby” star is 4.2 light years away, if we send a radio signal there, it takes 4.2 years to arrive! And if someone replies, we won’t receive the signal for another 4.2 years.

Sadly, Alpha Centauri can’t be seen from here, at our latitude it is always below the southern horizon. The brightest star in the night sky (Sirius) can be seen from most places including here, but the second brightest star (Canopus) also is too far south to see from the Chippewa Valley. People far enough south to see the Southern Cross can see Alpha Centauri, for example from Hawaii, Puerto Rico, or southern Florida. Maybe stargazing should be added to your list of reasons to travel.

-- Lauren Likkell is a member of the Chippewa Valley Astronomical Society

Figure caption: This sky map from Freestarcharts.com shows stars that we can’t see at the latitude of the Chippewa Valley. These stars are low on the southern horizon even as seen from near the equator. The Southern Cross constellation (its official name is Crux) is shown in this image, as well as the brightest star in the constellation Centaurus (Alpha Centauri). Near it is shown the location of the star “Proxima”, the star nearest to the sun, that is too dim to be shown on this star chart. Photo Credit: Freestarcharts.com

Alpha Centauri - α Cen

