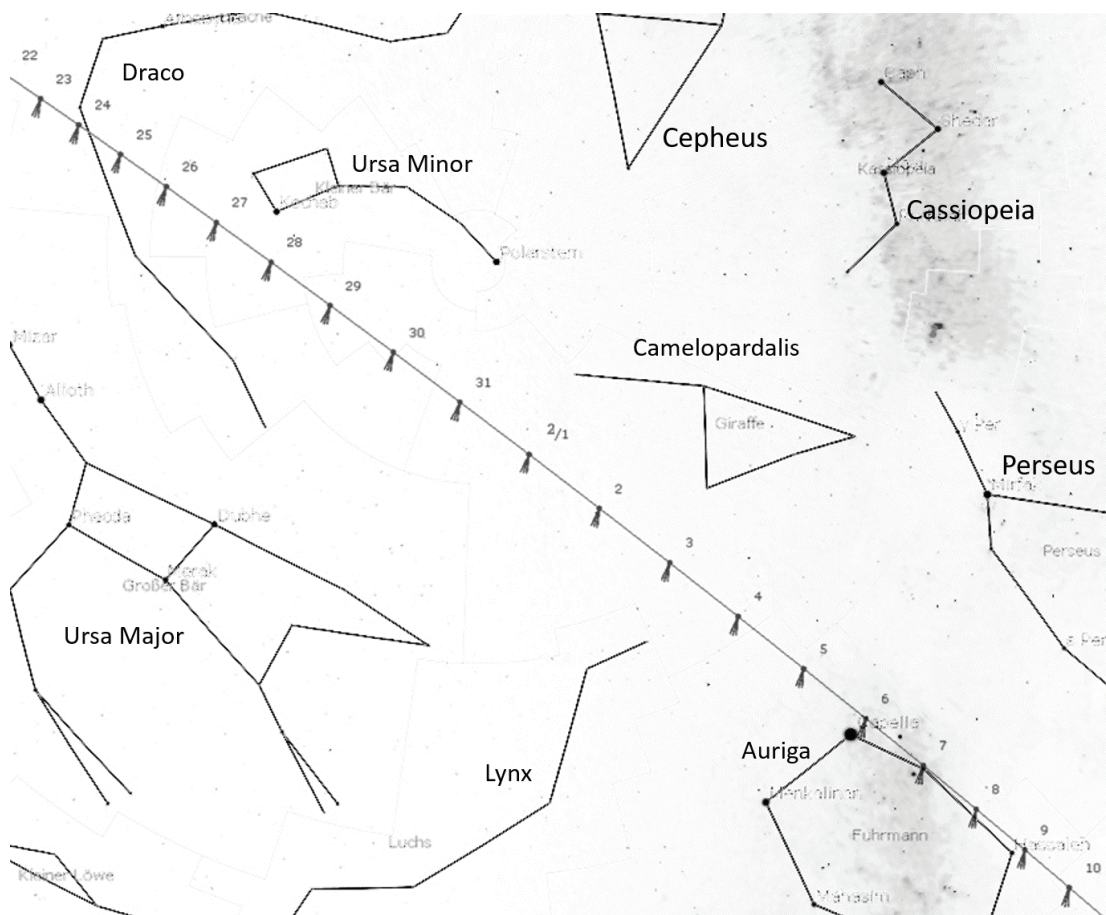


WHAT'S UP?

Hello and I hope that you and yours are off to a good start in 2023. In this installment, I want to tell you about Comet C/2022 E3 (ZTF). This is the comet's first trip through our part of the Solar System since humans have been recording astronomical events. It orbits the Sun once in 53,000 years. First, how did the comet get its name? The name, C/2022 E3 tells us about the comet's discovery. From this name we know that a) it's a non-periodic comet (C), b) it was discovered in 2022, c) it was discovered in the first half of the third month (March), and that it was the 3rd comet discovered in that half of March. The comet was discovered by astronomers at the Zwicky Transient Facility on Mount Palomar in California, so that explains the ZTF name. A comet's name packs a lot of information once you know how to read it!



Right now, can be found in our northern sky about in between the Big Dipper and the Little Dipper. It's best seen in the early morning hours, say from 1 a.m. until dawn. But depending on how flat your northern horizon is it could be seen just after midnight. Given the darkness of our skies, it *might* be visible to the unaided eye, but binoculars will definitely do the trick. Comet ZTF is moving quickly now because it is close to the Sun. You all know that because we learned about Kepler's 2nd Law of Planetary Motion in *What's Up? #17*. Just for you newcomers that didn't see that April 3, 2020 article, the 2nd Law says that a planet (or comet) sweeps out equal areas of its orbit in equal times. The upshot of the law is that comets move faster when they are closer to the Sun and more slowly when they are farther away. The comet was at its closest point to the Sun on January 17th. When you view the comet, note one or two stars that are close to it. Comet ZTF is moving so swiftly that within a couple of hours you will be able to tell that it has moved with respect to the stars. One other thing to look for is its color. Comet C/2022 E3 has a greenish glow to it. That's due to the excitation of diatomic carbon molecules in the gases created as the comet is warmed by the Sun's energy. A diatomic molecule is a molecule made up of two atoms. In this case, two carbon atoms. Comets like this are beautiful to see. In 1996, we were visited by Comet Hyakutake which had a very long and very green tail. It was spectacular. ZTF won't provide a show anywhere near Hyakutake's but it will still be nice to see. Due to the recent weather, I've yet to view C/2022 E3, but I'm really looking forward to it. You should be too!

This diagram shows the position of Comet C/2022 E3 each night from January 23rd (upper-left corner) through February 10th (lower-right corner). Also shown are the constellations that the comet will be passing near. A tip-of-the-hat to my friend Mike McCabe (member and President of the South Shore Astronomical Society) for the plot of the comet's path that I used as the basis for the diagram!

You can reach me at astroblog@comcast.net with any questions and comments. This is *What's Up?* installment #65.

Barry