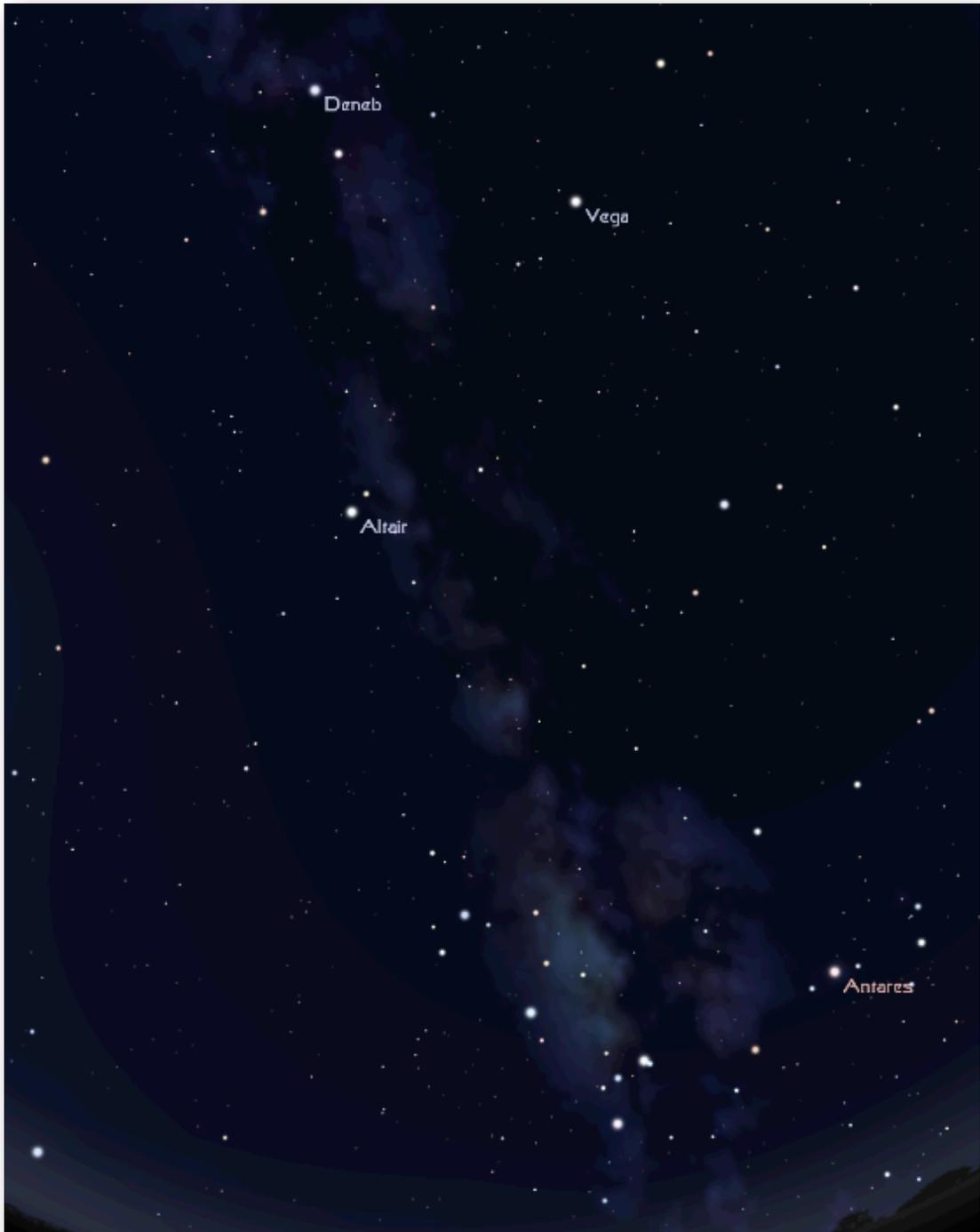


## To "Center City" and Back in a Night!

by Sam Storch

During the short steamy summer nights the center of our stellar "city," the Milky Way Galaxy, arches overhead and widens to show its broad central hub softly glowing on the southern horizon. Tonight's celestial romp will take us on a voyage from the galactic suburbs right to the core of our galaxy. If all goes well, we'll commute to the city and return safely, flying by swan all the way as we ride along the flight path of Cygnus!



If you're taking this tour from the light-polluted skies near home, take advantage of the brighter skies in finding some of our targets for tonight. With fewer stars visible, some of our targets will be easier to find. We begin with the bright "Summer Triangle" of Vega, Deneb, and Altair, a region dominating the sky above us. Our first target is in Cygnus. We seek a small open cluster in Cygnus that reminds me of the stick figure of a "little man." Shown on atlases and charts as **M-29**, you can find my "Little Man" by scanning the area around Gamma Cygni, also called Sadr, which marks the middle of the three brightest stars forming the swan's wings. Some folks might see the cluster and be reminded of that little "Android guy." What do you think?

We follow the swan's flight path toward the city and the second target, found in the constellation Delphinus the Dolphin- the only constellation that contains two stars named for a single person who actually lived! Sualocin and Rotanev are Alpha and Beta Delphini, respectively, and **Gamma Delphini** is our target- a nice double star to enjoy. Soak up the sight of this close (under 10" separation) double star Gamma Delphini. It has been described as a yellow and pale green double, and you might find other nice doubles nearby in the surrounding field. Find any?

On a cloudy night, you can discover how Sualocin and Rotanev were named, and who did the naming. It is quite a story! That story and the lovely double star make the little constellation of the leaping dolphin much more than a cute asterism.

We now turn our eyes to the third target, another star cluster not far from Delphinus. We seek **M-71** in the skies of Sagitta, the Arrow. I recall being visually puzzled as a beginner— is M-71 an open or globular cluster? Which is it visually to your eyes? Does it depend on your choice of magnification or telescope? And, which is it "officially?"

As we glide southward on our trip to the center of our star city, why not pause and compare this cluster with **M-11**, the quite splashy Wild Duck cluster? You can find M-11 by following the "spine" of Aquila down southward until your finder shows you a bright patch of sky (the Scutum star cloud, a concentration within the Milky Way).

We're almost at the center of the star city when we find the star **G Scorpii**. This is a third magnitude star at the eastern end of the Scorpion's "stinger." After you observe the star, see if you can find out why it is so oddly named. Once you become familiar with the stinger star of Scorpius, **Shaula**, and then with **Lesath**, a little dimmer and to the west of Shaula (remember "Lesath is lesser"), you will always find G Scorpii and remember the stinger end of the Scorpion as well as you remember the "Antares end."

Now that we're in the downtown hubbub of the Milky Way, turn your telescope to the clusters **M-6** and **M-7**, located just "above" or north of the Scorpion's tail. Of the two showy clusters, which is bigger? Which is brighter? Which is splashier and which is "ahead of" the other as the sky moves? Which is closer to Shaula, and which is closer to G Scorpii?

No cheating using a star atlas until after you spotted the two clusters for real!

Moving a little east, we "check off the Check Mark." Officially, the name of the object is **M-17**, and you might already know it as the **Swan Nebula** or the Omega Nebula. If you have a nebula filter, this is one of the objects that makes you very glad that you bought that filter. Look carefully- is it

really a check mark? Do you have the impression that there is a “curtain” of nebulosity behind the check mark? Or, as the sky moves east to west, does the curtain precede the check mark or is it the “other way?”

We’re now deep in the center of the city of stars, and it is time to discover that the Teapot asterism of Sagittarius has a little “flag” waving from its lid, flapping gloriously to the east! That flag is the gorgeous globular known as **M-22**. In steady air, the cluster has an almost golden glow to my eyes, especially when compared with the “colder” looking M-13, much higher above you. Let’s see the flag behind Kaus Australis in a new way, comparing it with the Hercules Cluster. Is M-22 or **M-13** larger looking? Which is easier to resolve to the core using low power? Can you characterize one of the globulars as looking “warmer” than the other as I do? What do you think causes the difference? “Commute” back and forth between the city (M-22) and the suburbs (M-13) We commute to work, so we should be able to do it in the sky as well- there will be no horns honking!

Back now in the suburbs of the Galaxy, we find ourselves home in Cygnus again, but this time, to observe the famous **Blinking Planetary, NGC-6826**. Once you find this interesting planetary, see if the nebulosity disappears with direct vision and returns with averted vision. If it does, you have observed its “blink.” I was very surprised when I spotted it the first time, but later, in a much larger telescope, it didn’t blink. Can you figure out the relationship between aperture, magnification, and the blinking effect when you see NGC-6826?

Our final target for the evening is also back in the suburbs of Cygnus, but will be something you probably have never bothered to look for. Where is Cygnus X-1, the famous candidate black hole? We begin with Eta Cygni, the "Adam's apple" of the swan. Use a good atlas or guide book to find **HDE 226868**, less than half a degree away from Eta. The RASC *Observer's Handbook* has a chart to find this star, and even the trusty old Burnham's *Celestial Handbook* has a good chart as well, in volume 2 of the 3-volume set. The object we seek is the invisible companion to HDE 226868, and it is the only thing in our little trip to the center of the Galaxy and back that you won't see. You *can't*!

Whew! What a commute! May your sky highways always be enjoyably clear and always well lit—illuminated by celestial wonders!