

Nights of the Heavenly "G"

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The late fall and early winter evenings are marked by spectacularly clear skies for those living in the northeast, skies with the year's greatest concentration of brilliant stars. A "super constellation" of stars drawn from several traditional patterns comprises the "Heavenly G" pattern known to the ancient mariners. Let's romp though the heavens and get



"hooked" on the "G!"

Stand under the stars and with your arm outstretched trace a sweeping arc, starting at Capella and moving to Castor, to Pollux, to Procyon, to Sirius, to Rigel in Orion, sweeping to Aldebaran in the Bull, and then cutting back down to Orion's belt. You will have learned most of the winter stars, and traced out a giant letter "G" taking up nearly half the starry sky!

Taking a closer look, let's begin with the "star of middle age," Capella. Even though various distances can be found for Capella, one frequently used figure states that the star is 43 light-years away. As this is being written, Earth's stargazers see Capella's light ending a journey that began 43 years ago, in 1967.

1. Find the triangle of stars called "The Kids." Which one is Epsilon? How does it compare in brightness with the other two stars in the little triangle? What's so special about Epsilon Aurigae anyway?

2. Sliding along the Heavenly G, we come to Castor. Look at this star with the highest magnification you dare. What do you see?

3. Pollux is our next stop on the "G." it is labelled as Alpha Geminorum on a star atlas. Compare its brightness with Castor. Which is brighter?

4. Procyon, in Canis Minor, is 11 light-years away and the "little dog star." Although Canis Major is not known for much in the "deep-sky department," what is the little cluster you can find by sweeping and then poking around a bit, about two-thirds of the way from Procyon down to brilliant Sirius? We've just found something finer than you'd expected, right?

5. Speaking of Sirius, try and try again- can you see Sirius-B, its famous white dwarf companion? This is something that few observers can check off on their life lists, but even if you're unable to make the claim to having seen it, even in twilight (hint!), think about the fact that the light from this star has been zooming through space for less than 9 years. Even a fourth grader can see Sirius light made during his or her lifetime!

6. Rigel, the intensely blue "knee" of Orion has about the same luminosity (energy output) as does Deneb, the tail of Cygnus, the Swan. How come Rigel is brighter, then? Near Rigel, there's something you have ignored night after night, yet it is visible to the unaided eye- just a bit higher than Rigel and to the west (right), don't you see the tip of Orion's foot kicking a ball? The star is named Cursa, and is part of Eridanus. Stop ignoring it!

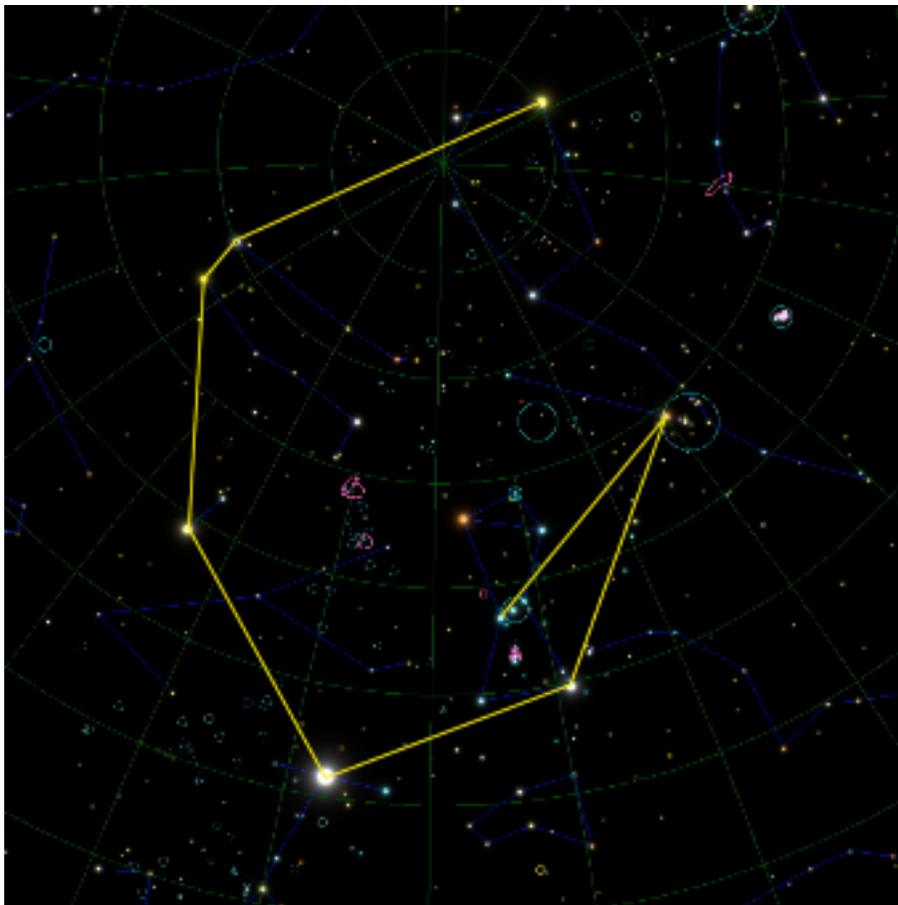
7. Aldebaran, the ruddy eye of Taurus, is an orange giant heading toward the end of its life. Taurus itself is a constellation well-known for being comprised of two star clusters-

the Pleiades and the Hyades. How do you know that the Hyades is an older cluster just by looking at it? There are at least two other good clusters in Taurus, NGC-1647 and NGC-1746. Have you ever observed them?

8. Finally, enjoy the sweep down though Orion's belt. Your binoculars will show that these are the three brightest gems in the middle of a long, oval open cluster, Collinder 70. This cluster is at a distance of 1300 light-years, so the light you see tonight ended its journey on your retina after a trip which began back when the calendar on the kitchen closet door was for the year 710! Just about all the history you ever learned about took place while that light was already on its way to your eyes!

Now that you've traced the Heavenly "G" with me, you've had an evening's labor of love with the eye, with binoculars, at the telescope, and maybe even written down a few questions for further research.

Clear, dark, GREAT and thrilling skies!



Thanks to Ken Spencer for the above chart.