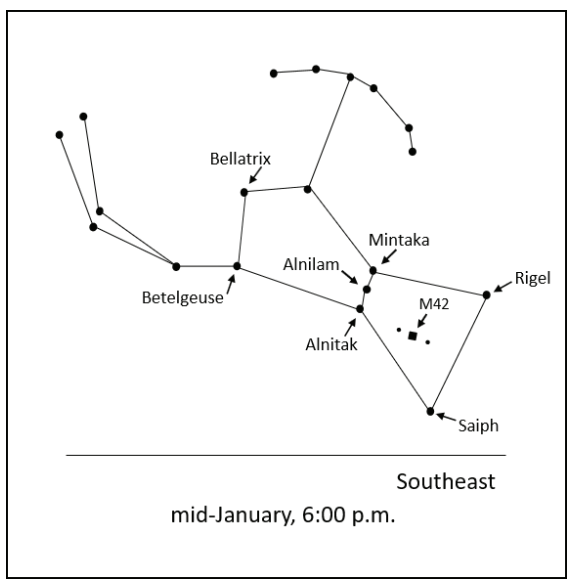
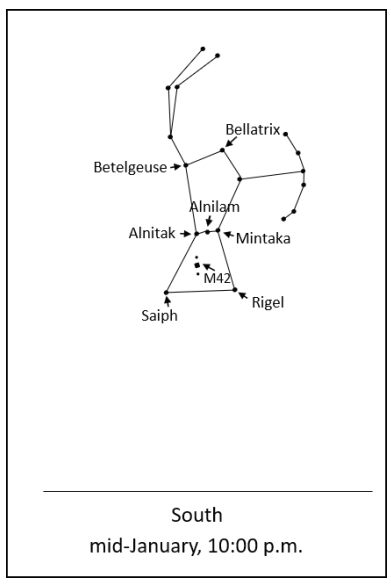
WHAT'S UP?

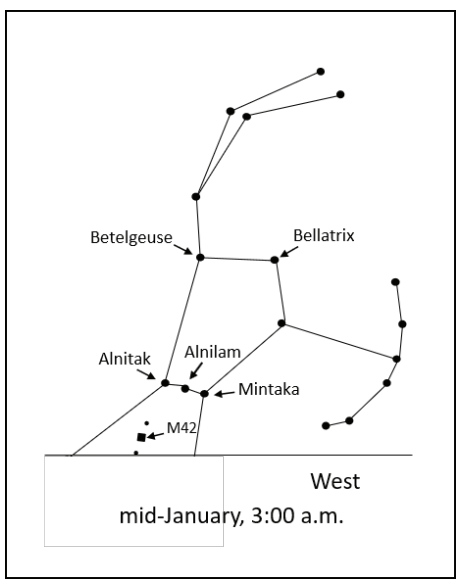
Happy New Year! Here's hoping that 2021 brings us plenty of clear, dark nights, strong meteor showers, and at least one comet visible with out binoculars or a telescope. At the end of December, the weather forecast proved to be correct and, unless you were just at the right location on the 21st, the conjunction of Jupiter and Saturn was clouded-out from view. A few of our club members were able to view it briefly from the Scituate lighthouse. Lucky them! For me, it was still great to at least get to see the two giant planets in the same eyepiece field of view the week prior (and the week after) the date of the conjunction.

I've been thinking about where to go next with *What's Up?* While continuing to keep you up to date on current happenings in our night skies, I'm going to start to take you through a tour of the constellations. From time to time, our tour will be co-guided by members of the South Shore Astronomical Society (SSAS; www.ssastros.org). This is the group of friendly, astronomy-loving folks that Carolyn and I are a part of. In this look at the constellation *Orion* (the Hunter), I am joined by Brendan Smith.

As night falls, Orion can be found rising above the eastern horizon and by 10:00 p.m. the Hunter is standing upright in the South (in the morning, it can be found setting in the West around 3:00 a.m.) This is one of the most ancient constellations and is mentioned in Homer's *Odyssey*. Some of the mythology about Orion is that he was the son of a god (Poseidon) and the daughter (Euryale) of King Minos of Crete. Orion is linked with the Pleiades (a star cluster in Taurus). The Pleiades are the daughters of Atlas. Orion pursued the sisters and for their protection, Zeus placed them among the stars where Orion still pursues, but never catches up to them. There are a few stories about the death of Orion. In one myth, Orion boasted he would kill all the wild animals on the earth. But, the earth goddess Gaia, who was the protector of all animals, produced a gigantic scorpion, whose body was so heavily encased that Orion was unable to pierce through the armor, and was himself stung to death. His companion Artemis was greatly saddened and arranged for Orion to be immortalized among the stars. *Scorpius* (the scorpion) was placed on the opposite side of the sky so that Orion would never be hurt by it again. To this day, Orion is never seen in the sky at the same time as Scorpius. Well, not entirely anyway – a few of Orion's stars are sometimes in the sky when some of Scorpius' stars still are.

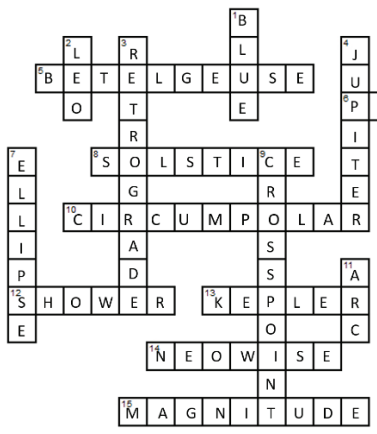






The constellation is home to a red supergiant star that marks the right armpit (*Betelgeuse*) and a blue supergiant (*Rigel*) that marks his left foot. You may have heard of the asterism called *Orion's Belt*. It is a line of three stars that mark the waist of the hunter. The *Sword of Orion* is a string of objects that lie – you guessed where – right where a hunter would wear a sword. The upper and lower ends of the sword are stars but near the middle is a patch of glowing hydrogen gas…the *Orion Nebula*. Also known as *Messier 42* (M42) this is a stellar nursery where new stars and planetary systems are being formed. Its glow, which is visible to us without needing binoculars or telescopes, results from the gasses of the cloud absorbing the ultraviolet radiation produced by the new stars and re-radiating that energy as light that we can see. Looking through a telescope, the nebula appears as a greenish mist sprinkled with stars. Four stars in particular form a trapezoid shape near the center. This group, the *Trapezium*, is a beautiful sight. We see it as green because in dim light conditions, our eyes are most sensitive green light. A camera or silicon detector shows M42 in all its full-color glory. Orion also helps us mark the northern and southern celestial hemispheres. The *celestial equator* runs almost right along Orion's Belt.

In our evening sky Mars, though not as shining as brilliantly as it did in the Fall, is still easy to spot high in the South. How high? Mars can be found about two-thirds of the way up from the horizon. If you have a small telescope and you point just a bit (about two fingers-width) to the left and very slightly above Mars, you may be able to pick up a small light-greenish-blue object. That is the planet Uranus. Uranus is the first of the planets to be discovered using a telescope. It turns out though, that Uranus IS visible to the unaided eye, but just barely. With a magnitude of 5.7, it's just in the range of our ability to detect if the sky is dark and clear enough. I have been able to see it with my bare eye from Plympton on occasion. Just before dawn, the planet Venus rises in the southeast. It is moving toward *superior conjunction* (it will pass behind the Sun as seen from Earth) and really won't be too visible again until July, when we'll see it in the west, after sunset.



Answers to *What's Up?* #36 puzzle.

You can reach me at **astroblog@comcast.net** with any questions and comments you have. This is *What's Up?* Installment #37.

Until next time, Keep looking up!

Barry