Observing Notes - December 2020

The Twins & Their Siblings!

This month we take a look at Gemini and their sibling .

For December, we turn to the constellation of Gemini (The Twins) with a few open clusters and a planetary nebula to view. Gemini sits to the upper left of Orion, its two main stars being Castor (a double star) and Pollux (a multiple system, with their primaries shining at 0.91 and 1.18 respectively.

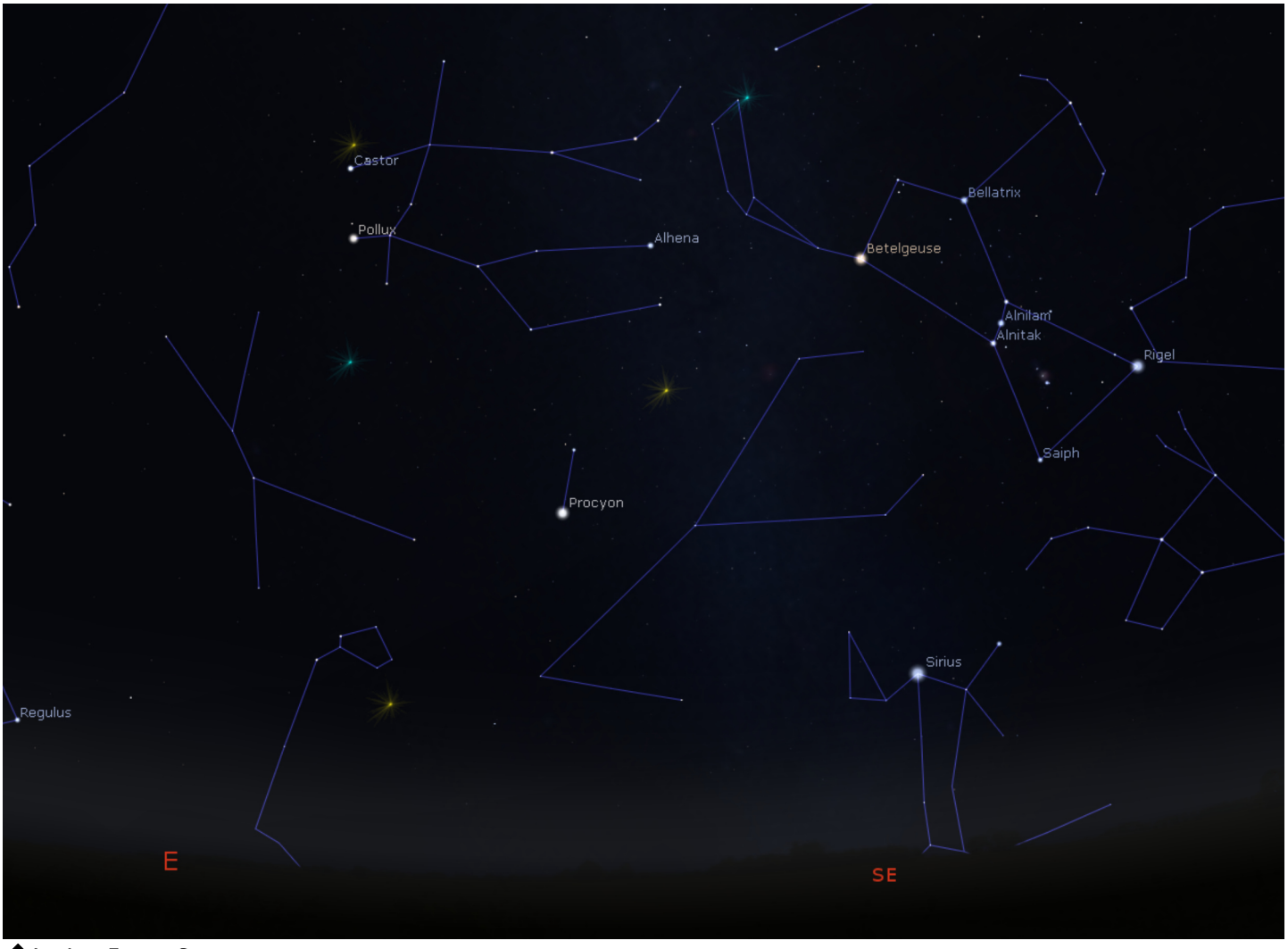
Greek mythology tells us that Gemini is named after the Twins, Castor and Pollux, who were allegedly the sons of Zeus. Inseparable from birth, when one twin died (or was murdered, depending upon which myth you care to read), Zeus placed them both in the sky becoming the constellation Gemini.

Gemini is quite easy to spot rising in the east to south east, with the screenshot below for around 10:30 pm on 12th December. If you locate Betelgeuse then look to the left you should be able to spot Castor and Pollux and then trace your way to the other main stars, Wasat, Mebsuta and Propus to guide us along the way.

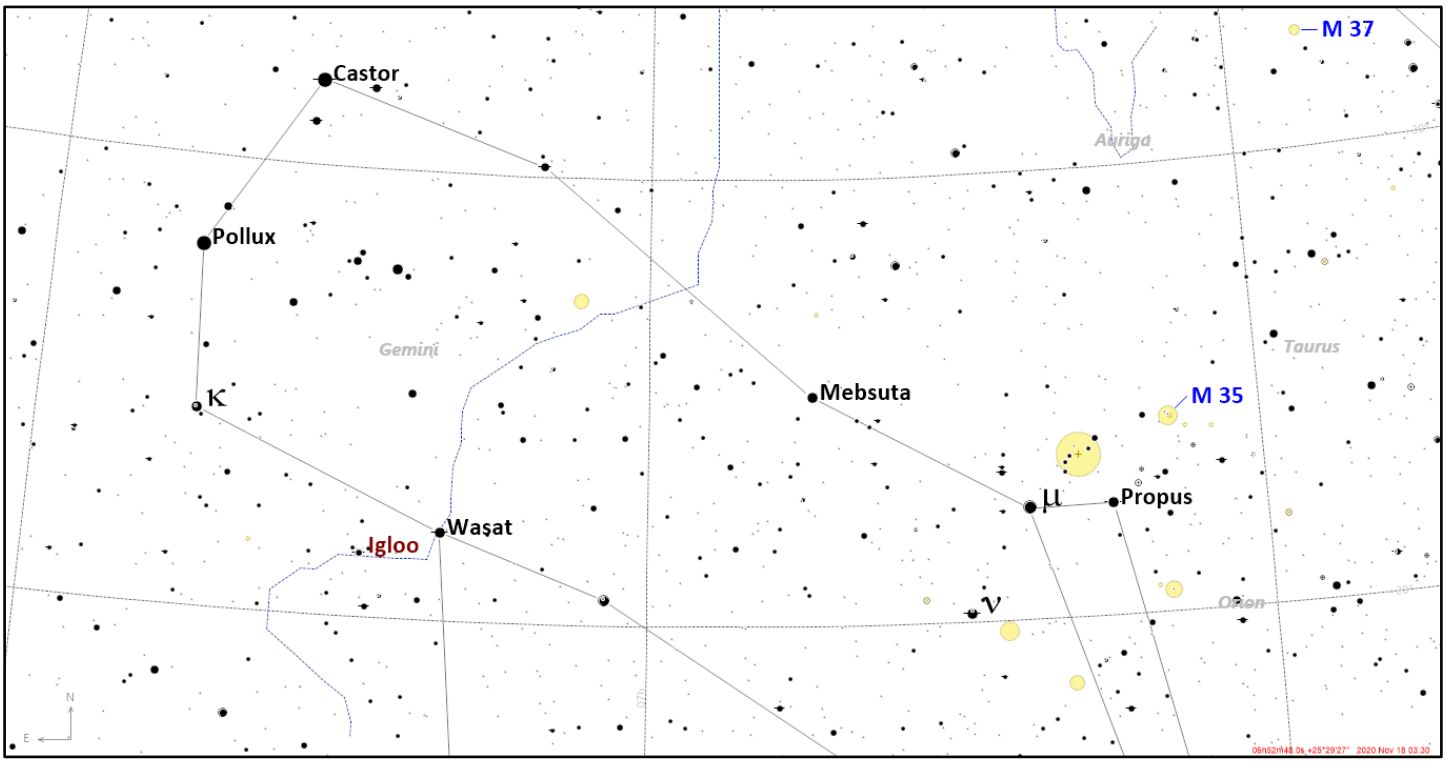
Messier 35

M35 is probably the most famous cluster of the winter sky and my favourite. The cluster is located some 2,800 light years away and is around 22 light years in diameter. We see it as covering an apparent area approximately the same as the full moon. M35 comprises around 20 stars of 10th magnitude, increasing to 120 of 13th magnitude, although once you reach 21st magnitude this gives some 2700 stars that may belong to the cluster. It is also comparatively young, having been formed some 100 to 150 million years ago.

Under dark skies, you may be able to make out M35 with the naked eye, but engage binoculars and you are amply rewarded by being able to trace the outer chains of stars. A telescope gives many happy hours of observing this cluster. For my own



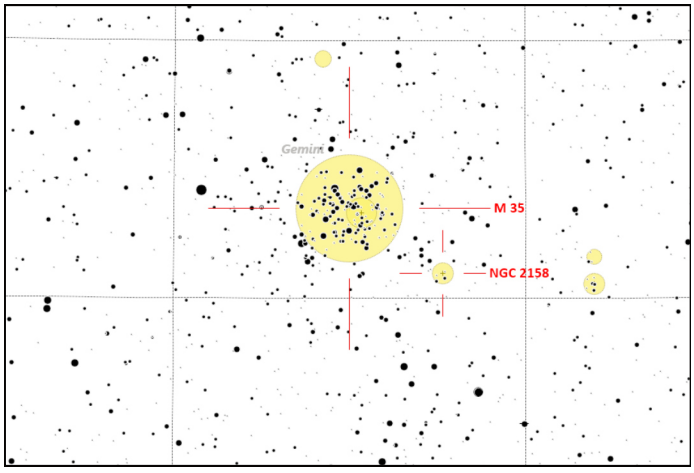
Looking East to Gemini



▲ Detail of Gemini and location of Messier 35

observations, using my 8" reflector, I have spent ages just following the trails of stars, the way they seem to interlink and create streamers, trails and chains. I normally start with a low power such as 32mm and just trace along the links and streamers, then add a Barlow to double the magnification, which fills my field of view. I perceive the stars as blue throughout; although there are some yellow and orange giants within the cluster.

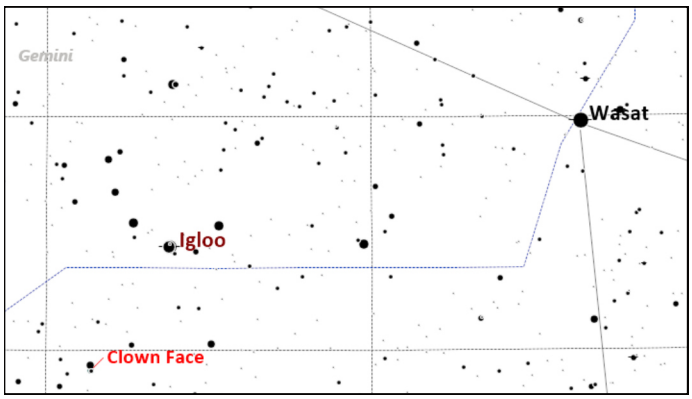
An added bonus is that in the immediate vicinity is NGC 2158, another open cluster, but rather more compact. Lying some 12,000 light years away, it is far older than M35 being estimated at just over 1 billion years old. Observationally a small telescope shows a nebulous patch, and an aperture of 10" to 12" is needed to resolve the brightest stars.



▲ M35 & NGC 2158

Eskimo Nebula

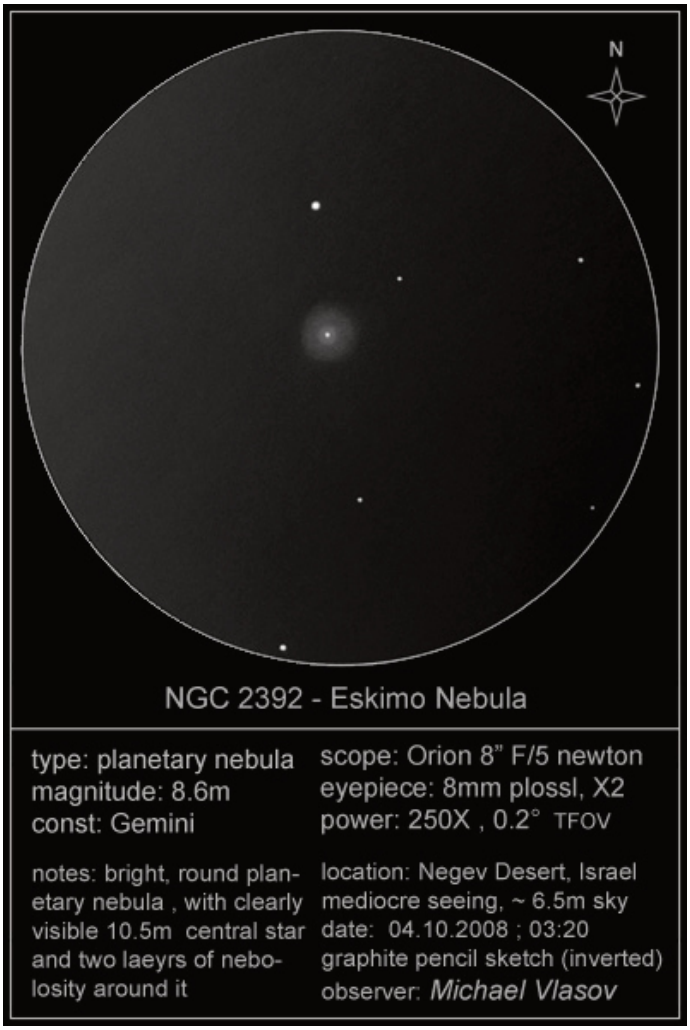
The Eskimo Nebula, or the Clown Face, or NGC 2392 to give it its proper designation, is a planetary nebula that is a good target for modest telescopes. I remember spotting this in my 6" reflector some years ago and found it by locating an arc of stars starting from Wasat. The Eskimo is so called due to its resemblance to a face on an Eskimo hood. I can't say I have seen this effect but I have not observed the Eskimo for a while and not with my bigger telescope.



▲ Finder for Eskimo (Clown Face) Nebula

To locate it by star hopping, locate Wasat, which I think of as the waist of Pollux, then look for the arc of stars known as the Igloo, which you

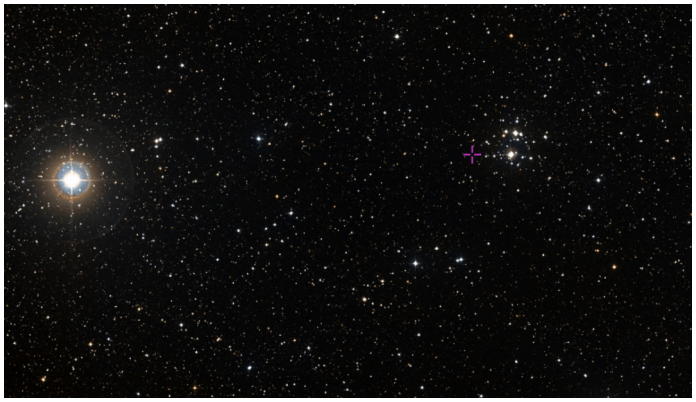
can spot it in the finder scope. This is a good sketch of the nebula by Michael Vlasov at http://www.deepskywatch.com

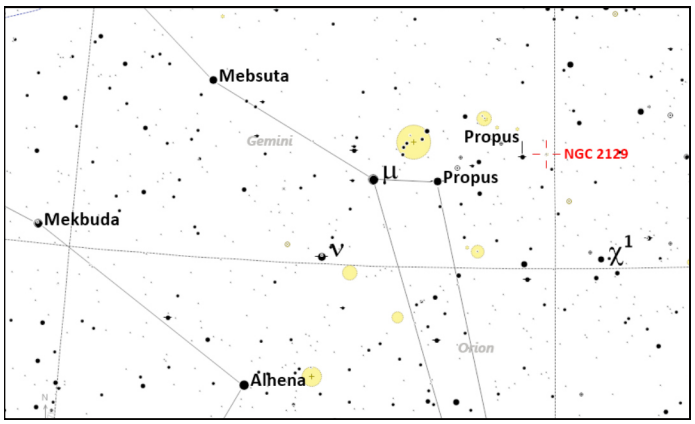


▲ Eskimo Nebula sketch by Michael Vlasov

NGC 2129

This open cluster lies a little beyond the star 1 Geminorum. Lying some 7,000 light years way, it is a is a very young cluster estimated at 10 million years old. I first observed this 7 years ago and I noted it as a "small Auriga shaped open cluster, 3 bright stars in a right angle with a small triangular



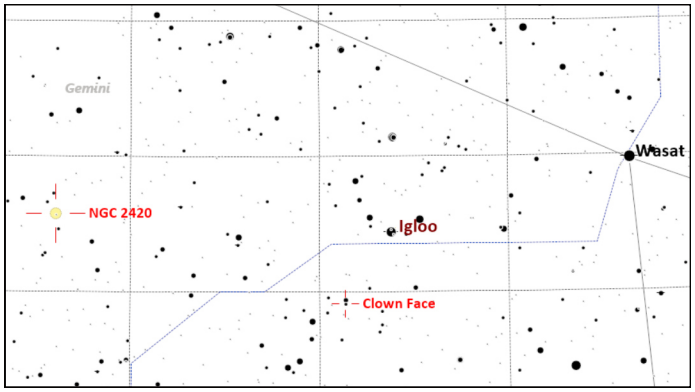


"hat"; I got more hints of stars in this cluster."

NGC 2420

NGC 2420 is a beautiful, yet subtle open cluster not far from The Eskimo Nebula. I found fairly easily starting from from Wasat, moving across to the Igloo and then to 2420. My notes remind me that "Its shape suggested a lazy X and was just visible in my 9 x 50 finder, and easy with 50x and resolvable at 100x."

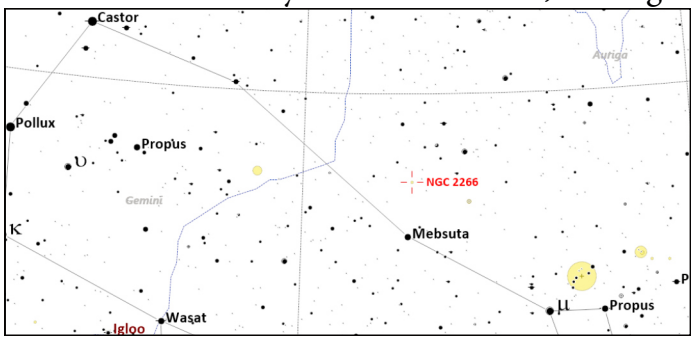
▲ NGC 2420



▲ Finder map for NGC 2420

NGC 2266

NGC 2266 lies near Mebsuta, the waist (to me) of Castor. It is a triangular cluster which shines at magnitude 9.5. It is old for a cluster estimated to be around 1 billion years old and is 10,0000 light years distant. I star hopped from Mebsuta and spotted with 50x, but upping to 100x shows line of bright curved stars across top, with fainter triangle of stars tapering to a point.



Finder chart for NGC 2266

NGC 2266

Geminids

This year, the Geminids coincides with the New Moon offering ideal observing conditions. This shower is one of the most active and appear to radiate near Castor. The source is a stream of debris left behind by the asteroid 3200 Phaethon, distinguishing it as one of the major showers not originating from a comet. The shower peaks on 13/14 December

Comets

We have Comet Atlas moving through Auriga during December. I have not yet seen it myself as the clouds have been ever-present, but it should be easy to spot as the moon moves out of the sky.

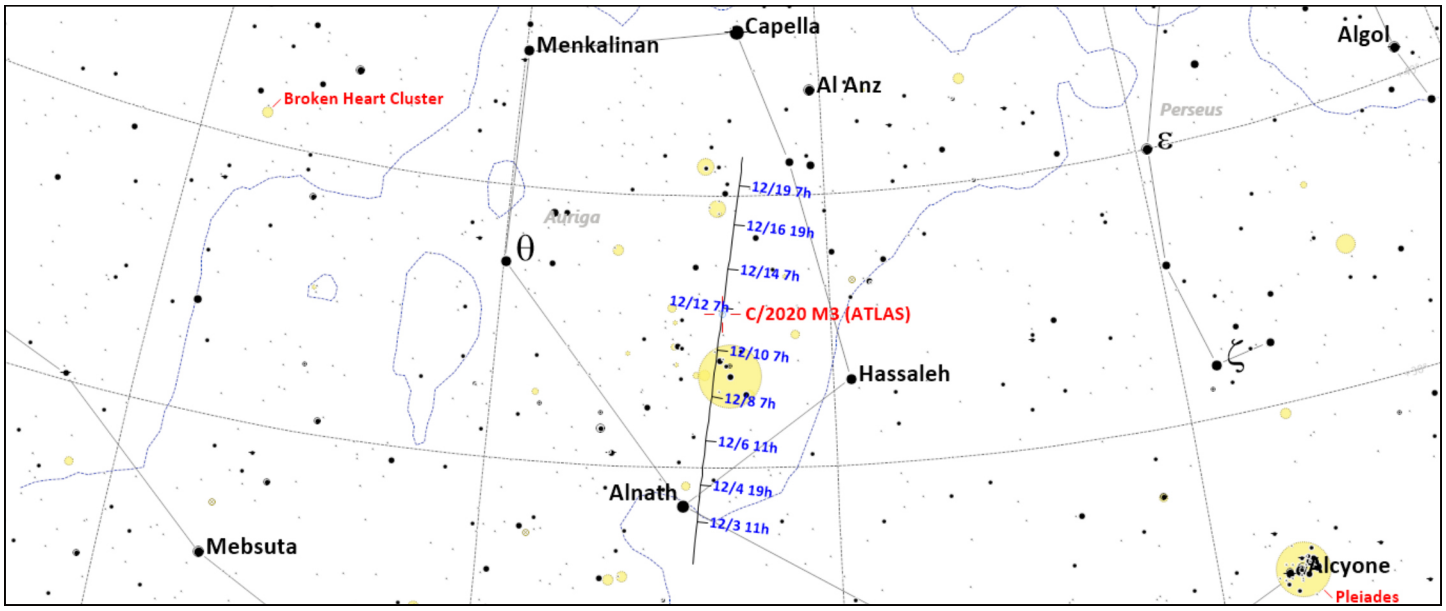
Planets

Mars continues its path across the sky, sinking in the south west around 23:00. Jupiter and Saturn move closer together in the early evening, culminating in a "Great Conjunction"; the last time these two planets appeared so close was on July 16, 1623, when they were only 5 arc minutes apart, this year they will be 6.1 arc minutes of each other.

Uranus lies in Aries and form a nice line taking in the Moon and Mars on the 21st. Early risers (07:00 is early for me!) can catch Venus in the south east.

December also sees the Winter Solstice and hopefully towards a better 2021!

Jonathan Gale
WAS Observing Team



Track of Comet Atlas from 1st December