

Observing Notes - October 2020

Get 'em while you can!

This time of year as the dark skies arrive earlier and earlier, astronomers and particularly astrophotographers are eagerly awaiting the rise of Orion as this easily recognisable constellation peaks its head above the horizon at midnight and heralds the imminent arrival of colder clear nights and the easiest nebula to see in the skies; M42.

However this time of year also carries other great sites in to the night skies and not all of them are faint fuzzies, so before they dip down to the murky horizon or even disappear from our skies until spring the following sites.

Deep Sky Objects

(Closest to the horizon first)

Messier 10 (M10) is a rich, bright globular cluster located in the constellation Ophiuchus.

With a visual magnitude of 6.4, even the cluster's bright core is too faint to be seen without binoculars.

A small telescope (3-inch) will reveal about half the cluster's size; roughly 8 to 9 minutes of arc, its bright central region. Larger telescopes show the cluster extending across 15.1 arc minutes and reveal a large, bright central core.

In reality, the cluster is about two thirds the size of the full Moon, but its outer regions are very dim and invisible except in very large telescopes.

Messier 12 (M12), also known as the Gumball Globular, is a globular star cluster is also located in the constellation Ophiuchus.

Messier 12 is invisible to the naked eye, but can be seen with binoculars in good conditions, with clear dark skies and no light pollution. Stars in the cluster can be resolved with an 8-inch or larger telescope. A 10-inch instrument reveals the core with a diameter of 3 arc minutes and a halo of stars stretching across an area of 10 arc minutes.

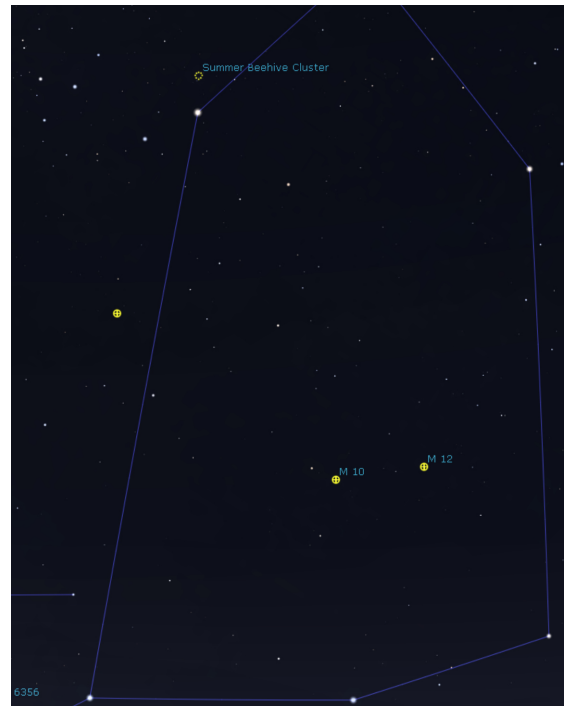
The cluster lies about 3 degrees in the

sky from Messier 10. Both clusters (M10 and M12) can be found about half a fistwidth west of the bright star Beta Ophiuchi, also known as Cebalrai, with Messier 10 lying a bit lower in the sky, to the south of M12. M10 lies along the line from Cebalrai to Zeta Ophiuchi, the

third brightest star in Ophiuchus. It is only a degree away from 30 Ophiuchi, an orange giant star with an apparent magnitude of 4.8.

In the constellation of Aquarius is NGC 7293, the Helix Nebula, which is also listed as Caldwell C63. It is a planetary nebula around magnitude 7.6 so it should be the easy to spot. However, it will be this month's biggest challenge as it never gets very high from UK locations so you will need both very good seeing and a clear view looking south at 10pm to spot it.

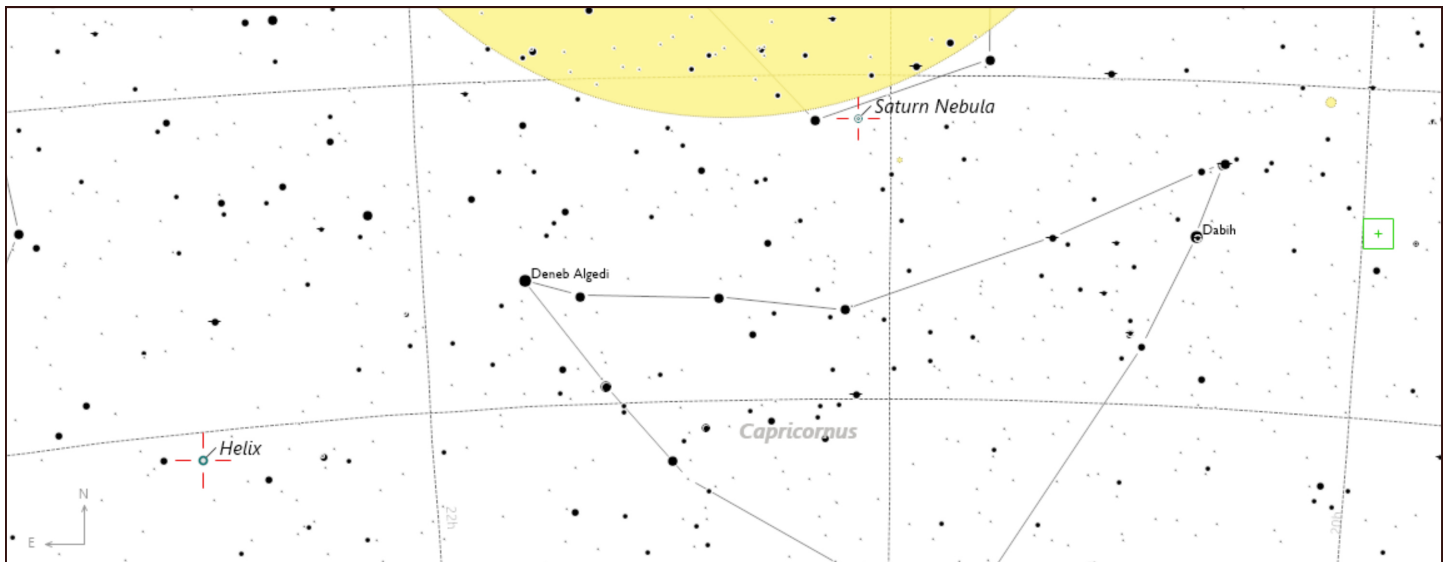
Start at the 3rd magnitude star Delta (δ) Aquarii. look 4° southwest for 5th magnitude 66 Aquarii. It should fit in the same finder field with Delta and shine with an orange tint.



▲ Looking South West to M10 and M12



▲ Messier 12



▲ Helix and Saturn Nebulae

Continue along that line another 2.8° and you will come to yellow-white Upsilon (ν) Aquarii, the brightest star in the area at magnitude 5.2. The Helix sits 1.2° west of Upsilon and is best sought with a low-power eyepiece. Two 10th-magnitude stars lie halfway between, helping pinpoint the Helix in two easy jumps.

NGC 7009 or Caldwell C55 is also in Aquarius and is known as the Saturn Nebula because it appears to have 'ears' and perhaps looks a bit like how Galileo would have first seen the planet Saturn and its rings. It shines at around mag 8 so should be detectable in even a small telescope, especially with its greenish glow.

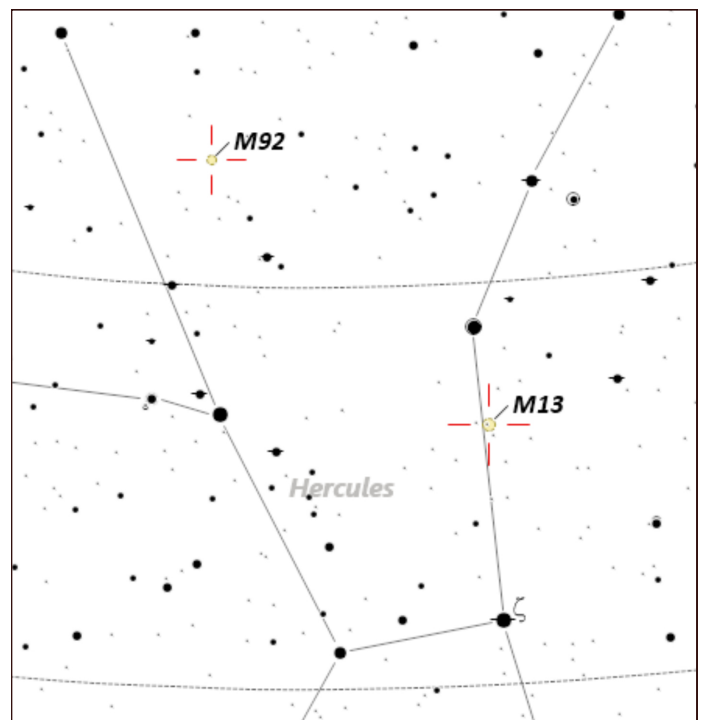
The Saturn Nebula lies in the western corner of Aquarius, just over a degree west of 4th magnitude Nu (ν) Aquarii.

Just as a side note the asterism M73 is 2 degrees southwest of the Saturn Nebula, with 9th magnitude globular cluster M72 a further 1.5 degrees west of M73 should you want to try those also.

Messier 13 (M13), also known as the Great Globular Cluster in Hercules, and is (funny enough) a globular cluster located in Hercules.

The 5.8 magnitude cluster can be seen without binoculars in exceptionally good viewing conditions, with clear skies and no light pollution.

It can be found about a 3rd of the way along a line drawn between the right-hand keystone asterism stars η and ζ Herculis and stretches



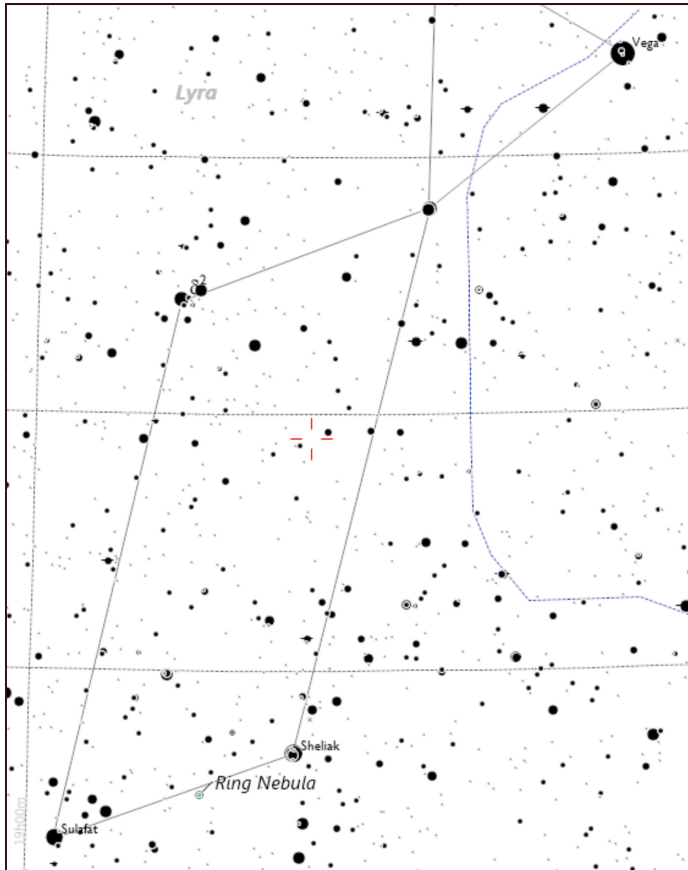
▲ Messier 13 and 92

across 20 arc minutes of the sky and easily visible in binoculars or a small scope.

Messier 92 (M92) is another a globular cluster located in the northern constellation Hercules. It is positioned north of the Keystone asterism in Hercules, between the Keystone star Eta Herculis and Iota Herculis.

In 10×50 binoculars, M92 appears like a blurry star with a brighter core. Small and medium-sized telescopes will resolve some of the stars in the outer regions of the cluster. 6-inch and 8-inch telescopes show an oval-shaped cluster with a bright centre, surrounded by a halo of stars. 12-inch telescopes resolve dozens of individual stars in the halo and throughout the cluster.

The cluster lies about 60 percent of the way from Eta to Iota. It forms a triangle with the two northernmost stars of the Keystone, Eta and Pi Herculis and can be found by first locating the bright Etamin (Eltanin, Gamma Draconis), an orange giant in Draco, and then moving about 6 degrees in the direction of the Keystone.



▲ Messier 57

Messier 57 (M57) is known as the Ring Nebula and is a planetary nebula located in the northern constellation Lyra.

The Ring Nebula has a magnitude of 8.8 and lies to the south of Vega, the brightest star in Lyra and one of the stars that form the Summer Triangle. The nebula is easy to find as it is located roughly 40 percent of the distance from Sheliak, Beta Lyrae, to Sulafat, Gamma Lyrae.

Unfortunately, the nebula cannot be resolved in small binoculars but small telescopes will reveal the nebula's ring shape, but the nebula is best seen in 8-inch and larger telescopes.

The Solar System

The Moon

October 1 - Full Hunters Moon is named because at this time of year the leaves are falling and the game is fat and ready to hunt... apparently. Other names are the Travel Moon and the Blood Moon and the Harvest Moon. The Harvest Moon is the full moon that occurs closest to the September equinox each year. Personally I think there is more interest in observing the texture of the moon surface around terminator during the waxing and waning phases.

On October 16 the Moon is new and will not be visible in the night sky so this is the best time of the month to observe faint objects such as galaxies and star clusters

The Planets

October 1 - Mercury is at its Greatest Eastern Elongation from the Sun but it is very low in the sky from the UK making observing very difficult.

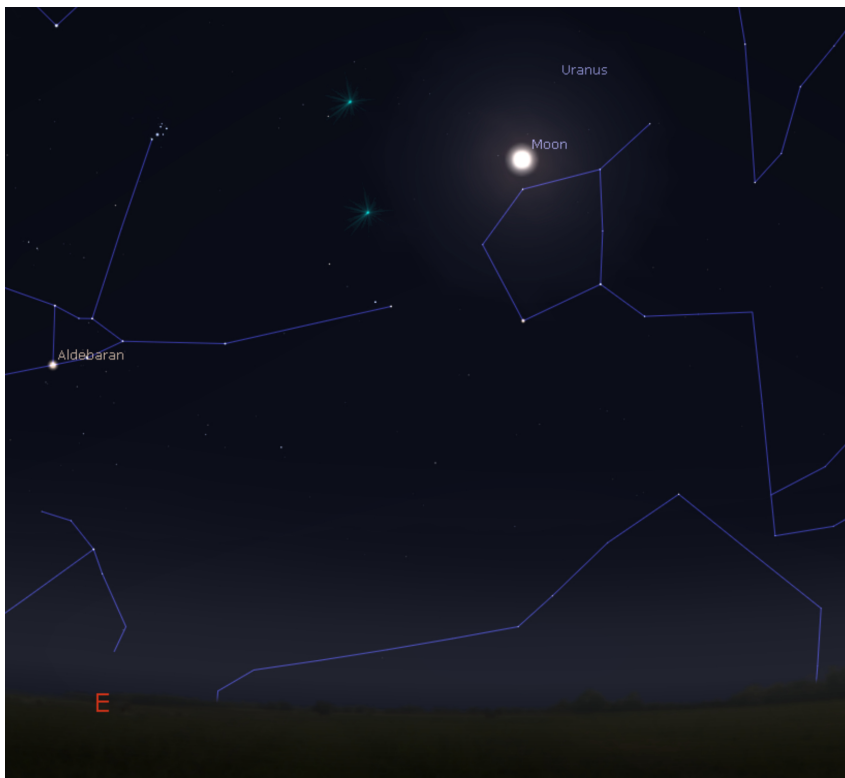


▲ Mars, Jupiter and Saturn

Venus rises in the constellation of Leo at about 03:30 at the beginning of the month, a good three hours before sunrise, so is easily observable for the early risers.

October 13 - Mars will be at its closest approach to Earth and its face will be fully illuminated by the Sun. It will be brighter than any other time of the year and will be visible all night long. Located in the constellation of Pisces, this is the best time to view and photograph Mars. A medium-sized telescope will allow you to see some of the dark details on the planet's orange surface.

Both Jupiter and Saturn are still visible to the south but are getting closer to the western horizon as the month passes. Still a magnificent site even in smaller telescope the mirk of the horizon means the seeing good surface detail is becoming less likely.



On October 31 the blue-green planet Uranus will be at its closest approach to Earth visible all night long in the constellation of Aries. This is the best time to view Uranus. Due to its distance, it will only appear as a tiny blue-green dot in all but the most powerful telescopes.

The disk of Neptune is even more difficult to see but the planet is visible almost from sunset to sunrise bordering the constellations of Aquarius and Pisces.

Meteor Showers

October 7 - Draconids Meteor Shower. The Draconids produce only about 10 meteors per hour. The Draconids is an

unusual shower in that the best viewing is in the early evening instead of early morning like most other showers.

The shower runs annually from October 6-10 and peaks on the night of the 7th. The moon will be at last quarter so will help the early evening observers see meteors radiate from the constellation Draco.

October 21, 22 - Orionids Meteor Shower. The Orionids produces up to 20 meteors per hour at its peak. It is produced by dust grains left behind by comet Halley, which has been known and observed since ancient times.

The shower runs annually from October 2 to November 7. It peaks this year on the night of the 21st in to the 22nd. The moon is a waxing crescent setting before midnight when the meteors will appear to radiate from the constellation Orion.

Lastly, clocks go back on the 25th of the month so we can enjoy the night skies even earlier.

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