

THE NIGHT SKY IN JUNE 2019

In June we reach the Summer Solstice. The Sun, which has been climbing steadily up the sky since the last Winter Solstice in December 2018, is about to reach its most northerly point, 23.25° above the celestial equator. It will reach this point at 5pm British Summer Time on June 21st. After this it will start its long journey back down the sky to the Winter Solstice on December 21st. The Sun, at the beginning of June, will rise a little before 5am BST and will set around 9pm. This gives around 16 hours with the Sun above the horizon. At the end of the month the Sun will rise around 4.40 am and will set around 9.20 pm. This represents an increase in the time that the Sun is above the horizon of only about 40 minutes.

The Moon will be new on June 3rd and will reach first quarter on June 10th. It will be full on June 17th and will reach last quarter on June 25th.

None of the planets are ideally positioned for observations this month despite the fact that Jupiter reaches opposition on June 10th. It can be found shining at magnitude - 2.6 in the constellation of Ophiuchus. It will not attain a high altitude at this opposition as it will be only 16° above the horizon at 1am BST. Never the less it is worth observing as a small telescope will show the 4 Galilean moons and the main cloud bands on the planet's disc.

Saturn, shining at magnitude +0.2 is to be found among the stars of Sagittarius following Jupiter along the ecliptic. It will come to opposition a month later than Jupiter and, like Jupiter, will be at low altitude.

On 18th June, shortly after sunset Mars and Mercury will be visible, west north west, close to the horizon. The planets will be in close conjunction presenting themselves only 13 arc minutes apart. Mercury will be shining at magnitude +0.2 while Mars only reaches magnitude +1.8. Never the less, with a low horizon and good weather, both planets should reach naked eye visibility. When searching for them, particularly if using any kind of optical instrument, make sure that the Sun is below the horizon.

We are entering the season when noctilucent clouds may be visible. The name noctilucent means night shining. These clouds have altitudes in the order of 50 miles and thus can be seen after the Sun has set illuminated from below the horizon. They appear silvery blue and can only be seen when the Sun is between 6° and 16° below the horizon. They are made by high altitude ice crystals and can be very spectacular. The display I once saw over St Albans Cathedral etched itself into my memory for evermore.

The ecliptic marks the path of the Sun around the sky. It is the orbiting of the Earth around the Sun, of course, that gives the impression that the Sun travels round the zodiac constellations. At this time of year, the ecliptic reaches its highest point above the southern horizon around the middle of the day. As a result, the ecliptic reaches its lowest point above the southern horizon around the middle of the night. The ecliptic passes through all of the constellations of the zodiac.

The two zodiac constellations in the south around midnight at this time of year are Scorpius, the scorpion and Sagittarius, the archer. In fact, the ecliptic is so low that only part of the constellation Scorpius appears above the horizon at our latitude. This is unfortunate as these two constellations contain many objects of interest. In fact, there are 19 Messier objects within the boundaries of Scorpius and Sagittarius.

It must be remembered that Messier did not catalogue all the objects of interest by any means so there is more to find when you have run out of Messiers. Part of the reason for this is that when we look in the direction of Sagittarius we are looking towards the center of our galaxy, the Milky Way with its gaseous nebulae and star clouds. It also presents a view of numerous globular clusters. These objects occupy the outskirts of the Milky Way and thus can be seen more easily from this aspect.

There are 9 globular clusters in Messier's catalogue located in Scorpius and Sagittarius. It is worth finding some of these objects but it will mean staying up late to let the sky get as dark as possible. Remember we are so far north in the UK that the sky remains in astronomical twilight at this time of the year. It also means dealing with the poor visibility resulting from the closeness of

the horizon. It is worth sweeping the area with a pair of binoculars before employing a telescope. This will give you an overview of the constellations and will allow you to gauge the clarity of the atmosphere.

I have listed of some of the Messiers together with their coordinates below:

M8 in Sagittarius is a large impressive emission nebula glowing at magnitude 5.8 so is easily seen with binoculars. It is known as the Lagoon Nebula. It can be found at Right Ascension 18 hours 3 minutes 54 seconds, Declination -24° 22 minutes 58 seconds.

M20 in Sagittarius is located north west of M8 in the same binocular field of view. It is called the Triffid and is both an emission and reflection nebula. This means that some of it is giving off light while some of it is seen by light coming from another part of the nebula. It glows at magnitude 6.3 It can be found at Right Ascension 18 hours 2 minutes 24 seconds, Declination -23° 1 minute 58 seconds.

M17 in Sagittarius is known as the Omega Nebula. It is a bright emission nebula associated with an open cluster. It glows at magnitude 6 and can be found at Right Ascension 18 hours 20 minutes and 53.5 seconds, Declination -16° 10 minutes 55 seconds

M24 is known as the Sagittarius Star Cloud and is a dense open cluster glowing at magnitude 11.0. It can be found at Right Ascension 18 hours 18 minutes 29.5 seconds, Declination -18° 24 minutes 56 seconds.

M80 in Scorpius is a globular cluster shining at magnitude 7.2. It can be found at Right Ascension 16 hours 17 minutes and 4.1 seconds, Declination -22° 59 minutes and 10 seconds.

M6 in Scorpius is a rich open cluster known as the Butterfly. It can be found at Right Ascension 17 hours 40 minutes and 10.4 seconds, Declination -32° 13 minutes and 3 seconds. It shines at magnitude 4.2. M6 remains very close to the horizon so you will need a clear southern aspect to be able to bag it.

I will leave you to locate the other gems in this part of the sky. Happy hunting!