

Here we are again in the month that contains mid-winter's day. On 22nd December at 4.21 a.m. the Sun will stop moving south and will begin its slow journey north. On mid-winter's day the Sun will rise a little after 8 a.m. and will set a little before 4 p.m. remaining above the horizon for only 8 hours. This state of affairs will remain roughly the same throughout December.

The Moon will be at first quarter on December 4th, will be full on the 12th and be at last quarter on the 19th. It will return to new on the 26th.

On 5th December, in the constellation of Pisces, the Moon passes in front of star 33 Piscium shining at a magnitude of +4.6.

At approximately 6.05 p.m. the star will disappear behind the dark limb of the Moon. The Moon will be 63% illuminated, just past first quarter. The star will then reappear from the bright limb of the Moon around 7.16 p.m.

I always enjoy watching events like this as they give the sense of watching the clockwork of the Universe in motion.

The Planets

Following its transit last month, Mercury has reappeared in the early morning sky. It can be found low in the south east about 40 minutes before sunrise for the first 10 days of the month. Luckily, finding a congenial time to observe Mercury is not so arduous at this time of the year, as the Sun does not rise until about 8a.m.!

Venus regains its position as the Evening Star this month. It can be found low in the south west, after sunset, shining at a magnitude of -3.9.

Mars can be found low in the south east among the stars of Libra, shining at magnitude +1.7.

Jupiter is in conjunction with the Sun so cannot be seen this month and Saturn will be in conjunction with the Sun at the beginning of January and consequently is becoming lost in the sunset glare during December.

Uranus is well placed for observation shining at magnitude +5.7 just above and to the right of the circlet of stars that represent the tail of Cetus the Whale. If you locate the great square of Pegasus you can use the bottom two stars as a pointer. Draw an imaginary line between the two stars and continue the line to the left for one and a half times the distance. At this point you should be close to Uranus.

Neptune is to be found in the early evening among the stars of Aquarius, shining at magnitude +7.9. The Great Square of Pegasus can assist in its location. Find the two right hand stars of the Square. Draw an imaginary line between the two stars and continue the line downwards for one and a half times the distance between the two. You should now be in the vicinity of Neptune. Both Uranus and Neptune are easy binocular objects.

Meteor shower

The Gemini Meteor is one of the most prolific showers and, at its peak, can produce a hundred meteors per hour. However, the rate quoted is under ideal conditions so observers will see considerably less than this.

This year, viewing the Geminids shower will be seriously hampered by the Moon which will be nearly full. To add insult to injury it will also be in the constellation of Gemini at the time of peak activity.

The shower is active between the 4th and 17th December with the peak activity in the early hours of the 14th. The shower is noted for its slow meteors. It has a good proportion of bright events, some of which leave persistent trains. When looking for meteors remember you do not look at the part of the sky from which the meteors appear to come, the radiant. In this case the constellation of Gemini. Instead look in neighbouring

constellations, to the right Orion and Taurus and to the left Leo and Cancer, as these are the locations at which the meteors are likely to be at their brightest.

A Comet

The comet 2017 T2 Panstarrs is well placed for observation this month. It is estimated to be at magnitude +9.5 so will not be a naked eye object. It should be visible through a six-inch telescope. It begins the month in Auriga, about 4° west of Capella. It then moves along towards Perseus and, by the 14th December, will be close to the open cluster NGC 1528. By the 19th December it will be just south of the open cluster NGC 1496. It will make a good target for those of you practicing astrophotography.

An elusive Globular Cluster

The globular cluster M79 is in the constellation Lepus the Hare. Lepus lies south of Orion and thus is only visible when Orion is well above the horizon. If M79 was not so awkwardly placed it would rival M13 the famous globular cluster in Hercules. M79 shines at magnitude +7.7. It is visible in binoculars but, as it is never high in the sky, will require an unobscured southern horizon.

That is all for this month. Enjoy the festive season.