

The Spring Equinox

In March we reach one of the four cardinal points of the year, the Spring Equinox.

On March 20th at 9 am the Sun, which has been moving steadily northwards since the Winter Solstice last December, will reach the Equator. On that day, the Sun will pass directly overhead for observers situated on the Equator. All over the world the Sun will be above the horizon for 12 hours and below for 12 hours hence the name Equinox. This reflects the fact that the whole Earth will experience a night lasting 12 hours, hence "Equal Nights". The Sun will continue to move northwards until the next cardinal point - Midsummers Day in June. It is worth mentioning here that on March 28th we will put the clocks forward an hour as we enter British Summer Time.

The Moon

The Moon will reach Last Quarter on March 6th, will be New on March 13th, will reach First Quarter on March 21st and will be Full on March 28th.

The Planets

None of the Planets are particularly well placed for observation this month.

Mercury is too close to the Sun to be easily visible.

Venus and Neptune are not visible due to their being in conjunction with the Sun.

Uranus is approaching conjunction and will be a difficult target at the beginning of the month but will be too close to the Sun at the month's end.

Jupiter and Saturn are emerging from behind the Sun and will become increasingly visible in the pre-dawn sky as the month progresses.

Mars is visible throughout the month but is becoming fainter as it moves further away from us. It will be close to the Pleiades star cluster during the first week of the month.

Constellations

I thought we might spend some time looking at the constellations so that we can develop an overview of the night sky.

From my own observing I have become very familiar with parts of the sky while other parts are relatively neglected. I propose to work systematically, starting with the Zodiac constellations, learning their shapes and how they can act as signposts to other constellations.

The Zodiac constellations are those that lie along the path that the Sun appears to take as Earth orbits it. The path is called the Ecliptic and twelve constellations are named as belonging to the Zodiac. This is nothing to do with astrology but is another way of dividing the year into 12. The year that we are used to has months of differing lengths. For example, March has 31 days whereas February has 28 or 29 depending if it is a leap year. If you want to use an astrolabe, a very useful if outdated instrument, it is convenient to standardise the months by having a year of 12 months each of 30 days. This gives you a system

which is accurate enough to be useful when studying the location of constellations. It only produces an error of about half a day per month which is easily absorbed in practice.

If we take each month and look at which Zodiac constellation is in the south in mid evening it will present the constellations in order with a new one each month. When a Zodiac constellation is in the south it will be at the greatest altitude it can attain from our latitude.

If we do this it will get us off to a good start with the constellation *Cancer*. There are no bright stars in Cancer. Unless it is a very dark clear night you will need a pair of wide-angle binoculars to appreciate it. However, this is a good example of using other star patterns as signposts.

The Zodiac constellation which precedes Cancer is Gemini the twins and the Zodiac constellation that follows is Leo the Lion. If you draw an imaginary line between Castor from Gemini to Regulus in Leo and use your binoculars to look halfway along the line, you will be close to the centre of Cancer which will resolve itself as the famous Beehive Star Cluster.

Cancer is Latin for Crab. It is difficult to picture a crab from the stars involved. The Egyptians called it a beetle and in India it was called a tortoise. Cancer used to contain the point at which, each year, the Sun stopped moving north and began its journey south, the Summer Solstice. It has been suggested that the Sun reversing direction and going backwards symbolised the movement of the crab. This seems a little odd to me but there you have it.

For homework this month try and locate Cancer using the method I have suggested. Having done so enjoy the spectacle of the Beehive which Messier catalogued as M44 and then, continuing to use your binoculars, scan south about 10 degrees to find another Messier cluster M67. It is not as spectacular as the Beehive, but it is worth “bagging”.

Another homework task to help you fix the position of Cancer in the context of the rest of the sky is to scan north by about 30 degrees and look a little to your left. You won't need your binoculars for this. You should find a very famous constellation. What is its name and what is the name of the even more famous asterism contained within it?

Until next month clear skies.