

We have again reached that point in the year when the Sun, in its journey south, reaches the equator. On September 23rd, the date of the equinox, the Sun will stand at the zenith over the equator at noon. This results in all parts of the Earth experiencing 12 hours with the Sun above the horizon and 12 hours below. The night will be the same length all over the planet hence the term “Equinox” which means “Equal Night”.

At the beginning of the month, locally, the Sun will rise around 6.20 am BST and will set around 7.40 pm BST. It will be approximately 7° above the celestial equator. At the end of the month the Sun will rise around 7 am BST and will set around 6.40 pm BST. It will have sunk to around 2.5° below the celestial equator. This is good news for astronomers as we are now sufficiently far away from midsummer to be experiencing the return of truly dark nights.

The Moon will reach first quarter on September 6th, will be full on September 14th, will reach last quarter on September 22nd and will be new on September 28th.

The Planets

Mercury Venus and Mars are all too close to the Sun to be observable this month.

Jupiter may be glimpsed at the beginning of the month but it too will be swamped by the “no go” area around the Sun before the month is very old.

Saturn will be visible throughout the month among the stars of Sagittarius. It may be seen low in the sky in the early evening, shining at magnitude +0.4.

Uranus rises around 8.30 pm BST and by 11 pm will have risen high enough to be a binocular object. It will be found among the stars of Aries shining at magnitude +5.7.

Neptune comes to opposition on September 10th. On that date it will be found in the south at midnight (1 am BST) at about 30° altitude. It will be shining at magnitude +7.8 among the stars of Aquarius and thus will be in range of a good pair of binoculars. At opposition it will be some 2.67 billion miles from us which means that when you see it you will be looking back in time some four hours. A telescope of 4 to 6 inches aperture will be required to resolve Neptune’s disc but it will require a telescope of 10 to 12 inches operating at high magnification to glimpse Neptune’s largest moon, Triton.

Comet 2018 W2

This comet will be well placed for observation throughout September and could become bright enough to be visible through a pair of large binoculars. In any event it should be visible through a telescope of reasonable aperture. At the beginning of the month it will be a little to the left of the Double Cluster in Perseus glowing with an estimated magnitude of +10.5. It will be closest to the Sun on September 6th but not so close as to be in a bright sky. Between September 16th and 21st it tracks south and west passing to the left of the Andromeda Nebula M31. On September 22nd it passes to the left of the upper left-hand star of the Great Square of Pegasus and on the 27th it passes to the right of the bottom left hand star of the Square. It is estimated that whatever magnitude it starts at Comet 2018 W2 will brighten by a magnitude of 1 during the course of the month.

While talking about the **Great Square of Pegasus**, it is worth remembering that counting the number of stars visible to the naked eye inside the Square, not counting the four stars that make up the Square itself, gives a useful measure of the clarity of the sky. Chose a Moonless night. 4 stars is average, 7 is described as “good” 13 is described as “very good” and 35 is described as “excellent”. It should be remembered that the older you get, the less sensitive your eyes become. If you are interested in light pollution rather than how much you, as an individual, can see it is a good idea to have someone relatively young with you when you assess the sky.

Cassiopeia is well placed for observation this month. Although the constellation is circumpolar, that is to say from our latitude, the whole constellation remains above the horizon throughout the hours of darkness, Cassiopeia rides high in the sky during mid to late evening. This means that the light from Cassiopeia’s stars have relatively little air to pass through before entering our eyes resulting in less light being absorbed by the atmosphere than when the constellation is lower in the sky. This makes it easier to see, including being able to see fainter objects.

Searching the area of sky around Cassiopeia with a pair of binoculars reveals spectacular views of star fields as the constellation lies in the plane of the Milky Way. There are a number of **Messier objects** around Cassiopeia the observing of which are complicated by the presence of lush Milky Way star fields. Try locating M34, M52 and M103, all galactic clusters. While you are observing this part of the sky don't forget to visit the Andromeda Nebula M31 and its companions M32 and M110.

Good hunting.