Athenaeum Astronomy Association

THE NIGHT SKY IN SEPTEMBER 2020

This month sees the Autumnal Equinox.
On September 22nd the Sun, which has been moving steadily south since mid-summer's day, has reached the Equator. As a result, all over the world, the length of the day will equal the length of the night. Following this, for people living north of the Equator, the nights will be longer than the days, a situation which will continue until the Spring Equinox in March next year.

This month the Moon will be full on the second and will reach last quarter on the 10th. The Moon will be new on the seventeenth and will reach first quarter on the twenty fourth.

All the planets, except for Mercury, put on a good show this month.

Venus is a morning object and is shining brilliantly at magnitude - 4.2. It is the brightest object in the sky bar the Sun and the Moon.
At the beginning of the month it rises around 2.12 am BST and thus will be visible against a dark sky for some time before the pre-dawn dilutes the effect.
On the fourteenth of the month the crescent Moon, three days from new, will be seen to the north east of the planet. Between the two will be found the Beehive Star Cluster M44, the three objects forming a sight crying out to be photographed.

Mars is nearing its opposition. This takes place in October. As a result, Mars is bright shining at magnitude - 2.1 and showing a disc of around 22.4 arc seconds. It is thus large enough to reveal surface features when observed through a small telescope.
It is to be found among the stars of Pisces and will be easy to identify given its current magnitude.
Mars is about to give us a demonstration of retrograde motion. If Earth were stationary Mars would pass us moving from right to left. As Earth is moving in its own orbit inside the orbit of Mars Earth moves faster than Mars. Earth, therefore, overtakes Mars on the inside track causing Mars to appear to move backwards against the background of stars. On the ninth of September Mars stops moving from right to left and reverses direction.

You can simulate the movement of Mars against the background of stars by using a planetarium program such as Stellarium.

Jupiter is still prominent in the early evening sky shining at magnitude - 2.6 at the beginning of the month. However, having passed opposition, it is beginning to move away from us but will still be shining at a respectable - 2.4. It remains low in the sky and is best observed as soon as possible after darkness has fallen. On September 4th the Great Red Spot is visible, together with the Moon Europa and its shadow. On September 13th the Moon Callisto will be seen crossing Jupiter's disc.

Saturn is still following Jupiter along the ecliptic. It is shining at + 0.4 and despite its low altitude is still a worthy target for a telescope.

Uranus is shining at magnitude +5.7. It therefore visible to the naked eye on a clear dark night, provided you have excellent vision and have allowed your eyes to become dark adapted.
Uranus has climbed to nearly 15º above the celestial equator and lies among the stars of Aries. It has not been at such a northerly position for some years.
Uranus has many moons and it is often said that they are all named after characters from Shakespeare's plays. This is not completely accurate as there are a couple that are not. Soon after Uranus was discovered it was found to have four moons - the first of many. It was decided to name the two brightest moons Oberon and Titania. It was thought that they would need assistants and so they named the other moons after sprites. They called the third brightest moon Ariel, a good sprite. They called the faintest moon Umbriel, a naughty sprite. Umbriel is a character from Alexander Pope's "The Rape of the Lock". Many years later and many more moons discovered with large advances in optical equipment, they found a much fainter moon. They decided to continue with the allusion to Popes book calling this one Belinda after the girl who had her lock of hair stolen. Uranus with the four brightest moons, Oberon, Titania, Ariel and Umbriel are within range of amateur imaging set ups.

Neptune reaches opposition on September 11th and shines at magnitude + 7.8, well placed among the stars of Aquarius. It is an easy target for a small telescope or large binoculars. A 10 to 12inch telescope will reveal Neptune's giant moon Triton.
Neptune is, so far as we are aware at the moment, the furthest planet in the solar system. It is currently some 2.67 billion miles from us. If an astronaut on Neptune radioed a message to us it would take four hours to reach us. Our reply would take a further four hours to get back to Neptune.

I look forward to seeing any images that are captured from your viewing this month until next month wishing you clear skies.