Athenaeum Astronomy Association

THE NIGHT SKY IN JUNE 2021

Time passes! Ever since the winter solstice that happened in December 2020 the Sun has been moving steadily north, bringing longer days and shorter nights. In the early hours of the morning of the 21st of June, the Sun will stop moving north and will begin its slow return south to the winter solstice on December 21st. On June 21st the Sun will reach a little above 23º north of the celestial equator and it will be the longest day of the year, technically mid- summer's day.

The Sun

This year the Sun has a treat for us. On the 10th of June there will be a partial solar eclipse which will be visible, weather permitting, from the U.K.
From London the eclipse will start at 10.09 BST and will last until 12.22 BST. Maximum eclipse will be at 11.13 BST when 31.6% of the Sun's diameter will be obscured. I make no apology for reminding you not to look directly at the Sun for fear of damaging your eyesight. I will be watching it through a small tripod mounted telescope from which I will be projecting an image of the eclipsing Sun onto a piece of white card. I will aim the telescope at the Sun by using the shadow of the telescope to guide me, so avoiding the need to put my eye anywhere near the telescope's eyepiece. If the sky is hazy or has thin cloud cover, do not be tempted to use this as a solar filter.

Recently the Sun has been more active than it has for some time. It is worth logging on to a solar internet site such as SOHO. You will be able to see, and watch, the development of current solar activity in perfect safety. The Sun has emitted some coronal mass ejections recently. They can be seen leaving the Sun but can take two or three days to reach us. If they hit us, they can cause disruptions to our electricity systems so constant watch is kept with the aim of giving early warning of the danger.

Now some news of the Moon and Planets.

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The Moon

In June the Moon will be at last quarter on June 2nd, will be new on June 10th, will be at first quarter on June 18th and will be full on June 24th

The Planets

Mercury is at conjunction with the Sun on June 11th and so will be too close to the Sun for viewing this month

Venus will be visible around sunset low in the northwest.

Mars can be seen among the stars of Cancer. It will pass through the Beehive cluster, Messier Number 44, on the 22nd, 23rd and 24th of the month. This will be a good opportunity for some astrophotography.

Jupiter can be seen in the morning sky near the border of Aquarius and Capricornus. It is continuing to move away from the Sun.

Saturn rises about 40 minutes before Jupiter among the stars of Capricornus and by the end of the month will have climbed to an altitude of about 20º before becoming lost in the morning twilight.

Uranus is too close to the Sun for easy viewing in the pre- dawn sky.

Neptune can be seen, during the second half of the month, among the stars of Aquarius near the border with Aries.

For the past few months, I have been engaged in a program to help people navigate their way around the night sky. The aim is to teach participants to recognise the patterns of stars that make up the constellations and to learn how the constellations fit together to cover the night sky.

To work systematically we are starting with the Zodiac constellations.

There are 12 constellations that make up the Zodiac. They all lie on the Ecliptic, a line which circles the sky, and which represents the path that the Sun takes in its annual perambulation around the sky. Of course, it is not the Sun which moves but the Earth orbiting the Sun which changes the position from which we are viewing the sky.

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We started at the beginning of March and chose the Zodiac constellation, Cancer, that appeared in the south in the late evening. We noted the pattern of stars that made up the constellation, together with its neighbouring constellations, Gemini and Leo.
We carried out the same procedure in April. This gave us the constellation Leo, flanked by Cancer and Virgo. We noted that Corvus the Raven and Crater the Cup are situated north of the constellations
The same procedure at the beginning of May gave us Virgo, flanked by Leo and Libra which are south of Coma Berenices and Bootes the Herdsman.

We are now up to date and hopefully can navigate around three months' worth of night sky. We should now know enough to know that the constellation for June is Libra the Scales.

From here things are about to become a little curious.
In the first place the Zodiac is supposed to be a circle of animals, the Zo of Zodiac being from the same root as Zoo. Yet Libra the Scales is not living. How do we explain it being part of the Zodiac? It seems that the Scales are representing the Scales of Justice which are represented by the Lady of Justice as depicted by the Statue of Justice who stands on the roof of the Old Bailey. She is blindfolded, representing impartiality, and carries a set of scales presumably to help in weighing up the evidence. It is Lady Justice that belongs in the Zodiac.
A more difficult problem is the question of Ophiuchus, a large constellation representing a Healer. Ophiuchus stands on the Ecliptic and, if you consult a star map, you will see that the Sun spends much more time crossing Ophiuchus than it does crossing Scorpius yet is not included as part of the 12 zodiac signs.
Ophiuchus means Serpent Bearer and he is crossed by a serpent whose head is on Ophiuchus's left and who's tail is on his right. It is said that the medical symbol of staff and snake originate from Ophiuchus and his serpent.

I will leave things there for this month. In July we will look at the interesting relationship between Libra and the next Zodiac in line, Scorpius.