

Welcome to the AAA Podcast for November 2020.

The Sun

Before we pay attention to our usual features, I thought you might be interested in the announcement that the Sun has begun its next Sun Cycle with a predicted solar maximum in 2025.

The Sun operates on a cycle of approximately 11 years. The most obvious sign of the cycle is the changes in the rate of production of sunspots which peaks at solar maximum and falls at solar minimum. The new cycle is designated Cycle 25. Cycle 24 is considered to have ended in December 2019.

The Sun has been relatively quiet in recent years and evidence suggests that this trend is likely to continue. Nevertheless, it will be worth keeping an eye open with a view to following Cycle 25 as it progresses.

Clearly it would be extremely foolish to look directly at the Sun, but fortunately amateur astronomers have access to highly sophisticated information and images from a dedicated solar telescope in Earth orbit. The images can be accessed with no risk to your eyesight from a telescope unaffected by clouds. The Solar and Heliospheric Observatory has an internet site from which you can access up to date images of the Sun as seen in a variety of light frequencies. Different frequencies show up different features of the Sun. I pay attention to four frequencies which, taken together, I find particularly interesting.

The Sun in white light will show any sunspots present. The Sun in hydrogen alpha shows solar flares and prominences, some of which are seen to be associated with spots. Extreme ultraviolet shows plasma arranged along lines of magnetic flux often showing spectacular loops around sunspots. There is also a magnetogram image which shows clumping of positive and negative charged plasma which again are associated with sunspots. These features are transient and change rapidly.

The Solar and Heliospheric Observatory site gives lots of information about the Sun and its cycles so I will not repeat it here. I would however recommend watching the Sun as Cycle 25 builds to a peak over the next few years.

To move on with November's podcast

The Moon will be at last quarter on the 8th, will be new on the 15th, will be at first quarter on the 22nd and will be full on the 30th.

The Planets are still putting on a good show

Mercury will be at greatest western elongation on 10th November and thus will be seen in the morning sky around that date. At about 6.30am Mercury will be shining at magnitude -0.6 and will have reached an altitude of about 10° on a compass bearing of 120°.

Above and to the right of Mercury you will find **Venus** shining brilliantly at magnitude -4. It will remain in this part of the sky throughout the month, unmistakably bright.

Mars is now past opposition and is therefore fading. Nevertheless, it is still unmistakably bright, shining in the stars of Pisces.

Jupiter and **Saturn** are getting closer to each other prior to their conjunction in December. They lie between the constellations of Capricorn and Sagittarius. Jupiter will be shining at magnitude -2.1 while Saturn, a few degrees to the left of Jupiter is fainter, shining at magnitude +0.6. A crescent Moon will be close on the 19th.

Uranus shines at magnitude +5.7 and is to be found just above the circlet of stars forming the tail of Cetus the Whale. It is well placed for observation reaching an altitude of 40 degrees. It is a good target for binoculars.

Neptune is also well placed for observation and can be found just below the circlet of stars at the lower right-hand border of Pisces.

So far as the stars are concerned, the sky scape is moving from its summer aspect to its winter presentation.

At the beginning of the month the summer triangle, Altair in Aquilla the Eagle, Vega in Libra the Scales and Deneb in Cygnus the Swan are sinking into the west by mid evening. In the east the Pleiades and Taurus the Bull are rising and by late evening Orion has joined the group.

Enjoy the spectacle

Wishing you clear skies until next month.