

It is now a year since I started my first *Journal Sky Notes*, and having come full circle I'll have to take care not to repeat myself. As principally a deep-sky observer, I do tend to treat these summer months as a holiday due to the shortness of the truly dark nights needed, but even in some of the short periods of darkness there are a few sights available – and of course the planets, the Moon, and the Sun are not so badly interfered with, so useful observations can still be made.

Sun

The summer solstice occurs on June 21 at 11:28 a.m. This marks the time when the Sun is at its apparent highest declination in the year, and marks the start of summer. No doubt the druids will be gathering at Stonehenge for the event, and if you get the chance there may be some interesting and evocative pictures to be had around the stones. However, research indicates that for our prehistoric ancestors the winter solstice was much more important.

It may seem strange to us in July in the northern hemisphere, that we are actually at our furthest from the Sun at this time, with the Earth being at aphelion on July 6, some 152.6 million km distant, about 5 million km further than at perihelion in January.

Solar activity has been increasing, and small sunspot groups and prominences are being frequently observed. So whether you have a dedicated solar telescope, or just make occasional observations using a filter or the projection method, it is well worth taking any opportunity offered.

There is a total eclipse of the Sun on July 11. However, this occurs over the south Pacific ocean, without much in the way of landfall. There are a few islands and atolls which will make ideal observing sites, the main being Easter Island, and no doubt there will be some cruise 'missions'. It could certainly be an amazing holiday, to take in



Saturn on April 17 imaged by Martin Lewis in St Albans with a 222mm Dobsonian and DMK21 CCD.

the eclipse and the culture and history of these Polynesian islands. And of course, reports of the eclipse will be most welcome.

Noctilucent clouds (NLC)

Much is still unknown about noctilucent clouds; these high altitude clouds are illuminated by grazing sunlight during the summer months, making them visible during the hours of darkness. They often have an electric blue appearance, which is quite distinctive. Last year was a good season with many observations reported. With the volcanic eruptions under the glacier Eyjafjallajökull in Iceland that caused so much disruption to the UK airspace, it will be interesting to note if this appears to have any effect on the incidence of NLCs. See page 127 for details of how to report your observations.

Moon

The Moon is New on June 12 and July 10, and Full on June 26 and July 26. The June New Moon will have a low altitude to the south, appearing just above the spout of the Teapot asterism of Sagittarius, and might make an interesting photo opportunity.

Planets

The apparition of **Mercury** in April was well seen by many members, but the planet is now at superior conjunction and unobservable.

Venus is still well placed in Gemini at the start of June and tracks through Cancer and on to Leo in July. As Venus is now closer,



As mentioned in the last Sky Notes there was an interesting approach to the Beehive cluster (Praesepe) by Mars in April. Nick James captured this image of the event on April 16 at 21:30 UT. EOS 10D digital SLR, Megrez 72 APO refractor, 4x300s.

the disk is larger, but the change in phase maintains the same level of brightness. On June 15, Venus will be near to the slimmest of new crescent Moons, making a nice but difficult photo opportunity. Also on June 20 and 21 Venus will cross M44, Praesepe, or the Beehive Cluster – another interesting but tricky photo-opp.

Mars is moving through Leo, but its apparent diameter is reducing, and it is heading into evening twilight in late July. Mars and Venus are closing together in July, and Saturn is also in the area, so this could make an interesting photo, but again will be difficult due to the low altitude of the three. The new crescent Moon will add to the trio on the July 14 and 15.

Jupiter is improving, though still low in the east in the morning sky in June, but will be rising around midnight in early July making it more available. **Uranus** is close to Jupiter in both these months, which will make an easy finder for the distinctly blue/green planet, which displays a 3.5" disk shining at around magnitude 5.8.

Saturn is heading towards the sunset, but will still be observable in June and July though low in the west. At the end of July there will



Galaxy M81 imaged by Peter Edwards on 2010 March 7 with a Celestron C11 at f/6.3 and SBIG ST2000XCM CCD camera. 18x300sec sub-exposures stacked to give a total of 90 minutes.

be a nice conjunction of Mars and Saturn, with Venus nearby too, which could make a nice little photo composition.

Neptune is between Capricorn and Aquarius, and is somewhat trickier, being 2 magnitudes fainter than Uranus, at around 7.8, with a disk of 2.3". However, Neptune does have a distinct blue colour. It is interesting to contrast the colours of Uranus and Neptune. Both have similar proportions of methane in their atmospheres, but Neptune is somewhat bluer, and it is unclear why.

Pluto is at opposition on June 26, but faint around 14th magnitude, and in amongst the star clouds between Scorpio and Scutum, making visual observation very difficult, though with a CCD you should be able to detect its motion over a couple of evenings.

Meteors

The bright nights do not make this period the best for meteor observing, though the

Ophiuchids have a double maximum on June 10 and 20, but low rates with a ZHR of 5. There are favourable maxima of the Capricornids on July 8 and 15 but again with low rates, also with a ZHR of 5.

Comets

This has been a lean time for comet observers, but there have been a few fainter comets worth following recently. Recent observations of Comet McNaught (2009 R1)

suggest that it may become naked eye towards the end of May and into June. It will be low in the east and north east, as it moves from Andromeda, through Perseus, and into Auriga. By the end of June, however, it will be unobservable from the UK.

Variable stars

In last years June/July Sky Notes I mentioned that the variable star R Corona Borealis was still dim, and due to brighten soon to its normal level of around magnitude 6. However, surprisingly, this year the star is still dim at around mag 14. So observations would be appreciated by the Variable Star Section, and if you notice a brightening, please let the Section Director know immediately. Finder charts for R CrB can be found on the VSS website, in the Charts area or at <http://www.britastro.org/vss/xchartcat/cr-b.html>

Deep sky

Although this is not the best time of the year for observing 'faint fuzzies' it is not impossible to see some of the brighter sights. The galaxies M81 and M82 in Ursa Major are an interesting pair, M81 being a traditional spiral galaxy, and M82 an active irregular galaxy. M81 was discovered by Johann Bode in 1744, and is sometimes known as 'Bode's Galaxy'. Messier later re-discovered it and added it to his catalogue. To find the pair I tend to use a non-traditional star-hop. Often it is recommended to go from Phad at the bottom left of the square of the Dipper across the diagonal to Dubhe, and continue in the same direction, for the same sort of distance, and you'll land in the vicinity of M81 & M82. I find that with this route there is quite a jump from Dubhe into 'open space', so I prefer to follow from Megrez to Dubhe, and then onto 23 UMa, north to 24 UMa, and then just track a little west to reach the pair.

Whilst around Ursa Major, one of the curiosities of the Messier catalogue is M40 – which is in fact just a double star. Messier was searching for a nebula identified by Hevelius, but he did not find anything nebulous in the area, but he found this double, and having measured the location, he put the object into his catalogue. It was catalogued later as Winnecke 4, which it is how it is listed in some star charting software.

They might be difficult but the other three Messier galaxies of Ursa Major should also be sought – M101, the Pin Wheel Galaxy is a fine spiral, M108 an edge-on spiral, and M109 another nice barred spiral.

Callum Potter

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