

Over these summer months I do tend to 'shut-down' from my main interests in deep sky observing due to the short nights. I find, though, that it is a good time to do maintenance on the telescopes and observatory, and send mirrors away for re-coating if required. This year I need to look at replacing the wooden support rails of my roll-off-roof, and the whole observatory needs a new coat of paint. Though over the past few weeks in April there have been few opportunities to work outdoors, hopefully over the summer there will be an improvement in the weather.

The short nights do make observation of fainter and fuzzier objects more difficult, but nevertheless over the next two months there will still be lots to look out for.

Transit of Venus

I am sure all BAA members will be well aware of the impending Transit of Venus, and that it's not really going to be favourable for UK observers. If you are intending to travel to get a better view, then you have probably already made arrangements, but if you are thinking of doing something at the last minute, then you would do best to travel eastwards – it's unfortunate for us in the UK, but all of the transit will be visible from much of Australia, New Zealand, China, Cambodia, Vietnam, Japan, the Philippines, and much of the Pacific Ocean. If you don't want to go so far, and would be happy witnessing just the closing stages, then the Middle East, Turkey, or India might be good choices.

In the UK the transit will be nearing completion as the Sun rises on Wednesday June 6. Depending on your location, there will be roughly an hour between sunrise and the end of the transit, with the Sun reaching an altitude of around 5 or 6° by the end of egress. So, you will need to find a good spot, with a clear north-eastern horizon, and hope for good weather. Those on the east coast will have a good horizon over the sea, of course, and if in Norfolk or Suffolk, you may get a few minutes more than those in the west. Those in the North and Scotland will also get a bit more time due to the

earlier sunrise. Otherwise, try to get to a high point for the best view.

We will be totally dependent on the weather, but although it's unlikely we will get a good view, you never know, so I would recommend making some plans, and getting out to try to witness this event. After all the next one won't be until 2117, and it is pretty unlikely that anyone of us will be around then to see that one!

Of course we were very lucky in the UK with the transit in 2004 – many of us had ideal weather for observing. And it was well timed for the UK too, starting in the early morning and completing around lunchtime. I well remember observing the ingress at home, and then travelling to Cheltenham for a public viewing event for the egress.

So, to summarise the circumstances for June 6 this year. Sunrise times (BST) around the UK are Lowestoft (most easterly point of England) 04:33, London 04:46, Cheltenham 04:51, Edinburgh 04:30, Inverness 04:23, Wick 04:10. Time of the beginning of the egress is around 05:37 BST and the completion of egress at around 05:54 BST.

Remember that when viewing the transit you are really observing the Sun, so all normal solar viewing precautions must be taken. Safe solar viewers are available for sale from the BAA office.

Sun and Moon

The Summer Solstice, when the Sun reaches its highest declination of the year, occurs on June 20 at 23:09 UT.

The Moon is full on June 4 and July 3, and new on the 19th of each month.

The June and July full Moons will not attain a very high altitude in the UK, transiting at around 15° from the south of England. You will probably notice how big the Moon appears to the naked eye, but if you take a photo it will not be so spectacular as you remembered; this is an optical illusion, known as the Moon Illusion. In reality the Moon when near the horizon is not bigger at all.

There is a partial lunar eclipse on June 4, but the UK and Europe are not well placed for this.

No eclipse will be visible here. You'd need to be in the Pacific for the best view – if you head out for the Transit, try to go a few days earlier and you should be able to catch both.

The Sun continues to display a number of spots, but not in the numbers that we would be expecting. But this is an improvement from a couple of years ago, when no spots were visible at all. If you can safely observe the Sun then please do at least record the number of sunspots and groups that you see. It is always interesting to see

full disk sketches of the Sun in addition to images.

Last year there were a number of noctilucent clouds (NLC) visible from the UK. I myself saw a small display whilst on holiday in Orkney last summer. Those more northerly seem to have a better chance of seeing NLC, but it is worth looking out for these pearly blue white clouds from southern parts too. NLC seem to more frequent when solar activity is low, but we have still not really seen a big upturn in sunspot numbers yet, so maybe this year we will have a good NLC season.

Planets

Around the solstice you might just catch a sight of the planet **Mercury**. It will be low in the west just after sunset. On June 22 the new crescent Moon will be nearby, and might help as a finder. This could be an interesting but difficult photo opportunity.

After the transit (when the planet is at conjunction), **Venus** becomes a morning object, and in July will be starting to make its presence felt again. Jupiter will be close by at the beginning of July and could make for an interesting photo.

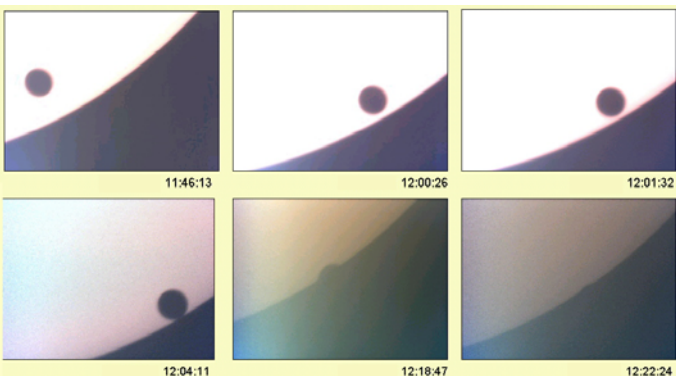
Mars and **Saturn** are still the two standout planets, though Mars is receding, and whilst having an apparent diameter of around 8 arcseconds at the beginning of June, this will have reduced to under 6" at the end of July. Mars is moving from Leo towards Virgo, but will be low in the evening sky by the end of July. Saturn stays in Virgo for these two months, reducing slightly in apparent diameter by about 4", but is still a magnificent sight through even a small telescope.

Jupiter is starting to make an appearance in the morning sky, though it will be better for observation in late July, rising earlier and gaining more altitude before twilight. On July 15 in the morning, the Moon will be very close, and Jupiter will be occulted from some parts or appear to skim the north pole of the Moon. It might be interesting to take some photos or film a movie of the event. You should probably be set up ready by 02:45 BST at the latest, with close approach happening after 03:00 BST.

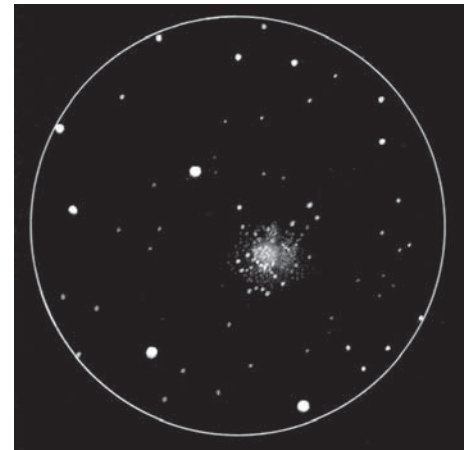
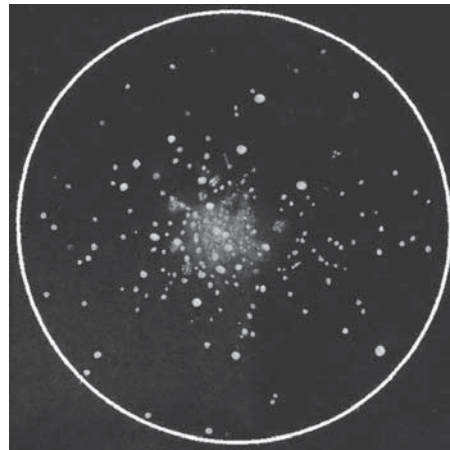
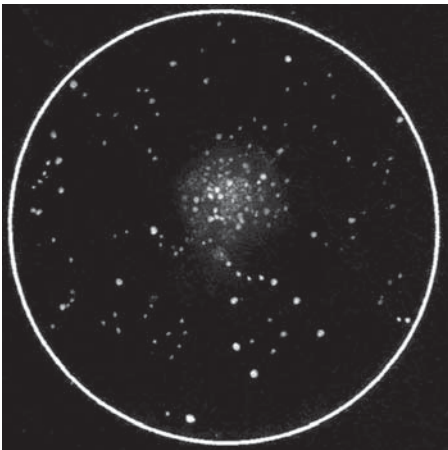
Neptune becomes available for observation in June, located in Aquarius, and **Uranus** should become available in July in Pisces. It's always interesting to note the similar yet contrasting colours of these two planets.



Mars on 2012 May 1, diameter 9.9 arcsec., imaged by Peter Edwards with a 280mm SCT and DMK21/618 CCD.



Images of the transit egress on 2004 June 8 by Les Dickens.



Drawings of globular clusters by Dale Holt using a 150mm refractor with Watec 120N video camera. Left: M9; Centre: M10; Right: M80.

Pluto is probably somewhat under-observed now it has been demoted, but it will be at opposition on June 30. Located in Sagittarius it will be around magnitude 14, and of course no disk or special colour is apparent. It will be quite close to the open cluster M25, a little over half a degree eastwards, which should make locating the field easier, and over July it will move towards and under the cluster. The only way to be sure of observing it is to compare observations made over a few nights. This is much easier for imagers, of course, but visual observers can try it too. With an accurate finder chart for the night, locate the area of Pluto, and sketch the 'stars' visible. Then come back a night or two later and make another sketch of the same area. An artistic sketch is not required – just a diagram showing the relative positions and brightness.

Deep sky

I have a particular interest in globular clusters (GCs). At this time of year there are a lot on show, and the brighter ones can still be found even with the shorter hours of darkness. I find globular clusters interesting because we don't

have a good understanding of their origin and evolution. They exist in the halo around our Milky Way galaxy, quite separate from the spiral arms, and seem to be quite old. Of course globular clusters are not restricted to our own galaxy. It's possible to observe GCs in other galaxies, such as M31, though a large telescope will be needed to do this visually.

There are many favourite summer globular clusters, and we will start with two in Scorpius. Scorpius never rises very high from the UK, but it is well worth searching out M4 and M80. M4 is magnitude 5.9, just a short distance west of Antares, and should be accessible with even a small telescope. M80 (mag 7.2) is north and west of M4 and somewhat fainter, and might be best sought at New Moon.

Somewhat higher in the sky and more accessible is M5, the brightest GC in the northern hemisphere at magnitude 5.8, which resides in the constellation Serpens. From there it's a short step west towards Ophiuchus, for M10 and M12 – both magnitude 6.6 objects. Also in Ophiuchus are M19 (mag 7.2), M14 (mag 7.6), M9 (mag 7.9), and M107 (mag 8.1). For those wishing to seek out even more globulars in Ophiuchus there are a good number of fainter ones in the NGC catalogue, which should be within range of larger scopes at a dark sky location.

Observing globular clusters visually is very rewarding, but I have noticed very few images in my collection of those sent in to the BAA website – so if you are an imager, why not have a go, and send me your results.

Callum Potter

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