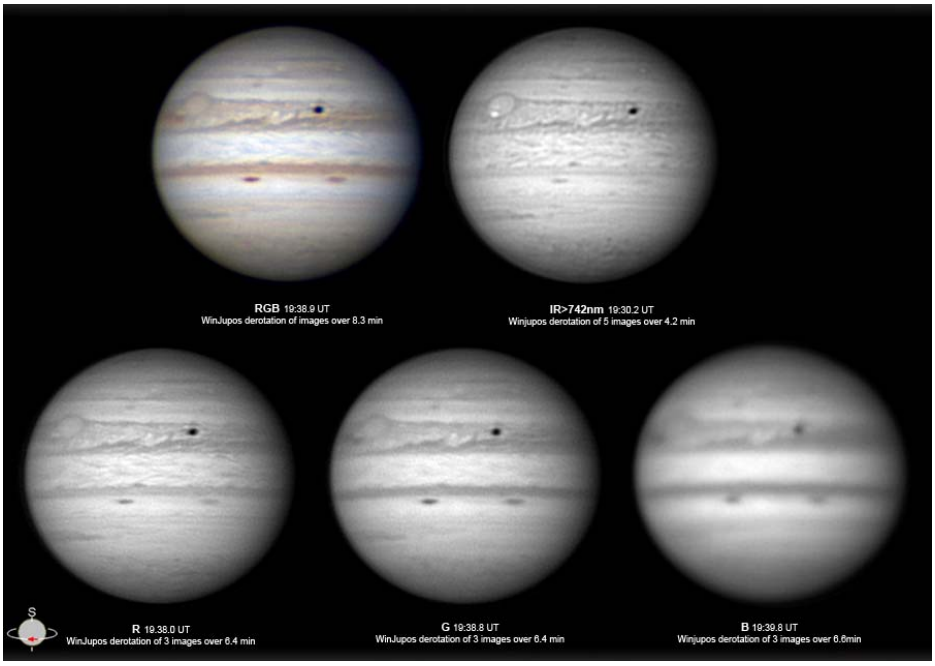
Sky Notes: 2012 August & September

by Callum Potter



Images of Jupiter in 2012 January by Marc Delcroix. Io is transiting near the GRS, its shadow following. A bright erupting spot is transiting at the central meridian in the SEB.

There can be little better than getting out observing in August and September – the warmer weather and darker nights at this time of year are a positive encouragement, and there is such a large number and variety of objects to observe it can be difficult to work out just what to look for. So even for the casual observer, I really do think it is worthwhile to have some sort of plan or programme. This way you will start to explore more interesting objects and things off the beaten track.

I also think it's always worth having a range of difficulty, especially for the visual observer. It is best to start with a few 'easy' objects, just to get oriented and your eye trained for the evening. Then some difficult targets, these are your 'stretching' objects. Towards the end of your session, a few of the 'chocolate box' objects, as a closing reward. For the visual observer, don't try to do too much; once an object has been found, spend some time inspecting the image and try to capture as much information as you can.

For those imaging with goto telescopes, a plan is just as important. You will want to work out how long you will be able to keep an object in view for a long series of exposures, and whether a meridian flip will be needed during the sequence (to be avoided, of course). With so much to view, and so little time, it really is not worth spending good observing minutes trying to decide what to observe!

The Moon is New on August 17 and September 16, and Full on August 2 and 31, and September 30. The autumnal equinox, when the Sun once again crosses the celestial equator, occurs on September 22.

Planets

Mercury will make a nice appearance in the morning sky in August. Look out east perhaps an hour before dawn, and you should see the planet rising. Maximum elongation will be around August 18, but you should be able to catch it from around August 8 to September 1. On August 16 a thin waning crescent Moon will be nearby, and is a good finder for Mercury, and could make a good photo-opportunity.

Venus is also once more a 'morning star', and impossible to miss in the east before dawn, throughout both August and September. Around August 13 & 14, the Moon will be near Venus, and could make an interesting picture. Indeed, you could manage to capture Mercury, Venus, the Moon, and Jupiter in a line on these dates.

During these months **Mars** and **Saturn** are heading west, and will be low in the sky, so it will be difficult to make good quality observations of these planets. Mars reduces in apparent diameter from 6 seconds of arc down to 5 in September. Saturn starts August to the east of Mars, but quickly overtakes it heading west. Around the evening of August 15 they will be fairly close in the sky and could make for an interesting photo. Even though low, Saturn will still be a fine sight with a small telescope many remember with great affection their first views of the ringed planet, so don't forget this if you have children visiting during this period.

Jupiter is becoming better placed for viewing in the morning sky in Taurus. Although we are not treated with another lunar occultation, the Moon will be close on August 12 when the pair rise around midnight UT. Recent observations have shown disturbances in the northern hemisphere of the planet. It is certainly an active place, and well worth a view for both the casual as well as the dedicated observer.

Uranus and **Neptune** are both favourably placed for observing in August and September. Neptune will be at opposition on August 25 in Aquarius. Uranus will be at opposition on September 29, and is hanging around in Pisces.

I am indebted to BAA member Mark Gingrich who alerted me to an unusual 'appulse' of Uranus and the star 44 Piscium. Over a 14-hour span on September 23, centred on 11:50UT, Uranus draws to within one arcminute of 44 Piscium – an angular separation less than the dark-adapted eye's resolution limit. Since the star is magnitude 5.8 and the planet will be mag 5.7, together the two will appear to naked-eye observers in the right location as a single, temporary 'pseudo-star' of mag 5.0.

Those who have never seen Uranus without binoculars or a telescope might wish to take advantage of this fortuitous coincidence. If you do use binoculars or a telescope, the pair will be easily resolved, with a theoretical minimum separation of 41 arcseconds, and wider than this during UK darkness.

Meteor showers

The Perseid meteor shower is often well observed, probably due to its mid-summer appearance, where you don't have to suffer the cold for long periods to get a good view.

This year the maximum is predicted to occur on August 12 during daytime in the UK, so both the previous night (11/12) and following night (12/13) will be the most popular for observing. But Perseid activity extends from July 17 to August 24, so observations for several days

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not be detected. Dr Malek summarised by saying that we live in an extremely interesting time for working with neutrinos.

The President thanked Dr Malek after he answered questions from the members.

Prof Leatherbarrow then introduced Nick James to give the sky notes for the month. Mr James said that in the last month we have all had the advantage of a period of reasonably clear skies. He showed some images received from David Tyler showing an active Sun. From Tom Boles a short video was shown of aurora seen in northern Norway. Other images were shown of the planets by Damian Peach.

The meeting closed at 19.50 hrs.

Alan Dowdell

BAA members are reminded that videos of talks at Meetings may be downloaded from the Members' section of the BAA website, **www.britastro.org**

A composite photo of Perseids in Cassiopeia taken during the night of 2011 August 12/13 from Whitstable, Kent. Ten exposures showing meteors were combined with 19 background shots, selected from several hundred 30sec. exposures made between 22:45 and 03:45. Konica Minolta Dynax 5D DSLR, 400 ISO, 50mm f/1.8 lens, tracked to maintain the field of view. *John Kemp*.

around the maximum will be useful. Sometimes the Perseids have displayed a double peak, and although none is expected this year, the only way to be sure will be to observe.

On August 12 this year the Moon will be a waning crescent rising after midnight, and should not interfere greatly. People often ask when is the best time of night to observe, and unfortunately for the Perseids there is no easy answer. It is best to observe when the radiant is high in the sky, so probably after midnight and towards morning will be best despite the Moon's interference, but you may see Perseids at any time of the night.

Visual observing is a very effective method for recording meteor activity – details of visual techniques are given on the Meteor Section website. Perseids tend to be fast with many bright meteors, and often persistent trains will be seen. This makes them a good target for imaging. I would have to admit to not having a great deal of luck in my attempts to photograph meteors; often I have seen a bright meteor in the camera's field of view, but nothing showed up on later inspection. Also don't be fooled by satellite tracks on your images.

A bright Perseid fireball on 2011 Aug 10/11 at 00:42UT from Chelmsford, Essex. The 10sec image using an automated Imaging Source camera with wide angle lens shows the meteor passing between Pegasus to the left and Delphinus to the right. *Peter Meadows*.

Simple equipment is quite suitable – a digital SLR with a wide angle or 'normal' lens is certainly sufficient. A tripod is essential, as you will be setting the shutter for a long exposure, perhaps 30 seconds or more, and a remote release will prevent shake when the picture is taken. Use a high ISO setting. Switch off noise reduction if you have it, and use raw image format. You do not want to centre on the radiant, because there are actually few meteors seen there (it is the point the meteors appear to come from when traced back) – the areas around the Plough or around the Milky Way are popular locations. Several BAA members have had great success with low-light video all-sky cameras, and whilst you might not have much time to set this up now for this year's Perseids, it would certainly be a worthwhile long term project.

Deep sky

This time of year is one of the best to take in the view of the Milky Way, our own galaxy. From Scutum in the south, through Cygnus towards Perseus, it is truly a magnificent naked eye sight that cannot be bettered from a dark site. You can also spend many hours exploring the Milky Way with binoculars, and these might be the best tool for the job. With binoculars or a rich field telescope, it is worth checking out Brocchi's Cluster, Collinder 399, more commonly known as The Coathanger. In 1976 George Alcock made one of his nova discoveries, NQ Vulpeculae, which was very close to the Coathanger. If you are visually sweeping, or imaging the Milky Way, it is always worth checking for bright stars out of place – you never know, you might discover a nova too.

Of course when looking at objects in the Milky Way, these are mostly fairly close, and there are a wide range of objects to be seen with a telescope – planetary nebulae, bright nebulae, dark nebulae and supernova remnants, and here are just a few suggestions of objects to look at in these categories. In Cygnus there is I think a somewhat under-observed planetary NGC 7026, which lies north and east of the North America nebula. It is quite bright, and should be easily seen with a medium sized scope. Larger scopes should reveal some structure and lobes.

A popular target for imagers recently has been the Soap Bubble nebula – discovered by an amateur astronomer, and not really recognised until

The North America Nebula, NGC 7000, imaged with a Canon EOS 5D MkII DSLR at ISO6400, 65x30s. 254mm Newtonian f/4.8 (f=1200mm), HEQ5 mount, driven but not guided. Taken from Rookhope, Co.Durham, on 2011 Sep 29, 23:23–00:01UT. With an unmodified DSLR this nebula is not as red as most photos show it. *Graham Relf*.

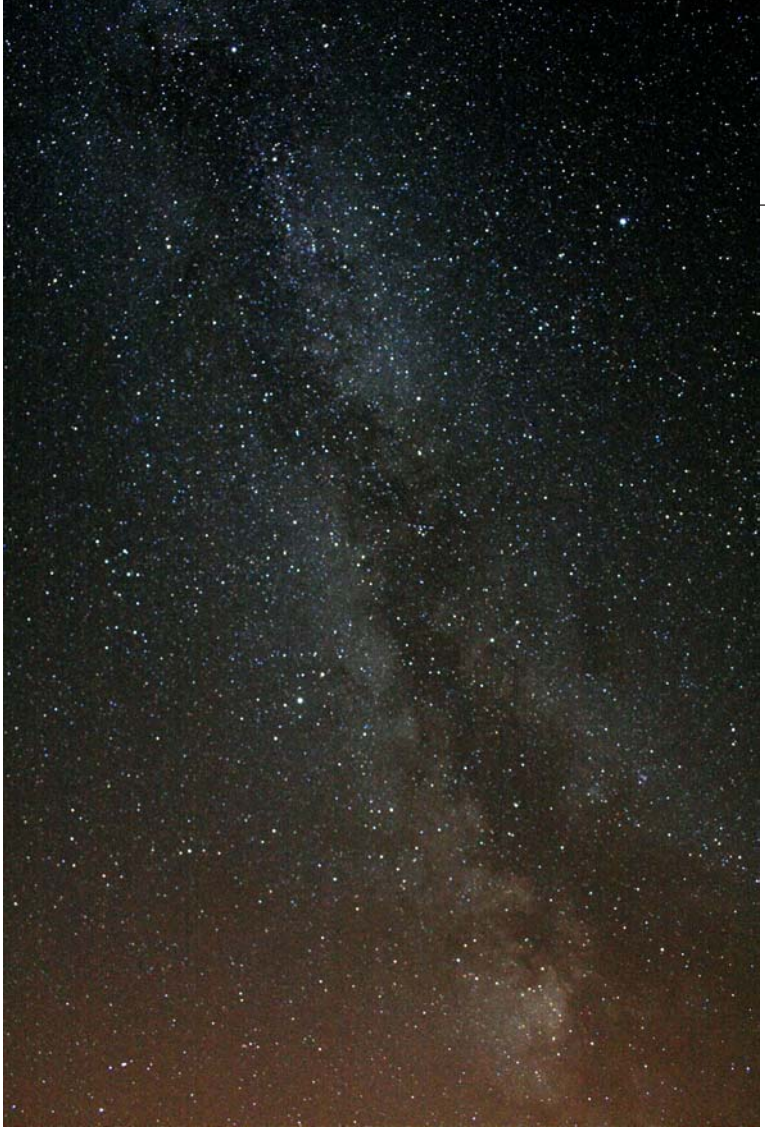
2008. It is quite close to the Crescent Nebula, and has the official designation PN G75.5+1.7.

Cygnus is littered with bright nebulae, but to combine bright and dark there is no need to look beyond the North America Nebula, NGC 7000. This is such a large-field object that probably binoculars do it best justice under a dark sky, and it is a popular target for wide-field astro-imagers.

And for supernova remnants, the Veil Nebula is the normal 'goto' object. At one time it was thought of as quite difficult, but today it is mostly seen as routine. For a real challenge seek out Sharpless 2-91, a wisp of nebulosity not far from Albireo. It has been seen visually with larger telescopes (16"+), but should be well within reach of imagers, and possibly smaller scopes at a truly dark site.

If you manage to make observations of these, please do send them in to the Deep Sky Section. Failed attempts at observation are just as interesting, so if you have attempted these without success please let us know, but do remember to include details of the equipment and conditions at the time of observing.

Callum Potter



The Milky Way from Cygnus to Aquila, photographed from Hardwick churchyard, Herefordshire on 2011 Aug 10. This church is where T. W. Webb (*'Celestial objects for common telescopes'*) spent most of his years, and wrote the book in the rectory a few yards away. 200 secs, piggybacked Canon 1000DSLR at ISO800 with an 18mm f5.6 lens. *Martin Griffiths.*