

# Sky Notes: 2011 June & July

by Callum Potter



Noctilucent clouds on 2010 July 9 at 22:30 BST, photographed from south Suffolk with a Canon 450D digital SLR. Dennis Boon.

The summer months again, and for me this means two things – light summer nights, so a bit of a break from deep sky observing, and the start of the noctilucent cloud season. I have very vivid memories of the first occasion that I saw a display of noctilucent clouds. I was living in Eindhoven at the time in the late '80's and on walking home from visiting friends, the sky became alive with these strange clouds. Back at our flat it was magical sitting on the balcony watching them. I have not seen such a good display since, though I have seen them on a few occasions from the south of the UK.

Strangely, NLC seem to be a modern phenomenon. First reports date from only the 19th century, and it seems unlikely that such a dramatic night-time display would not have been recorded earlier had they been present. So it has been suggested that they may be

related to man-made emissions which started during the industrial revolution.

Certainly its well worth observing them today, to see what we can deduce from their forms and behaviour. There may also be a link to solar activity – with NLC being more visible when solar activity is low. So as the Sun becomes more active it is well worth recording their visibility or otherwise during these summer months. The clouds appear at a height of about 82km in the atmosphere and are visible when the Sun is between 6 and 16° below the horizon. Modern digital cameras can be used to capture a nice image either on automatic exposure, or you could experiment with just a few seconds and manual exposure. You do need a sturdy tripod, though. If you take some time-lapse images these could be combined into a video, or with the latest digital SLRs you might be able to shoot some raw video footage. Please report observations and non-observations to the BAA Aurora Section, and you may also find the website [www.nlnet.co.uk](http://www.nlnet.co.uk) a useful resource.

## Sun

June 21 in the northern hemisphere is the summer solstice – the longest day. In fact astronomical twilight (when the Sun is less than 18° below the horizon) lasts all night from May 24 to July 22 for those observing from the latitude of London (51° 30'). For those further north, in Edinburgh (latitude 55° 57'), it lasts all night from May 5

to August 8, and for those in Orkney (59°) it will not be truly dark from April 26 through to August 18. Of course there is still a lot of observational astronomy that can be done during this period of the year, but it does make seeking out some of the fainter and fuzzier objects a bit harder. But why not challenge conventional wisdom – try to see what you *can* see at this time of year. And do report your results back to the BAA.

The Sun continues to be active. Continued monitoring of sunspots, active regions, and prominences using safe observing techniques will certainly be productive. There have been some aurora alerts due to heightened magnetic disturbances, and although the light skies do not make for good aurora observing conditions, it may still be worthwhile keeping a look out.

## Moon

There is a total eclipse of the Moon on June 15, but the UK is not best placed for viewing this – somewhat further east and south would be better. From the UK the Moon rises in eclipse at 21:36, and totality will last for a further 30 minutes. A clear south eastern horizon will be needed to see anything of the eclipsed Moon, but it certainly will make an interesting photo opportunity if you can capture it.

## Planets

Of the planets Saturn is still the best placed for viewing or observation. Although reced-



Total lunar eclipse on 2007 March 3. Bruce Kingsley.



**Vesta (right) and Ceres imaged with the Hubble Space Telescope in 2007 and 2004 respectively. NASA/ESA/STScI.**

ing now, it is still prominent and easy to find in Virgo, being 1st magnitude, but by the end of July it will be less favourable for observation as it sinks towards the western horizon in the evening.

Jupiter and Mars are now coming into view in the morning sky. Mars is a fairly tiny disk, a mere 4" of arc diameter. Rising in the early morning, it will not achieve any great altitude before being swamped by the dawn. Mars will be at opposition in March next year, but even then will be at best around 13" diameter, but it will make a presentable showing.

Jupiter rises a little earlier than Mars, and its nearly 10 times bigger disk will make observation somewhat easier. It will achieve a useful altitude before sunrise overtakes it. Of course as the planet heads towards opposition in the autumn, it will only get better. Uranus and Neptune are also coming into view, in Pisces and Aquarius respectively. Neptune will be the easier at first (in June), but by July both should be readily available after midnight.

A challenge for July will be to find the asteroid Vesta with the naked eye. Although the fourth asteroid to be discovered, it is second only to Ceres in size. It is the brightest of the asteroids, as it orbits closer to the Sun than Ceres. Vesta is heading towards opposition in August, but should be just into naked eye visibility at around mag 5.7 at the start of July, rising to 5.5 by month end. You should be able to track its progress through Capricornus, making obvious moves from night to night. If you don't have the best observing site, then even small binoculars will help you make a visual observation, and if you have a digital SLR you should be able to capture it without great difficulty – blinking the images to show its progress.

## Meteor showers

This is not a very good period for meteor showers. The only highlight may be the Capricornids which have a triple peak, on July 8, 15 and 26. The peak on July 15 is

hampered by the full Moon, but the other two peaks are favourable. The shower is characterised by bright yellow-blue meteors.

## Comets

There is still a shortage of bright comets. Enthusiasts will check out the Comet Section website for prospects for some of the fainter ones – but hopefully by the autumn there will be a couple putting on more of a show for the casual observer.

## Deep sky

Double stars are not greatly affected by the bright summer skies, and it is a good time to search out some of the classic doubles. I particularly like to look for colour contrasting pairs. Possibly everyone's favourite double is Albireo, Beta Cygni – a spectacular yellow and blue/green star combination. Oddly, Albireo is not the second brightest star in Cygnus – Gamma, Epsilon, and Delta are all brighter. Albireo A is a mag 3 K3III star, and B is mag 5 B0V Be star. Be stars are characterised by their hydrogen emission lines and fast ro-

tational speed; Albireo B rotates at about 250km/s at its equator. Gamma Cassiopeiae was the first star to be characterised as a Be star – when observed spectroscopically in 1866 it was the first star noticed to have strong emission lines. Be stars are frequently variable, and are good targets for amateur spectroscopy.

Another nice pair with orange and yellow/white components is Gamma Delphini – easy to separate, being about 9.6" apart. And for triple systems Omicron Cygni (or 30/31 Cygni) is worth seeking out; the three components are orange, white and blue to most eyes. This is a very wide 'double' and is best seen with low power.

There are so many nice double stars to view its not possible in this space to list many, but I hope this gives a bit of a taster. And if you wish to go further and start making measurements of double stars the Deep Sky Section's Double Star adviser John McCue will be more than happy to provide advice and assistance.

Generally we do not get many images of double stars sent in for the BAA Web galleries – it would be an interesting project to capture colour images of brighter pairs, perhaps with a webcam or colour CCD camera, or by making a sketch. As always, please do send your results in.

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