

# Sky Notes: 2009 June and July

by Callum Potter

Neil Bone compiled the BAA *Journal* Sky Notes for many years, and even when unwell in hospital was not deterred from authoring the notes for last April's *Journal*, such was his determination and commitment. A difficult example to follow, but it is one that we should all strive to live up to. I hope in taking on the *Journal* Sky Notes column I can maintain the high standard set by Neil. CP.

## Sun

The summer solstice occurs on June 21 at 05:45 UT and during these summer months it does not get really dark at night. Astronomical twilight is the period between 'civil' twilight and the time when the Sun is  $16^\circ$  below the horizon. From southern parts of the UK astronomical twilight lasts the whole night from May 23 to July 20, but by the end of July there is a useful  $2\frac{1}{2}$  hours of darkness around midnight. If you observe further north the twilight period is much longer, for example from Inverness, astronomical twilight lasts all night from April 30 to August 13. But of course in such northerly latitudes, you can almost enjoy the midnight Sun! Not quite no sunset, but it is possible to read your newspaper at midnight, or play a round of golf.

On the Sun itself, activity continues to be low. However, it is still worth looking out for sunspots and prominences, if you have suitable equipment. July 22 sees a total eclipse of the Sun. It is not visible from the UK, but I am sure many keen eclipse-chasers will be travelling to China and other easterly parts to see the event.

## NLCs

The summer months are however the time for observing Noctilucent Clouds. These are poorly understood, so observations are always welcome. Look to the north, or north-west after sunset on a clear night, and you may see this high altitude phenomenon. Tenuous, 'electric blue' filamentary clouds light up the sky. Although more northerly observers may be favoured, it is possible to see these from southerly latitudes; I have observed them from Worcestershire, and Maurice Gavin and other observers have seen them from around the southern counties, so there is certainly no difficulty in seeing them - if you look. Reports would be welcomed by the Aurora Section, who collates these observations. You can also read and log reports on the excellent website run by Tom McEwan at <http://www.nlnet.co.uk>. Reports should include azimuth and elevation, and a brightness estimate. There is a classification of various forms

and structures too, that can be usefully recorded. You might also like to try photography or digital imaging. With a DSLR or digital compact camera, good results can be had with a second or two exposure. A tripod will help keep your camera steady and a shutter release will help stop camera shake.

## Moon

The Moon is full on June 7 and July 7, and rather low above the horizon on both occasions, which may make for an interesting photo opportunity. The Moon will be new on June 22 and July 22. On July 18 there is a lunar occultation of the Pleiades, and a grazing occultation of Alcyone (Eta Tau) at 02:07 UT at the western end of the track, which runs from South Wales to North Yorkshire. The BAA *Handbook* has details of the track for further information.

## Planets

Venus is bright in the east before dawn in June and July. Venus passes Mars on June 21, though Mars is considerably fainter. On June 19, the crescent Moon is in the vicinity too, making for an interesting photo opportunity, though made trickier by the mag 1.1 'dimness' of Mars. In July Venus will be passing through Taurus, and there will be some interesting encounters with Aldebaran on July 14, and the Crab Nebula (M1) on July 27. Jupiter is mag -2.6 to -2.7 throughout both months, and is becoming obvious in the south east before midnight in June, and will be available for observation in July though a little low in the sky. Opportunities to observe Saturn are becoming shorter, with the planet fading, and heading towards the setting Sun. Uranus and Neptune are coming into view, in Aquarius and Capricorn, respectively. Jupi-

ter is near to Neptune making it a good jumping off point. Pluto is in Sagittarius, and is at opposition on June 23, its magnitude of 14.3 making it a difficult visual observation, though well within reach of CCD imagers. Ceres fades as it recedes from the Earth in Leo, and will not be observable after the end of July.



Photo by James Weightman of noctilucent clouds taken from Gloucestershire on 2008 June 29.

## Meteors

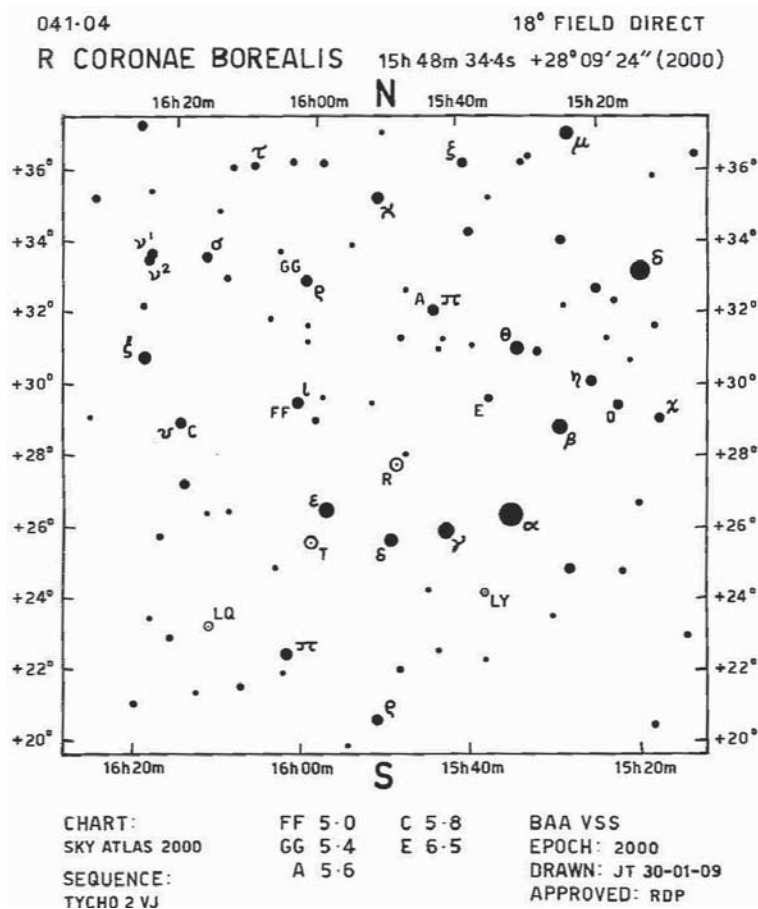
It is not the best period for meteor showers, either. The best to offer may be the Capricornids. This shower has a triple maximum. The first and second will not be favourable, but the third, on July 26 should be favourable, just a few days after New Moon.

## Comets

There is not much to interest the casual observer, but for enthusiasts 22/PKopff will be at its brightest (mag 9), and available for observation in Capricornus, and C/2006 W3 Christensen will be of similar brightness in Lacerta. However both will be difficult observations due to the bright background sky. Check the Comet Section website for details of the locations of these comets.

## Variable stars

For those starting out on variable star observing Algol (Beta Perseus) has favourable eclipses on July 8 and 30, and is an ideal target for binocular observation. Slightly fainter, but also suitable for binoculars, RZ Cassiopeia has eclipses on June 3, 8, and



**BAA VSS binocular finder chart for R CrB.**

July 10, 16, 22, and 27. RZ Cass has an eclipse duration of 4.8 hours, compared to Algol's 9.6 hrs.

The peculiar variable star R Corona Borealis (R CrB) is well worth keeping an eye on. This normally mag 6 star faded quickly through the summer of 2007 to around mag 13, faded further to around mag 15, and has remained at this level ever since. Normally R CrB would have returned to its

normal brightness by now. The minima are thought to be caused by a dust cloud that forms around the star, that is eventually blown or moved away resulting in the return to its normal level. You can use the finder chart here, or use one from the Variable Star Section website online charts ([www.britastro.org/vss](http://www.britastro.org/vss)). If you do notice R CrB brightening please let the VSS Director know immediately.

## Deep sky

The light skies do not make this the ideal time of year for deep sky observing, certainly for 'faint fuzzies', however there are still a lot of targets to satisfy the thirst. Whilst checking the brightness of R CrB, or at least checking whether there is anything to be seen there or not, it is worth taking a look at some of the double stars in Corona Borealis too. Although not actually in the 'crown' asterism, use your charts to hunt down Sigma CrB which is an easy hop from either Theta or Iota (the end stars of the crown). With a separation of 7.1", this is an easy pair to split with moderate power. Interestingly the Rev. Webb reported a distinct difference in colours, but most see a pair of similar yellow colour. What do you see?

It is then a short hop to Nu CrB, a widely separated pair of 361". Low power will give a nice view of these yellow/orange/red stars. A third interesting coloured pair is Zeta CrB. Again it is fairly straightforward hop – back to Sigma, then via Rho and Kappa to Zeta. Moderate power is enough to view this 6.1" separation pair. The stars appear white, blue, or blue/green to some observers, though colour differences here are probably contrast effects; the two are actually very similar B stars.

From Corona Borealis, it is an easy jump to Hercules, with the magnificent globular cluster M13 (see page 165), and the often overlooked M92. Easily visible in binoculars as a fuzzy patch, M92 is easy to find from Hercules' 'keystone'. Locate Pi Her (the top left star of the keystone), and head north about 6°. For a bigger challenge, seek out NGC 6229, a faint mag 9.2 globular cluster of about 4.5" apparent diameter. It is 100,000 lightyears distant from us, nearly four times further away than M92. It is difficult to resolve stars in this cluster, but those with larger telescopes will relish the challenge.

**Callum Potter**