





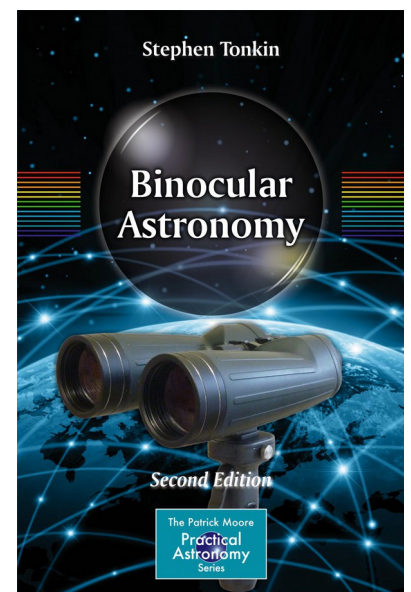
Introduction

Welcome to the ***Binocular Sky*** Newsletter of May 2015. The intention of this monthly offering is to highlight some of the binocular targets for the coming month. It is primarily targeted at observers in the UK, but should have some usefulness for observers anywhere north of Latitude 30°N and possibly even further south.

Solar-system charts are clickable and will take you to a (usually) larger chart that may be more useful as well as being downloadable to your computer or smartphone.

If you would like me to email this newsletter to you each month, please complete and submit the [subscription form](#). You can get "between the newsletters" alerts, etc. via  and .

If you would like to support this Newsletter, the simplest way is to purchase my book, [Binocular Astronomy](#). Please click on the image for more information.



The Deep Sky *(Hyperlinks take you to charts and more information)*

The [trio of open clusters](#) in Auriga and [M35](#) in Gemini are still visible low in the West as twilight darkens. While you are looking at [M35](#), also see if you can identify two smaller open clusters, [NGC 2158](#), which is half a degree to the SE, and the somewhat more difficult [IC 2157](#), which is a degree to the ESE. Also in the West, but slightly higher are [M44 \(Praesepe\)](#) and [M67](#), two fine open clusters in Cancer. Also visible in the North are [NGC 457 \(The Owl Cluster\)](#) and [NGC 633](#) in Cassiopeia and the [Perseus Double Cluster](#). The finest and best-placed open cluster available this month is [Melotte 111](#), the cluster that gives Coma Berenices its name.

Open (also called 'Galactic') Clusters are loosely packed groups of stars that are gravitationally bound together; they may contain from a few dozen to a few thousand stars which recently formed in the galactic disk.

In May, we are able to look out of the plane of the Galaxy during the evening. This makes more globular clusters and galaxies available for observation. Look out for the two galaxy trios in Leo ([M95/96/105](#) and [M65/66/NGC3628](#)) which are now moving into the western sky, and [Markarian's Chain](#) in Coma Berenices, which is very well placed as we enter astronomical twilight. If you have a big binocular, also observe the edge-on [NGC4565 \(Berenice's Hair Clip\)](#), which is next to [Melotte 111](#). Also very well placed this month are [M81 \(Bode's Nebula\)](#) and [M82 \(The Cigar Galaxy\)](#), both of which are easy in a 50mm binocular. These can be used as a good demonstration of averted vision: if you have them both in the same field of view, you may see that the core of M81 becomes more apparent if you look at M82. If you have good skies, try [M51 \(The Whirlpool\)](#) and [M101](#) which, although it is a large object, is very difficult owing to its low surface brightness.

Of the globular clusters, M3 is a good one to start with during a May evening's observing. Later in the evening, the two Hercules globulars, M92 and the very impressive and very easy to find M13 are at a better altitude for observation. Although M13 is clearly larger than M3, it is easier to resolve the outer stars of the latter one. Also becoming visible in May evenings is M5 in Serpens.

Globular clusters are tightly-bound, and hence approximately spherical, clusters of tens, or even hundreds, of thousands of stars that orbit in a halo around almost all large galaxies that have been observed. They are important for two reasons: Firstly, they contain some of the oldest stars in the galaxy, so studying them helps us understand the evolution of stars. Secondly, they are useful as "standard candles" in establishing a distance scale of the Universe, based on the assumptions that the brightest stars in any globular cluster will be approximately the same brightness, and that the brightest globulars in a galaxy will be approximately the same brightness.

If you have binoculars of at least 100mm aperture, see if you can find and identify NGC 4361, a planetary nebula in Corvus. It is a difficult object because it is low in the sky, even from southern Britain.

Planetary Nebulae are short-lived (a few tens of thousands of years) masses of gas and plasma that result from the death of some stars. They have nothing to do with planets, but get their name from the fact that, in early telescopes, they had the appearance of giant planets.

For interactive maps of Deep Sky Objects visible from 51°N, please visit: http://binocularsky.com/map_select.php

Variable Stars

The only bright Mira-type variable near maximum this month is *Mira (o Cet)* itself, which is only above the horizon during daylight.

Selection of binocular variables (mag < +7.5)			
Star	Mag Range	Period	Type
AA Cam	7.5-8.8	Irreg	Irregular
Y Lyn	7.2-7.8	110d	Semi-regular
U Cep	6.8-9.2	2.5d (increasing)	Eclipsing binary
V1010 Oph	6.1-7	0.66d	Eclipsing binary
RR Lyr	7.06-8.12	0.57d	RR Lyr
TX UMa	7.0-8.8	3.06d	Eclipsing binary

Double Stars

Binocular Double Stars for May			
Star	Magnitudes	Spectral Types	Separation (arcsec)
67 Oph	4.0, 8.1	B5, A	54
ρ Oph	5.0, 7.3, 7.5	B5, A, B3	151, 157
53 Oph	5.7, 7.4	A2, F	41
δ Cep	4.1, 6.1	F5, A0	41
γ Her	3.7, 9.4	F0, K	43
ν Boo	5.0, 5.0	K5, A2	628
DN & 65 UMa	6.7, 7.0,	A3, B9	63
π -1 Umi	6.6, 7.2	G5, G5	31
ν Dra	4.9, 4.9	A5, A5	62
39 Dra	5.1, 7.9	A2, F8	89

The Solar System

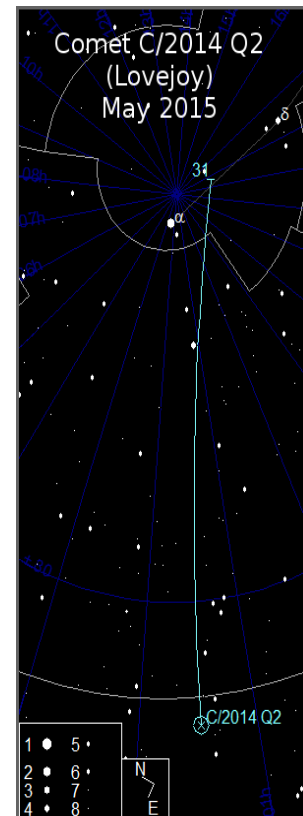
(The charts in this section are "clicky")

Planets

Of the binocular planets, **Uranus** is very close to the Sun and is not observable this month. **Neptune** is a very difficult binocular object in the dawn twilight. There are no bright **asteroids** observable this month.

Comets

Comet C/2014 Q2 (Lovejoy) is circumpolar in Cassiopeia, moving into to Ursa Minor on the 28th, when it passes just over a degree from *Polaris*. Fading from a magnitude about +7.5 at the beginning of the month, it is now a very difficult binocular object and you should use an aperture of at least 70mm to have a good chance of success. On the 22nd, it passes within 8 arcminutes of the mag +4.2 star *HIP 5372*.



Meteor Showers

There are no major meteor showers this month

The Moon

May 04 Full Moon

May 11 Last Quarter

May 18 New Moon

May 25 First Quarter

Lunar Occultations

As May nights get shorter, there are only three occultations of stars brighter than mag +7.0 visible from the UK this month. Times and Position Angles are for my location (approx: 50.9N, 1.8W) and will vary by up to several minutes for other UK locations. They are all (D)isappearances.

Lunar Occultations, May 2015, 50.9°N, 1.8°W					
Date	Time	Type	SAO	Mag	PA (°)
May 26	22:39	D	SAO 118734	6.8	95
May 27	00:42	D	75 Leo	5.2	80
May 27	23:54	D	SAO 138533	6.3	117

Astronomy Talks

I will be giving the following astronomy talks, open to the public, this month:

11th May	<u>Norman Lockyer Observatory</u>	<i>Ten Ways the Universe Tries to Kill You</i>
22nd May	<u>Vectis AS</u>	<i>Are We Alone?</i>

Wishing you Clear Dark Skies,

Steve Tonkin

for

The Binocular Sky

Acknowledgments:

The charts in this newsletter were prepared with Guide v9.0 from <http://projectpluto.com>

Variable star data based on David Levy's *Observing Variable Stars*

Occultation data derived with Dave Herald's *Occult*

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