



The Binocular Sky

June
2018

Newsletter

Introduction



Welcome to June's **Binocular Sky** Newsletter. For those who are new to it, the intention of this monthly offering is to highlight some of the binocular targets for the coming month. It is primarily targeted at binocular (and small telescope) observers in the UK, but should have some usefulness for observers anywhere north of Latitude 30°N and possibly even further south.

Even in southern Britain, we no longer have astronomical darkness (although we do have several hours of astronomical twilight) so observing opportunities are necessarily limited.

That said, there's still a lot to see, even in twilight skies and, as binocular observers with our combination of maximum portability and minimal set-up time, we are well suited to take advantage of what there is.

Uranus and Neptune both become visible during pre-dawn astronomical twilight this month, but are hardly spectacular and probably not worth staying/getting up for, although if you happen to be awake and seeking something else...

Vesta, however, is nicely placed and, if you've not seen an asteroid before, this is a good opportunity.

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The Deep Sky

(Hyperlinks will take you to finder charts and more information about the object.)

Visible low in the North are [NGC 457 \(The Owl Cluster\)](#), [NGC 663](#) 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 its name. More open clusters are becoming visible in the south-eastern sky as [Ophiuchus](#) rises. These include [Melotte186](#), [NGC 6633](#) and [IC4665](#), all of which are easily visible in 50mm binoculars.

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.

While you are in the region of [Ophiuchus](#), see if you can find [Barnard's Star](#). This has the largest known [proper motion](#) of any star. Although it is visible in 50mm binoculars from a dark site, it is considerably easier in larger glasses and I recommend a minimum of 70mm.

In June, 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.

*Galaxies are gravitationally bound "island universes" of hundreds of billions of stars at enormous distances. The light that we see from [M31](#), for example, left that galaxy around the time our ancestors of the genus *Homo* were just evolving!*

diameter. Its apparent size is nearly as large as a Full Moon.

If you have binoculars of at least 100mm aperture, see if you can find and identify NGC 6572, a planetary nebula in Ophiuchus. It looks like a star, Even in large binoculars, but it has the distinction of being possibly the greenest object in the sky.

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 ghostly planets.

June Deep Sky Objects by Right Ascension

Object	Con	Type	Mag	RA (hhmmss)	Dec (ddmmss)
NGC 457 (the ET Cluster, the Owl Cluster)	Cas	oc	6.4	011932	581727
NGC 663	Cas	oc	7.1	014601	611406
NGC 884 and NGC 869 (the Perseus Double Cluste	Per	oc	5.3	022107	570802
M81 (NGC 3031)	UMa	gal	7.8	095533	690401
M82 (NGC 3034)	UMa	gal	9.2	095554	694059
M95 (NGC 3351)	Leo	gal	10.6	104357	114211
M96 (NGC 3368)	Leo	gal	10.1	104645	114912
M105 (NGC 3379)	Leo	gal	10.5	104749	123449
M65 (NGC 3623)	Leo	gal	10.1	111855	130526
M66 (NGC 3627)	Leo	gal	9.7	112015	125924
Melotte 111	Com	oc	1.8	122430	260122
Markarian's Chain	Vir	gal	9.9	122611	125647
NGC 4565 (Berenice's Hair Clip)	Com	gal	9.9	123620	255914
M51 (NGC 5194, the Whirlpool Galaxy)	CVn	gal	8.9	132952	471144
M3 (NGC 5272)	CVn	gc	6.2	134211	282233
M101 (NGC 5457)	UMa	gal	7.7	140312	542057
M5 (NGC 5904)	Ser	gc	5.7	151833	020459
M13 (NGC 6205, the Great Hercules Globular Clust	Her	gc	5.8	164141	362738
M92 (NGC 6341)	Her	gc	6.4	171707	430812
IC 4665 (The Summer Beehive)	Oph	oc	4.2	174618	054300
Barnard's Star	Oph	st	9.5	175749	044136
Melotte 186	Oph	oc	3.0	180030	025356
NGC 6572	Oph	pn	9.0	181206	065113
NGC 6633	Oph	oc	4.6	182715	063030

For interactive maps of Deep Sky Objects visible from 51°N, please visit:

http://binocularsky.com/map_select.php

Variable Stars

Selection of binocular variables (mag < +7.5)			
Star	Mag Range	Period	Type
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
AF Cyg	6.4-8.4	92.5	Semi-regular
ZZ Boo	6.7-7.4	4.99d	Eclipsing binary
U Sge	6.5-9.3	3.38d	Eclipsing binary
U Vul	6.7-7.5	7.99d	Cepheid
SU Cyg	6.4-7.2	3.84d	Cepheid
X Cyg	5.9-6.9	16.39d	Cepheid

Mira-type stars near predicted maximum (mag < +7.5)		
Star	Mag Range	Period (days)
R Aqr	5.6-9.4	384

NB: R Aqr is a twilight-only (morning) object, and hence quite tricky.

Double Stars

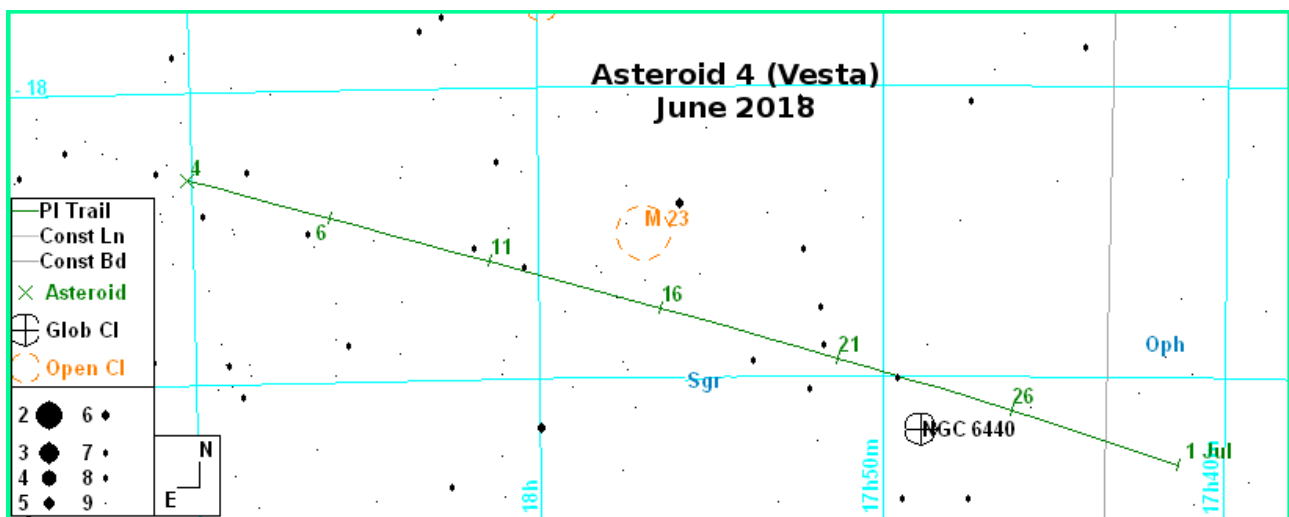
Binocular Double Stars for June			
Star	Magnitudes	Spectral Types	Separation (arcsec)
67 Oph	4.0, 8.1	B5, A	54
ρ Oph	5.0, 7.3, 7.5	B5, A, B3	151, 157
53 Oph	5.7, 7.4	A2, F	41
γ Her	3.7, 9.4	F0, K	43
δ Boo	3.5, 7.8	K0, G0	105
μ Boo	4.3, 7	F0, K0	109
ι Boo	4.0, 8.1	A5, A2	38
ν Boo	5.0, 5.0	K5, A2	628
DN & 65 UMa	6.7, 7.0,	A3, B9	63
π -1 UMi	6.6, 7.2	G5, G5	31
δ Cep	4.1, 6.1	F5, A0	41

The Solar System

Neptune is theoretically visible at mag. +7.9, and gets gradually higher during morning twilight as the month progresses.

At the beginning of the month, **Uranus** rises after Nautical dawn, but by the end of the month it is 13°-ish high from southern Britain, shining at mag +5.8.

Asteroid 4 (Vesta) is low down in Sagittarius for most of the month, and brightens slightly from mag +5.8 to 5.6 during the month. This, coupled with its culmination when the sky is near its darkest, makes it quite good for binocular observation.



Comets

There are no comets suitable for small to medium binoculars this month.

Asteroid Occultations

There are no predicted asteroid occultations of stars mag +7.5 or brighter, visible from mainland UK, this month.

Lunar Occultations

Data are for my location and may vary by several minutes for other UK locations. The types are (**D**)isappearance, (**R**)eappearance and (**Gr**)aze; they are all dark-limb events unless there is a (**B**).

Lunar Occultations, Jun 2018, 50.9°N, 1.8°W							
Date	Time	Phase	Star	Spectrum	Magnitude	Cusp Angle	Position Angle
Jun 24	23:30:26	D	eta Lib	A6	5.4	83N	101
Jun 28	22:38:00	R	omi Sgr	K0	3.8	61S	227

The Moon

June 06 Last Quarter
June 13 New Moon
June 20 First Quarter
June 28 Full Moon

Public Outreach & Talks

On June 24th, I will be at Hengistbury Head with Fordingbridge Astronomers for *International SUNday* ; please do come and say "Hello" if you attend.

Later in the year, in August at Builth Wells, Powys, I will be offering a *Binocular Astronomy Workshop* as part of the **SolarSphere festival**:



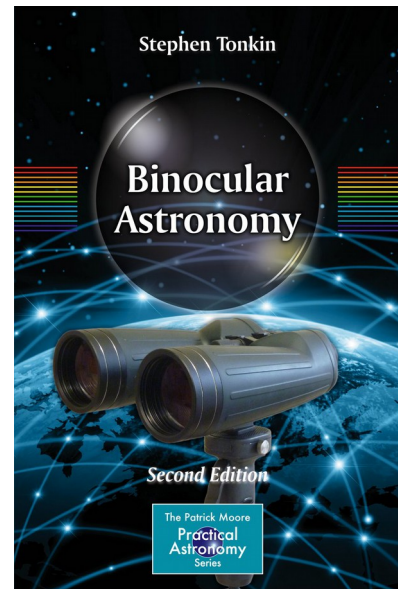
For those who like to mix music, camping and astronomy, **Solarsphere** boasts a good dark site (with a "red light only" camping option for observers), decent showers/loos,

good craic, and is very family-friendly.

I'll also be giving a talk (*Pseudoastronomy – Planet X, Zetans and Lost Civilisations*).

The **Binocular Sky Newsletter** will always be free to anyone who wants it, but if you would like to support it, there are a number of options:

- Purchase my book, [Binocular Astronomy](#):
Click on the image for more information
- Make a purchase via the affiliate links in the [Binocular Sky shopfront](#)
- Donate to my [Binoculars for Astronomical Outreach](#) crowdfunder.



Wishing you Clear Dark Skies,

Steve Tonkin

for

[The Binocular Sky](#)

Acknowledgements:

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Variable star data based on David Levy's *Observing Variable Stars*
Occultation data derived with Dave Herald's *Occult*

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