



# The Binocular Sky

May  
2016



# Newsletter

## Introduction

Welcome to the [Binocular Sky](#) Newsletter for May 2016.

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 usually clickable and will take you to a larger chart that may be more useful as well as being downloadable to your computer or mobile device.

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 .

## The Deep Sky

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

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 dozens 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](http://binocularsky.com/map_select.php)

## Variable Stars

<b>Mira-type stars near predicted maximum (mag &lt; +7.5)</b>		
<b>Star</b>	<b>Mag Range</b>	<b>Period (days)</b>
R And	6.9 – 14.4	409
R Aqr	6.5 – 10.3	387
U Ori	6.3 – 12.0	368

<b>Selection of binocular variables (mag &lt; +7.5)</b>			
<b>Star</b>	<b>Mag Range</b>	<b>Period</b>	<b>Type</b>
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
$\rho$ Oph	5.0, 7.3, 7.5	B5, A, B3	151, 157
53 Oph	5.7, 7.4	A2, F	41
dCep	4.1, 6.1	F5, A0	41
$\gamma$ Her	3.7, 9.4	F0, K	43
nBoo	5.0, 5.0	K5, A2	628
DN & 65 UMa	6.7, 7.0,	A3, B9	63
$\rho$ -1 Umi	6.6, 7.2	G5, G5	31
nDra	4.9, 4.9	A5, A5	62
39 Dra	5.1, 7.9	A2, F8	89

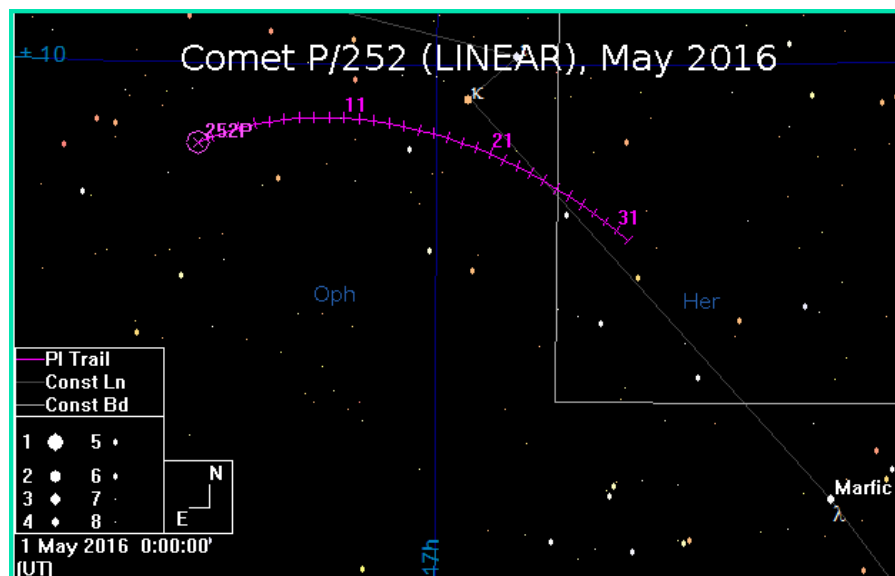
## The Solar System

### Planets

The binocular planets, **Uranus** and **Neptune**, are not observable from our latitude this month.

### Comets

**Comet P/252 (LINEAR)** is now fading. It is likely to be around mag +7 by the time this newsletter is published, so may become an object for large-aperture binoculars only.



## Meteor Showers

The Moon is favourable for the eta Aquarids, which are active for most of the month but which peak (ZHR = 65) in the pre-dawn of the 6th. However, do not expect to see nearly that many: the radiant rises in astronomical twilight, so only the brighter ones, if any, are liable to be seen. These meteors are the result of Earth travelling through the debris left by Comet P/1 (Halley); binoculars are useful for examining the ionisation trains left by the meteors.

## Asteroid Occultations

There are no asteroid occultations suitable for binoculars observable from our location this month.

## Lunar Occultations

There are several occultations of stars brighter than mag +7.5 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. The phases are **(D)**isappearance, **(R)**eappearance and **(Gr)**aze; they are all dark-limb events unless there is a **(B)**.

Lunar Occultations, May 2016, 50.9°N, 1.8°W							
Date	Time	Phase	Star	Spectrum	Magnitude	Cusp Angle	Position Angle
May 12	23:03:12	D	HIP 44148	K5	6.5	82S	115
May 14	20:58:32	D	48 Leo	G8	5.1	65S	136
May 16	00:13:37	D	83 Leo	K0	6.6	53N	76
May 16	00:54:54	D	tau Leo	G8	5	63N	86
May 17	21:19:06	D	HIP 62915	K0	6.5	87N	112
May 25	01:50:07	R	HIP 91781	M4	6.3	86N	264
May 26	02:11:24	R	HIP 96496	K0	5.7	74N	273

## The Moon

May 06	New Moon
May 13	First Quarter
May 21	Full Moon
May 29	Last Quarter

## Equipment Mini-Review

### Opticron WP Observation 16x80

Manufacturer's Specification	
Weight (g)	2390
Field of View (°)	4.3
Eye Relief (mm)	17
IPD (mm)	55-72
Waterproof	Yes
Prism Type	Porro
UK Guarantee	30 yrs
Origin	Japan
Body Material	Aluminium Alloy
Armour Type	None
Nitrogen Gas Filled	Yes
Prism Material	BaK4
Prism Coating	Multi-coated
Lens Coating	Fully multi-coated with protective overcoat
Eyecup Type	Twist-up



The Opticron WP Observation 16x80 is a competitor for the same market as last month's binocular, the Lunt Magnesium 16x70. They are the same price in the UK and are of similar optical quality.

The smaller and lighter Lunt has a better strap and eyepiece covers. I preferred the twist-up eye-cups of the Opticron, but found that the right eyepiece dioptre was too easy to accidentally adjust when twisting the cup up or down; it only needed to be slightly stiffer. The extending lens hoods of the Opticron are also a nice touch, although they are not sufficiently long to act as proper dew shields.

Under the stars, there was little to choose between them. The Opticron goes about 0.2 magnitudes deeper than the Lunt. I experienced the Lunt's field to be very slightly flatter but, because the Opticron's field is larger, there was no detectable difference in the size of the true flat field. Other than that, there is little to choose between them. For that reason, I think the Opticron would be my binocular of choice if it was to be my largest binocular but, if not, it comes down to personal preference with respect to things like centre or individual focus and twist-up or fold-down eye-cups.

Both binoculars represent exceptionally good value for money and I don't think a serious binocular observer would be disappointed with either.

You can read the [full review here](#).

Thanks to [The Binocular Shop](#), who supplied the new binoculars.

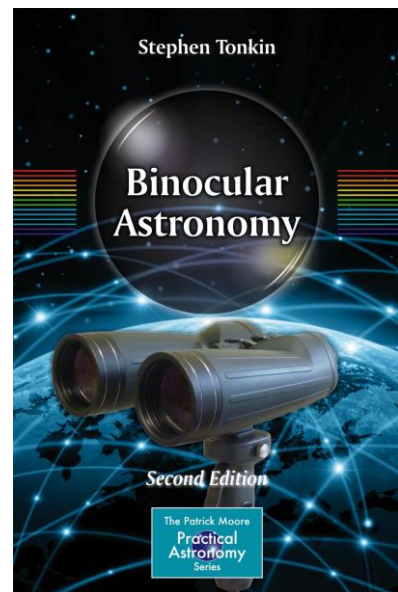
## Public Outreach & Talks

During May I will be giving one astronomy talk, where I would be delighted to meet any readers of this newsletter who attend:

17<sup>th</sup>: *Astrocrud: Complementary and Alternative Astronomy*, 7:30pm at [Fordingbridge Astronomers](#)

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](#)
- Make a small [PayPal](#) donation to [newsletter@binocularsky.com](mailto:newsletter@binocularsky.com)



Wishing you Clear Dark Skies,  
**Steve Tonkin**  
for  
**The Binocular Sky**

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**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](#)

Lunar occultation data derived with Dave Herald's [Occult](#)

Asteroid occultation data derived from Hristo Pavlov's [OccultWatcher](#)

**Disclosure:** Links to *Amazon* or *The Binocular Shop* may be affiliate links

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