



The Binocular Sky


May
2017

Newsletter

Introduction

Welcome, especially to new readers, to May's **Binocular Sky** Newsletter. The intention of this monthly offering is to highlight some of the binocular targets for the coming month. It is primarily targeted at binocular observers (although I know that many small-scope observers use it as well) in the UK, but should have some usefulness for observers anywhere north of Latitude 30°N and possibly even further south.

Highlights this month include the return of Neptune to the morning sky.

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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

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

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

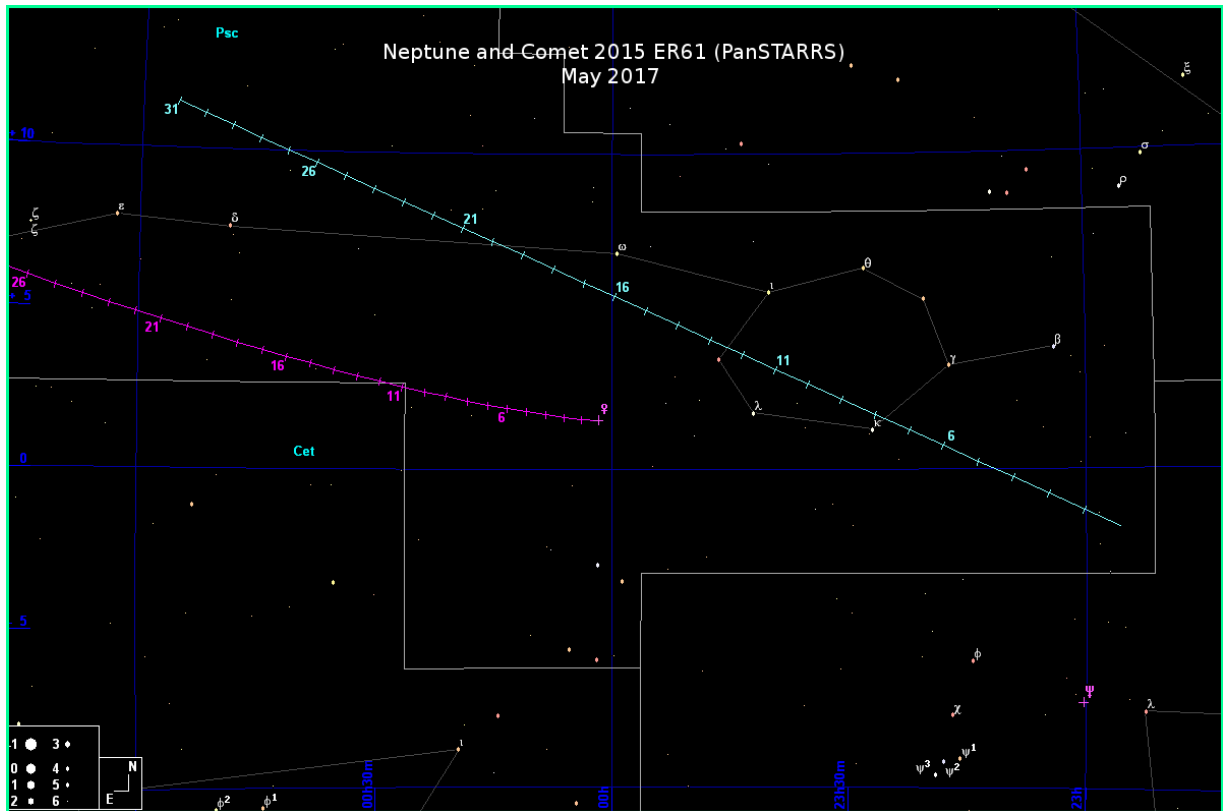
Double Stars

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

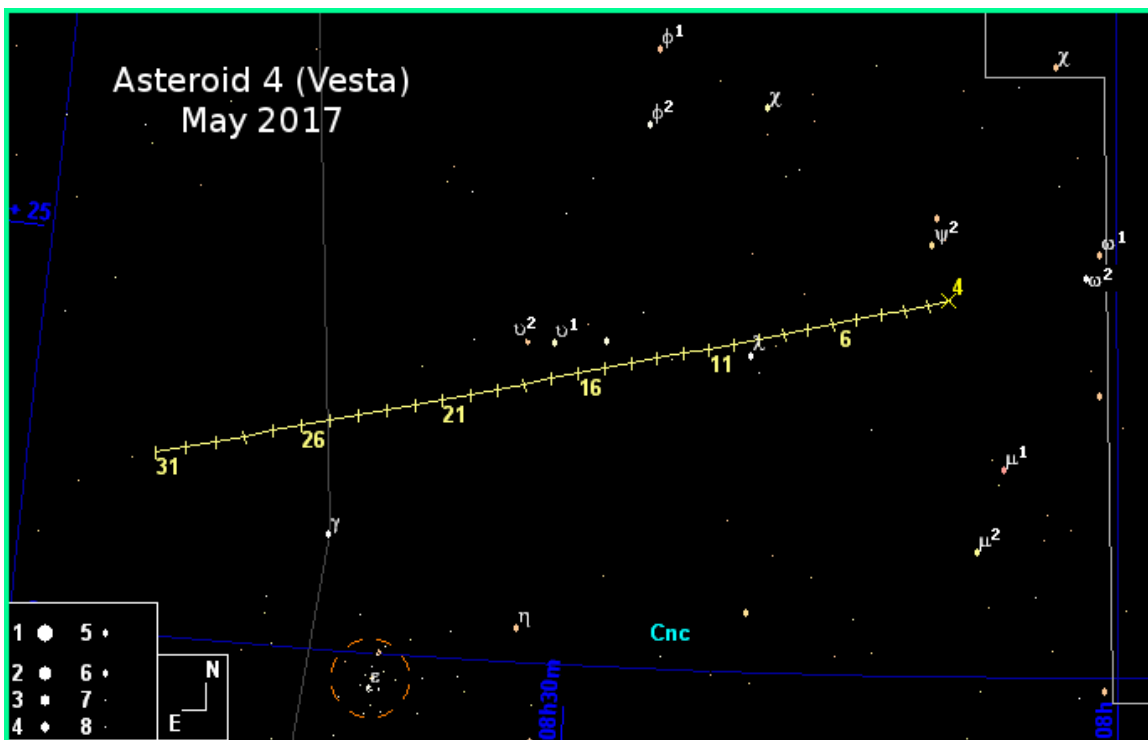
Neptune returns (just!) to the morning sky by the end of the month, shining at mag. +7.9 midway between two reddish stars, λ and ϕ Aqr.

Comet 2015 ER 61 (PanSTARRS) has brightened more than expected and is now around 7th magnitude, but may fade briefly before brightening again as it nears perihelion. It is a difficult morning object, in the same part of the sky as Venus (at the beginning of the month) and Neptune.



(clicky)

Asteroid 4 (Vesta) passes just north of the Beehive Cluster (M44). Both the 8th magnitude asteroid and the cluster will fit in a 10x50 binocular field from about mid-month.



Asteroid Occultations

There are no predicted asteroid occultations of stars visible from the UK and suitable for binoculars (mag. < +7.5) this month.

Lunar Occultations

There are several occultations of stars brighter than mag +7.0 visible from the UK this month. 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.

Lunar Occultations, May 2017, 50.9°N, 1.8°W							
Date	Time	Phase	Star	Spectrum	Magnitude	Cusp Angle	Position Angle
May 03	20:19:11	D	HIP 47291	G8	6.7	84N	102
May 04	00:59:35	D	18 Leo	K4	5.7	48S	151
May 04	23:20:14	D	49 Leo	A2	5.6	76S	126
May 07	23:54:30	D	46 Vir	K2	6.2	64N	91
May 08	02:06:56	D	48 Vir	F0	6.7	50N	77
May 13	02:54:45	R	29 Oph	K1	6.3	84S	260
May 15	00:59:46	R	HIP 91527	A8	6.7	70N	283
May 28	21:05:49	D	HIP 36060	G5	6.9	74N	87

The Moon

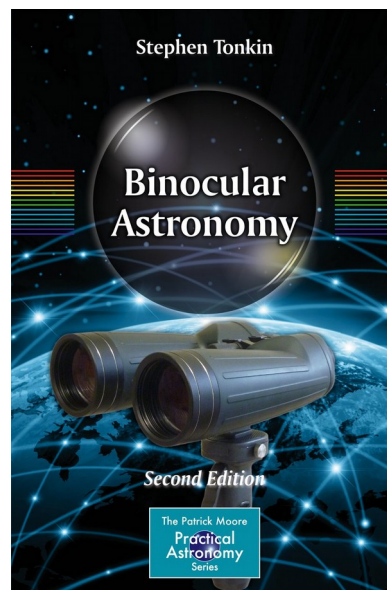
May 03 First Quarter
May 10 Full Moon
May 19 Last Quarter
May 25 New Moon

Meteors

The **Eta Aquarids** peak on the 6th (ZHR = 55/hr). The gibbous Moon will still be up at the onset of nautical twilight, but at least it will be the other side of the sky. The meteors are grains of dust that were left in the wake of Comet Halley. As these particles enter the atmosphere, they compress and heat the air in front of them. This heat causes the surface of the particle to ablate and ionise. Binoculars are useful for observing the persistence of these ionisation trains that form the streak in the sky which is what we observe as a "shooting star".

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](#):
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Wishing you Clear Dark Skies,

Steve Tonkin

for

[The Binocular Sky](#)

Acknowledgments:

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

Occultation data derived with Dave Herald's *Occult*

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

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