



# The Binocular Sky

No. 128  
August 2022



# Newsletter

## Introduction

Welcome, especially to our new subscribers, to August's **Binocular Sky** Newsletter. As most of you know, my intention here is to highlight some of the binocular targets for the coming month. It is primarily targeted at binocular observers (although many small telescope observers use it as well) in the UK, but almost all the objects can be seen from anywhere north of latitude 30°N and many of the even further south (we have at least one subscriber as far south as Canberra: 35°S!), for whom our low southern objects culminate high in the sky.

Astronomical darkness, albeit short-lived, has now returned for most of the UK – the observing season proper approaches. Bright asterisms are useful “sharing” objects in skies that aren't particularly dark, so we look at some of them. The binocular planets, ice giants **Uranus** and **Neptune**, are part of the planetary grouping in the morning sky and asteroid **Vesta** is very bright this month.

We also have a grazing occultation of a bright star for mainland Britain (see page 10).

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## The Deep Sky

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

Asterisms are informal groups of stars that form recognisable shapes, and which can either be useful as signposts that lead to other objects of interest (e.g. the “Plough”, aka “Big Dipper” in Ursa Major, which directs us to both Polaris and Arcturus) or which remind us of familiar shapes (possibly the best known of these in our summer skies is the “Coathanger” asterism of brighter stars in [Collinder 399](#) in Vulpecula).

The more you look around the skies, the more likely you are to find – invent? – some of your own. If you do this, make your own catalogue of things that **you** find interesting, then share them with others. Your catalogue may never be as famous as Charles Messier’s or the NGC, but it can help to enhance **your** personal relationship with your skies. However, it is only polite to check that someone else hasn’t got there first; if they have, acknowledge them – there’s a reasonably comprehensive list [here](#). We’ll highlight a few of them this month.

As the sky darkens at twilight, in the north are [NGC 457](#) (the Owl Cluster) and [NGC 663](#) in Cassiopeia, the [Perseus Double Cluster](#), and [Stock 2](#) (the Muscleman Cluster). Also visible in Cassiopeia is the “[Eddie’s Coaster](#)” asterism, a lovely curve of stars that is not particularly apparent on star charts or images, but which is obvious in 10x50 binoculars. It is named for the late Eddie Carpenter, the West Country amateur who discovered it and has been delighting people with it for many years.

*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.*

More open Clusters are visible in the southern sky in the region of Ophiuchus. These include [Melotte 186](#), [NGC 6633](#), [IC 4665](#) and [M11](#), The Wild Duck Cluster, all of which are easily visible in 50mm binoculars. [M11](#), which is a cluster of over a thousand stars, benefits

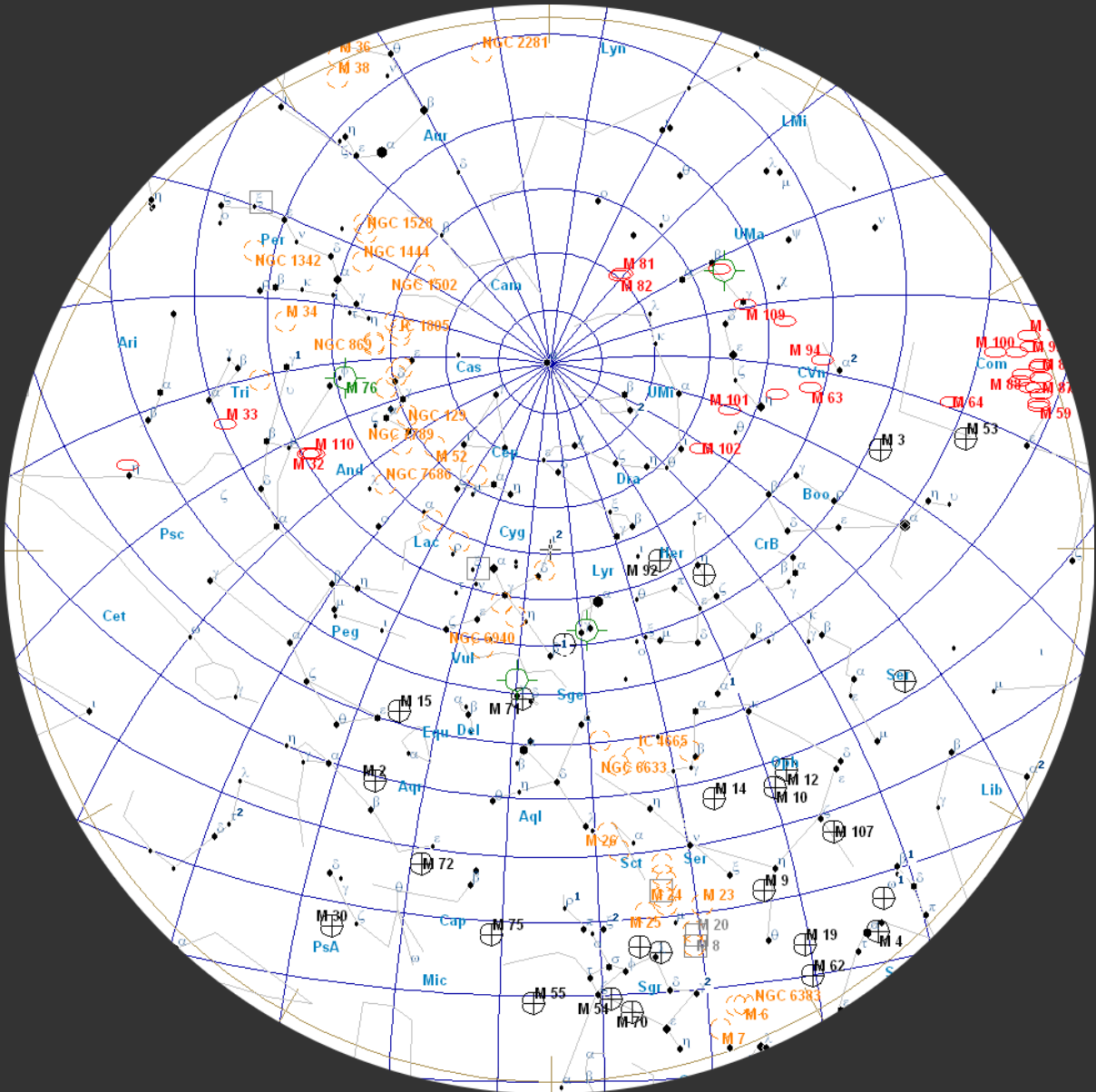
51°N

August 01, 23:00 UT

August 15, 22:00 UT

August 31, 21:00 UT

(chart is "clicky")



enormously from larger apertures and the higher magnification that permits more stars, including the "V"-shaped grouping that gives it its common name, to be revealed.

[IC 4665](#) benefits enormously from larger apertures and the higher

magnification that permits more stars to be revealed. You should seek out a particularly attractive curved of bright white stars that forms part of the “Hi” asterism (inverted in binoculars from the Northern Hemisphere) that welcomes you to this part of the summer sky.

Even further to the south, culminating at around local midnight, is a group of open clusters in Serpens and Sagittarius that includes M16 (the Eagle Nebula), M17 (the Swan or Omega Nebula), M23, M24 (the Sagittarius Star Cloud – the densest accumulation of stars you will see with binoculars anywhere in our galaxy), and M25.

While you’re in this region of the sky, the denser part of the Milky Way that forms the *Scutum Star Cloud* as a backdrop to M25 is also worth enjoying. Also, see if you can find Barnard's Star in Ophiuchus. This has the largest known proper motion of any star. (*Proper motion* is motion with respect to the celestial sphere.) 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 August, 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. 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. The Great Andromeda Galaxy, M31, is also rising into the sky to a reasonable altitude this month. It is large and bright enough to be able to withstand quite a lot of light pollution although, obviously, it benefits from a dark transparent sky.

*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 technology consisted of rocks, sticks and bones.*

The two Hercules globulars, M92 and the very impressive, and very easy to find, M13 are at a very good altitude for observation. Although M13 is clearly larger than M92, I find it to be easier to resolve the outer stars of the latter one (needs big binos).

*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.*

While you're in Hercules, using 70mm or larger binocs, see if you can find an asterism that was introduced by, and named for, the prolific American amateur astronomer, Phil Harrington in his catalogue: Hrr 7. Find *Kajam* ( $\omega$  Her) and pan 2° W to a golden 8<sup>th</sup> mag star which is part of a 1.3°-long chain of fainter stars that runs approximately north-south. Phil sees a zigzag, but others have seen a dragon, a long-tailed tadpole, and a flower. What do you see?

Also visible this month is M5 in Serpens, which is one of the largest globular clusters known, being 165 light years in diameter. Its apparent size is nearly as large as a Full Moon. At a reasonable altitude from the beginning of the month are the very bright M15, M2 (which looks almost stellar at 10x50) and NGC 6934. This last cluster is very easy to see and is excellent for demonstrating how globular clusters respond to transparency. In apertures of around 70mm and upwards, almost all of them look larger as the sky becomes more transparent. NGC 6934 displays this to the greatest extent of any globular on which I have tested the phenomenon.

The easiest planetary nebula from the UK, M27, the Dumbbell Nebula – although I insist that it looks more like an apple core than a dumbbell! – is visible in the evening skies in even 30mm binoculars. At the other extreme, if you have binoculars of at least 100mm aperture, see if you can find and identify NGC 6572, a planetary nebula in Ophiuchus. Even in large glasses it looks stellar, 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.*

There are two other objects which, owing to their southerly declination, are best observed this month. They are the two bright emission nebulae, M20 (the Trifid) and the larger, brighter and easier M8 (the Lagoon). They are only about a degree and a half apart, so they will fit into the same field of view of even quite large binoculars.

For interactive maps of Deep Sky Objects visible from 51°N, you can visit: [http://binocularsky.com/map\\_select.php](http://binocularsky.com/map_select.php)

**August Deep Sky Objects by Right Ascension**

Object	Con	Type	Mag	RA (hhmmss)	Dec (ddmmss)
M31 (the Great Andromeda Galaxy)	And	gal	4.3	004244	411608
Eddie's Coaster	Cas	ast	7.0	010129	634005
NGC 457 (the ET Cluster, the Owl Cluster)	Cas	oc	6.4	011932	581727
NGC 663	Cas	oc	7.1	014601	611406
Stock 2 (the Musclemans Cluster)	Cas	oc	4.4	021434	591358
NGC 884 and NGC 869 (the Perseus Double Cluster)	Per	oc	5.3	022107	570802
M81 (NGC 3031)	UMa	gal	7.8	095533	690401
M82 (NGC 3034)	UMa	gal	9.2	095554	694059
M51 (NGC 5194, the Whirlpool Galaxy)	CVn	gal	8.9	132952	471144
M101 (NGC 5457)	UMa	gal	7.7	140312	542057
M5 (NGC 5904)	Ser	gc	5.7	151833	020459
Harrington 7	Her	ast	9.0	161652	132255
M13 (NGC 6205, the Great Hercules Globular Cluster)	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
M23 (NGC 6494)	Sgr	oc	5.5	175700	-190100
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
M24	Sgr	oc	4.6	181826	-182421
M16 (NGC 6611, the Eagle Nebula)	Ser	oc	6.0	181848	-134749
M17 (NGC 6618, the Omega Nebula or Swan Nebula)	Sgr	en	6.0	182048	-161059
NGC 6633	Oph	oc	4.6	182715	063030
M25 (IC 4725)	Sgr	oc	4.6	183146	-190654
M11 (NGC 6705, Wild Duck Cluster)	Sct	oc	5.8	185106	-061600
M27 (NGC 6853, the Dumbbell Nebula, the Apple)	Vul	pn	7.6	195936	224318
NGC 6934	Del	gc	8.8	203411	072415
M15 (NGC 7078)	Peg	gc	6.2	212958	121003

**Variable Stars**

<b>Selection of Binocular Variables (mag &lt; +7.5)</b>			
<b>Star</b>	<b>Mag Range</b>	<b>Period</b>	<b>Type</b>
U Cep	6.8-9.2	2.5d (increasing)	Eclipsing binary
EK Cep	8.2-9.5	4.3d	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
ZZ Boo	6.7-7.4	4.99d	Eclipsing binary
R Sge	8.0-10.4	71d, 1112 d	RV Tau
U Sge	6.5-9.3	3.38d	Eclipsing binary
DY Vul	8.4-9.7	–	Irregular
U Vul	6.7-7.5	7.99d	Cepheid
X Cyg	5.9-6.9	16.39d	Cepheid
SU Cyg	6.4-7.2	3.84d	Cepheid
AF Cyg	6.4-8.4	92.5	Semi-regular

<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	5.8-15.2	409.2

<b>Mira-type stars near predicted maximum (mag &lt; +7.5)</b>		
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R And	5.8-15.2	409.2

## Double Stars

Binocular Double Stars for August			
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
$\delta$ Cep	4.1, 6.1	F5, A0	41
$\gamma$ Her	3.7, 9.4	F0, K	43
d Boo	3.5, 7.8	K0, G0	105
$\mu$ Boo	4.3, 7	F0, K0	109
$\iota$ Boo	4.0, 8.1	A5, A2	38
n Boo	5.0, 5.0	K5, A2	628
DN & 65 UMa	6.7, 7.0,	A3, B9	63
$\pi$ -1 Umi	6.6, 7.2	G5, G5	31

## The Solar System

*(Clicking on the charts in this section will take you to higher resolution ones)*

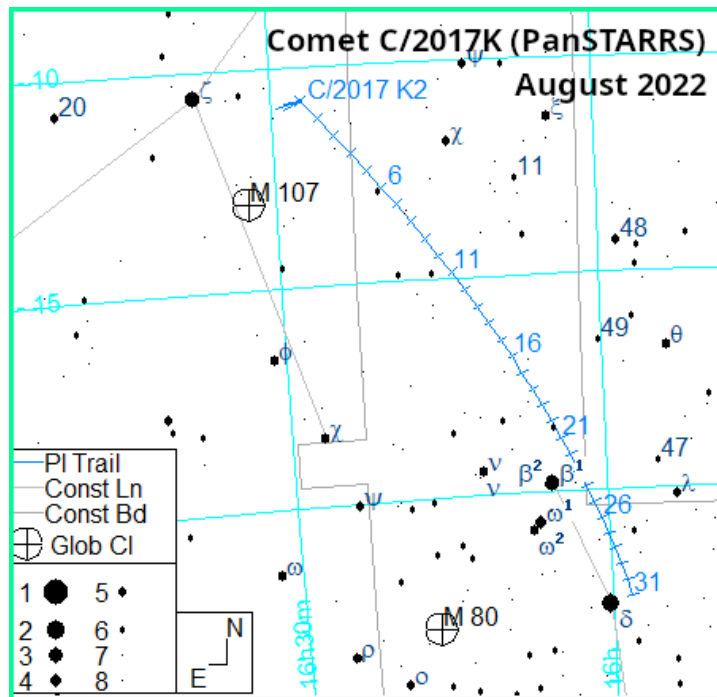
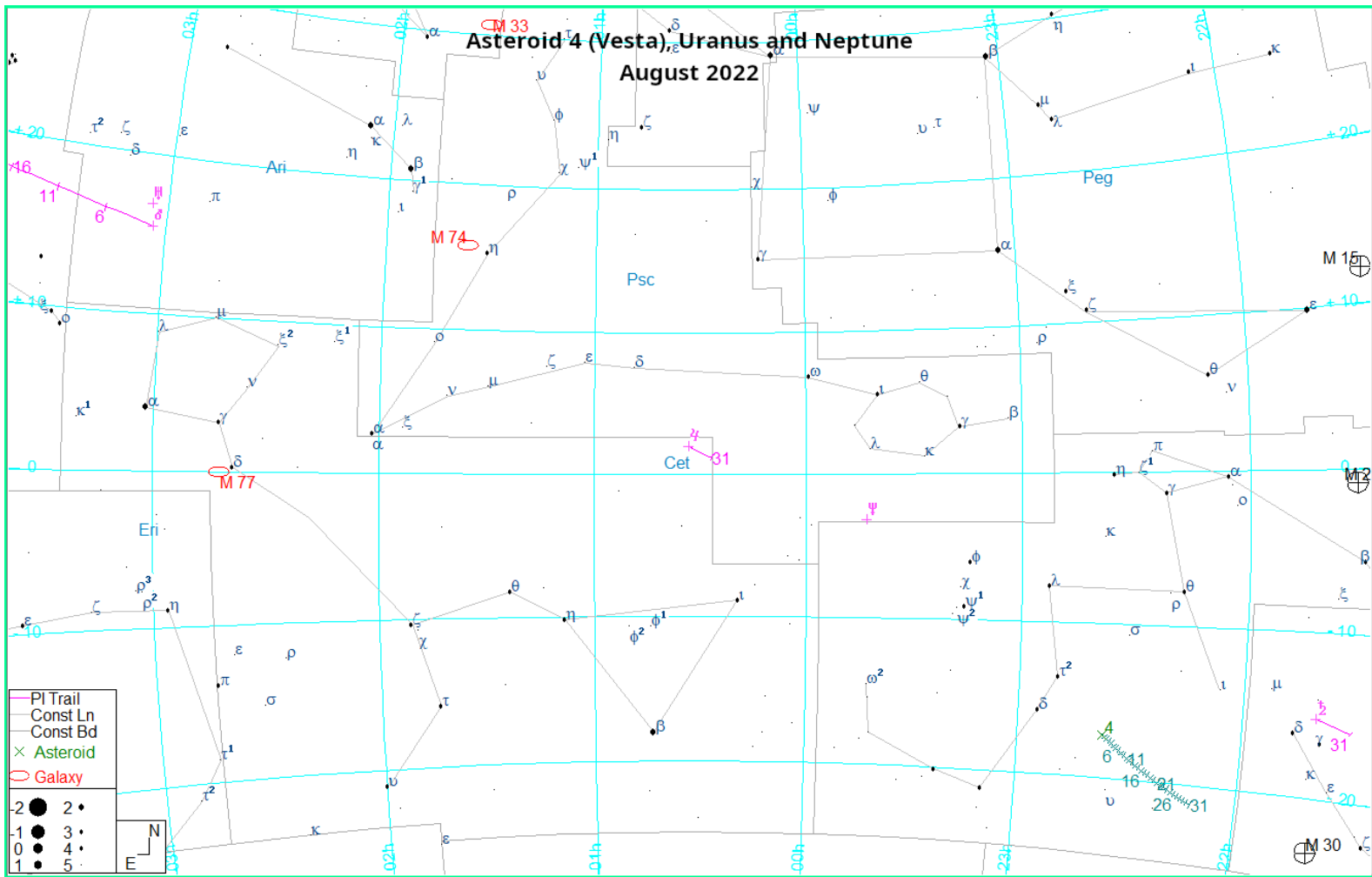
The ice giants **Uranus** and **Neptune**, are best observed after midnight. They become gradually easier as August progresses: by the end of the month, Neptune (mag + 7.8) transits just after midnight during astronomical dark, and Uranus (mag +5.8) during morning astronomical twilight. It is close to Mars at the beginning of the month (see chart), so you can use that as a marker.

Further west in Aquarius, **Asteroid 4 (Vesta)**, is easily visible to small binoculars. It starts the month at mag +6.5, peaks at +6.1 around the 22<sup>nd</sup>, then fades to +6.2 by the end of the month. It's quite low, so you will need a good southern horizon. As with Uranus and Neptune, you confirm its identity through its motion from night to night.

**Comet C/2017 K2 (PanSTARRS)** is actually brightening as it moves southward from Ophiuchus to Scorpius but, because of its low altitude, it's not getting any easier from British latitudes, although it is still visible – I recommend at least 70mm binoculars.



(Clicking on the charts in this section will take you to higher resolution ones)



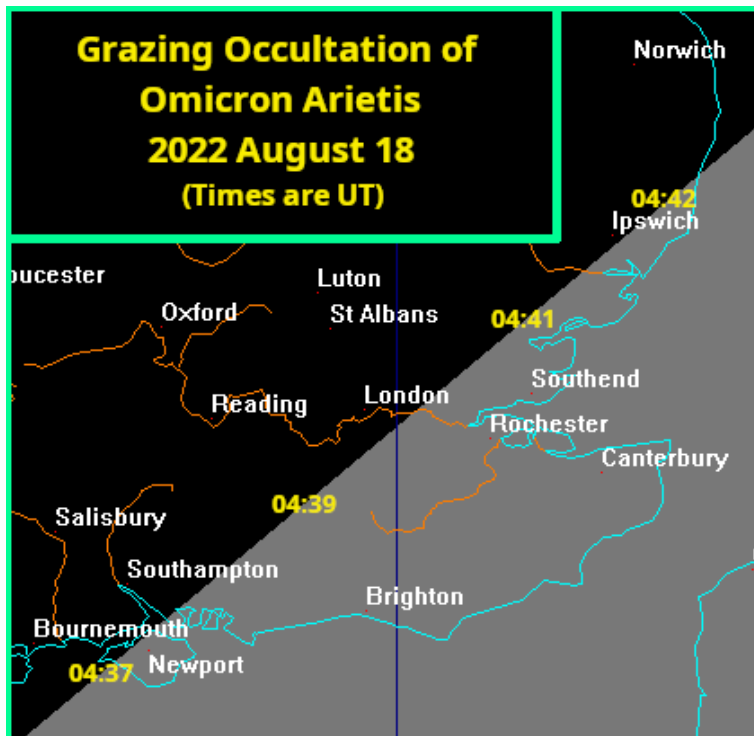
## The Moon

August 05      First Quarter  
 August 12      Full Moon  
 August 19      Last Quarter  
 August 27      New Moon

## Lunar Occultations

Data are for my location and may vary by several minutes for other UK locations. The phases are **(D)**isappearance, **(R)**eappearance and **(Gr)**aze; they are dark-limb events unless there is a **(B)**. The highlight is the grazing occultation of Omicron Arietis for South-Eastern England.

Lunar Occultations, August 2022, 50.9°N, 1.8°W							
Date	Time	Phase	Star	Spectral Type	Magnitude	Position Angle	Cusp Angle
Aug 06	21:41:30	D	del Sco	B0	2.3	41	31N
Aug 06	22:11:59	R	del Sco	B0	2.3	349	-21N
Aug 18	04:36:31	Gr	omi Ari	B9	5.8		15N
Aug 18	04:36:59	M	omi Ari	B9	5.8	328	15N
Aug 19	00:50:29	R	HIP 16077	A3	6.5	271	75N



## Public Outreach & Talks

9<sup>th</sup>

Twynham Probus Club

**Are We Alone?**

### **Zoom/Webex Talks?**

I regularly give talks, on *Binocular Astronomy* and numerous other astronomical topics. I'd be happy to do this – including locations anywhere in the world on Zoom or Webex – that is of interest.

If you would like a talk for your society/group, [Click here for current talks](#). For schools/scouts/guides, etc., I am a STEM Ambassador so there will be no fee.

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 one of my books, **[Binocular Astronomy](#)** or **[Discover the Night Sky through Binoculars](#)**.
- Buy equipment or books through an affiliate link in the newsletter or on <https://binocularsky.com>
- 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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**Acknowledgements:**

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Variable star data based on *The International Variable Star Index*

Occultation data derived with Dave Herald's *Occult*

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