



# The Binocular Sky

No. 105  
August 2020

# Newsletter

## Introduction



I hope August's **Binocular Sky** Newsletter finds you in good health. It's intended primarily for binocular observers (although many small telescope observers find it useful) in the UK. That said, almost all the highlighted 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 (UK) low southern objects culminate high in the sky. So welcome!

Astronomical darkness, albeit short-lived, has now returned for most of the UK – the observing season proper is imminent. As binocular observers, with our combination of maximum portability and minimal set-up time, we are well suited to take advantage of what the night sky reveals.

**C/2020 F3 (NEOWISE)** is still with us, although it's fading quite rapidly now. It was still an easy object in 10x50s on July 30<sup>th</sup>., but will probably be lost to us within 3 weeks.

The binocular planets, **Uranus** and **Neptune** are now visible before midnight, as is **Ceres**, which is brightening.

*Stay well and safe!*

If you would like to receive the newsletter automatically 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 on the objects.)*

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 Eddie Carpenter, the West Country amateur who discovered it and has been delighting people with it for many years.

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 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. [NGC 6633](#) and [IC 4756](#) are only a little more than 3° apart, so you can get them in the same field of view of most binoculars of 16x and lower magnification. It’s interesting to compare and contrast them.

[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.

*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.*

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

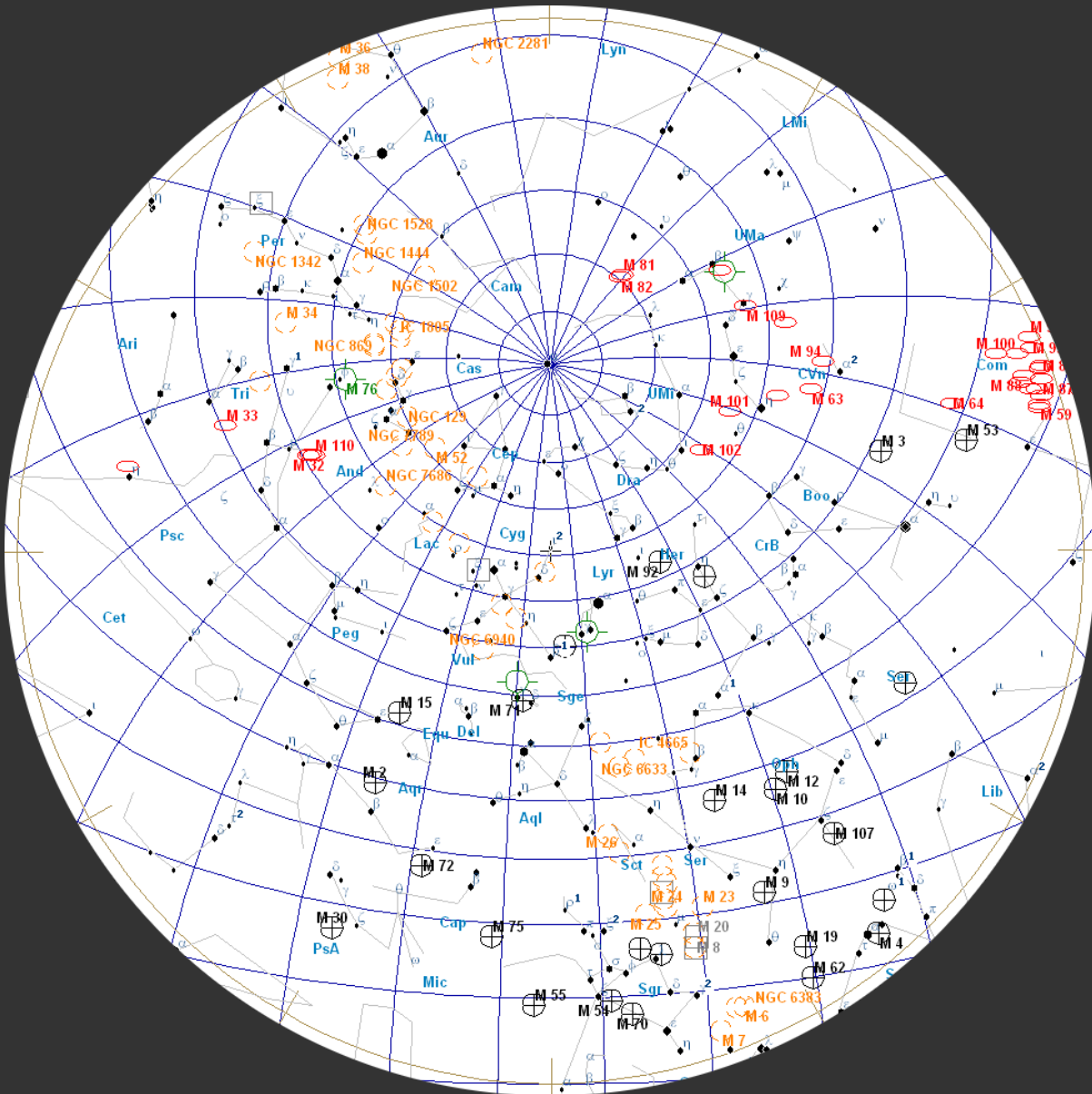
51°N

August 01, 23:00 UT

August 15, 22:00 UT

August 31, 21:00 UT

(chart is "clicky")



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.*

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, M27, the Dumbbell Nebula – although I insist that it looks more like an apple core or a diabolo 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, an 8<sup>th</sup> mag 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: [https://binocularsky.com/map\\_select.php](https://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 Muscleman 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
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
IC 4756	Ser	oc	4.6	183900	052700
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>Mira-type stars near predicted maximum (mag &lt; +7.5)</b>		
Star	Mag Range	Period (days)
S CrB	5.8-14.1	360.3

<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

### Double Stars

<b>Binocular Double Stars for August</b>			
<b>Star</b>	<b>Magnitudes</b>	<b>Spectral Types</b>	<b>Separation (arcsec)</b>
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

(Charts are “clicky” for higher resolution alternatives)

### The Moon

August 03	Full Moon
August 11	Last Quarter
August 19	New Moon
August 25	First Quarter

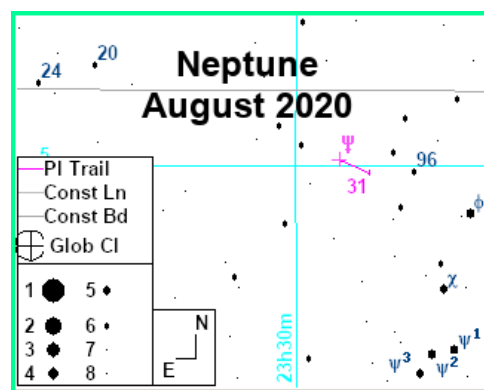
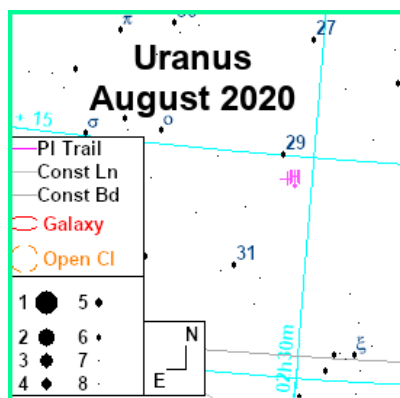
### Lunar Occultations

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)**.

Lunar Occultations August 2020 50.9°N 1.8°W							
Date	Time (UT)	Phase	Star	Spectral Type	Magnitude	Position Angle	Cusp Angle
Aug 13	02:39:00	R	85 Tau	F3	6.1	97	53S
Aug 15	03:45:52	R	4 Gem	B9	6.9	87	31S

### Planets

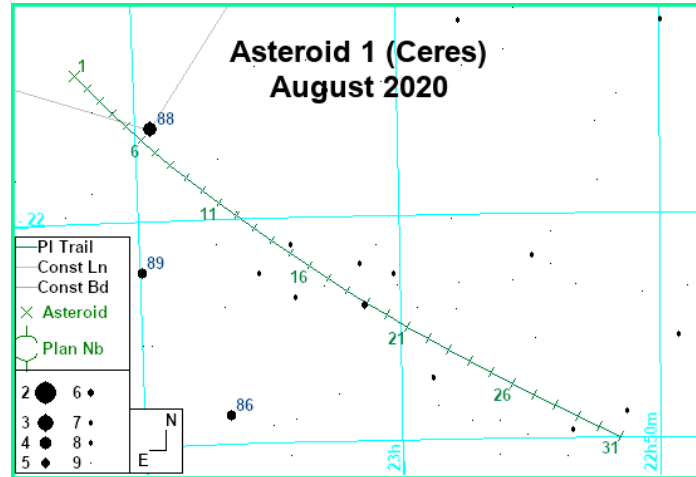
The ice giants **Uranus** and **Neptune**, are best observed after midnight. They become gradually easier as August progresses: by the end of the month, Neptune (mag +7.8) transits just after midnight during astronomical dark, and Uranus (mag +5.7) during morning astronomical twilight. Uranus hardly appears to move throughout the month: this is because it goes retrograde on the 15<sup>th</sup>.





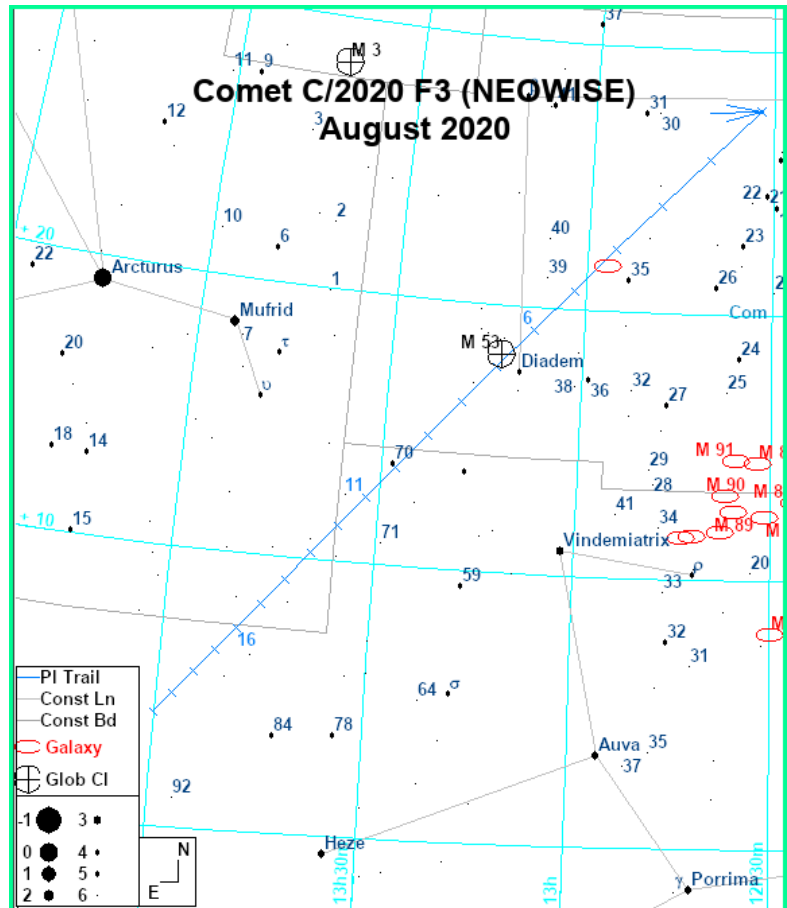
## Asteroids

**Asteroid 1 (Ceres)** is also available in Aquarius, well to the south of Neptune. It brightens from mag +8.0 to +7.7 during the month.



## Comets

**Comet C/2020 F3 (NEOWISE)** is now rapidly fading and will soon be lost in the evening twilight. At least the Moon will not interfere when its getting towards its faintest, so it may still be observable until about the 20<sup>th</sup>.



## Meteor Showers

The Perseids are already active, and the peak is predicted to be on August 12<sup>th</sup> between 13:00 and 16:00 UT. Unfortunately the Moon will interfere after local midnight on the 11<sup>th</sup> and 12<sup>th</sup>, which would otherwise be the optimum times for viewing. However, you should still be able to catch the brighter ones.

But why binoculars for a meteor shower? The meteors are grains of dust that were left in the wake of Comet Swift-Tuttle. 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”. If you get a particularly bright one, use binoculars to look at where it was its brightest; you may see a smoky trail that can persist for several seconds. The way it moves tells you how the atmosphere was moving at that level.

## Solarsphere

Perseids month is also **Solarsphere** month. For obvious reasons, the festival is a “virtual” online one this year, but there are several astronomical talks (including one by yours truly), interviews with prominent professional and amateur astronomers, and much more. [Click here](http://www.solarsphere.events) for more info.



## Public Outreach & Talks

All my “in person” public talks for the next few months have been postponed or cancelled, but some socially distanced outreach events are still scheduled to go ahead. However, I will be doing some “Zoom talks” during the month. If you’re at any of them, do give me a virtual “wave”:

August 12	<a href="#">Fordingbridge AS</a>	<b>Perseids Picnic</b> (socially distanced public observing)
August 14	<a href="#">Avon Heath Country Park</a>	<b>Dusk Walk</b> (bats, nightjars, moths, and stars – socially distanced)
August 15-16	<a href="#">Solarsphere Festival</a>	<b>Two Eyes are Better Than One</b> and <b>Ask an Astronomer</b>
August 18	Verwood Rotary Club	<b>Are We Alone?</b>

---

### Zoom Talks during “Lockdown”?

I regularly give talks, on *Binocular Astronomy* and numerous other astronomical topics. During the current “lockdown” in the UK, I’d be happy to do this on Zoom if that is of interest. For astronomy societies (and some other groups), I would not charge unless I incurred expenses (although I have never knowingly refused a donation made on my behalf to the [BAA Commission for Dark Skies](#)).

If you would like a talk for your society/group,  
[Click here for current talks.](#)

---

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

Wishing you Clear Dark Skies,

**Steve Tonkin**

*for*

**The Binocular Sky**

---

**Acknowledgements:**

The charts in this newsletter were prepared with Guide v9.0 from <http://projectpluto.com> or [Stellarium](#) under [GNU Public License](#), incorporating Milky Way panorama ©[Axel Mellinger](#)

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

Occultation data derived with Dave Herald's *Occult*

**Disclosure:** Links to *Amazon* or *First Light Optics* may be affiliate links

© 2020 Stephen Tonkin under a [Creative Commons BY-NC-SA License](#)

