



The Binocular Sky

No. 139
July 2023

Newsletter

Introduction



Welcome to July's **Binocular Sky** Newsletter.

Astronomical darkness, albeit short, returns for locations south of about 53.5°N this month and, as binocular observers with our combination of maximum portability and minimal set-up time, we are well suited to take advantage of what these short periods of darkness reveal.

This month, make what use you can of any clear skies to explore the star-dense regions of Scorpius and Sagittarius – there is much here to delight any visual observer.

In the Solar System, we have more lunar occultations, but only one of these is a disappearance. The binocular planets (ice-giants **Uranus** and **Neptune**) are back – but only just – for morning twilight observation!

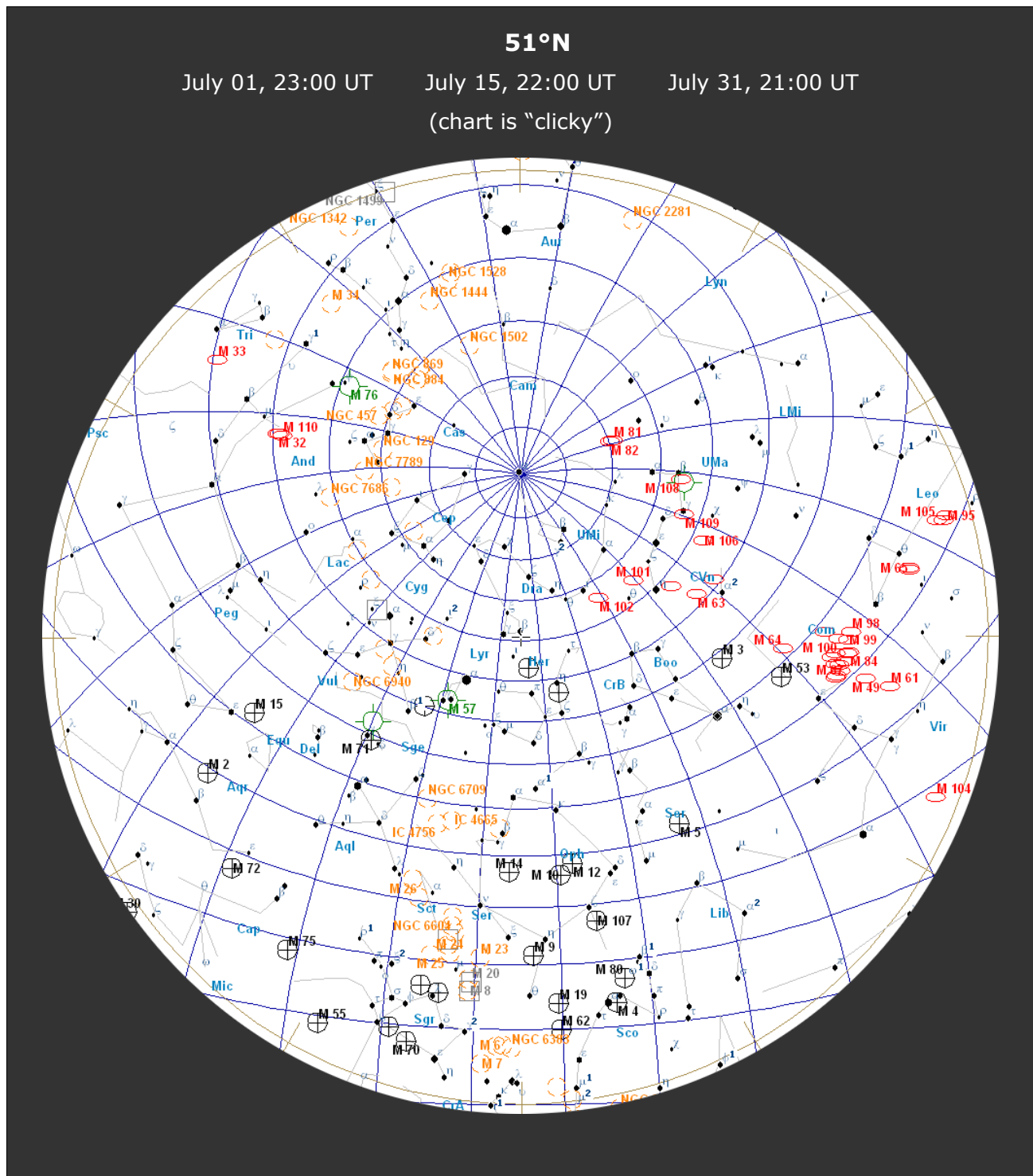
We have a mini-review this month. The subject is the first truly innovative binocular mount to become available for a very long time ([page 9](#))

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The Deep Sky

(Hyperlinks will take you to finder charts and more information on the objects.)

As the sky darkens, NGC 457 (the Owl Cluster) and NGC 663 in Cassiopeia, and the Perseus Double Cluster become visible low in the north. More open clusters are visible in the southern sky as the region around



Ophiuchus culminates. These include Melotte 186, NGC 6633 and IC 4665, all of which are easily visible in 50mm binoculars. 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 chain of bright white stars that forms part of the inverted greeting “Hi” written in the 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 visible in binoculars anywhere in the sky), and M25. A little to the northeast, in Scutum, is M11 (the Wild Duck Cluster). This is the densest known open cluster, which enables it to be distinguished from the Milky Way background. While you are here, take the opportunity to look at the Scutum Star Cloud as a backdrop to this cluster; it is second only to M24 for star density in the Milky Way.

While you are in this region of sky, 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 July, we are able to look out of the plane of the Galaxy during the evening, making 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

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.

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.

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, it is easier to resolve the outer stars of the latter one. M5 in Serpens is also visible on these summer nights. It is one of the largest globular clusters known, being 165 light years in diameter. It's

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.

apparent size is nearly as great as the Moon. At a reasonable altitude by mid-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 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 than a dumbbell!!) is now 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 (although some people see it as being blue).

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

July 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
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 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
M20 (NGC 6514, the Trifid Nebula)	Sgr	en	6.3	180218	-230159
M8 (NGC 6523, the Lagoon Nebula)	Sgr	en	5.0	180348	-242259
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 Nebula)	Vul	pn	7.6	195936	224318
NGC 6934	Del	gc	8.8	203411	072415
M15 (NGC 7078)	Peg	gc	6.2	212958	121003
M2 (NGC 7089)	Aqr	gc	6.5	213327	-004922

Variable Stars

Mira-type stars near predicted maximum (mag < +7.5)		
Star	Mag Range	Period (days)
o Cet	2.0-10.1	331.96
S CrB	5.8-14.1	360.26

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

Double Stars

Binocular Double Stars for July			
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

The Moon

July 03 Full Moon
 July 10 Last Quarter
 July 17 New Moon
 July 25 First Quarter

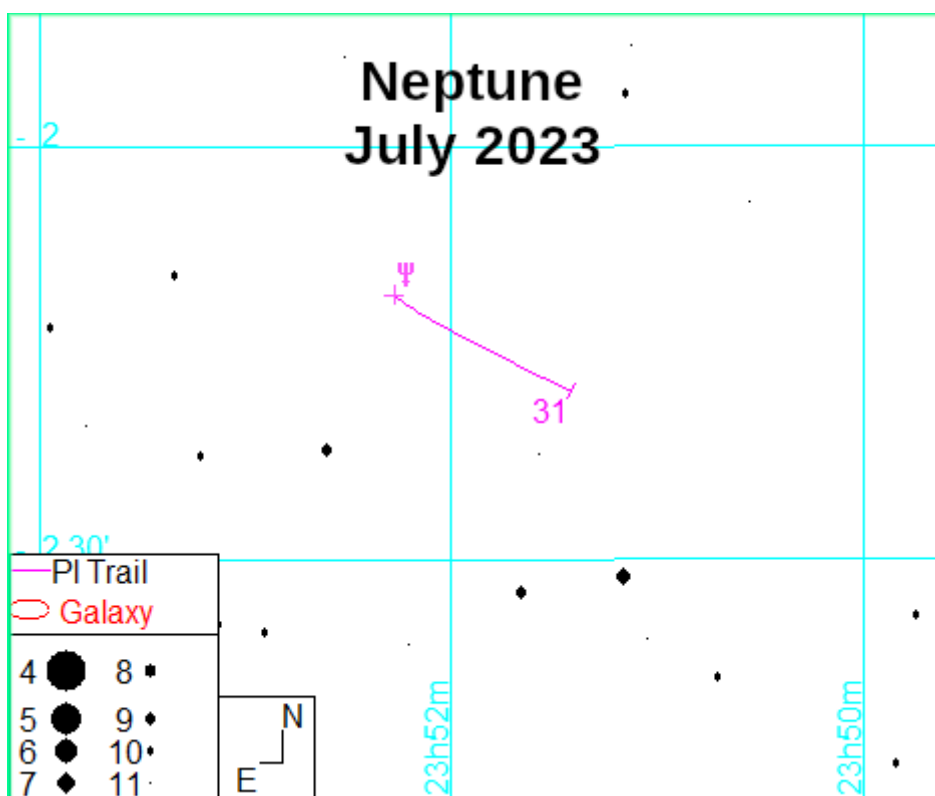
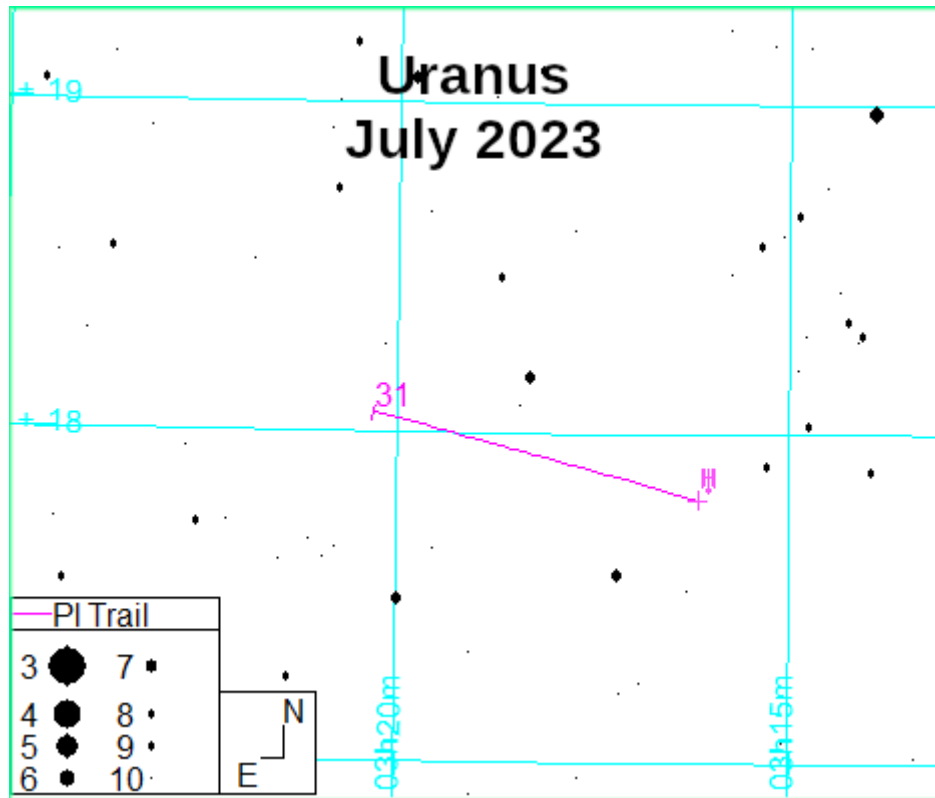
Lunar Occultations

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 the Cusp Angle is negative.

Lunar Occultation July 2023 50.9°N 1.8°W							
Date	Time (UT)	Phase	Star	Spectral Type	Magnitude	Position Angle	Cusp Angle
Jul 2	23:54:03	D	HIP 89622	A5	6.2	87N	Jul 2
Jul 4	00:36:05	R	NSV 24772	B2	6.0	76S	Jul 4
Jul 5	01:45:47	R	HIP 101384	A0	6.4	80S	Jul 5
Jul 6	01:42:11	R	38 Cap	F7	6.7	65N	Jul 6
Jul 10	01:23:03	R	77 Psc	F4	6.4	59N	Jul 10
Jul 11	00:49:23	R	HIP 8859	F5	6.8	72S	Jul 11
Jul 13	02:42:51	R	HIP 17026	A*	6.5	63S	Jul 13
Jul 15	07:44:39	R	HIP 26396	B9	5.8	69S	Jul 15

Planets

The binocular planets, ice giants **Uranus** (mag +5.8) and **Neptune** (mag +7.9) are back and are now observable in morning twilight, in *Aries* and *Pisces* respectively. Neither is easy from this latitude.



Mini Review: Bresser Slider Mount

Manufacturer's Specifications

Weight (g)	14500
Payload (g)	3500
Tripod Mount	3/8" UNC + M10 adaptor
Instrument mount	1/4" UNC
Degrees of motion	5
Centre of mass adjustment	Yes
Body Material	Aluminium
Counterweights (kg)	2 x 2.5 2 x 1.25 2 x 0.5
Origin	Hungary
Warranty	5 years



Available from: [Bresser](#)

Price: £735 (without tripod). £939 (with tripod)

Introduction

The Bresser Slider Mount is an innovative binocular mount developed by the Hungarian engineer, Attila Madai. Its primary purpose is to properly support the binocular whilst simultaneously enabling you to access the entire sky without having to change the position of your seat.

Setting-up

Setting the mount properly is crucial to being able to use it successfully, so it is worthwhile to do this carefully and precisely. The key here is not to rush it the first time. Bresser provides an instructional video, "[Bresser Slider Binocular Mount - Manual](#)" on YouTube. In particular, take your time adjusting the friction and tension screws so that the arm slides freely and smoothly.

You don't have to get the balance perfect because the tilting friction adjuster allows a certain amount of imbalance, but obviously you should get it as close as you can.

You can adjust the cradle fulcrum so that it is in line with the centre of mass of the binoculars. There are also additional holes in the cradle to which you can mount useful additional devices such as a phone holder and finder.

Under the Sky

The manufacturer suggests the use of a swivel chair to gain full advantage of the characteristics of the slider mount and, whilst swivel chair does make it more of a pleasure to use, I found that a simple stool was more than adequate and a lot less bulky to move around. However, the swivel chair, once in place, enables you to see the entire hemisphere of sky without you having to change your seating position.



So does it work? It does. Very well indeed. I found it to be a sheer pleasure to use. It genuinely gives the sensation that the binoculars are floating in the air and can be "floated" to wherever you want, through a full 360° of azimuth and with an altitude range considerably more than 90°.

Conclusion

My overall impression is that this is a great bit of kit that is a delight to use. It's suitable for binoculars weighing up to about 3.5 kg. You could also use it for a small telescope.

You can read the full review at https://binocularsky.com/binoc_reviews.php

Public Outreach & Talks

If you find yourself at any of these, do come and say "Hello". Dates are UT.

July 4 th -6 th	Local Government Association Conference	UK Dark Skies Partnership/CfDS/IDA-UK stall
July 23 rd	Hengisbury Head	Solar Observing and Telescope Clinic with Wessex AS
July 29 th	Damerham Fair	Responsible Lighting presentation and Solar Observing (if clear)

Zoom/Webex/Teams 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, Webex or Teams – if that is of interest.

**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**.
- 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

Wishing you Clear Dark Skies,

Steve Tonkin

for

The Binocular Sky

Acknowledgements:

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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

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