



The Binocular Sky

November
2018

Newsletter

Introduction



Welcome to November's **Binocular Sky** Newsletter. If you're new to it, my intention in this monthly publication is to highlight some of the binocular targets for the coming month. It is primarily written for binocular (and small telescope) observers in the UK, but should be quite useful for observers anywhere north of Latitude 30°N and not entirely useless even further south.

Now that we have reverted to "proper" time (UTC), the sky is fully dark by early evening so that a significant amount of observing is a realistic option for those who need to work the next day. The darker skies mean that some otherwise tricky deep sky objects are more easily visible.

Uranus is now relatively easy, but Neptune remains difficult and is only available in the evening.

The highlights this month are an asteroid occultation of a bright (in binoculars!) star for southern England in the early hours of the 10th, Comet 46P (Wirtanen) may reach naked eye visibility when it gets higher above the horizon at the end of the month, and Mira is brightening.

A personal highlight has been the publication of my new book, *Discover the Night Sky through Binoculars: A systematic guide to binocular astronomy*. More details on p 10.

If you would like to receive this 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 about the object.)

As the sky darkens at twilight, the Milky Way, always a pleasure to scan with binoculars of any size, arches overhead. In the north are [NGC 457](#) (the Owl Cluster) and [NGC 663](#) in Cassiopeia and the [Perseus Double Cluster](#), from which you can easily find [Stock 2](#) (the Muscleman Cluster). [Kemble's Cascade](#) and its "splash pool", [NGC 1502](#) are also conveniently placed. To the East of them lie [M34](#) in Perseus and the often-overlooked [NGC 752](#) in Andromeda. More open Clusters are visible in the southern sky in the region of Ophiuchus. These include [Melotte 186](#), [NGC 6633](#) and [M11](#), [The Wild Duck Cluster](#), all of which are easily visible in 50mm binoculars. Rising in the north-east are the [Auriga clusters](#), [M36](#), [M37](#) and [M38](#) and, later, [M35](#) in Gemini. 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 slightly more difficult [IC 2157](#), which is a degree to the ESE. To the south of them, the [Pleiades](#) and [Hyades](#) make a welcome return to evening skies. Also look out for the nearby [NGC1647](#).

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.

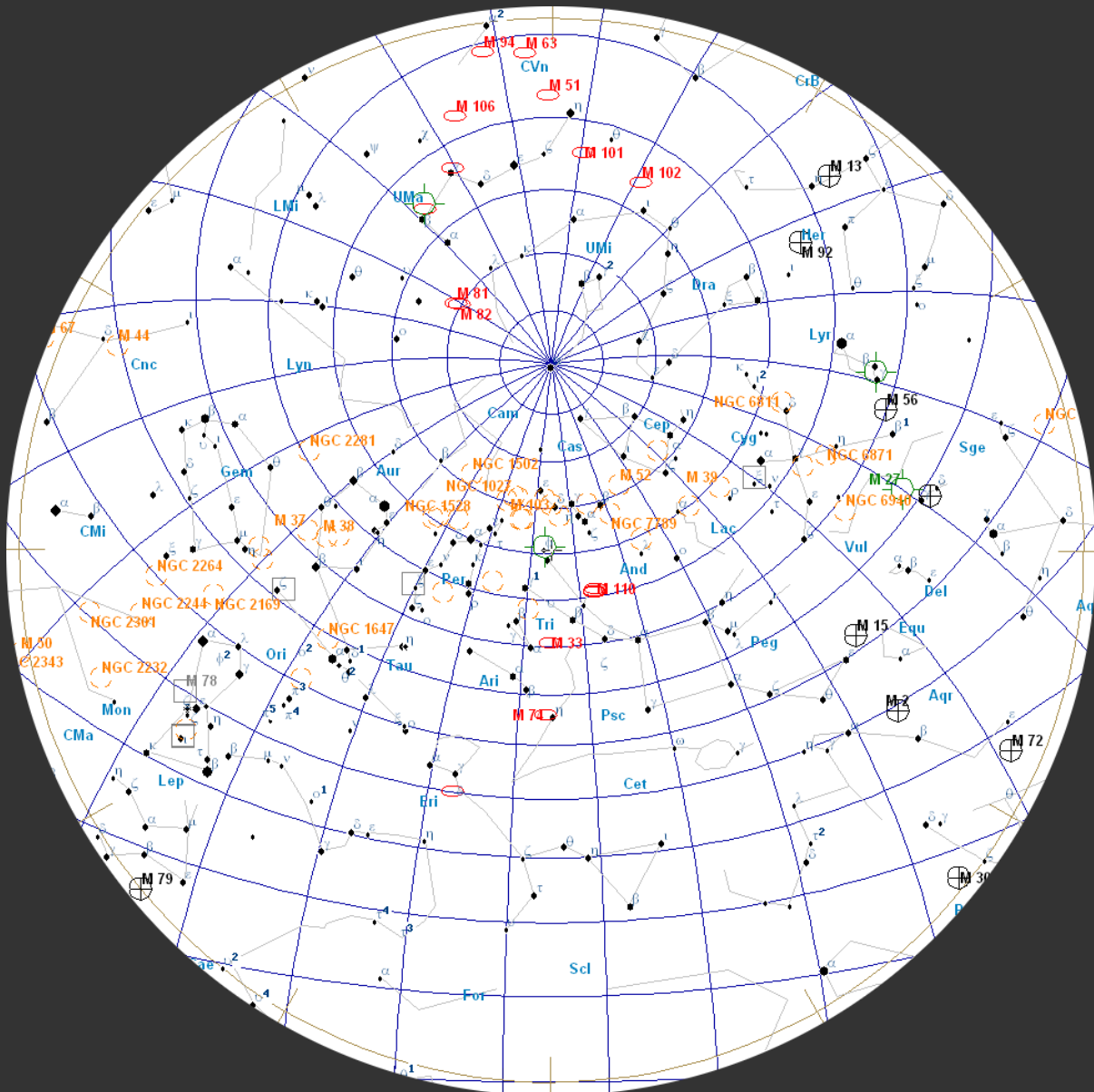
In November, the Milky Way is overhead in the mid-to-late evening. This means that those objects (globular clusters and galaxies) that are outside our galaxy are not as well placed for observation as they are when the Milky Way is low in the sky. Although the bright [M81](#) (Bode's Nebula) and [M82](#) (The Cigar Galaxy), are still relatively easy to observe, even in a 50mm binocular, their altitude is such that you are unlikely to get neck-strain when you do so with straight-through binoculars. [M81](#) and [M82](#) can be used as a good demonstration of averted vision: if you have them both in the same field

*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 ancestors of the genus *Homo* were just evolving!*

51°N

November 01, 23:00 UT November 15, 22:00 UT November 31, 21:00 UT

(chart is "clicky")



of view, you may see that the core of M81 becomes more apparent if you look at M82. M51 (The Whirlpool) and M101 are becoming much more difficult owing to their lower altitudes; if you wish to see them this month, you should look as soon as the sky is dark.

Two notable exceptions to the generalisation of galaxies being poorly placed on November evenings are The Great Andromeda Galaxy, M31 and M33 (The Triangulum Galaxy), both of which are close to the plane of the Milky Way. M31 in particular is very easily visible this month and is a naked eye object in moderately dark skies. It is large and bright enough to be able to withstand quite a lot of light pollution (making it available to urban observers). M33 has a low surface-brightness and benefits from lower magnification. This generally makes it easier to see in, say, a 10x50 binocular than in many "starter" telescopes. It is in November evenings that the Sculptor Galaxy, NGC 253, becomes observable before midnight, but you will need a good southern horizon for this.

Although the two Hercules globulars, M92 and the very impressive, and very easy to find, M13 are still observable, their altitude becomes less favourable as the month progresses. M15 and M2 are both better placed. This is also the best time of year to observe NGC 288 in the evening; as with NGC 253, a good southern horizon is essential.

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.

The easiest planetary nebula, M27 (the Dumbbell Nebula – also known as the Apple Core and the Diabolo) – is visible in the evening skies in even 30mm binoculars. The Helix Nebula, NGC 7293 is now

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.

about as well-placed as it gets for observation from Britain before midnight; you'll need a decent southern horizon.

For interactive maps of Deep Sky Objects visible from 51°N, please visit:
http://binocularsky.com/map_select.php

November 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 253	Scl	gal	8.0	004733	-251717
NGC 288	Scl	gc	8.1	005246	-263512
NGC 457 (the ET Cluster, the Owl Cluster)	Cas	oc	6.4	011932	581727
M33 (NGC 598, the Pinwheel Galaxy)	Tri	gal	6.2	013351	303929
NGC 663	Cas	oc	7.1	014601	611406
NGC 752	And	oc	5.7	015742	374700
NGC 884 and NGC 869 (the Perseus Double Cluster)	Per	oc	5.3	022107	570802
Melotte 25 (the Hyades)	Tau	oc	0.5	042650	154841
NGC 1647	Tau	oc	6.4	044555	190542
M38 (NGC 1912)	Aur	oc	6.4	052842	355117
M36 (NGC 1960)	Aur	oc	6.0	053617	340826
M37 (NGC 2099)	Aur	oc	5.6	055218	323310
M35 (NGC 2168)	Gem	oc	5.1	060900	242100
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
M13 (NGC 6205, the Great Hercules Globular Cluster)	Her	gc	5.8	164141	362738
M92 (NGC 6341)	Her	gc	6.4	171707	430812
M11 (NGC 6705, Wild Duck Cluster)	Sct	oc	5.8	185106	-061600
M27 (NGC 6853, the Dumbbell Nebula, the Apple Core, the Diabolo)	Vul	pn	7.6	195936	224318
M15 (NGC 7078)	Peg	gc	6.2	212958	121003
M2 (NGC 7089)	Aqr	gc	6.5	213327	-004922
NGC 7293 (the Helix Nebula)	Aqr	pn	6.5	222938	-205013

Double Stars

Binocular Double Stars for November			
Star	Magnitudes	Spectral Types	Separation (arcsec)
ζ Lyr	4.3, 5.6	A3, A3	44
β Lyr	3.6, 6.7	B8, B3	46
οΣ525 Lyr	6.0, 7.6	G0, A0	45
d Cep	4.1, 6.1	F5, A0	41
γ Her	3.7, 9.4	F0, K	43

Binocular Double Stars for November			
Star	Magnitudes	Spectral Types	Separation (arcsec)
Σ2277 Her	6,2, 8.9	A0, K	27
8 Lac	5.7, 6.3	B3, B5	22
56 And	5.7, 5.9	K0, K2	128
ΣI 1 And	7.1, 7.3	G5, G5	47
ψ-1 Psc	5.3, 5.8	A2, A0	30
14 Ari	5.0, 7.9	F0, F2	106
62 Eri	5.4, 8.9	B9, B8	67
τ Tau	4.3, 7.0	B5, A0	63
ν Gem	4.1, 8.0	B5, A0	113
ζ Gem	4.0, 7.6	G0, G	101
π-1 Umi	6.6, 7.2	G5, G5	31

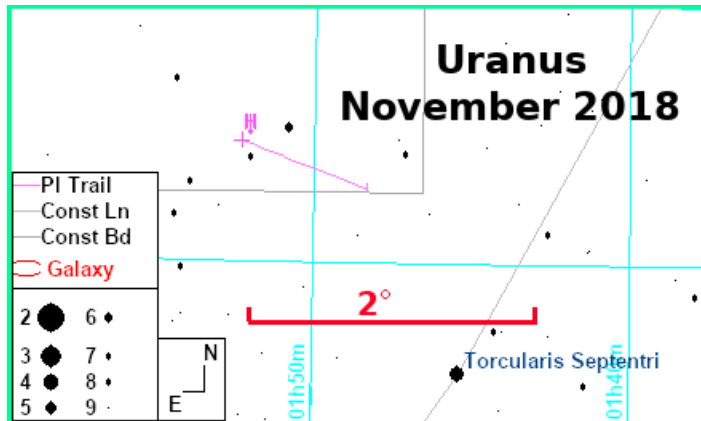
Variable Stars

Selection of binocular variables (mag < +7.5)			
Star	Mag Range	Period	Type
XY Lyr	5.8-6.4	Irreg	Irregular
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
U Del	7.0-8.0	ca. 110d	Irregular
TW Peg	7.0-9.2	ca. 90d	Semi-regular
U Cep	6.8-9.2	2.5d (increasing)	Eclipsing binary
SS Cep	6.7-7.8	ca. 190d	Semi-regular
RZ Cas	6.2-7.7	1.195d	Eclipsing binary
R Sct	4.5-9.0	146d	RV Tau

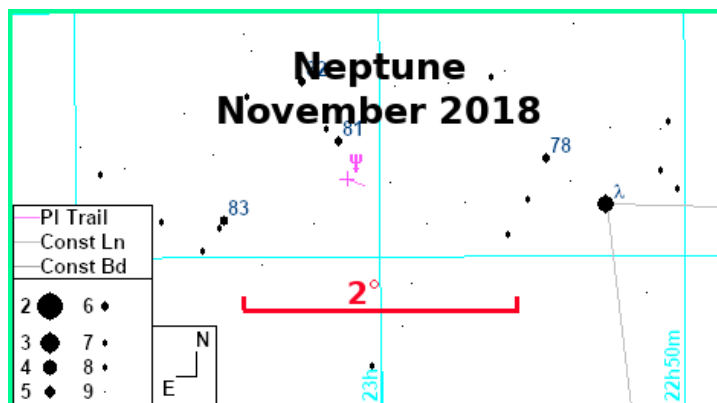
Mira-type stars near predicted maximum (mag < +7.5)		
Star	Mag Range	Period (days)
R Hya	3.5-10.9	380
o Cet	2.5-10.1	332

The Solar System

Uranus is visible throughout the hours of darkness in southern Aries, shining at mag +5.7 at the beginning of November. It starts the month 2.5° NE of Torcularis Septentri (o Psc). By the end of the month, it sets before 04:30 UT.



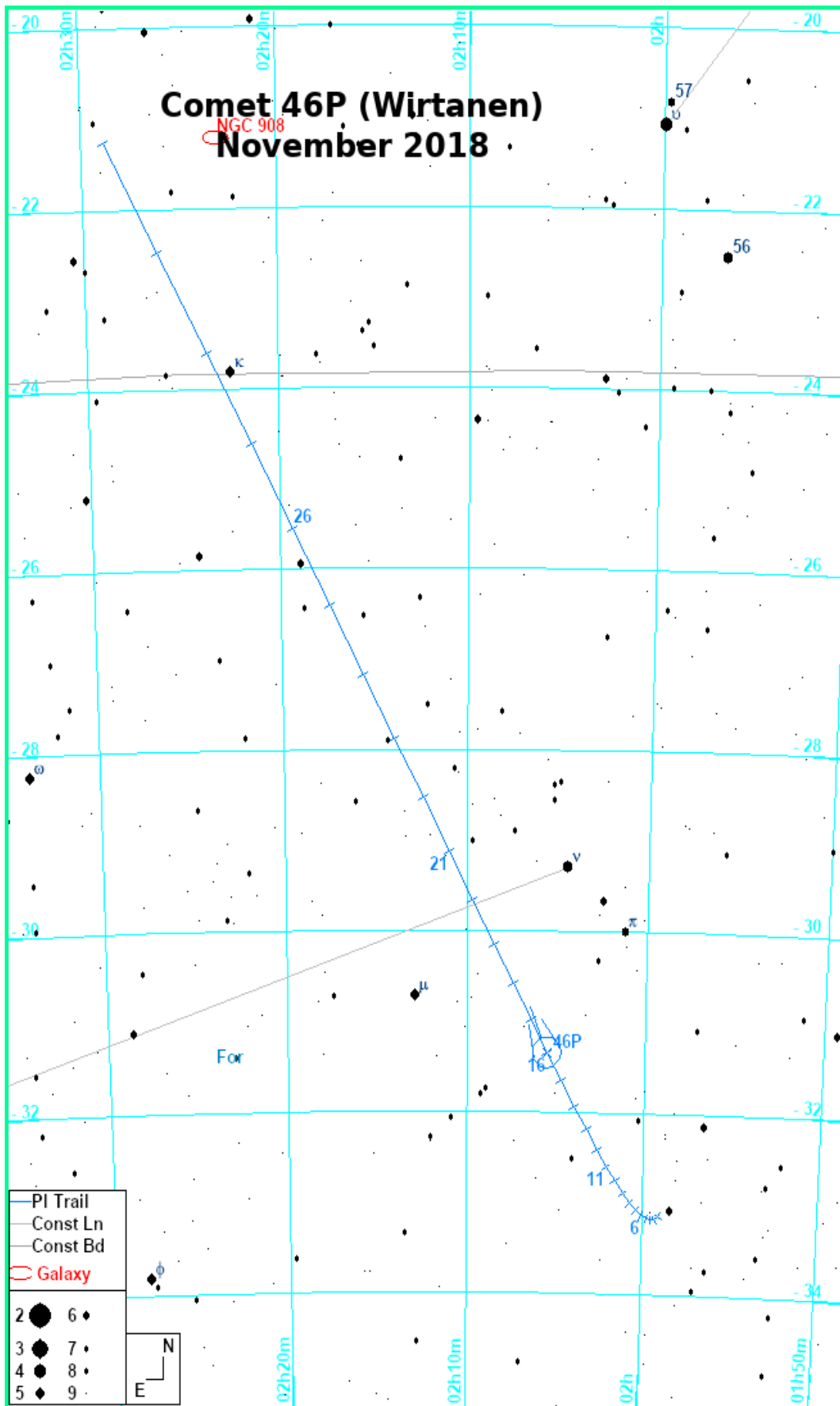
Neptune is now an evening object, about 2° E of λ Aq (its position changes by less than 10 arcmin this month). It's a lot trickier than Uranus as it's both lower and fainter (mag +7.9). By the end of the month it sets before midnight.



Comets

Comet 46P (Wirtanen) starts the month as a difficult object, low down in Fornax. From the 6th, it starts moving north, brightening as it does so, possibly achieving naked-eye magnitude by the end of the month, when transits in the evening.

(The Solar System charts are "Clicky" for higher resolution chart)



Asteroid Occultations

November 10: Asteroid 1756 (Giacobini) is predicted to occult the mag 6.6 HIP 7358. The occultation track crosses southern England between 02:11 and 02:13 UT. FFI, see:

http://asteroidoccultation.com/2018_11/1110_1756_57736.htm

The Moon

November 07	New Moon
November 15	First Quarter
November 23	Full Moon
November 30	Last Quarter

Lunar Occultations

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 unless there is a **(B)**.

Lunar Occultations, Nov 2018, 50.9°N, 1.8°W							Position Angle
Date	Time	Phase	Star	Spectrum	Magnitude	Cusp Angle	
02 Nov	06:04:59	R	34 Leo	F7	6.5	83N	299
03 Nov	03:45:53	R	HIP 53977	A0	7.2	51S	256
16 Nov	20:30:30	D	HIP 112021	K2	6.8	36N	14
21 Nov	20:46:20	D	mu Cet	F1	4.3	89N	54
25 Nov	05:49:02	R	HIP 27829	B9	6.7	69S	255
25 Nov	06:16:10	R	chi-1 Ori	G0	4.4	63S	249
26 Nov	04:59:03	R	HIP 33179	K1	6.6	52N	316
26 Nov	23:14:38	R	79 Gem	A1	6.5	75S	266
28 Nov	05:10:34	R	FZ Cnc	M4	6.3	12N	4
29 Nov	05:01:22	R	HIP 48751	G5	7.4	60N	319
30 Nov	03:22:15	R	53 Leo	A2	5.3	58S	260

My New Book

Over the last few months, I've been lurching uncertainly down the learning curve that is self-publishing a book. There have been a couple of false starts (and numerous mistakes made and lessons learned), but a book that I am happy with is now available.

The impulse behind **Discover the Night Sky through Binoculars** is the knowledge that beginning amateur astronomers are frequently advised to "start with binoculars", but get very little specific further guidance on how to go about it.

Anyone who follows this year-long systematic approach will acquire a sound basic knowledge of the night sky (as seen from northern temperate latitudes) and will gather eclectic snippets of astronomical knowledge and whimsy along the way.

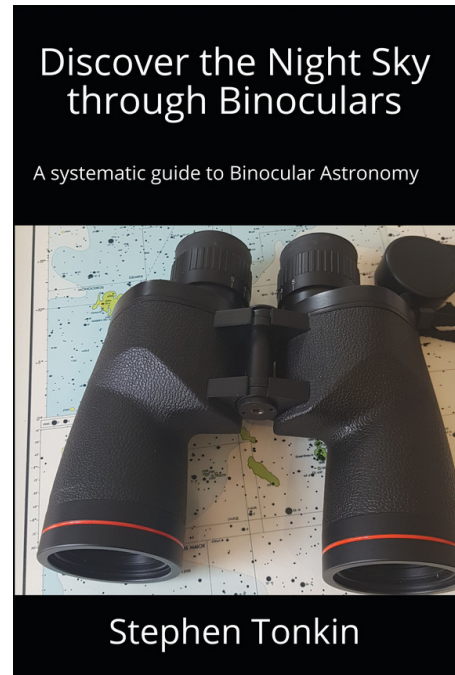
It's intended to be used with a decent star atlas (the star charts in the book are size-limited by the page size), but readers have the option of downloading a full set of higher resolution colour charts to print out or for use on a tablet or smartphone.

An eBook version is in the pipeline – yet another learning curve to trip me up... 😊

Reader comments:

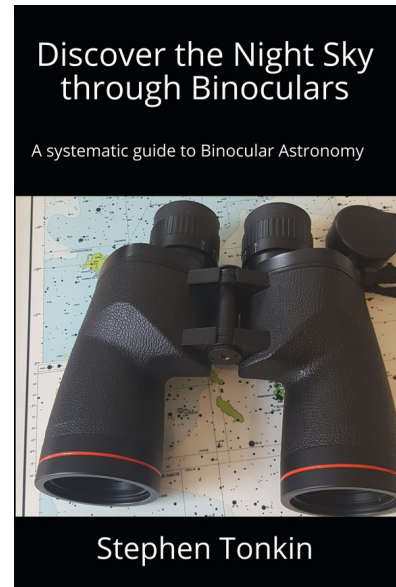
"I think it is fantastic. Easy to follow and an ideal book to accompany every binocular and small telescope session. It really is very readable."

"Naturally, a good intro for those starting off, but I would also say a useful reference as well."



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, [Discover the Night Sky through Binoculars](#): 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



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

© 2018 Stephen Tonkin under a [Creative Commons BY-NC-SA License](#)

