



The Binocular Sky

October
2018

Newsletter



Introduction

Welcome to October'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.

We still have the ice giants, Uranus and Neptune, but the latter will become an evening-only object, and a poorly placed one at that!

We have two comets potentially visible this month: as Comet 21P fades from view, Comet 38P brightens and may become visible in binoculars. But watch this space for a potentially brighter (naked eye?) comet for November onwards!

There is a lunar occultation of a 4th magnitude star in Gemini on the night of the 29th/30th. The dark limb reappearance occurs about an hour after Mekbuda disappears behind the bright limb. There is also an asteroid occultation that may be observable from Shetland.

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](#). To the south of them, the [Pleiades](#) and [Hyades](#) make a welcome return to evening skies. Also look out for the nearby [NGC1647](#).

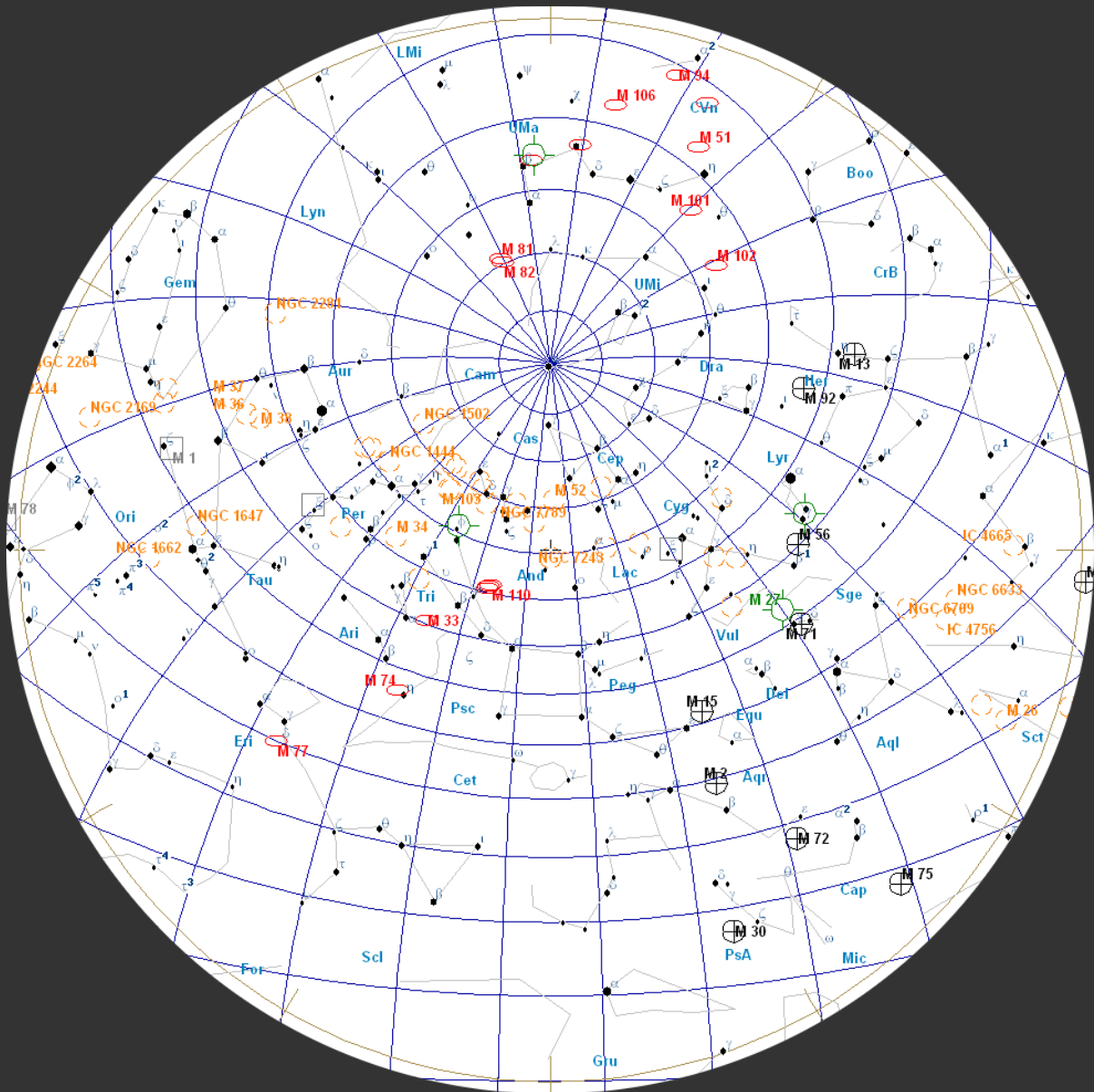
Open (also called 'Galactic') Clusters are loosely packed groups of stars that are gravitationally bound together; they may contain from a few dozen to a few thousand stars which recently formed in the galactic disk.

In October, 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 in the early evening, try [M51](#) (The Whirlpool) and [M101](#) which, although it is a large object, is very difficult owing to its low surface brightness. The same can be said of [M33](#) (The Pinwheel), which is now very well placed for observation. Because they are of such low surface-brightness, they benefit from low magnification. This generally makes them easier to see in, say, a 10x50 binocular than in many "starter" telescopes. The [Great Andromeda Galaxy](#), [M31](#), is easily visible this

*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

October 01, 23:00 UT October 15, 22:00 UT October 31, 21:00 UT
(chart is "clicky")



month. It is large and bright enough to be able to withstand quite a lot of light pollution (making it available to urban observers) 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

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.

is clearly larger than M92, it is easier to resolve the outer stars of the latter one. M2 is easy to find and easy to see, even in small binoculars.

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

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.

For interactive maps of Deep Sky Objects visible from 51°N, please visit:

http://binocularsky.com/map_select.php

October 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
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
Stock 2 (the Muscleman Cluster)	Cas	oc	4.4	021434	591358
NGC 884 and NGC 869 (the Perseus Double Cluste	Per	oc	5.3	022107	570802
M34 (NGC 1039)	Per	oc	5.2	024204	424542
M45 (the Pleiades)	Tau	oc	1.6	034729	240619
Kemble's Cascade	Cam	ast	9.0	035752	630711
Melotte 25 (the Hyades)	Tau	oc	0.5	042650	154841
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
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 Clust	Her	gc	5.8	164141	362738
M92 (NGC 6341)	Her	gc	6.4	171707	430812
Melotte 186	Oph	oc	3.0	180030	025356
NGC 6633	Oph	oc	4.6	182715	063030
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
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 October			
Star	Magnitudes	Spectral Types	Separation (arcsec)
ζ Lyr	4.3, 5.6	A3, A3	44
β Lyr	3.6, 6.7	B8, B3	46
OΣ525 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
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

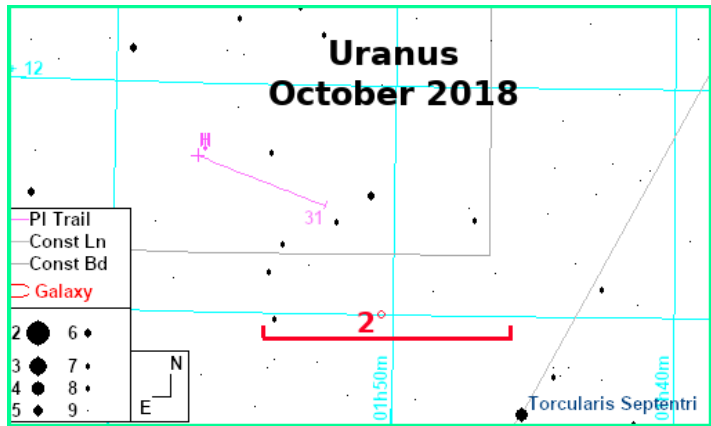
Variable Stars

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
T Cep	6.0-10.3	388d	Mira
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

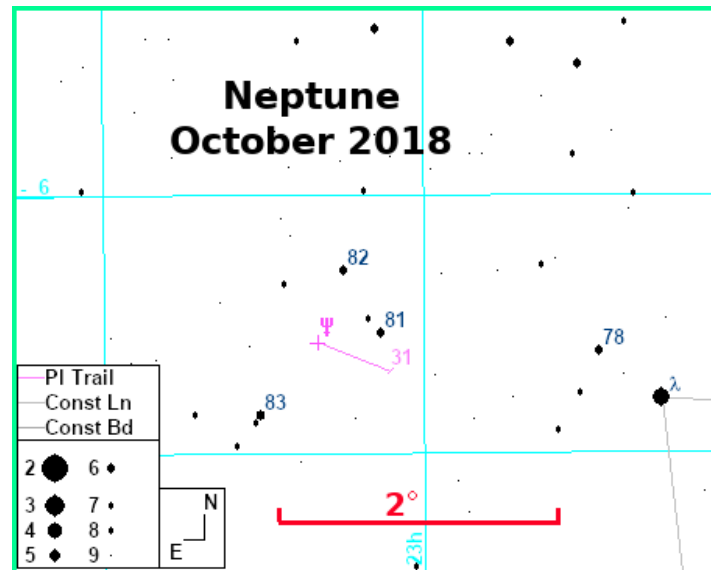
Mira-type stars near predicted maximum (mag < +7.5)		
Star	Mag Range	Period (days)
R Hya	3.5-10.9	380

The Solar System

Uranus is visible throughout the hours of darkness in southern Aries, shining at mag +5.7 throughout October. It starts the month 3.5° NE of Torcularis Septentri (o Psc).

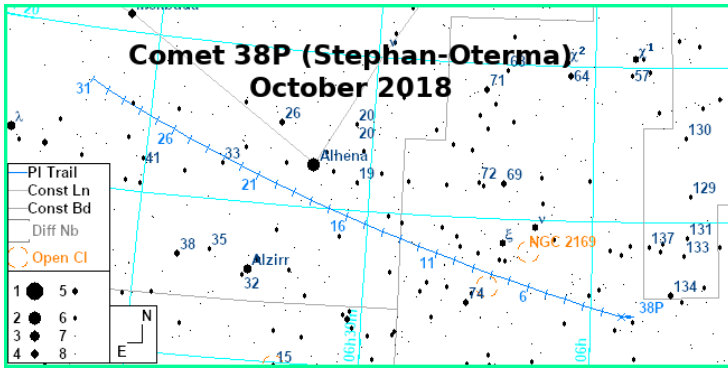


Neptune is also available throughout astro darkness at the beginning of the month, about 2.5° E of λ Aqr. It's a tad trickier than Uranus as it's both lower and fainter (mag +7.8). By the end of the month it is an evening object only.



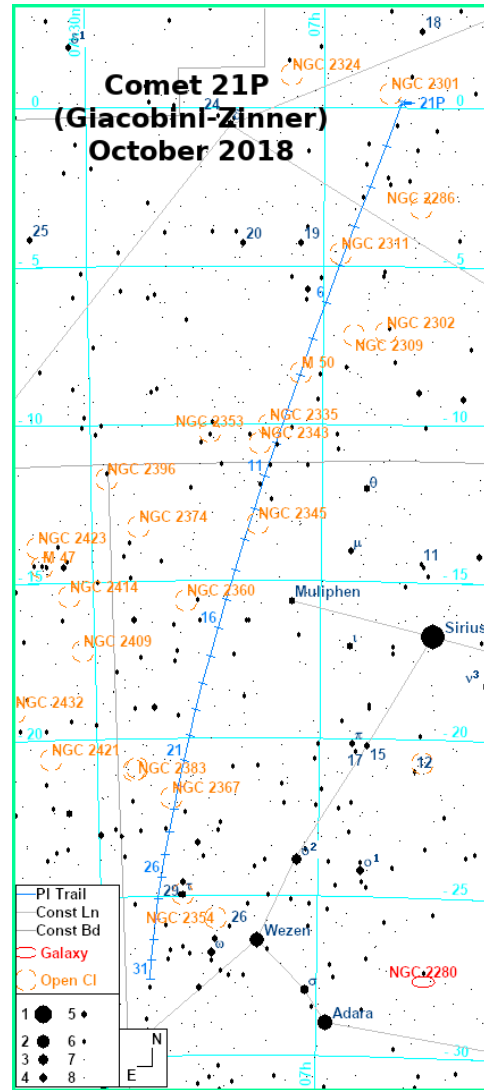
Comets

Comet 21P (Giacobini-Zinner) has been within the range of small binoculars for a couple of months now. it's still an easy object but will probably fade by about 2 magnitudes this month as it dives through Monoceros and then Canis Major towards the horizon.



As 21P fades, another periodic comet brightens. This is **Comet 38P** (Stephan-Oterma), which is expected to brighten by about one magnitude as it passes from Orion into Gemini. At the time of writing, I've not yet been able to observe it (cloud, followed by Moon), but your best chance will be an hour or so before dawn twilight once the Moon is out of the way. You'll probably need 70 mm binoculars or larger.

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



Asteroid Occultations

There are no predicted asteroid occultations of stars mag +7.5 or brighter, visible from mainland UK, this month, although the track for the occultation of HIP 31277 (mag +5.6) by asteroid 7394 (Xanthomalitia) may be observable from Shetland. For further information, see http://asteroidoccultation.com/2018_10/1005_7394_57676_Summary.txt

The Moon

October 02	Last Quarter
October 09	New Moon
October 16	First Quarter
October 24	Full Moon

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**). The highlight is the disappearance and reappearance of Mekkuda (ζ Gem) at the end of the month.

Lunar Occultations, Oct 2018, 50.9°N, 1.8°W							
Date	Time	Phase	Star	Spectrum	Magnitude	Cusp Angle	Position Angle
03 Oct	02:33:02	R	56 Gem	M0	5.1	51N	317
03 Oct	04:11:24	R	HIP 36035	A5	7.3	39N	330
03 Oct	05:10:47	R	61 Gem	F2	5.9	83S	271
15 Oct	19:38:37	D	30 Sgr	F2	6.3	45S	130
15 Oct	20:17:35	D	31 Sgr	A3	6.6	82N	77
19 Oct	21:24:11	D	39 Aqr	F0	6.1	31N	8
21 Oct	21:37:18	D	HIP 117420	K4	6.1	89N	58
29 Oct	00:36:18	R	HIP 28659	G5	6.9	33N	330
29 Oct	00:58:08	R	chi-2 Ori	B2	4.6	24S	206
29 Oct	23:58:08	D(B)	zet Gem	G3	4	-80S	107
30 Oct	00:56:46	R	zet Gem	G3	4	58S	246
30 Oct	23:16:36	R	HIP 39180	K1	6.3	65N	307

Public Outreach & Talks

This month I will be at the following events. I do like to meet the "real people" behind the names on a subscription list, so please do come and introduce yourself if you are there.

5th: [Tiverton and Mid Devon AS](#)

Ten Ways the Universe Tries to Kill You(Talk)

13th: [Cotswold AS](#)

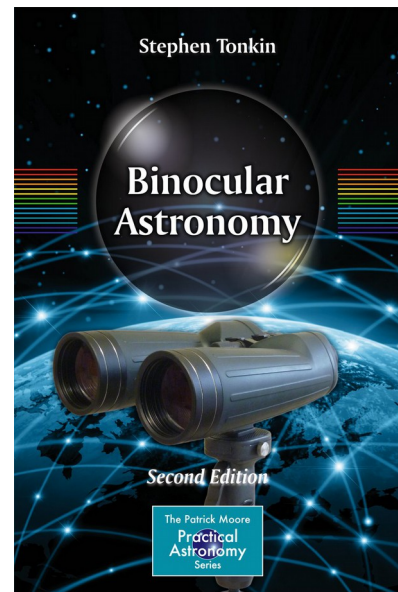
Pseudoastronomy: Planet X, Zetans and Lost Civilisations (Talk)

18th: [Andover AS](#)

Ten Ways the Universe Tries to Kill You (Talk)

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- Purchase my book, [Binocular Astronomy](#):
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- 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:

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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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