



# The Binocular Sky

February  
2018

# Newsletter



## Introduction

Welcome, especially to new readers, to February's [Binocular Sky](#) Newsletter. The intention of this monthly offering is to highlight some of the binocular targets for the coming month. It is primarily targeted at binocular observers (although I know that many small-scope observers use it as well) in the UK, but should have some usefulness for observers anywhere north of Latitude 30°N and possibly even further south.

Compared to the overhyped [SuperBlueBloodMoon](#), excitement about the real night sky may seem a bit muted, but there is still a lot to see with small astronomical instruments. We have some good lunar occultation events, an easy asteroid and the usual batch of deep sky objects.

Also this month, I am starting a [Binoculars for Astronomical Outreach](#) [Crowdfunder](#) appeal to try to get some more binoculars to use with the astronomical outreach I do. More about that [later](#).

Some of the charts are "clicky" and will take you to a higher resolution chart than is possible in the newsletter.

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.)*

February skies are not markedly different from those of January with respect to what is observable in the evening. We are losing the "summer triangle" constellations (Cygnus, Aquila and Lyra) and the Pleiades (M45) culminates before the end of twilight, followed an hour later by the Hyades, the Great Orion Nebula (M42) and the trio of open clusters in Auriga. M35 in Gemini is close behind. If you take the northern tip of the Hyades "vee", Oculus Boreas and pan half a 10x50 field of view towards Perseus, you will find an asterism called Davis's Dog. That spans about 3.5° of sky. The stars 51, 56 and 53 Tau form its head, and  $\kappa^1$ ,  $\kappa^2$ ,  $\upsilon$  and 71 form its tail.

*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.*

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. M44 (Praesepe) and M67, two fine open clusters in Cancer, are very well placed for evening observation. Lower in the southern sky are more well-placed open clusters M46, M47 and, near Sirius, M41.

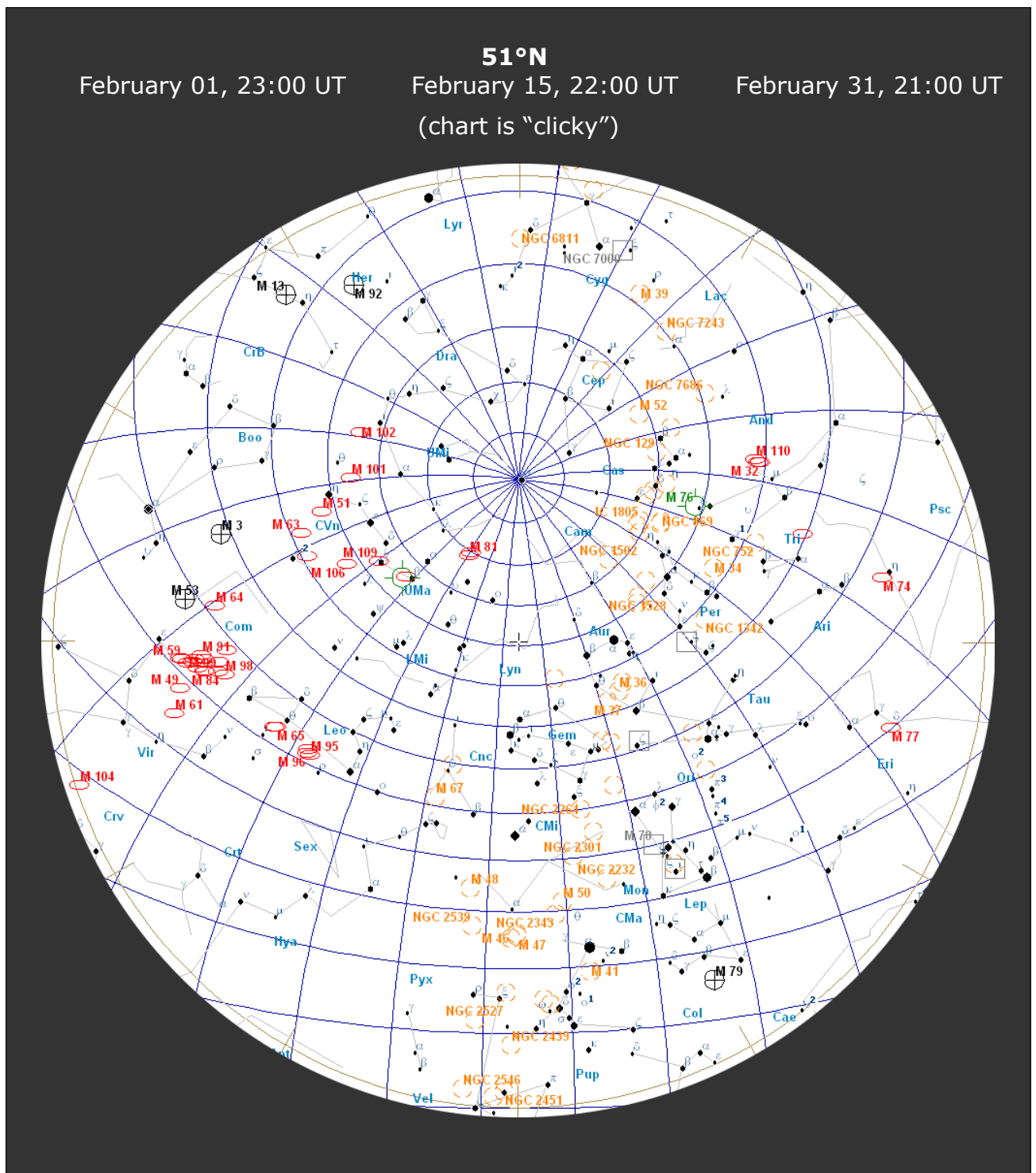
In the north rather indistinct open cluster NGC1502, is brought to prominence by a favourite binocular asterism named Kemble's Cascade. although the imagination of it being a ribbon waterfall plunging into a splash-pool (NGC 1502) needs some gravity-defying modification because, in late winter evenings, the waterfall flows upwards!

While you are observing in the region of the Orion Nebula, take the time to study R Leporis (Hind's Crimson Star), which is near maximum and is a candidate for the reddest star in the heavens. To the north of that, just to the SE of Alnitak ( $\zeta$  Ori) is the multiple star  $\sigma$  Orionis.

Although The Great Andromeda Galaxy, M31 and M33 (The Pinwheel), are sinking lower into the evening twilight, they are still observable this month. M31 is still a naked eye object in moderately dark skies. It is large and bright enough

*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!*

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. High in the northern sky, the Ursa Major pair of Bode's Nebula (M81) and the Cigar Galaxy (M82) are conveniently placed for most of the night. Later in the evening, look out for the galaxy trios in Leo (M95/96/105 and M65/66/NGC3628) and Markarian's Chain in Coma Berenices rising in the west, although they are not at their



best until after midnight. If you have a big binocular, also observe the edge-on NGC4565 (Berenice's Hair Clip), which is next to Melotte 111, the cluster that gives Coma its name.

Lastly, take this opportunity to appreciate Herschel's Garnet Star,  $\mu$  Cep, which is at a comfortable elevation early in the evening. William Herschel described it as "*a very fine deep garnet colour ... a most beautiful object, especially if we look for some time at a white star before we turn ... to it, such as Alpha Cephei, which is near at hand.*" The wide field of medium-sized binoculars enables you to hold it in the same field as Alderamin (a Cep), so you can appreciate Herschel's comparison.

### February Deep Sky Objects by Right Ascension

Object	Con	Type	Mag	RA (hhmmss)	Dec (ddmmss)
M45 (the Pleiades)	Tau	oc	1.6	034729	240619
Kemble's Cascade	Cam	ast	9.0	035752	630711
Davis's Dog	Tau	ast	5.0	042109	214809
R Leporis (Hind's Crimson Star)	Lep	vs	8.2	045936	-144821
M38 (NGC 1912)	Aur	oc	6.4	052842	355117
M42 (NGC 1976, The Great Orion Nebula)	Ori	en	4.0	053517	-052325
M36 (NGC 1960)	Aur	oc	6.0	053617	340826
$\sigma$ Orionis	Ori	ms	3.8	053845	-023553
M37 (NGC 2099)	Aur	oc	5.6	055218	323310
M35 (NGC 2168)	Gem	oc	5.1	060900	242100
M41 (NGC 2287)	CMa	oc	4.5	064559	-204515
M47 (NGC 2422)	Pup	oc	4.4	073634	-142846
M46 (NGC 2437)	Pup	oc	6.1	074146	-144836
M44 (NGC 2632, Praesepe, the Beehive Cluster)	Cnc	oc	3.1	083957	194020
M67 (NGC 2682)	Cnc	oc	6.9	085124	114900
M81 (NGC 3031)	UMa	gal	7.8	095533	690401
M82 (NGC 3034)	UMa	gal	9.2	095554	694059
M95 (NGC 3351)	Leo	gal	10.6	104357	114211
M96 (NGC 3368)	Leo	gal	10.1	104645	114912
M105 (NGC 3379)	Leo	gal	10.5	104749	123449
M65 (NGC 3623)	Leo	gal	10.1	111855	130526
M66 (NGC 3627)	Leo	gal	9.7	112015	125924
Melotte 111	Com	oc	1.8	122430	260122
NGC 4565 (Berenice's Hair Clip)	Com	gal	9.9	123620	255914
$\mu$ Cep (Herschel's Garnet Star)	Cep	vs	4.0	214330	584648

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

[http://binocularsky.com/map\\_select.php](http://binocularsky.com/map_select.php)

## 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>
AA Cam	7.5-8.8	Irreg	Irregular
RX Lep	5.4-7.4	Irreg	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

<b>Mira-type stars near predicted maximum (mag &lt; +7.5)</b>		
<b>Star</b>	<b>Mag Range</b>	<b>Period (days)</b>
Mira (o Cet)	3.4-9.3	332
W And	7.4-13.7	409

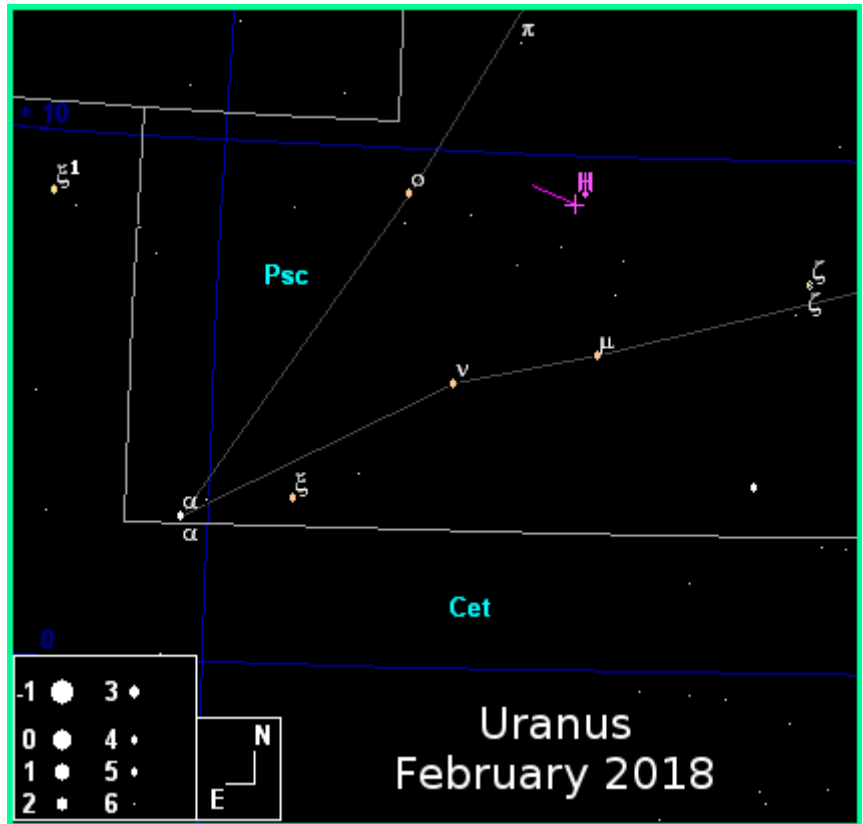
## Double Stars

<b>Binocular Double Stars for February</b>			
<b>Star</b>	<b>Magnitudes</b>	<b>Spectral Types</b>	<b>Separation (arcsec)</b>
$\alpha$ Leo	1.4, 8.1	B8, G	176
7 Leo	6.3, 9.3	A0, F8	41
$\tau$ Leo	5.0, 7.4	K0, G5	89
$\delta$ Cep	4.1, 6.1	F5, A0	41
56 And	5.7, 5.9	K0, K2	128
$\Sigma$ 1 And	7.1, 7.3	G5, G5	47
14 Ari	5.0, 7.9	F0, F2	106
62 Eri	5.4, 8.9	B9, B8	67
$\tau$ Tau	4.3, 7.0	B5, A0	63
$\nu$ Gem	4.1, 8.0	B5, A0	113
$\zeta$ Gem	4.0, 7.6	G0, G	101
$\iota$ Cnc	4.0, 6.0	G5, A5	31
$\pi$ -1 Umi	6.6, 7.2	G5, G5	31

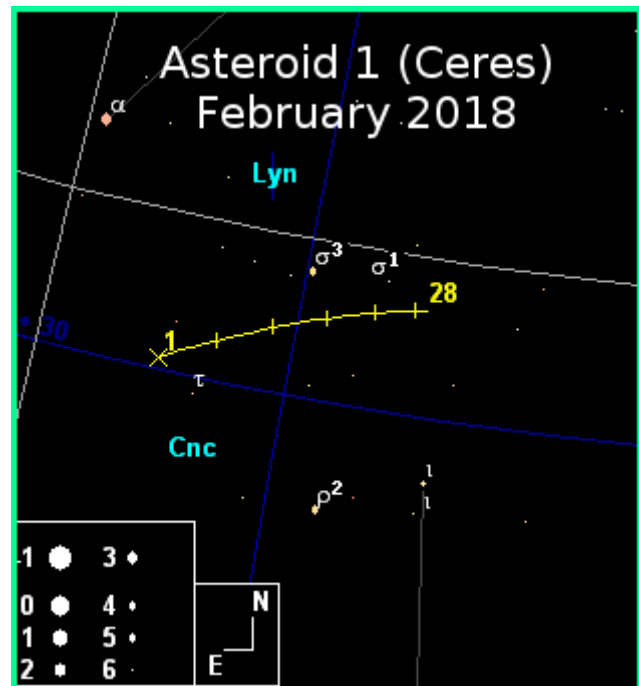
# The Solar System

**Neptune** won't be available again until late May/early June.

**Uranus** is available from the onset of twilight, but sets before midnight at the beginning of the month and at 22:00 by month end. It starts the month shining at mag. +5.8 just over 3° west of  $\alpha$  Psc, its position changing by nearly 1° ENE (prograde) during February.



**Asteroid 1 (Ceres)** is skirting through the northern part of Cancer, just south of the  $\sigma$  Cnc group of stars. At mag. +6.9 it is a very easy object at the beginning of the month and, although it fades by half a magnitude, it's still a good object for small binoculars at month end. To detect it, observe on different nights, when you should notice that it has moved.



## Comets

There are no comets suitable for small to medium binoculars this month.

## Meteor Showers

There are no major meteor showers this month.

## Asteroid Occultations

There are no predicted asteroid occultations of stars mag +7.5 or brighter, visible from mainland UK, this month.

## 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, Feb 2018, 50.9°N, 1.8°W							
Date	Time	Phase	Star	Spectrum	Magnitude	Cusp Angle	Position Angle
03 Feb	02:29:14	R	HIP 55455	F8	6.7	83S	283
03 Feb	03:25:34	R	HIP 55589	G5	6.9	65N	315
04 Feb	01:42:44	R	HIP 59646	G5	6.9	60N	321
08 Feb	04:11:11	R	gam Lib	K0	3.9	59S	253
12 Feb	05:41:12	R	xi-1 Sgr	B9	5	57N	299
20 Feb	20:53:13	D	HIP 9343	G5	6.8	33S	130
24 Feb	20:24:29	D	HIP 26886	K0	7.3	70N	66
24 Feb	20:37:00	D	HIP 26925	B9	6.7	73N	70
24 Feb	22:01:57	D	HIP 27129	G8	6.7	32S	145

## The Moon

February 07    Last Quarter  
February 15    New Moon  
February 23    First Quarter

## Public Outreach & Talks

During February I will be at the following event; please do come and say "Hello" if you attend:

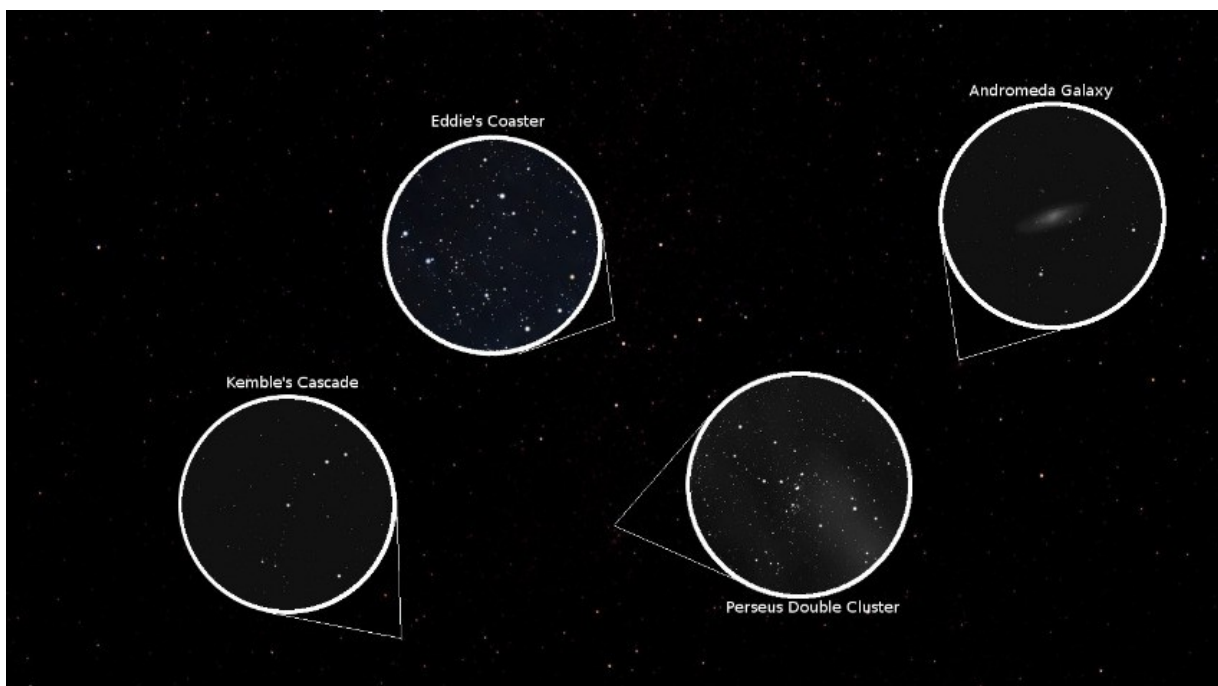
13<sup>th</sup>: Blashford Lakes **The Night Sky** (Public observing session)

### Crowdfunding initiative

As part of my outreach activities, I lead a lot of sessions for beginners, like the one above. An increasing number of these beginners are youngsters, i.e. the astronomers of tomorrow. Whilst I do have some binoculars that I share around, I don't have enough, so queuing and waiting is inevitable. These outreach events would be far more "efficient", and enjoyable for the participants, if individuals could each use one binocular without having to share.

To that end, I am trying to raise some money to enable me to get a "suite" of binoculars. Opticron UK has generously offered to match the number of funded binoculars on a one-to-one basis by donating up to ten binoculars, so any money raised will have double the effect!

As binocular astronomers, you know how effective binoculars are for simple, quick astronomy. If you are able, [please click here to support this initiative.](#)

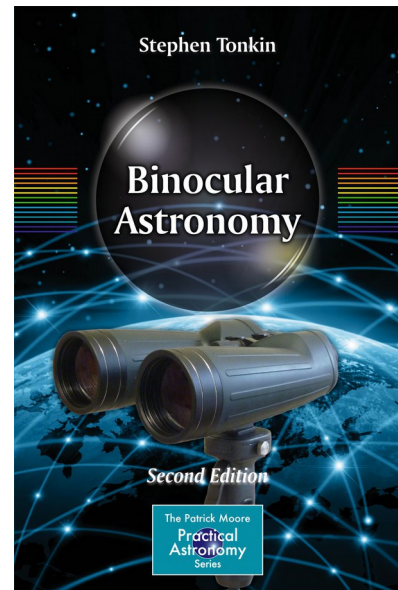




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The **Binocular Sky Newsletter** will always be free to anyone who wants it, but if you would like to support it, there are a number of options:

- Purchase my book, [Binocular Astronomy](#):  
Click on the image for more information
- Make a purchase via the affiliate links in the [Binocular Sky shopfront](#)
- Donate to my [Binoculars for Astronomical Outreach](#) crowdfunder.



Wishing you Clear Dark Skies,

**Steve Tonkin**

for

**[The Binocular Sky](#)**

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#### **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 David Levy's *Observing Variable Stars*  
Occultation data derived with Dave Herald's *Occult*

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