



The Binocular Sky

No. 122
February 2022

Newsletter

Introduction



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

As regular readers will know, my intention is to highlight some of the binocular targets for the coming month. This is primarily intended for visual astronomers, with binoculars or small telescopes, in the UK, but it should have some utility for observers anywhere north of Latitude 30°S and possibly even further south.

In the Solar System, **Uranus** is still available in the evening, but we've lost Neptune until late April.

The subject of light pollution is one that is dear to me, so it's great to see that there are four Dark Sky festivals this month, one of which I have helped to organise. Do take a look – this potentially benefits us all ([page 8](#)).

The ingenuity of the amateur astronomical community is something that has always appealed to me, harking back to my days as an amateur telescope maker. The "mini-review" feature returns this month, the consequence of some imaginative repurposing of something designed for a non-binocular-mount purpose ([page 9](#)).

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.)

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. While you are in Auriga, do take a look at the [Leaping Minnow](#) and adjacent to it to the north-east, the unearthly grin of the Cheshire Cat asterism, which has M38 as one of its cheeks. The “Queen of Clusters”, M35 in Gemini, culminates soon after. 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 κ^1 , κ^2 , υ 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.

Return to M35, and use averted vision to 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 a candidate for the reddest star in the heavens. To the north of that, just to the SE of Alnitak (ζ Ori) is

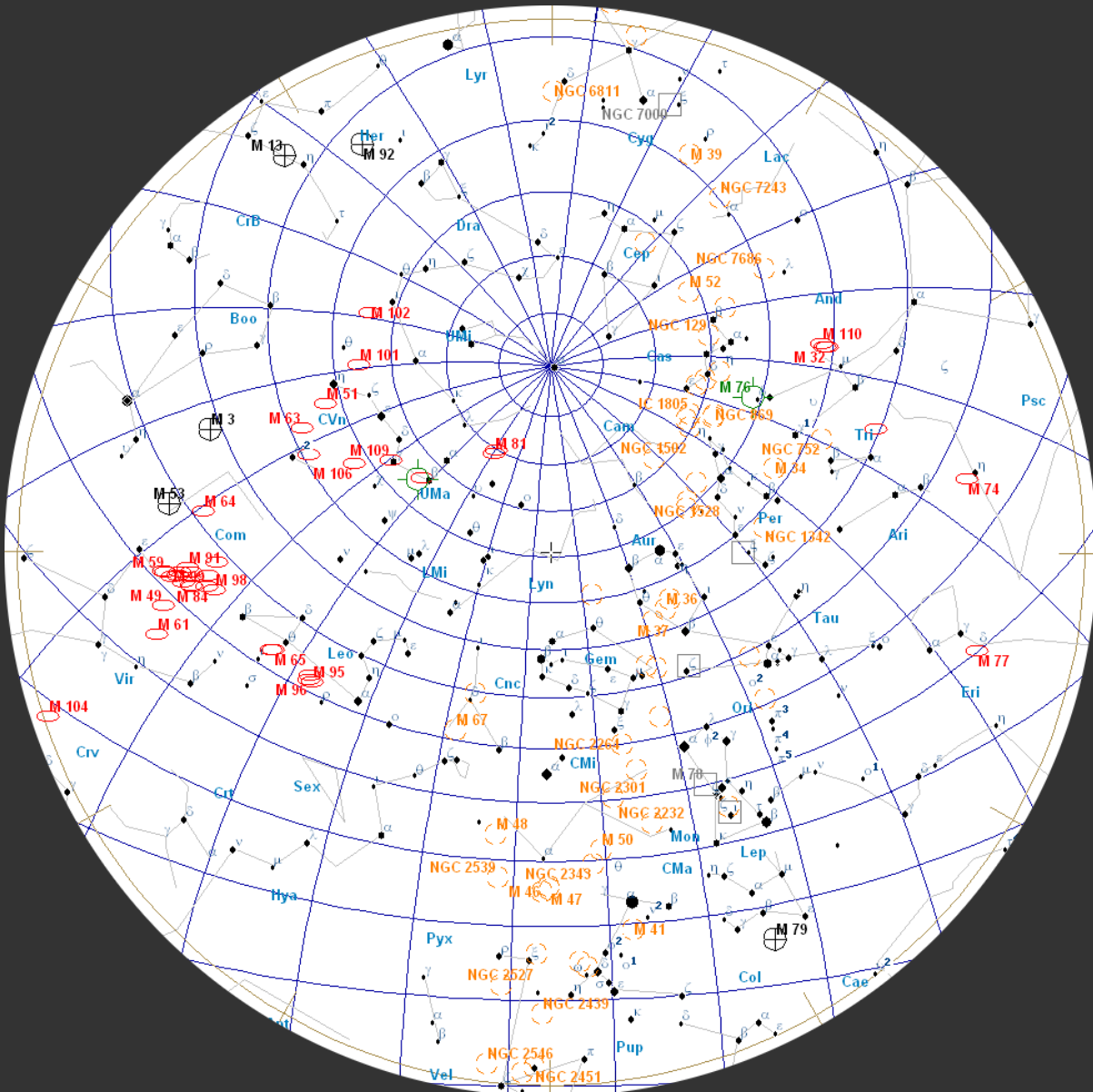
51°N

February 01, 23:00 UT

February 15, 22:00 UT

February 31, 21:00 UT

(chart is "clicky")



the multiple star σ Orionis. The entire region of the Orion's Belt is home to the spectacular (in small binoculars) OB association of stars, *Collinder 70*, which I sometimes call "the cluster everyone has seen and nobody knows".

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 to be able to withstand quite a lot of light pollution (making it available to urban observers), and is at a comfortable elevation for straight-through binoculars.

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.

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. If you find it difficult to see, make sure you have the correct region of sky, midway between *Metallah (α Tri)* and *82 Psc*), approximately central in your field of view, and try the tapping technique – it may well make it visible, if only as a very slightly brighter patch of sky. Once you have found the best part of the field of view is best to direct your gaze at, you will be able to use this technique to bring some previously-invisible objects to visibility.

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, please do take this opportunity to appreciate *Herschel's Garnet Star, μ 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 (α Cep)*, so you can appreciate Herschel's comparison.

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

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
The Leaping Minnow	Aur	ast	5.0	051811	332207
M42 (NGC 1976, The Great Orion Nebula)	Ori	en	4.0	053517	-052325
Collinder 70	Ori	oc	0.4	053532	-010407
M36 (NGC 1960)	Aur	oc	6.0	053617	340826
σ 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

Double Stars

Binocular Double Stars for February

Star	Magnitudes	Spectral Types	Separation (arcsec)
α Leo	1.4, 8.1	B8, G	176
7 Leo	6.3, 9.3	A0, F8	41
τ Leo	5.0, 7.4	K0, G5	89
δ Cep	4.1, 6.1	F5, A0	41
56 And	5.7, 5.9	K0, K2	128
Σ 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
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
ι Cnc	4.0, 6.0	G5, A5	31
π -1 Umi	6.6, 7.2	G5, G5	31

Variable Stars

Selection of binocular variables (mag < +7.5)			
Star	Mag Range	Period	Type
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

The Solar System

(Low resolution charts may be “clicky” for higher resolution alternatives)

The Moon

February 01	New Moon
February 08	First Quarter
February 16	Full Moon
February 23	Last Quarter

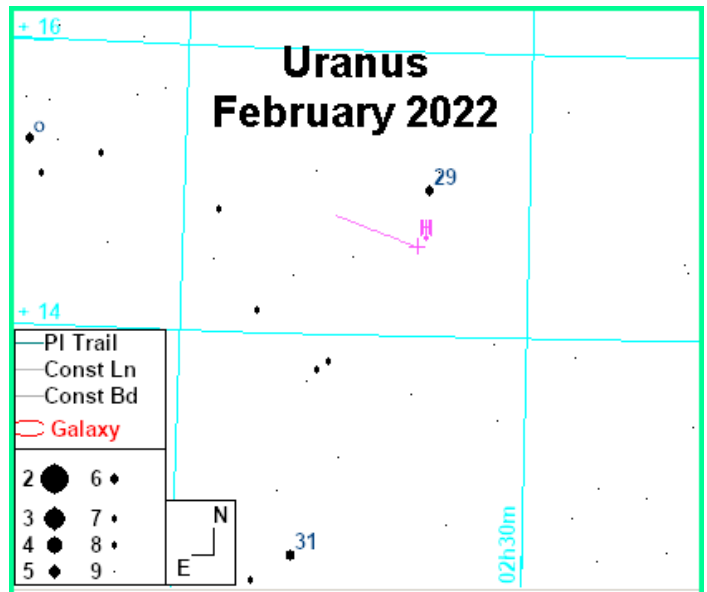
Lunar Occultations

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 Occultations February 2022 50.9°N 1.8°W							
Date	Time (UT)	Phase	Star	Spectral Type	Magnitude	Position Angle	Cusp Angle
Feb 03	18:05:52	D	HIP 115347	B3	7.7	51	66N
Feb 03	19:11:31	D	HIP 115457	F5	7.9	17	33N
Feb 10	01:08:20	D	51 Tau	F0	5.6	100	70S
Feb 10	01:45:27	D	56 Tau	A0	5.3	65	74N
Feb 10	18:35:23	D	99 Tau	G8	5.8	47	52N
Feb 11	00:47:51	D	103 Tau	B2	5.5	25	73N
Feb 11	23:59:43	D	HIP 28301	K0	6.6	65	63N
Feb 12	23:34:18	D	HIP 32874	F8	7.0	166	22S
Feb 15	19:43:22	D	HIP 46155	G7	6.5	149	74S
Feb 21	04:04:35	R	82 Vir	M2	5.0	301	79N
Feb 23	06:40:27	R	HIP 76033	A5	6.3	255	61S
Feb 24	03:59:36	R	rho Oph	B2	5.0	314	55N

Planets

Uranus (mag +5.8) is now an evening object in Aries, close to mag +6.0 29 *Arietis*; it moves less than a degree during the month, but is a magnitude brighter than anything within a couple of degrees of it so should be easy to identify. Observe it as early as you can, both in the evening and in the month; it is highest during nautical twilight at the beginning of the month and gets progressively lower.



Dark Skies Festivals

There are several UK dark Skies Festivals in the UK this month:

[Dark Skies Cumbria](#)

[North York Moors](#)

[Yorkshire Dales](#)

Close to my heart since I am one of the organisers, is [Cranborne Chase AONB International Dark Sky Reserve Dark-Skies StarFest:](#)



Public Outreach & Talks

If you're at any of these, do give me a virtual "wave". Dates are UT.

Feb 10 th	<u>StarQuest AC</u>	The Right Light at Night
Feb 12 th	Cotswold AS	Time and Calendars
Feb 15 th	Sale Probus Club	Pseudoastronomy: Hollow Moon and Flat Earth
Feb 17 th	Forest of Bowland AONB	The Right Light at Night
Feb 21 st	<u>Cranborne Chase AONB International Dark Sky Reserve StarFest</u>	Introduction to Stargazing
Feb 23 rd	<u>Cranborne Chase AONB International Dark Sky Reserve StarFest</u>	The Right Light at Night
Feb 24 th	<u>Cranborne Chase AONB International Dark Sky Reserve StarFest</u>	Public Stargazing at Coombe Bissett
Feb 25 th	<u>Cranborne Chase AONB International Dark Sky Reserve StarFest</u>	Deep Sky Observing for Absolute Beginners

Mini-review: The Neewer Camera Crane (used as a parallelogram mount for binoculars)

Manufacturer's Specifications	
Weight (lbs)	10.8
Payload (lbs)	17.8
Counterweight arm	20mm od tube
Tripod Mount	3/8" 16 tpi
Instrument mount	1/4" 20 tpi 3/8" 16 tpi
Degrees of motion	1
Centre of mass adjustment	No
Body Material	Aluminium and plastic
Counterweights	2 x 1kg
Origin	China



Early in January, English astronomer Les Brand [posted](#) his idea of using a Neewer Camera Crane in the [Binocular Astronomy: Observing with Binoculars Facebook group](#).

In good amateur astronomy tradition, the idea was immediately picked up by others, including Italian astronomer Paolo Morini (carbon fibre version) and me (aluminium version), and we have both conducted, and continue to conduct, testing with various combinations.

The crane does not have a rotating base, which is potentially limiting; I used tripods with rotating central columns; Paolo suggested adding a Neewer rotating base to a fixed-column tripod. At the binocular end, Les used a trigger-grip head to mount the binoculars; I have used that and also a lighter simple ball-head to enable heavier binoculars to be mounted, Paolo has been experimenting with a monopod-head and a ball-head.

A severe limitation is that the crane takes proprietary counterweights, and the limit is the 2kg supplied with it. With slack pivot fulcrums, the payload is limited to 2083g. I was surprised that smooth motion is still possible with tightened

fulcrums, enabling heavier binocular/head combinations to be satisfactorily used. Paolo recently figured out how to add more counterweight to enable him to balance his Fujinon 70mm binos.

Experiments are ongoing, and more people are trying it out, but the emerging consensus is that this has the potential to be a lower-cost, more flexible alternative to the commercially available entry-level parallelogram mounts.

My [detailed review](#) can be read [here](#).

Zoom/Webex Talks during SARS-CoV-2 times?

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 – potentially anywhere in the world – on Zoom or Webex if that is of interest.

If you would like a talk for your society/group, [Click here for current talks](#). For schools/scouts/guides, etc., I am a STEM Ambassador so there will be no fee.

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

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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