



The Binocular Sky



February
2017

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.

Highlights this month include a nice easy-to-find Asteroid Vesta (p5) and a couple of lunar occultations, one for southern England, the other for Guernsey (pp6,7). The quipment review returns this month with the Oberwerk Ultra 10x50.

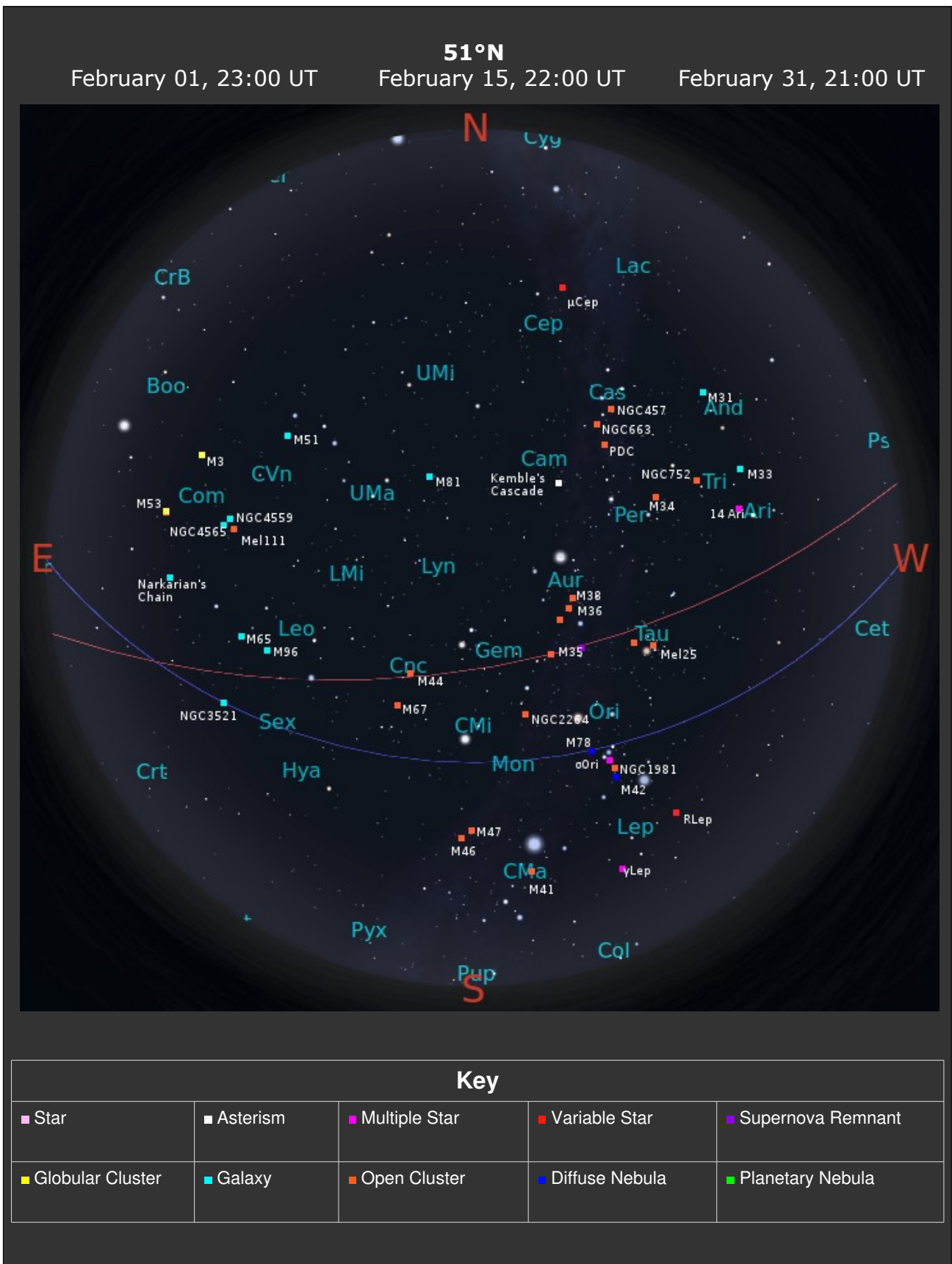
If you would like me to email this newsletter to you each month, please complete and submit the [subscription form](#). You can get "between the newsletters" alerts, etc. via  and .

The Deep Sky

([Hyperlinks](#) will take you to finder charts and more information about the object.)

The [Pleiades](#) (M45) and the [Great Orion Nebula](#) (M42) culminate in the early evening, as do the [trio of open clusters](#) in Auriga and 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. Also high are [M44](#) ([Praesepe](#)) and [M67](#), two fine open clusters in Cancer. Lower in the southern sky are more open clusters [M46](#), [M47](#) and, near Sirius, [M41](#).



The rather indistinct open cluster, NGC1502, is brought to prominence by an asterism, that is named Kemble's Cascade, in honour of Fr. Lucian Kemble, a Canadian amateur astronomer and Franciscan friar, who

discovered it with a 7x35 binocular. He described as "a beautiful cascade of faint stars tumbling from the northwest down to the open cluster NGC 1502." It is one of the most pleasing objects in small and medium binoculars.

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 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 the multiple star σ Orionis.

If you are up around midnight (or later) it is worth looking out for the galaxy trios in Leo (M95/96/105 and M65/66/NGC3628) and Markarian's Chain in Coma Berenices. 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.

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 were still Australopithecines!

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

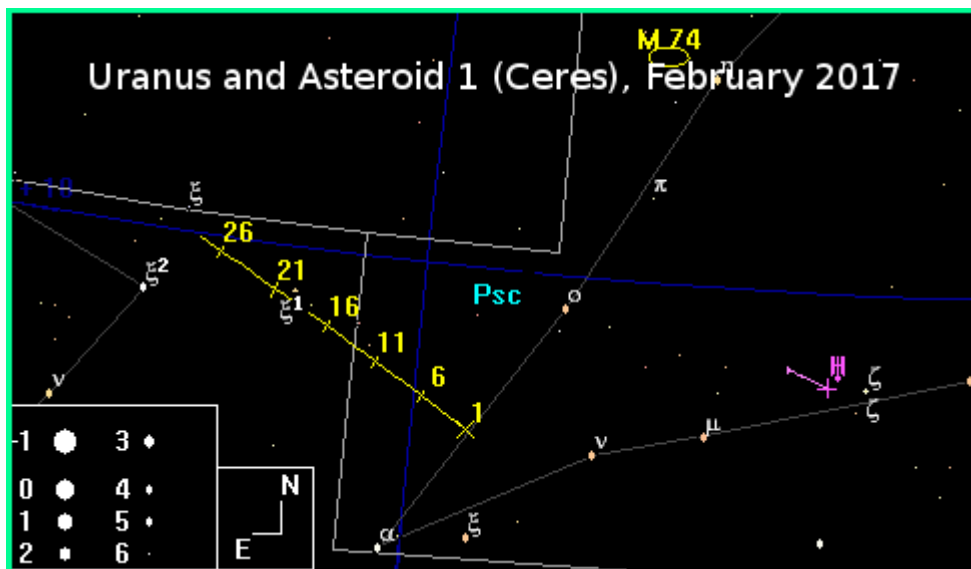
Double Stars

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

The Solar System

Planets and minor planets

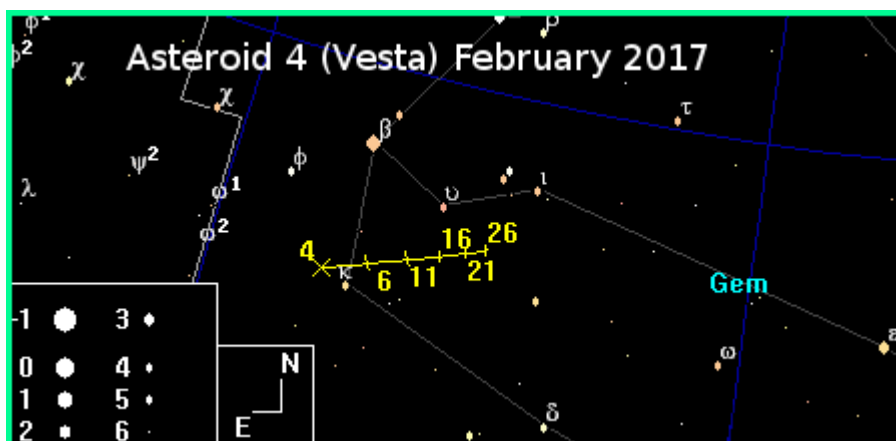
Uranus is best observed in the evening, shining at mag. +5.8, 1° east of ζ Psc; it fades imperceptibly during the month and sets on after 21:30 by month end, by when it has moved a further 1° to the ENE.



Neptune is now getting lost in the evening twilight.

Asteroid 1 (Ceres) is a tricky object as it fades further mag. +8.9 to +9.0 during the month as it moves 8° towards ξ Psc.

Asteroid 4 (Vesta) fades from mag. +6.5 to +7.1 during the month as it moves 4.5° retrograde past κ Gem.



Comets

At the time of writing, there are no comets suitable for binocular observation from our location.

Meteor Showers

There are no major showers for northern observers, although southern observers may be able to enjoy the typically bright Alpha Centaurids, which peak on the 8th.

Asteroid Occultations

There are no predicted asteroid occultations of stars visible from the UK and suitable for binoculars this month.

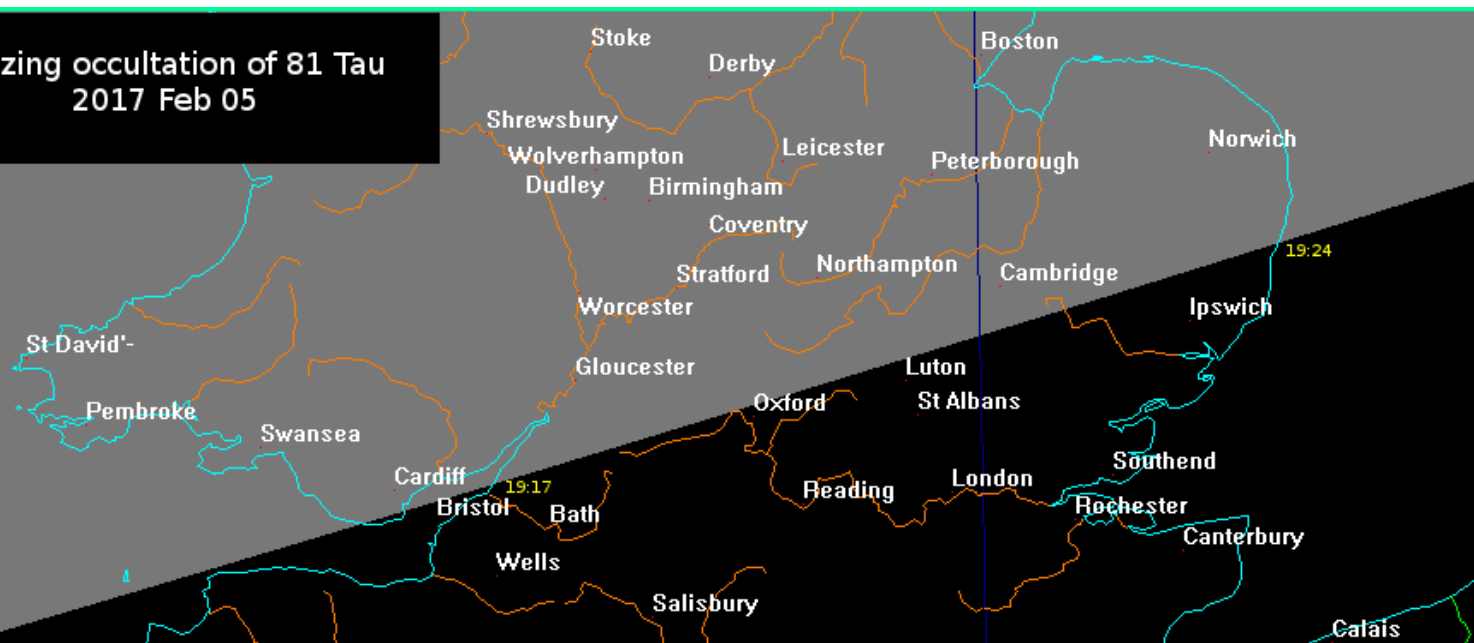
Lunar Occultations

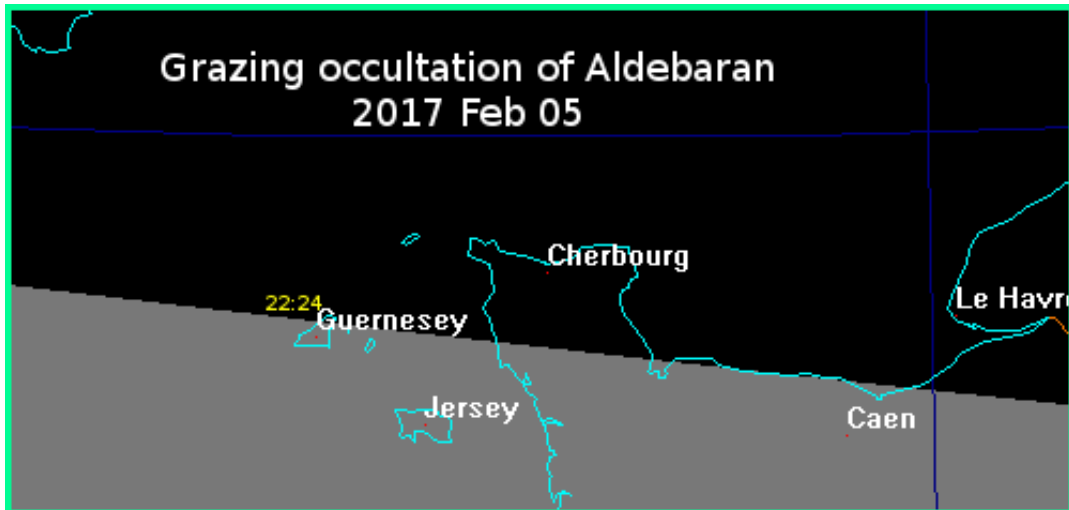
There are several occultations of stars brighter than mag +7.0 visible from the UK this month. Data are for my location and may vary by several minutes for other UK locations. The types are **(D)**isappearance, **(R)**eappearance and **(Gr)**aze; they are all dark-limb events unless followed by a **(B)**. The highlights are the grazes of 81 Tau (Bristol to Southwold) and Aldebaran (Guernsey) the 5th.

Lunar Occultations, Feb 2017, 50.9°N, 1.8°W

Date	Time	Phase	Star	Spectrum	Magnitude	Cusp Angle	Position Angle
Feb 02	19:00:53	D	HIP 7884	K3	4.5	82N	63
Feb 02	20:10:11	R (B)	HIP 7884	K3	4.5	-86N	254
Feb 03	23:35:31	D	μ Cet	F1	4.3	63S	100
Feb 04	18:00:15	D	5 Tau	K0	4.1	63S	102
Feb 04	19:04:57	R (B)	5 Tau	K0	4.1	-57S	222
Feb 05	17:44:30	D	θ -2 Tau	A7	3.4	86N	75
Feb 05	17:47:10	D	θ -1 Tau	G7	3.8	66N	55
Feb 05	18:30:29	D	HIP 20916	F7	6.7	13N	2
Feb 05	18:55:14	R(B)	θ -1 Tau	G7	3.8	-72N	277
Feb 05	18:57:21	R	θ -2 Tau	A7	3.4	-88S	257
Feb 05	19:05:26	D	HIP 21053	F5	6.5	54N	43
Feb 05	19:06:43	D	HIP21029	A6	4.8	38N	27
Feb 05	19:18:29	Gr	81 Tau	A5	5.5	1.9S	
Feb 05	19:35:17	D	85 Tau	F4	6.0	47S	122
Feb 05	19:54:25	R (B)	HIP21029	A6	4.8	-41N	308
Feb 05	20:45:05	D	HIP 21257	F0	6.6	46N	35
Feb 05	22:25:35	Gr	Aldebaran	K5	0.9	3.3N	
Feb 05	23:07:16	D	89 Tau	F0	5.8	24S	145
Feb 07	03:05:37	D	130 Tau	F0	5.5	54S	120
Feb 08	02:53:56	D	HIP 32539	A2	6.4	79N	77
Feb 08	22:56:22	D	74 Gem	M0	5.0	59N	61
Feb 12	03:41:25	R	49 Leo	A2	5.6	72N	311
Feb 15	00:08:57	R	HIP 63328	K2	6.7	56N	324
Feb 15	01:43:40	R	46 Vir	K2	6.2	73S	273
Feb 15	04:03:25	R	48 Vir	F0	6.7	85N	295

**Grazing occultation of 81 Tau
2017 Feb 05**





The Moon

Feb 04	First Quarter
Feb 11	Full Moon
Feb 18	Last Quarter
Feb 26	New Moon

Public Outreach & Talks

During February I will be active at the following events, where I would be delighted to meet any readers of this newsletter who attend:

- 21st: *Any Astronomical Questions*; 19:30, panel member for this at [Fordingbridge Astronomers](#).
- 23rd: *Public Observing*, 18:30, at [Blashford Lakes](#) (booking essential)

Equipment Mini-Review

Manufacturer's Specification

Weight (g)	1600
Field of View (°)	6.6
Close Focus (m)	8
Eye Relief (mm)	18
Waterproof	Yes
Prism Type	Porro
Origin	China
Body Material	Aluminium Alloy
Armour Type	Rubber
Nitrogen Gas Filled	Yes
Prism Material	BaK4
Prism Coating	Multi-coated
Lens Coating	Fully multi-coated with protective overcoat
Eyecup Type	Fold-down



Oberwerk Ultra 10x50

The *Oberwerk Ultra* is a branded *United Optics BA8* for the American market; other brands of the same binocular include *Helios Apollo*, *William Optics*, *Orion Resolux*, *Garrett Signature*, *Delta Optical Extreme* and possibly others. This was my "workhorse" 10x50 until recently.

The first thing that strikes you about the binocular is its weight and its feel. It feels very robust. Nice features include the tethered lens caps (both ends, a decent neoprene strap, mounting bush, and a good quality semi-rigid *Cordura*[™] bag. Unlike the 15x70, the eyepieces are not threaded for 1.25" filters. However, like its bigger brother, the eye lenses are deeply recessed, so only 10mm of the specified eye relief is actually available for spectacle

wearers. This does not enable me to see the full field of view with my specs on.

The prisms appear to be in proper cages. The coatings seem very good and consistent with the specification. As you would expect, there is no internal stopping down of the aperture: the exit pupil is a true 5mm. This is also apparent under the stars, where the full aperture, crisp focus and decent coatings give it a bit more than half a magnitude over budget binoculars. The individually focused eyepieces snap to a very sharp focus. The central 70% diameter of the field of view is flat and sharp, but you will notice that it starts to drop off after that. I found that Albireo (34 arcsec) was splittable in the central 75%.

If they are to be used hand-held, this peripheral lack of sharpness will not be a problem, as we pan the binocular to our target anyway. Also, the 70% of a 6.5° field is an equivalent area to 90% of the 5° field that some competitors offer. For astronomy, I think I prefer the wider field.

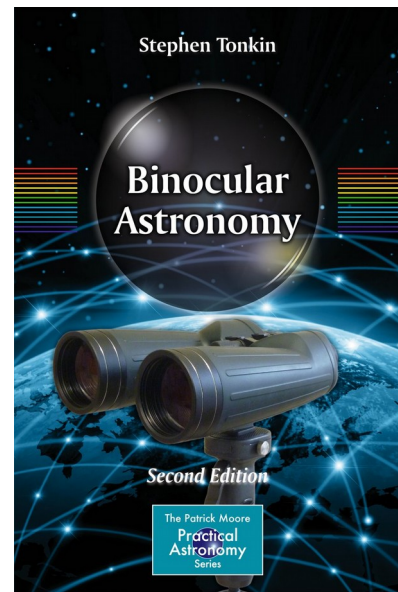
Colour correction is very good on axis, as is control of stray light. This gives a nice contrasty view that, coupled with the sharp focus, gives a very bright image of a starry sky. Colour rendition is also very faithful.

The weight can make it tiring to hold for long periods, but its inertia also gives a steadier view than some lighter binoculars. There is, of course, the option of tripod-mounting it. It comes with a decent metal tripod adaptor for the purpose.

In summary, this is a decent 10x50 best suited to a regular binocular observer who wants something approaching excellent quality optics without having to pay excellent quality prices. They are now coming onto the used market – expect to pay about 75% of the new price for a well-kept example.

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](#)
- Make a small [PayPal](#) donation to newsletter@binocularsky.com



Wishing you Clear Dark Skies,

Steve Tonkin

for

[The Binocular Sky](#)

Acknowledgments:

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Variable star data based on David Levy's *Observing Variable Stars*

Occultation data derived with Dave Herald's *Occult*

Disclosure: Links to *Amazon* or *The Binocular Shop* may be affiliate links

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