The Binocular Sky Newsletter

No. 100
March 2020

Introduction

Welcome to the 100th **Binocular Sky** Newsletter. I never dreamed that it would get this far, or as many readers. Anyway, as some sort of celebration, this month I've included a quiz for your entertainment.

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.

March nights are rapidly shortening as we approach the equinox, but even at the end of the month we'll still have more than 7 hours of astrodark.

We have a binocular comet at last! **2017 T2** is not yet easy, but certainly detectable in 70mm binos.

The ice-giant **Uranus** is still available in the evening, and has a convenient appulse with **Venus** (which is showing a phase in binoculars) early in the month.

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

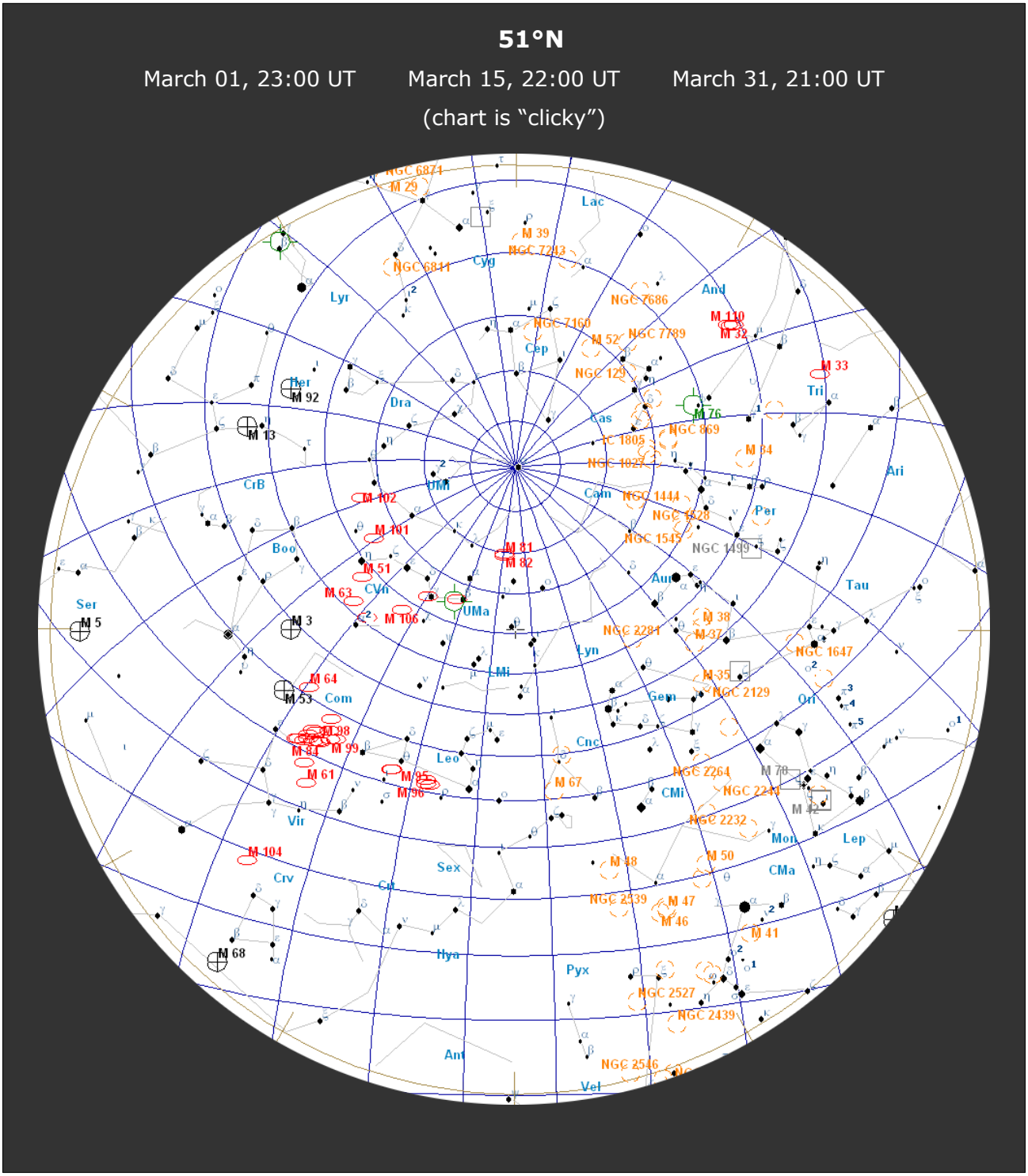
(Hyperlinks will take you to finder charts and more information about the object.)

One of the most noticeable things about the night sky in March is how rapidly the nights shorten. Now is the time to take a last look at some of those winter favourites before they are lost to us for several months. The *Pleiades* (M45) and the Great Orion Nebula (M42) culminate before Civil Twilight ends, 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.

In the north, 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, although the imagination of it being a ribbon waterfall plunging into a splash-pool needs some gravity-defying modification because, in late winter/early spring evenings, the waterfall flows upwards!

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.

One of the best objects for small binoculars is Melotte 111, the cluster that gives *Coma Berenices* its name. In Greek mythology, it is the hair of Queen Berenice, and the Romans saw it as the veil dropped by Thisbē in Ovid's tale of star-crossed lovers, but one of my favourite myths, from the North Africa, has it as a watering hole. The lion (Leo) startled a gazelle that was drinking there, and it leapt away to safety, leaving its hoofprints as the pairs of stars *ν* and *ξ*, *λ* and *μ*, and *ι* and *κ UMa:* the *Three Leaps of the*



Gazelle.

While you are taking your last fill until autumn of the Orion Nebula, take the time to study R Leporis (*Hind's Crimson Star*), which is fading now and 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. At the time of writing, *Betelgeuse* (*α Ori*) has begun to brighten again and is now distinctly brighter than *Bellatrix* (*γ Ori*) at about mag +1.2. It still seems to me to be redder than usual.

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 (which makes 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. A galaxy in this region that is often ignored, owing to the lack of nearby bright stars, is NGC 3521, which is bright enough to be sometimes visible with averted vision in a 10x50, although I suggest a minimum of 70mm for ease of observation. It is considerably larger than any of the M95/96/105 trio and is as bright as M96.

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.

If you have binoculars of 70mm aperture or (preferably) greater, see if you can find and identify The Ghost of Jupiter (NGC 3242), a planetary nebula in Hydra. It is a difficult object because it is low in the sky, even from southern Britain.

If you missed it last month, take this opportunity to appreciate *Herschel's Garnet Star, μ Cep*, which is at a

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.

comfortable elevation early in the evening. The wide field of medium-sized binoculars enables you to hold it in the same field as *Alderamin (α Cep)*, so you can appreciate the colour difference.

Lastly, if you enjoy colourful star-fields, take a look around the "back" of Leo, where there are some very pretty groups of stars within the rectangle bounded by *β, δ, θ,* and *93 Leonis* and, later this month, the region just to the south of *σ Virginis*.

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

March 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
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
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
NGC 3242 (the Ghost of Jupiter)	Hya	pn	8.6	102446	-183833
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
NGC 3521	Leo	gal	10.0	110548	-000215
M65 (NGC 3623)	Leo	gal	10.1	111855	130526
M66 (NGC 3627)	Leo	gal	9.7	112015	125924
Leo star fields	Leo	stars	>5.5	113000	174500
Melotte 111	Com	oc	1.8	122430	260122
Markarian's Chain	Vir	gal	9.9	122611	125647
NGC 4565 (Berenice's Hair Clip)	Com	gal	9.9	123620	255914
μ Cep (Herschel's Garnet Star)	Cep	vs	4.0	214330	584648

Variable Stars

Selection of Binocular Variables (mag < +7.5)			
Star	**Mag Range**	**Period**	**Type**
U Cep	6.8-9.2	2.5d (increasing)	Eclipsing binary
AR Cep	7.0-7.9	116	Semi-regular
RX Cep	7.2-8.2	55	Semi-regular
TX Psc	4.8-5.2	-	Irregular
RR Lyr	7.06-8.12	0.57d	RR Lyr
TX UMa	7.0-8.8	3.06d	Eclipsing binary
R Sge	8.0-10.4	71d, 1112 d	RV Tau
U Sge	6.5-9.3	3.38d	Eclipsing binary
DY Vul	8.4-9.7	–	Irregular
U Vul	6.7-7.5	7.99d	Cepheid
X Cyg	5.9-6.9	16.39d	Cepheid
SU Cyg	6.4-7.2	3.84d	Cepheid
AF Cyg	6.4-8.4	92.5	Semi-regular
TW Peg	7.0-9.2	90, 956	Semi-regular

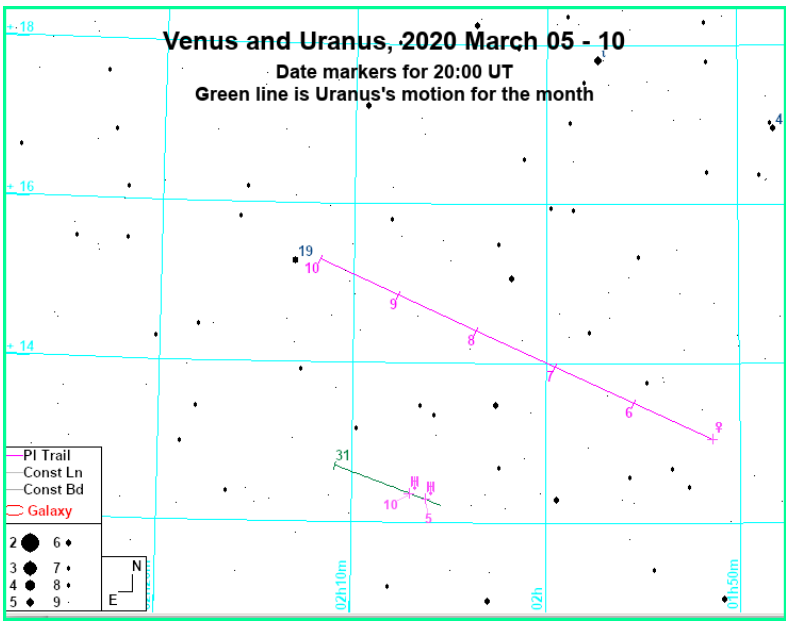
Double Stars

Binocular Double Stars for March			
		Spectral	**Separation**
Star	**Magnitudes**	**Types**	**(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
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
65 Uma	6.7, 7.0	A3, B9	63
α Cvn	2.9, 5.5	A0, F0	17.5

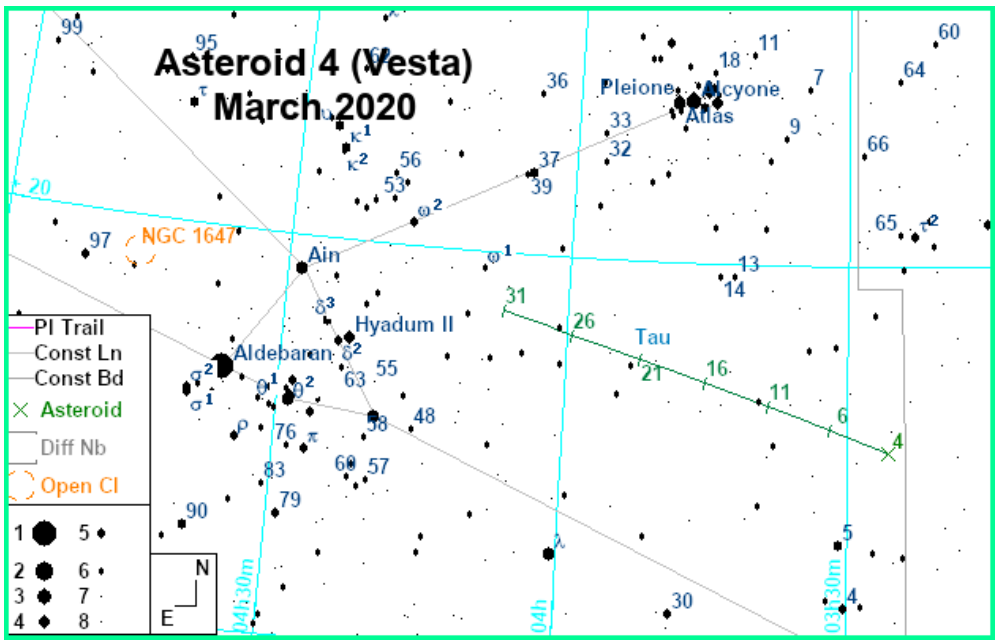
The Solar System

(Clicking on the charts below will take you to higher resolution ones)

The ice giant **Uranus** (mag +5.8) sets in the evening but is still observable at the end of astronomical twilight for the early part of the month (exactly how long will depend on your local conditions). On the 7th and 8th Venus acts as a convenient marker – Uranus is the brightest object between it and *ξ-1 Cet*.

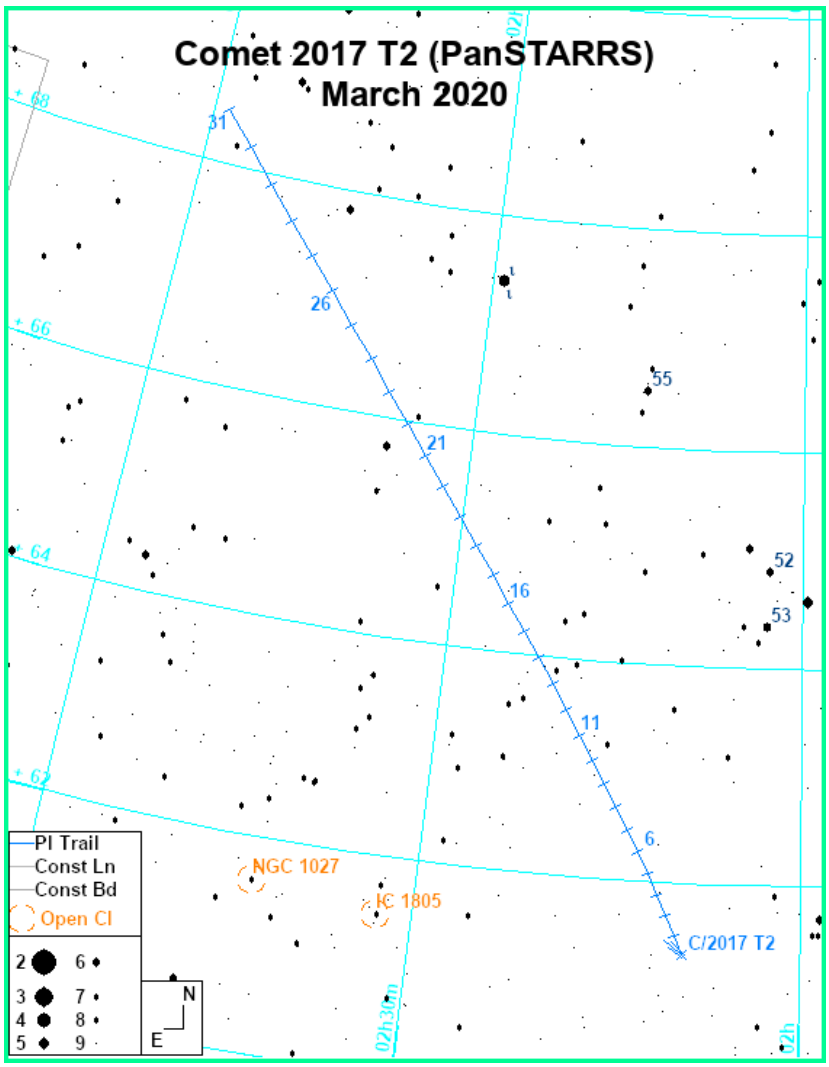


Asteroid 4 (Vesta) fades from mag +8.2 to 8.4; it's heading back into Taurus now, so there are lots of star-markers to help you identify it.



Comets

After a long hiatus, we at last have a comet suitable for us binocular users. It's not yet easy, around 9th magnitude, but it's possible in 70mm binocs (I've not yet tried anything smaller). It's circumpolar in Cassiopeia, so we can make use of any clear spells. Best time is in the evening after astro-dusk, when it is higher in the sky.



The Moon

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

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 there is a (**B**).

Lunar Occultations March 2020 50.9°N 1.8°W

Date	Time (UT)	Phase	Star	Spectral Type	Magnitude	Position Angle	Cusp Angle
Mar 01	20:45:49	D	HIP 18267	G0	6.8	249	27S
Mar 01	23:56:01	D	HIP 18717	A0	6.3	286	59N
Mar 03	18:14:06	D	HIP 26328	F8	7.0	160	62N
Mar 03	20:16:47	D	HIP 26616	A1	6.4	215	28S
Mar 05	00:05:03	D	HIP 32333	A2	6.8	263	83S
Mar 05	20:34:06	D	HIP 37121	G5	7.0	172	36S
Mar 05	23:16:14	D	HIP 37636	K0	6.3	237	80N
Mar 06	21:33:36	D	HIP 42628	A0	6.8	173	81S
Mar 11	23:47:02	R	80 Vir	G6	5.7	136	57N
Mar 14	01:29:21	R	34 Lib	K0	5.8	140	50S
Mar 14	02:46:24	R	Zet Lib	B3	5.5	158	54S
Mar 18	05:12:10	R	49 Sgr	K3	5.5	144	22N
Mar 26	18:50:48	D	HIP 9706	K0	6.4	263	38N
Mar 29	19:21:49	D	Eps Tau	K0	3.5	249	77S
Mar 29	20:30:08	R(B)	Eps Tau	K0	3.5	264	-71S
Mar 30	22:49:14	D	HIP 25539	B2	4.9	282	47N
Mar 31	21:17:42	D	12 Gem	A0	7.0	256	17N

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.

13th Moors Valley Country Park — **Public Stargazing** (Leading)

20th Dorset Wildlife Trust, Kingcombe — **Astronomy Workshop**

24th: Cranborne Chase AONB IDR — **Public Stargazing** (Assisting)

The "Century Twenty Questions"

(Just for entertainment. Answers next month. All the questions have something – possibly very tenuous – to do with astronomy/space; some may be "googlable" (if you must), but I've tried to ensure that some aren't.)

1. Who went fishing for his dinner but ended up catching a comet?
2. Who described herself as the "Anneka Rice of astronomy"?
3. Which Duke visited Descartes?
4. Which binocular vendor appears to sell serpents and birds of prey?
5. Which UK binocular vendor sounds like a slow reel?
6. Who was famously **not** born under a rhyming planet?
7. What shook pestilence and war from its horrid hair?
8. What glowed like a ruddy shield on the Lion's breast?
9. What is the meaning of the word "right" in Right Ascension?
10. What connects Johann Muller and red polka dots?
11. What is *Third Stone from the Sun*?
12. What optical phenomenon is common to Iceland spar and Lyot filters?
13. Who drew the earliest known telescopic map of the Moon?
14. Of which telescope was it said that the users needed to be trained mountaineers?
15. Who is the muse of astronomy?
16. What, in 1900, was salvaged by sponge divers between Cyprus and Kithira?
17. What unlikely feat was achieved by a lady named Bright?
18. What was the shape of Fisk's rapier?
19. Whose allegiance was said to be ruled by expedience?
20. Who, in 1965, thought that he had decoded Stonehenge?

I regularly give talks, on *Binocular Astronomy* and numerous other astronomical topics. For astronomy societies (and some other groups), I do this on an "expenses only" basis (although I have never knowingly refused a bottle of decent Rioja or a donation made on my behalf to the BAA Commission for Dark Skies).

If you would like a talk for your society/group,
Click here for current talks.

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 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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