The Messenger

Mexborough & Swinton Astronomical Society June 2014

3 Key Numbers to Remember When Choosing Astronomy Binoculars

By Brian Ventrudo



Every stargazer should have a pair of binoculars. They're easy to handle, simple to use, and much less expensive than a telescope. They're also easy for grab-and-go stargazing. But which features and configurations should you look for when choosing a pair of binoculars for astronomy?

One critical parameter for stargazing binoculars is the so-called "visibility factor", or V, the product of magnification and lens diameter (MxD). Other factors aside, a higher visibility factor is usually better for stargazing. For example, a pair of 6x42s (V=252) shows about as much detail as a pair of 8×30 (V=240), or a pair of 7x35s (V=245). Despite their puny lens diameter, a pair of 10×30 image-stabilized binoculars by Canon has a visibility factor of 300, better than the larger 6×42's.

Visibility factor is a critical number for astronomy binoculars, but there are a few more things to keep in mind. Weight, for example. You want to make sure that you can hold your optics steady enough to get a good view, but more than 2.0 lbs or 2.5 lbs start to get heavy for hand-held use. You can mount heavier binoculars on a tripod, but this is a little more awkward.

You also need to consider size of the exit pupil, the diameter of the beam of light coming out of the eyepieces. It's simply the diameter of the lenses divided by the magnification. So a pair of 10×50 binoculars has an exit pupil of 5 mm, and a 7x50s have an exit pupil of about 7 mm. When your eye is adapted to the dark, your pupils will open to as much as 7 mm when you're young and healthy. But if you're older than 40 or 50, your pupils may only open to 5 mm or 6 mm. If you choose binoculars with a larger exit pupil, not all the light can enter your eye.

From One-Minute Astronomer. : http://oneminuteastronomer.com

The Thoughts of Chairman Les



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To say that I'm happy to be your chairman once again would be an understatement and I intend to continue as I have for past few years and help to take this great society from strength to strength.

I would like to start my thoughts by extending a very warm welcome to the new members who have joined us since our last of this publication. I hope that you find this great society of ours helps you with your chosen hobby of astronomy and that you have many fruitful and happy years with us.

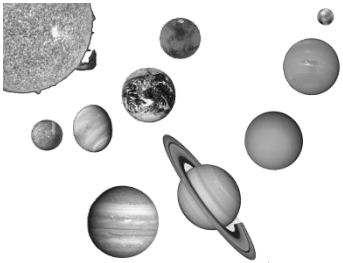
Last month saw us hold our 36th AGM, what a milestone this is, I'm sure that we have many more to come. The only way this can happen is if we, the membership, continue with the enthusiasm and endeavour that has been shown in the past. I wish you clear skies

Les Marsden FRAS

Chairman

SPACE

By Saskia Wingfield (aged 10)



The Sun big and bright
The Moon reflects the light
Mercury the moon like planet
In space is the comet
Venus the fiery furnace of a world
We were made and twirled
Mars red in angry Orion
Jupiter the king like a lion
Saturn the lord of the rings
Uranus and Neptune the ice kings
Finally Pluto the dwarf planet

Submitted by Mike Hall

May's Puzzle Answer

The Chicken and Leg Problem
A chicken farmer also has some cows for a total of 30 animals, and the animals have 74 legs in all. How many chickens does the farmer have?

Answer:

This is a typical algebra problem with two unknowns, and we need to have two equations to solve the problem. Let X be the number of cows, and Y the number of chickens.

The number of cows plus the number of chickens equals 30:
X + Y = 30
Since cows have four legs and chickens have two legs, we can also have an equation for the number of legs.
4 X + 2 Y = 74
Rearranging the first equation we get
X = 30 - Y
Substituting X in the second equation gives us
4 × (30 - Y) + 2 Y = 74

120 - 4 Y + 2 Y = 74

-2 Y = 74 - 120 = -46

Y = 23
The farmer has 23 chickens. (and 7 cows).

June Puzzle

An old man goes to a bank with a check of £200 and asks the cashier "Give me some one pound coins, ten times as many twos and the balance in five pound notes!

What will the cashier do?

Student makes discovery

At just 21 years old, a California college student has made an incredible discovery: Michael Sandoval and his astrophysics professor at San Jose State have spotted what they believe is one galaxy that was swallowed up by another.

The result is a dense system of stars—apparently the densest ever found. They're calling it a "hypercompact cluster," since no word for the object currently exists, the San Jose Mercury News reports.

Our Active Sun



Phillipa Browning, Professor of Astrophysics at the Jodrell Bank centre for Astrophysics at the University of Manchester was our guest speaker for May 2014.
She gave a talk focussing on our sun's outer atmosphere – the corona. Showed many images taken in X-rays, Ultra-violet and visible light of the sun's surface. Talked on the propagation of sunspots, and how coronal mass ejections could effect terrestrial weather.
One of the longest Q&A sessions for some time after a talk ensued indicating what an interesting lecture had occurred.



UNDER PROFESSOR TETLEY'S DIRECTION A NEW TEABAG RENEWAL SYSTEM IS BEING PROTOTYPED AT THE HOOBER OBSERVATORY

The Night Sky in June

Saturn reached opposition on the 10th of May, so is now due south and highest in the sky soon after darkness falls.

To find it in the sky, follow the arc of the Plough's handle downwards to first find the orange star Arcturus and continue down to find the white, first magnitude star, Spica, in Virgo. Saturn, a little brighter than Spica, lies in Libra down to its lower left and will appear slightly yellow in colour

There are two very nice objects to spot with binoculars in the western sky well after dark this month. Two thirds of the way up the right hand side of the 4 stars that make up the "keystone" in the constellation Hercules is M13, the best globular cluster visible in the northern sky

Just to the left of the bright star Vega in Lyra is the multiple star system Epsilon Lyrae often called the double-double. With binoculars a binary star is seen but, when observed with a telescope, each of these two stars is revealed to be a double star - hence the name!

Venus June 24th - before dawn: **Venus** and a thin crescent Moon. Looking East before dawn, it is lying between the Pleiades and Hyades clusters in Taurus, will be seen ~2.5 degrees to the left of a thin crescent Moon. This would make a nice wide field image should it be clear.

Mars. Following its opposition in April, Mars is now receding rapidly and so will dim from magnitude -0.5 to 0 during the month. As it does so, its angular size will shrink from 11.8 down to 9.5 arc seconds

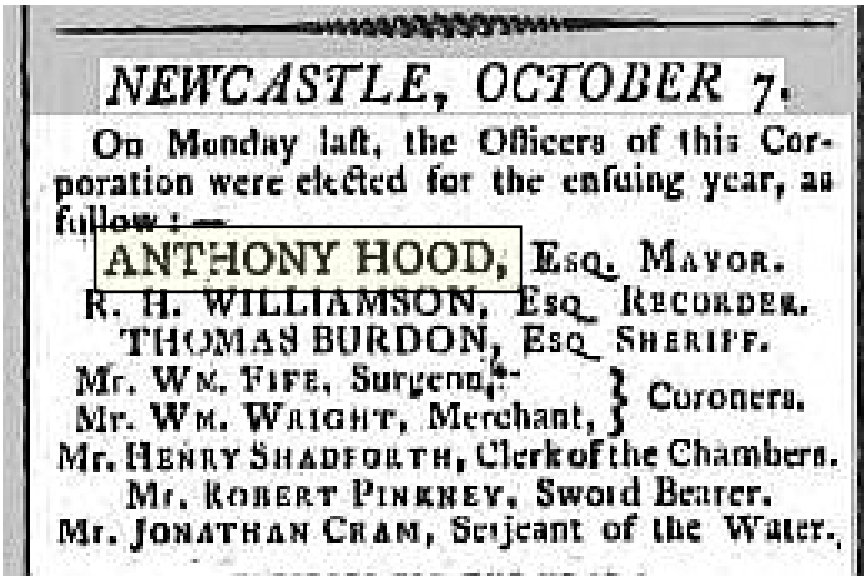
Jupiter. As June begins, **Jupi**ter sets nearly 3 hours after sunset. It is, however, now well past its best and fading from -1.9 to -1.8 during the month whilst its angular diameter shrinks from 33 to 32 arc seconds as it moves towards superior conjunction with the Sun on July 24th.

Saturn came to opposition on May 10th and as June begins is high in the south as darkness begins lying in Libra, midway between Spica and Antares. It is shining with a magnitude of +0.2.as June begins, falling to +0.4 by months end. Its fully illuminated disk has a diameter of ~18 arc seconds.

The Moon in June

new moon	first quarter	full moon	last quarter
June 27th	June 5th	June 13th	June 19th

Moonlighting



NEWCASTLE, OCTOBER 7.

On Monday laft, the Officers of this Corporation were elected for the enfuing year, as follow : —

ANTHONY HOOD, Esq. Mayor.
R. H. WILLIAMSON, Esq. Recorder.
THOMAS BURDON, Esq. Sheriff.
Mr. Wm. Fife, Surgeon, } Coroners.
Mr. Wm. Wright, Merchant, }
Mr. Henry Shadforth, Clerk of the Chambers.
Mr. Robert Pinkney, Sword Bearer.
Mr. Jonathan Cram, Serjeant of the Water.

Newcastle Courant, Oct 7th 1797

An Apprentice Case.—Michael Collinson, apprehended on a warrant, was charged with leaving the service of his employers, Messrs Wright and Brown, to whom he was legally bound. The prosecutors pressed for full punishment, but the Bench, considering that this was the first time the prisoner had been before them, agreed to discharge him on promising to return to his work.

Newcastle Guardian, July 28th 1855

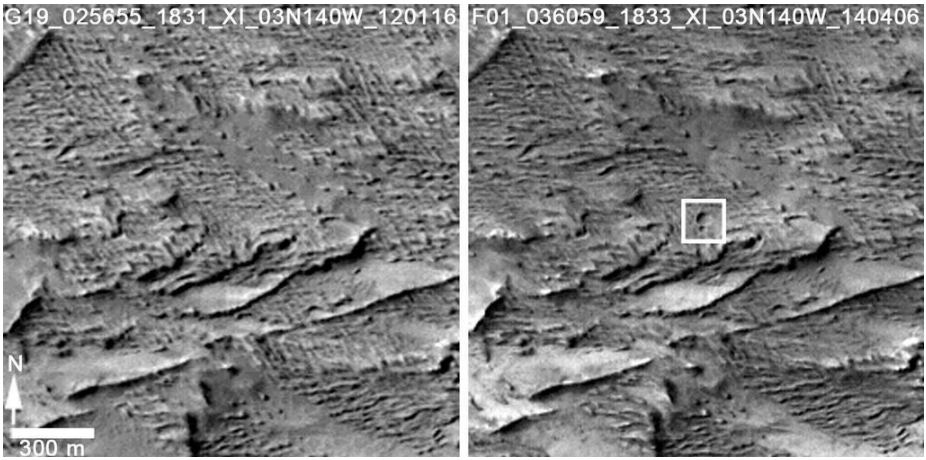
Mars Reconnaissance Orbiter finds new crater

A large fresh crater appeared on the Martian surface in March 2012.

Two photographs taken of the same place on the Martian surface on March 27th and March 28th 2012 revealed a dark spot on the later image but not on the first image. A follow up close-up taken in April 2014 revealed that the cause was a new crater.

Probably formed by an impacting object some 10 to 18 feet across it created a crater about 150 feet across a secondary crater about a third the size is seen just below on the photograph and there are several smaller impact craters nearby.

There is also indication of some recent landslides on nearby slopes.





Programme for May & June 2014

Date	Time	Location	Subject & Speaker
Sun June 1st	14:00	Hoober Observatory	**Solar Observing**
Thu June 5th	19:45	Club Room	**" Kennedy Space Centre"** Phil Muffett
Thu June 12th	19:45	Club Room	**"Back to Basics"** *Paul D'Silva*
Fri June 13th	19:45	Club Room	**"To Be Confirmed"** *Dr Alan Chapman*
Sun June 15th	10:00	RSPB Old Moor	**Solar Observing**
Thu June 19th	19:45	Club Room	**"Manchester's First Rocket Man"** *Kevin Kilburn*
Thu June 26th	19:45	Club Room	**"Britain in Space"** *Mike Hall*
Thu July 3rd	19:45	Club Room	**Shakespeare & Astronomy** *Roy Gunson*
Sun July 6th	14:00	Hoober Observatory	**Solar Observing**
Thu July 10th	19:45	Club Room	**NASA'a Maven Mission** *Phil Muffett*
Sun July 13	10:00	RSPB Old Moor	**Solar Observing**
Thu July 17th	19:45	Club Room	**Stars & Stone Circles** *Duncan Lunan*
Thu July 24th	19:45	Club Room	**TED Talks – Ideas worth Spreading** *Tony Morris*
Thu July 31st	19:45	Club Room	**To be Confirmed**

Web site: http://msas.org.uk

Meeting room is at Swinton Working Men's Club, Station Street, Swinton, South Yorkshire, S64 8AU.

Observatory is at Lee Brook Lane, Hoober, S62 7SH

RSPB Old Moor, Manvers Way, Wath, S73 0YF

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