The Messenger
Mexborough & Swinton Astronomical Society
February 2017

The Thornborough Henges

Not far from here in North Yorkshire, close to the village of Thornborough, between Ripon and Masham, are three interconnected Henges.



The henges are dated between 3500Bc and 2500BC. The three henges lie in a crooked line with an avenue linking the circles. The three circles are not in a perfect line. The exact purpose of the three interconnected henges is unknown, although many Neolithic features exist within a few miles of this site indicating an extensive community living in the area at this period the henges were built and in use.
Quarry work over the past century for gravel extraction has damaged some of the henge detail, but they have now been put on a World Heritage list.
The most notable feature for astronomers is the fact that the henges seem to be an almost perfect match for the three stars that comprise the belt of Orion (Alnitak, Alnilam and Mintaka).



All three henges would have been roughly the same size with the outer diameter of the bank being between 240 and 275 metres and standing some 3 metres in height. Tthe internal ditches which were each about 20 metres wide and 3 metres deep while all three henges had twin entrances to the northwest and the southeast.By doing a quick measurement using photoshop on the two images the difference in alignment between the centres of the three henges and the three stars of Orion is less than 0.3 of a degree

The Thoughts of Chairman Les



The first thing I must do is welcome our new members and let them know that they have joined the best astronomical society they there is. We are very go ahead society and are consistently upgrading our instruments and moving the society ahead.

We are in the midst of planning an extension to the observatory to further our observing possibilities and better serve the public that wants to visit to see something of the night sky. We have been providing a Community Access Programme for some years now are we are invariably oversubscribed with the general public wanting to visit. We also take on board visits to schools, scouts, cubs etc. etc.

Our new members will find that a very important part of any society or group that fundraising is an absolute necessity and is totally ongoing. This helps keep the society to provide all the items that we do throughout the year.

I hope that you find your particular interest in astronomy will continue and you can you're your interest on the up and up.

I wish you clear skies

Les Marsden



SOLSTICE DINNER - FRIDAY JUNE 23rd 2017

This will be held next year at Rotherham Golf Club, Thryberg. 7.00pm for 7:45pm meal: Bar available to midnight.

The Menu is as follows:-

Starters

Risotto: beetroot and mascarpone, mushroom, butternut squash or tomato.
Homemade ham hock and parsley terrine.
Grilled goats cheese, homemade focaccia, fruit chutney and dressed leaves
Homemade fishcake, tomato and basil sauce.
Roasted Mediterranean vegetable tart, dressed leaves and pesto

Mains

Braised beef, herb mash and roasted roots
Lamb shoulder, fondant potato, cauliflower puree, wilted greens
Roast belly pork, roast kohlrabi, burnt apple puree and dauphinoise potatoes
Roast market fish, fondant potatoes, fennel and pan juices
Sage roasted chicken, sautéed cabbage crushed potato cake
Baked salmon, Green beans, creamed potato lemon beurre blanc.
Pie chips and peas

Vegetarian

Risotto — Tomato or Mediterranean Vegetable or Wild Mushroom
Or any starter can be taken as a main

Desserts

Homemade Chocolate Brownie
Lemon tart
Sticky date and Guinness sponge, Crème Anglaise.
Apple Tart Tatin with Chantilly cream.

We hope to have our Honorary President, Alan Chapman FRAS as our after dinner speaker
The important bit is that it will cost £25 per head, and at some stage I'll be asking for a £5 deposit (after Christmas)



February Skynopsis



Diary

5th	Full Moon
	Sunset 17.02, Sunrise 07.50
6th	Jupiter in opposition to the Sun in Cancer, Mag. -2.6
13th	Last Quarter Moon in conjunction with Saturn, Scorpio
15th	Sunset 17, 22, Sunrise 07.31
17th	Mercury with crescent Moon, half-hour before sunrise, approx. 07.25
20th	New Moon
21st	Mars together with Venus
24th	Mercury visible in the morning, Capricornus
25th	Sunset 17.42, sunrise 07.10
27th	Moon at First Quarter
16th	Moon lies below Regulus, late evening
17th	Crescent Moon close to Spica, morning
21st	Winter Solstice
22nd	New Moon, Ursids meteor shower peak
28th	Moon at First Quarter
31st	Venus and Mercury just 3deg. apart

Planets

Mercury	24th good viewing in the dawn sky at mag. -1.9, SE rising 56 min. before the Sun in Capricornus
Venus	Together with Mars on 21st
	Venus and Mercury are just 3deg. apart on the 31st
Mars	See above
Jupiter	magnitude -2.6
Saturn	Morning object moving above Beta and Nu Scorpio
Uranus	Lost in the Solar glare early in month
Neptune	West in Pisces

Galactic Goodies

M3	Globular cluster, Mag. +6.2, RA: 13h 42m 12s, Dec: +28deg 22min 38sec
M81	Bode's Galaxy, Mag. +6.94, RA: 09h 55m 33s, Dec: +69deg 03m 55s
M51	Whirlpool Galaxy, Mag. +8.4, RA: 13h 29m 53s, Dec: +47deg 11m 43s

Mike Hall

On Our Calendar - Keep your eyes on these!



Professor Simon Goodwin
Terra-forming Mars

Thu, 9th February 2017 (19:45 - 22:00) : Venue: Meeting Room,

Mars is the closest match to the Earth of all the planets and the most obvious target for colonisation, but it isn't very like the Earth. 'Terraforming' is the process of planetary scale engineering to make another planet more Earth-like.
Simon will talk about what could be done to Mars to make it more Earth-like, how we might do this, and consider if any ideas are at all reasonable?

BAA "Back to Basics" Workshop
Saturday March 11th 2017
SWINTON MASONIC HALL, 63 STATION STREET, SWINTON, MEXBOROUGH S64 8PZ

The Jeff Williams Memorial Science Lecture



Thursday, 23rd March 2017 (19:45 - 22:00)
Venue: Meeting Room, Swinton Bottom Club

The Life and Works of Richard Feynman.

Speaker: Tony Morris

Planets in the Park: VI

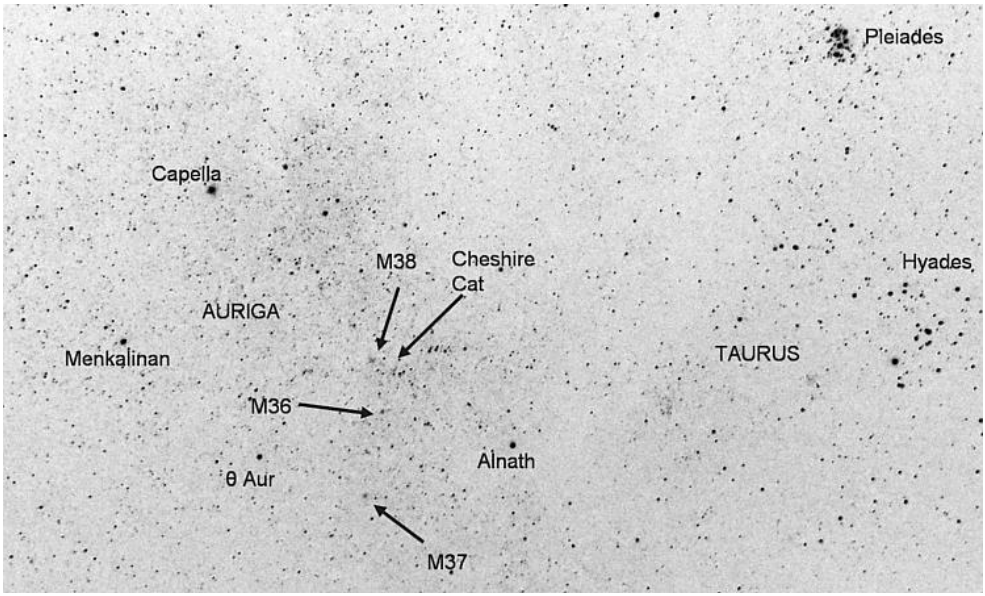
Stargazing Live Event: Saturday, 18th February 2017 (18:00 - 20:30): Clifton Park Walled Garden

In association with Friends of Clifton Park

Three Clusters and a Cheshire Cat

Visible nearly overhead in the northern hemisphere, the bright constellation Auriga makes for pleasant viewing this time of year. The constellation, which looks like a big hexagon about 15° across, sits in a fine star field along the northern Milky Way directly opposite the much richer sky near the galactic center in Sagittarius. Auriga also holds the dazzling star Capella, the most northerly first-magnitude star in the skies. The constellation is also visible above the northern horizon from most populated parts of the southern hemisphere. Whether you have a pair of binoculars or a small telescope, make an appointment to examine the three finest open star clusters of Auriga– M36, M37, and M38– along with a smiling asterism embedded in the stream of the Milky Way.

These three bright Auriga star clusters are about 4,200 light years away, but they are otherwise quite distinct from each other. All lie within a single field of view of a pair of 7×50 binoculars. M36 is the smallest and youngest of the trio, and, with optics, presents a lovely arrangement of blue-white stars. The cluster lies within the hexagon of Auriga just northwest of the mid-point of the line between Alnath and θ (theta) Aurigae. The cluster comprises a loose group of about 50 stars. Moderate magnification in a telescope opens the cluster up nicely for inspection. The edges of the cluster are not well defined, and streams of blue stars appear to arc out from the center like the arms of a distorted cross.



Just two degrees northwest of M36 lies M38. It forms an equilateral triangle with Elnath and ι (iota) Aurigae. The cluster is about 0.3o across, some 1/3 larger than M36, but it's also half a magnitude fainter. There appear to be twice as many stars in this cluster as M36– about 120 stars– and the cluster is much older than M36, so there are fewer blue-white stars here. At 75x, you'll see about 60-80 stars of magnitude 8 and fainter.

Like M36, the boundary of the cluster is ill defined. There's an odd-looking void near the center of the cluster. And there appears to emanate a ragged cross from this void, with the long arm running west-southwest to east-northeast. Higher magnification brings out more stars, perhaps 80-90 total in a 4-inch scope.

If you can manage 70-80x with a one degree field of view, you can also see the smaller and fainter cluster NGC 1907 just south of M38.

The open star cluster M37 is the brightest of the three Auriga Messier objects and by far the most striking. It lies just outside the hexagon of Auriga, about as far outside the hexagon as M36 lies within it. The cluster presents a rich spray of faint stars clumped around a glorious central 9th-magnitude red-orange star. M37 makes the "best-of" list of many experienced stargazers. For dramatic effect, when you tour this part of the sky, look first at M36, then M38, and end with the magnificent M37.
While even binoculars can nearly resolve M36, M37 is far tighter and only shows its character in a telescope. M37 is much more compact than M36 or M38… the bulk of the stars lie within an apparent diameter of 15' (1/4 of a degree). In a small scope, M37 looks like a loose globular cluster, perhaps a little like M22 in Sagittarius. As M37 lies at the same distance as the other two clusters in Auriga, the apparent richness of the cluster is real. There are nearly 2,000 stars here all told, though you can see perhaps 200 with a 4-inch scope. M37 is most dramatic not only for its stars, but also for its dark lanes that appear to wind through the cluster. Defocus your telescope slightly to accentuate these dark regions, and relax your eye as you follow them in and around the rich field of stars. Some claim to see the outline of a spider among these stars.
And what about this smiling asterism? Look with binoculars or a finderscope towards the cluster M38. Here you'll see a broad arc of stars about 2° wide with two 'eyes' immediately to the northwest. This is the 'Cheshire Cat', a group of unrelated stars that may put a smile on your face on a clear and chilly night.

Brian Ventrudo

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Comet C/2015 Johnson

This comet is starting to get bright enough for binoculars and is very high in the sky in the constellation of Bootes. It will be visible for us here in the Rotherham/Barnsley area until June at which time it may even become naked eye visible.

Finder for Comet C/2015 (Johnson)			
DATE	**RA**	**Dec**	**Magnitude**
Feb 1st	15h 34m	+44° 36'	9.4
Feb 8th	15h 46m	+44° 54'	9.2
Feb 15th	15h 57m	+45° 15'	9.0
Feb 22nd	16h 16m	+45° 39'	8.9
Mar 1st	16h 16m	+46° 05'	8.7
Mar 8th	16h 23m	+46° 31'	8.5
Mar 15th	16h 28m	+46° 56'	8.3
Mar 22nd	16h 31m	+47° 17'	8.1
Mar 31st	16h 31m	+47° 32'	7.9

The comet has an eccentricity of a very small fraction over 1 so may never return to the inner solar system again and has its closest approach to Earth on June 5th – at 0.8 AU. After this date it will become a southern hemisphere object!

Programme for February & March 2017

Date	Time	Location	Subject / Event	
Thu Feb 2nd	**19:45**	**Club Room**	**Astronomy Quiz**	*Roy Gunson*
Fri Feb 3rd	**19:45**	**Club Room**	**TBA**	*Alan Chapman*
Fri Feb 3rd	**19:30**	**Observatory**	**PVE**	*Alan Birch*
Sat Feb 4th	**19:45**	**Observatory**	**PVE**	*Les Marsden*
Mon Feb 6th	**16:00**	**Parkgate**	**Stargazing @ Parkgate**	*Roy Gunson*
Wed Feb 8th	**19:45**	**Club Room**	**Executive Committee Meeting**	
Thu Feb 9th	**19:45**	**Club Room**	**Terra-forming Mars**	*Prof Simon Goodwin*
Thu Feb 16th	**19:45**	**Club Room**	**Grubb Telescopes**	*Steve Taylor*
Sat Feb 18th	**18:00**	**Clifton Park**	**Planets in the Park VI**	
Thu Feb 23rd	**19:45**	**Club Room**	**The Spring Sky**	*A Kirton-Vaughan*
Thu Mar 2nd	**19:45**	**Club Room**	**TBA**	*Dr James Mullaney*
Fri Mar 3rd	**19:45**	**Observatory**	**PVE**	*Les Marsden*
Sat Mar 4th	**19:45**	**Observatory**	**PVE**	*Les Marsden*
Wed Mar 8th	**19:45**	**Club Room**	**Executive Committee Meeting**	
Thu Mar 9th	**19:45**	**Club Room**	**TBA**	
Sat Mar 11th	**10:00**	**See Notice**	**BAA Event @ Masonic Hall**	
Thu Mar 16th	**19:45**	**Club Room**	**Observing Jupiter**	*Roy Gunson* *Paul D'Silva*
Thu Mar 23rd	**19:45**	**Club Room**	**The Life & Works of Richard Feynman**	*Tony Morris*
Sat Mar 25th	**17:00**	**Old Moor RSPB**	**CAE**	*Les Marsden* *Phil Muffett*
Thu Mar 30th	**19:45**	**Club Room**	**Life off Earth**	*Mike Hall*

Old Moor RSPB – Manvers Way, Barnsley, S73 0YF
PVE – Public Viewing Event – Bookable Only
CAE – Community Access Event
PO – Public Outreach
TBA – To be announced – (otherwise – We don't know!)

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
Mexborough & Swinton Astronomical Society is Registered Charity N° 1064103 in England & Wales

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