The Messenger

Mexborough & Swinton Astronomical Society

July 2016



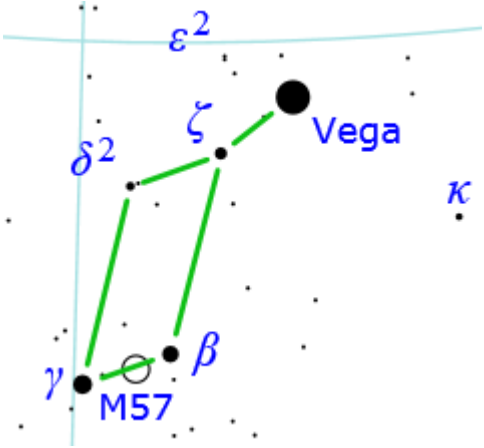
No-one wanted to be first to the bar

so they waited for Paul D'Silva to arrive!

Stars in the Rotherham Sky

2: Vega

Alpha Lyrae is the brightest star in the constellation Lyra and the second brightest star as seen from Rotherham after Sirius. At this time of the year it can be seen high overhead for most of the night.

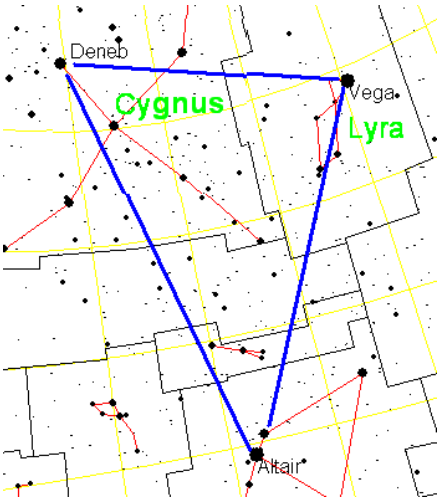


Vega is some 25 light years from Earth and is classified as an A0 Main sequence star. It is thought to be only about 500 million years old (about a tenth the age of the sun) but due to being more than twice the suns mass it will probably "die" in a glorious nova in a similar time frame.

Prior to modern methods of brightness measurement, astronomers used Vega as a reference for the magnitude (photometric) scale making it magnitude zero and calibrating their measurements from this star. Nowadays a numerically derived flux level is used to determine the magnitude scale. Vega's magnitude in Stellarium is still quoted as 0.0, whilst other sources have varying numbers from -0.07 to + 0.03.

Vega is rotating rapidly, and its poles are aligned almost in the direction of Earth, and its rapid equatorial rotation (240 km/sec) means that the equatorial diameter is 25% greater than the polar diameter. It is also calculated that this rotational speed is 88% of that required to cause the star top star breaking up from centrifugal effects!

This rapid rotation is likely to make Vega a strange visual object from any orbiting planet. It is estimated that the equatorial surface temperature is some 7,600K whist the polar surface temperature may be 10,000K. This will make the polar regions twice as bright as the equatorial regions. There may be some strange layering effects of the photosphere, similar to the cloud bands on Jupiter giving a banded nature to luminosity increments.



Some 11,000 years ago Vega was in the position of being the "Pole Star" and will regain the title in another 10,000 years time. Vega and the Suns motion through the Milky Way are causing them to approach each other and in a mere 250,000 years Vega will reach its closest approach at 13.2 light years. Along with Deneb and Altair Vega forms the asterism "The Summer Triangle"

Vega has been observed with a debris disc around it extending from 80 Au from the star out to 120 AU. (similar to the sun's Kuiper belt?), there has been some indication that a large planet may be orbiting Vega within this dust disk but all the reports and indications so far have been highly conflicting.

The Men from the Telegraph

On Thursday 16th June we had a visit from a reporter, Joe Shute, and photographer from the Daily Telegraph who are doing an article on protecting rural England on encroaching light pollution and wanted to look at the effect of Parkgate Steel Works on light emission and talk to a few of our club members.



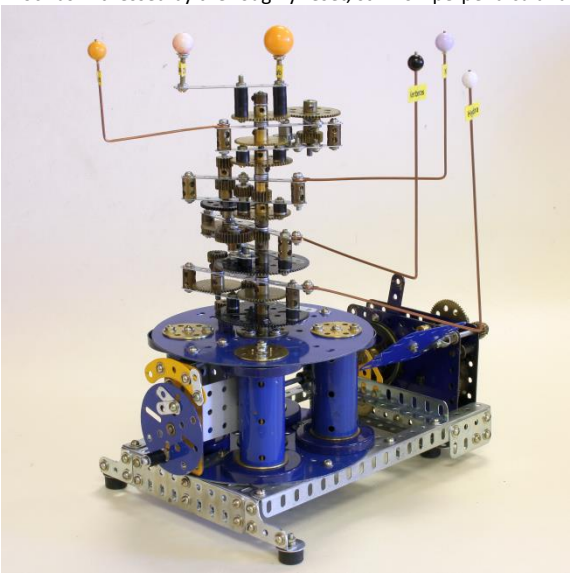
Our club member Phil Muffett writes on the subject of light pollution ;
I did some digging at work on light pollution in Rotherham which falls into several departments,

Government legislation on light pollution is vague and sketchy open to interpretation by local authorities, It is classed as unwanted artificial light i.e., the wrong type of lighting in the wrong place; Legislation does not distinguish between rural and urban areas and is looked at differently in domestic and commercial circumstances.
Our local authority as most do not subscribe to a “Dark sky policy” and only enforced the legal requirement, However, due to government cuts on local spending the spin off from this means the council have looked at street lighting. The council is changing at a considerable cost all the lighting on public roads and then onto estate roads in order to make a very considerable amount of saving running them of which the new LED light fittings comply with the latest “Euro codes”. These save a substantial amount of light leakage and directs it where it’s needed; the council is also looking at turning areas of lighting off in Rotherham for further savings. Apparently the council does not have to provide any street lighting at all. Lighting is provided for traffic safety and to reduce criminal activity. Planning do have control on light signage and have it directed down rather than up. Environmental health also have legislation to prevent the public from causing a nuisance, any lighting over 500w is a floodlight and needs a planning application. Looks like good times ahead.

Phil Muffett

An Orrery of Pluto

Another of my passions is an orrery of Pluto with its five moons (OK, some are snared rocks); constructed entirely from standard parts, the gear ratios are designed to give orbital periods to within 1% of published values. I'm not clever enough to devise the stacked epicyclic gear trains which is the preserve of a dedicated handful of people in the fraternity, a mix mathematicians and astro/clock builders who self-imposed a 1% tolerance - I merely used the gearing layout from a recent club mag. The thing is one of the few orreries where the relative orbit radii can be in proportion and as the centre of mass for Pluto-Charon lies outside both, the barycentre is represented. A simplification compared to many orreries is that tidal locking means each body's own day rotation isn't needed. There's a handwheel at the front or the unPATable, unbreakable vintage clockwork motor at the back can do the job instead. The thing had had a knock as witnessed by the roughly reset, still non-perpendicular arm extensions to the moons...!



Robert Mitchell

Easyfundraing

Support your chosen cause for free when shopping online with over 2000 popular retailers, including Argos, M&S, John Lewis, Debenhams, HMV, Vodafone, DELL, The Body Shop, PLAY.com, Interflora and many more.

http://www.easyfundraising.org.uk/causes/masas

Raise funds for your chosen cause when you search the Web with easysearch - the best results from Yahoo!, Bing and Ask.com in one simple search.

http://masas.easysearch.org.uk

The Sky in July

New Moon on 4th July, Full Moon 19th July
Mercury & Venus neither are visible from Hoober at this moment
Earth at Aphelion on 4th July – yes the farthest from the sun!
Mars continues to be a bright object in the southern sky – albeit it being low down achieving no more than 15° above the horizon, at the most.
Jupiter is a bright early evening object in the south west some 20° above the horizon at sunset, setting at around midnight.
Saturn again is low in the south, and achieves no more than 16° above the horizon.
Uranus is now a morning sky object in Pisces at magnitude 6 in the second half of the month as the month progresses it will become an increasingly better object for observation.
Neptune is in Aquarius and like Uranus is a morning object in the second half of the month about magnitude 7.8.

Is there anybody there?

The physicist Enrico Fermi, when asked about the possibility of alien civilisations, put forward the question "Where are they?" known as Fermi's paradox. Dr. Sue Cartwright, astrophysicist at Sheffield University presented the following possibilities at one of her frequent visits to MSAS:
Self-replication robots could visit every star in our galaxy over 10 million years; therefore we would expect to detect some evidence of their existence.
They do not exist! The obvious default answer but difficult to verify.
They exist but do not communicate. Our search for extra-terrestrial life assumes that detected communication be in some form electro-magnetic radiation, for example, radio or television. If conditions on a planet favour other forms such as sound, e.g. as whales communicate, then this would not be detectable over the vast distances of the cosmos.
They exist and colonise but we are looking in the wrong direction. We may be looking in the right direction but not necessarily in the right order!
We do not exist! Are we merely players in a vast computer simulation being run by white mice?

Mike Hall

Professor Brian Cox

Coming to Sheffield and Chesterfield later this year in what is being advertised as "Professor Brian Cox Live". The show is advertised as "taking the audience on a dazzling journey through space and time, delving into 'high science' and freewheeling on the edges of the known cosmos. Whether an avid science reader or a total novice, Professor Brian Cox Live will test the limits of our knowledge and make highly complex ideas accessible to all"

If you're interested he's appearing at Bradford Alhambra on £0th September, Sheffield City Hall on 6th October, and Chesterfield Winding Wheel on 11th November.

From the old Newspaper Archive

New York Times Mar 22nd 1953

German's Theory On Sun Loses In Court

OSNABRUECK, Germany (UP) —An amateur astronomer is under court order to pay 25,000 Deutsche marks (about $6,000) because a board of scientists agreed that man can not live on the sun.

Godfried Bueren was directed by the verdict to pay the money to the Astronomy Society of Hamburg plus four percent annual interest retroactive to April, 1952.

In 1949 Bueren announced in newspaper advertisements he had concluded human beings could live on the sun. His claim was that sun spots observed by astronomers "a valleys on the sun's surface which have cooled off enough to allow vegetation, and consequently the dwelling of animals and human beings." He offered 25,000 Deutsche marks to anyone who could prove his theory wrong.

Hamburg Astronomy Society experts submitted their proof and demanded the money. Bueren refused to pay and the suit followed. Bueren hopes to appeal.

The Thoughts of Chairman Les



It's been a long time since we had a real celebratory dinner together and we recently did another. It had been decided to celebrate the Summer Solstice with a three course dinner and it was arranged for this to be held at the Rockingham Arms in Wentworth on Friday 17th June.

The evening went extremely well with our guest speaker being Alan Chapman, our President and Patron, who made a first rate presentation about the lady astronomer Mary Somerville, we had also invited Sue Cartwright from Hallam University as our guest.

The meal was first class and was served piping hot by a flurry of waitresses who looked after us in fine style.

After Alan had finished his talk we were treated to the card game called 'Play Your Stars Right' (now I've heard a similar title somewhere else) which gave us all half hour of pure hilarity with our Master of Ceremonies and Game Designer trying to keep some kind of decorum. After this we moved on to drawing the raffle.



I think that you will agree with me that the whole evening went extremely well and we all really enjoyed ourselves. I think you will have realised that none of this could have possibly taken place had it not been for a hard working member Roy Gunson who took the job on some months ago. As you know to get a Yorkshire man to part with his money is not the easiest job in the world and it took a lot effort for Roy to get our cash – BUT HE DID IT!!

It only leaves me to thank Roy for doing a sterling job and giving us a night to remember and all the staff at the Rockingham Arms Wentworth





Programme for July & August 2016

Date	Time	Location	Subject / Event	
Sun July 3rd	14:00	Observatory	CAE – Solar Observing	
Thu July 7th	19:45	Club Room	Gravitational Waves Discovered	*Dr Ed Daw*
Wed July 13th	19:45	Club Room	Executive Committee Meeting	
Thu July 14th	19:45	Club Room	Astronomy News	
Sun July 17th	10:00	Old Moor RSPB	View the Sun as Never Before	
Thu July 21st	19:45	Club Room	TBA	*Phil Muffett*
Thu July 28th	19:45	Club Room	Astronomy Quiz	*Les Marsden*
Thu Aug 4th	19:45	Club Room	TBA	*TBA*
Sun Aug 7th	14:00	Observatory	CAE – Solar Observing	
Wed Aug 10th	19:45	Club Room	Executive Committee Meeting	
Thu Aug 11th	19:45	Club Room	Perseids	*Roy Gunson*
Fri Aug 12th	19:30	Observatory	Perseids (Provisional)	
Sun Aug 14th	10:00	Old Moor RSPB	View the Sun as Never Before	
Thu Aug 18th	19:45	Club Room	TBA	*TBA*
Thu Aug 25th	19:45	Club Room	Autumn Sky	

Old Moor RSPB – Manvers Way, Barnsley, S73 0YF
RA – Rockingham Arms, Wentworth
Clifton Park –Clifton Lane, Rotherham, S65 2AA
Thryberg Country Park – Doncaster Rd, Rotherham, S65 4NU
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

For submissions to The Messenger - Editor: Roy Gunson: royg@gmx.co.uk