The Messenger

Mexborough & Swinton Astronomical Society November 2016

Solon Irving Bailey born in 1854 and after graduating from Boston University in 1887 he joined the staff of Harvard College Observatory. He received an M.A. from there in 1888. Working with Professor E. C. Pickering he was tasked to find a location for a "southern observatory" after the observatory received a bequest from the will of Uriah A. Boyden; Bailey founded the Boyden Station in Arequipa, Peru, and was in charge of it from 1892 to 1919.



When Solon Bailey set up the observatory in Peru, he took more than a hundred crates of equipment: telescopes, weather instruments, seismometers, and much more. But a couple of years later, he needed a few other pieces of equipment to keep his observatory safe: guns and clubs. Bailey had picked the town of Arequipa, which was about 8,000 feet high and offered plenty of clear nights for observing the southern sky. Harvard Observatory director Edward Pickering then sent his brother William to run the new station. But a couple of years later, William had made a mess of things, so Bailey returned to take over.

At first, everything was calm, and Bailey produced hundreds of photographic plates of southern stars and star clusters.

But in 1894, a revolution was under way, as an exiled former president sought to return to power. Bailey and his family were on a train when it was captured by rebels, although they were unharmed. Later, when the fighting reached Arequipa, Bailey removed the lenses from his telescopes and buried them to keep them safe. He barricaded the observatory compound, and stocked up on supplies.

Hostilities soon ended, though, with no casualties among family, staff, or telescopes. And Bailey saw a chance to win a new friend. He invited the restored ex-president for a tour. With good relations assured, the observatory continued to operate in Peru for three decades more.

The difficulties and discouragements of establishing a station on top of El Misti, Arequipa's nearly extinct volcano, 19,200 feet high, might have baffled a less determined man. Upon his first attempt to walk up, he became unconscious at the altitude of 16,000 feet and had to be carried down the mountain. Observing that the pack mules reached the top with slight discomfort, it occurred to him that if fatigue could be lessened by riding, this elevated station might be maintained. Thus the problem was solved by the construction of a mule-path to the summit.

The Thoughts of Chairman Les



It's your chairman again, did you take advantage of the few clear skies we had recently?
Our 'Internal Astromind' in September I'm afraid to say was not a success in any shape or form. There was only ten of us turned up on the night therefor we were unable to raise a team for the event, a very disappointing night. The outcome from this is that we haven't got a contestant for the 'Yorkshire Astromind' competition being held late this month with Huddersfield AS hosting, I don't think that any of us will be visiting either, what a disappointment.
Saturday 17th September visit to 'Boston Castle' in Rotherham for solar observing. This was our first joint venture with Boston Castle. We were to provide Solar Telescopes at ground level, a 'scope on the roof to investigate the surrounding area and a couple of indoor presentations. The programme was to run from 11.00am to 3.00pm. The weather was not ideal at first for solar observing but the cloud did clear and customers got a couple of hours observing. The 'scope on the roof proved to be extremely popular and was busy all day. The presentations were not such a success as they were to be held in the Craft Room which was very busy all day by entertaining the children. Our display on the ground floor was well received by the visitors and proved to be a success. The end of the day came round very quickly and it was a rush to clear things away to close the rooms and secure 'The Castle'. At this busy time there was phone call from 'The Star' saying their reporter was coming to do and article on the day. This in its self was a busy and interesting time as the reporter wanted lots of information to give a good and full report of the day. There are a few pictures in a couple of the local papers.
It has been quite a full and busy month with a PVE at the observatory and evening at RSPB. We had two Guest Speakers in the middle of the month, Mike Frost and his 'pumas' followed by Dr Mathew Malik and 'Cosmic Rays', two very good and interesting speakers.
I wish you clear skies

Les Marsden

RSPB – October 8th 2016

We had apparently 60 people through the doors at this event "Stargazing Extra with Pie & Peas". Thanks to Phil Muffett Tony Hood, Roy Gunson, Paul D'Silva, Steve Taylor and Mick Collinson for their efforts on the night.
Please note we could do with a few more scopes at these events – and don't forget we get the Pie & Peas free!





Tony Hood looking relaxed and the Crepuscular Rays looked nice even though the clouds didn't shift

Long Delayed Echo (LDE)

I do like reading and looking at some of the strange oddities in science. For this one I'm going to try to give some information on a topic that has, unfortunately, been hijacked by the UFO community. However it does seem to be a real effect and has so far no explanation.
Long delayed echoes are radio phenomena where an echo of a transmission is heard that is longer than can readily be explained by most known origins, most typically 3-40 seconds.
This phenomenon was first experienced by a Norwegian radio engineer, Jorgen Hals while listening to a Dutch shortwave station.
"I herewith have the honour to advise you that at the end of the summer 1927 I repeatedly heard signals from the Dutch short-wave transmitter station PCJJ (Eindhoven). At the same time as I heard the telegraph-signals I also heard echoes. I heard the usual echo, which goes round the earth with an interval of about 1/7 second, as well as a weaker echo about 3 seconds after the principal signal had gone. When the principal signal was especially strong, I suppose that the amplitude for the last echo 3 seconds after lay between 1/10 and 1/20 of the principal signal in strength. From where this echo comes I cannot say for the present. I will only herewith confirm that I really heard this echo."
Some research by A. K. Goodacre in 1980 reported LDE's of up to 9 seconds in duration whilst some investigations done in the 1970's measured some LDE's with durations up to 40 seconds. There are other reports detailing LDE's with delays between 1 second and 16 seconds,
A delay of 1/7th second is apparently quite common in shortwave broadcasts and this is the time it takes the signal to go around the earth once using multiple hops between the ground and the ionosphere.
A three second delay would represent a total path length of 558,000 miles, or a round trip (there and back) of 279,000 miles. Could this be a bounce off the moon?
Shortwave radio is refracted by the ionosphere rather than being reflected though common parlance has it that the signal is "reflected", so shortwave signals that are perpendicular, going straight up, should penetrate the ionosphere, however this would mean that the signal would only occur when the moon was overhead. It must be said that due to the distance, the small angular size of the moon the signal should be very heavily attenuated.

Discussions on radio ham websites talk about EME echo's (Earth-Moon-Earth), and amateurs have successfully reflected radio signals off the moon, and to do so they use high power combined with very high gain antennas and UHF or microwave frequencies so that a high degree of directivity can be accomplished with a reasonable antenna. Even Venus has been bounced off (however this was done with a large dish transmitter from the Bochum amateur radio telescope in March 2009!).
This however does not explain longer echoes of up to 40 seconds or in some rare cases even more. It is also interesting to note that a shift in frequency has been reported in the reception of some echoes suggesting that the reflector, whatever it is, is moving relative to the transmission / reception site.
There is a theory that suggests that acoustic propagation in the ionosphere may be responsible. The idea that ions, being charged, respond to electromagnetic radiation by physically moving, essentially setting up a radio frequency acoustic wave which travels at the speed of sound in the ionosphere rather than at the speed of light.
Some people believe there is a correspondence between auroral activity and LDE's and it has been suggested that some of these LDE's could be reflections from clouds of ionised particles coming from the sun as they pass close to the Earth.
Of course the UFO "nuts" have claimed siege to this phenomena and in 1970's it was suggested that the signals are coming from an alien space probe in near earth orbit which are returning the signals to Earth in an attempt to open up communication. Why they don't just land and say "Yoo-hoo we're here" - it would be a lot more efficient.
However you look at it, LDE phenomena does exist and is still awaiting an explanation. For whatever reason at the moment however, all the investigations are seemingly done by amateurs as the regular professionals don't want to get involved with an effect that is sporadic and has been tainted by the "flying saucer" crowd.

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)



Mike Hall's November 2016 Skynopsis

Diary (all times GMT unless otherwise specified)

1st Sunrise 07.05, Sunset 16.34
2nd 19.00 Saturn 40 South of Moon
3rd 04.00 Venus 70 South of Moon, 3rd 17.30; Venus, Saturn and Moon are all together in the evening sky
6th 24.00 Mars 50 South of Moon
7th 20.00 Moon First Quarter
8th Sunrise 07.18 Sunset 16.21
9th 03.00 Neptune 10 South of Moon
12th Northern Taurids meteor shower peaks; 11.00 Uranus 30 North of Moon
14th Full Moon (Super Moon 33.3'), 11.00 Moon at perigee
15th Sunrise 07.31, Sunset 16.00; 17.00 Aldebaran at greatest western elongation (mag. +10.1)
17th - 18th Leonid meteor shower peaks
18th 21.00 Mercury 30 South Antares
20th 10.00 Neptune stationary
21st 09.00 Moon at Last Quarter
22nd Sunrise 07.44, Sunset 16.00
25th 02.00 Jupiter 1.90 South of Moon
27th 20.00 Moon at apogee
29th Sunrise 07.55, Sunset 16.53; 18.00 New Moon;
30th St. Andrew's Day

The Solar System

Mercury Poor viewing but close to the meridian in early evening sky and crosses into Capricornus on the 8th.
Venus Low in the early evening sky improving thorough the month
Mars Viewable before evening twilight passing from Sagittarius to Capricornus; close to M75
Jupiter Lying in the morning sky; in conjunction with gamma Virgo on the 1st
Saturn Low in the sky after sunset, lost o view mid-month
Uranus Still well placed for viewing all this month, in Pisces, moving towards zeta Pisces 12th-30th.
Neptune Is also still well placed for viewing, crossing into Aquarius; highest 19.30
Pluto Not visible
Ceres In Pisces around the 1st, to the right of omicron Pisces

Supermoon 14th. Moon is at perigee (356.512 km, 33.3') at 23.00

Galactic Goodies

M34 (Little Dumbbell) Between Perseus and Andromeda, 2 0'clock from beta Algol
M76 M76 between Andromeda and Cassiopeia, 10 o'clock from M31

Meteors

12th. Northern Taurids Meteor shower peaks
17th- 18th, Leonid meteor shower peaks, visibility unfavourable.

Easyfundraising

Help us raise funds whilst you shop.

I know that many of you will not want to be reminded that Christmas is coming but you will be thinking about it.

As many of you will be doing your shopping on line please think about how you can help your society to raise fund with just a little bit of effort.

First, if you are going to use Amazon then access their site via our front page. There is a link near the bottom of the page. If you do this any purchases you make during that session will lead to a donation to MSAS. The more you send the more your society receives. It really is that simple!

Second. A little more complicated but far more productive and not just for Christmas. register with Easyfundraising.

This organisation has been mentioned before. If you haven't already done so go to their website at www.easyfundraising.org.uk , register as a user, register MSAS as your charity and load the small application onto your browser. After that every time you use the internet to buy and goods or services you will be able to get a donation for the society. If you need extra help ask Paul D'Silva for a flyer explaining how to set up your Easyfundraising account.

The Death of a Star: Observing Supernovae with Neutrinos

Guest Speaker: Jost Migenda Thursday, 3rd November 2016 (19:45 - 22:00)



Neutrinos are ghost-like particles that can literally "go through walls". They can bring information from places that are extremely hard to observe otherwise, like active nuclear reactors or the centre of our Earth and stars.
After a brief discussion of the exciting history of neutrinos, I will describe how we can use them to look inside a supernova in the moment of explosion and what we might learn from this – about stars, neutrinos and, if we're lucky, about physics beyond the standard model. Jost is a Post-Grad student at Sheffield University

Edge of Darkness - Introducing Dark Nebulae

Guest Speaker: Nick Hewitt Thursday, 17th November 2016 (19:45 - 22:00)

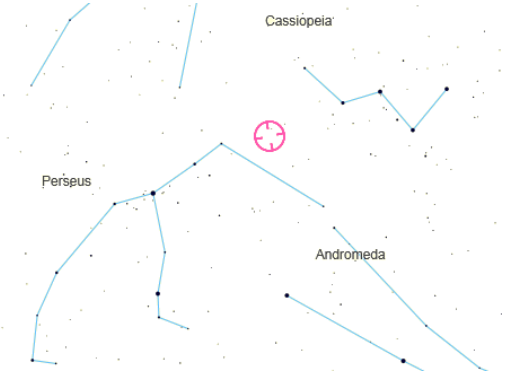


Nicks talk is essentially an overview of these under-discussed nebulae (in amateur circles) and a bit on his project. Nick is a retired GP (just) from Northampton. He is currently Chairman of the local society (Northamptonshire Natural History Society's Astronomy Section). He was Director of the Deep Sky Section of the BAA from 1992-2003, President from 1999-2001 and remain a Trustee. I am a keen eclipse chaser and enthusiastic observer of the Deep Sky, Mars and AGNs

The Double Cluster

The Double Cluster is the common name for the naked-eye open clusters NGC 869 and NGC 884

The open star cluster NGC 884 is the eastern half of the double cluster and the cluster NGC 869 is the western half of the double cluster.
At this time of year it is well placed for observation. It will reach its highest point in the sky at around midnight local time.
From Barnsley and Rotherham, it will be visible all night because it is circumpolar. It will be highest in the sky at 01:00am on the 1st, 86° above the northern horizon (almost straight overhead).
At dusk, it will become visible at around 40° above the north-eastern horizon (look below Cassiopeia as shown in the map below).
At dawn at around it will be 45° above the north-western horizon, so all in all it will be well placed all night.
At magnitude 5.0, the double cluster is tricky to make out with the naked eye except from a dark site, but is visible through a pair of binoculars or small telescope.



The Double Cluster is one of the most prominent deep-sky objects not to be included in the famous Messier catalogue. Charles Messier (1730-1817) was looking for deep-sky objects that could be mistaken for comets. He must have thought nobody would mistake this pair of splendid clusters as a comet in the sky.
Double Cluster is thought to be some 7,500 light-years distant, and to be separated from one another by a few hundred light-years. It's amazing that we can see these stars at all across this great span of space. We know they must be bright stars, intrinsically, or we wouldn't be able to see them. Each cluster contains a few hundred stars, and, indeed, these stars are young, hot supergiant suns that are many thousands of times more luminous than our sun.

The Double Cluster lies within the Perseus arm of the Milky Way galaxy. However, our solar system resides in the inner part of the Orion arm, so when we look at the Double Cluster, we are looking through our local spiral arm and all the way to the next spiral arm outward from the galactic centre.

The double cluster was first spotted as a patch of light by Hipparchus in 130BC, but its true identity wasn't known until the invention of the telescope.

Programme for November & December 2016

Date	Time	Location	Subject / Event	
Thu Nov 3rd	19:45	Club Room	The Death of a Star	*Jost Migenda*
Tue Nov 8th	18:15	Observatory	CAE – Chapeltown Beavers	*Alan Birch*
Wed Nov 9th	18:15	Observatory	CAE – Rotherham Brownies	*Alan Birch*
Wed Nov 9th	19:45	Club Room	Executive Committee Meeting	
Thu Nov 10th	19:45	Club Room	Uncertainty of Mr Heisenberg	*Roy Gunson*
Fri Nov 11th	19:45	Observatory	PVE	*Les Marsden*
Thu Nov 17th	19:45	Club Room	Edge of Darkness	*Nick Hewitt*
Thu Nov 24th	19:45	Club Room	Winter Sky	*A Kirton-Vaughan*
Wed Nov 30th	19:45	Club Room	Aquarius Project Meeting #10	
Thu Dec 1st	19:45	Club Room	TBA	*Paul Money*
Thu Dec 8th	19:45	Club Room	We're going to the movies	*Jez Robinson*
Fri Dec 9th	19:45	Observatory	PVE	*Les Marsden*
Sat Dec 10th	19:45	Observatory	PVE	*Les Marsden*
Wed Dec 14th	19:45	Club Room	Executive Committee Meeting	
Thu Dec 15th	19:45	Club Room	TBA	*Sue Cartwright*
Thu Dec 22nd	!9:45	Club Room	Grubb Telescopes	*Steve Taylor*
Thu Dec 29th	19:45	Club Room	Meteors & Quadrantids	*Paul D'Silva*

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

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

Coming Soon .....

Get ready to be wrapped up warm – Quadrantids viewing at the Observatory on Tuesday January 3rd

Also get your images ready for the Photo Competition on 26th January