

East Lincolnshire Astronomy Club

2018 Review

Sat 21st April 2018 (AGM)

The March meeting had to be cancelled due to bad weather so the Annual General Meeting was postponed to the April meeting after the lecture. The guest speaker was Dr. Julian Onions from Nottingham University with a talk titled "Cold Dark Matter. Is it cold? Is it dark? Is it matter?"

The meeting was very well attended and we welcomed surprise guests Paul Money and Michelle Clark (Meteorocks.co.uk).

Julian began his talk explaining why the scientists think dark matter exists and referred to the observations of some of the spiral galaxies and the fact that there isn't enough visible matter there, to stop them from flying apart. So something unseen must be adding to the mass of the galaxies, to keep them rotating as they do. This is referred to as dark matter.

Other evidence for dark matter appears in the CMB (cosmic microwave background) and gravitational lensing. So this matter must have been present and ubiquitous in the very early universe.

Mathematical calculations seem to imply that the universe consists of about 5% ordinary matter, 26% dark matter and the rest made up of so called dark energy.

Dark matter has never been directly observed, but we know it exists due to its gravitational effects. Several experiments are ongoing, including at the LHC in Geneva and deep underground in various parts of the world, to try and detect and observe it directly, but this is so far proving difficult as it doesn't seem to interact with ordinary matter or light.

Continuing his talk, Julian explained that dark matter is classified as cold, warm or hot according to its velocity, but current models favour a cold dark matter scenario.

Julian's talk was very in depth, well explained and interesting. He then went on to answer member's questions on the subject.

The final part of the evening was taken up with the AGM. Last year's committee members were re-elected unopposed, but in slightly different roles: Paul Cotton-Chairman, David Wiggs-Vice Chairman, Mark Shaw-Treasurer/Membership and with the addition of Steve Cansdale-Web Master.

Forthcoming planned events were discussed.

On 12th May the club will have a table at Lincolnshire Heritage volunteers event at Louth library 10am- 3pm.

On 27th July a 'sidewalk' Astronomy event is proposed at a sea front location to view the Lunar eclipse called 'fishandeclipse'. The planned venue is Sutton-On-Sea.

Then 11th August will be a Perseid meteor shower party at Badger Farm.

Sat 12th May 2018

ELAC, along with other societies and organisations, put on a display at the Lincolnshire Heritage volunteers event, held at Louth Library. The aim of the event was to try and encourage people to maybe try something new, that perhaps they had never previously considered.

A small team of club members set up a table top display including the club display boards, a laptop showing various celestial images, a small Meteorite display, some free giveaway astronomy magazines and 'Buzz' the cut-out astronaut. Two telescopes were also on view.

The morning started quite busy, with people coming in to view the displays and asking various questions, but the afternoon proved to be very quiet.

However it was deemed a worthwhile exercise and it did raise the clubs profile with the other exhibitors.

Sat 19th May 2018

There was a brief window of opportunity to do some solar observing, with Paul's Equinox 80/Quark Daystar combo for tonight's early arrivals, with several flares been noted, before the sun disappeared behind the trees.

David Castledine from Lincoln Astronomical Society was our guest speaker for tonight's talk, titled 'Off Axis Telescope Project'.

The project was undertaken by David way back in the 1980's, as part of an OND course, and involved the total build of the telescope with all the relevant parts been made by himself.

Starting with explaining the initial design process and selecting the optimum focal length and primary mirror diameter for the required field of view, David described how he constructed the telescope.

Obviously the most important components are the primary and secondary mirrors. These were made from two circular glass discs about 10mm thick which were ground together by hand, using different grades of carborundum paste, to achieve the desired concave and convex shapes. This process took many hours of labour to get to the accuracy and finish required. He discussed the method used to minimise the effects of aberration in the optics.

Finally the mirrors were sent away for 'silvering' to achieve their reflectivity.

The mount for the telescope was a tripod construction made out of timber, as were other components in the telescope assembly.

Finally, after answering some of the member's related questions, David set up his scope outside the hall to observe Venus and the Moon to demonstrate its functionality.

Using Paul's scope, we managed to view Jupiter and its moons and although the seeing wasn't great, we did see its main two bands but not the GRS. We also observed the lovely crescent moon.

One final note...Thanks go to Jan for sharing with us her birthday cake.

Sat 16th June 2018

This evening's monthly meeting started with a raffle of a pair of 10x50 binoculars, kindly donated by Nigel from Northern Optics and a copy of the Haynes Voyager manual donated by club member Neil.

In the same theme, tonight's guest speaker Paul Money was giving his talk on 'The Triumphs of Voyager Pt. 2'. This followed on from his previous Voyager talk in July 2017 'Journey to Jupiter/Splendours of Saturn'.

Paul began his talk by briefly reflecting on the Voyagers journey so far, to Saturn.

Voyager 1, having flybys of Saturn and Titan, Saturn's largest moon, which is known to have a substantial atmosphere, then achieved the required escape velocity to allow it to leave the solar system. It became the first spacecraft to cross the heliopause and enter the interstellar medium.

Most of Paul's talk however, focused on Voyager 2, which by using a different trajectory to reach Jupiter and Saturn, allowed it to visit the outer planets Uranus and Neptune.

It reached the Uranian system in 1986 and made many discoveries, including ten new moons and the ring systems of Uranus. These were graphically illustrated by images shown by Paul. Instruments onboard also studied the planet's magnetic field.

Voyager 2 then became the first spacecraft to observe Neptune, in 1989. It skimmed at about 3,000 miles above the planet's atmosphere and spotted 5 new moons and 4 new rings around the planet.

Carrying a golden record bearing sounds from earth, Voyager 2 is now in its extended mission to study the outer reaches of the solar system and beyond. The mission is expected to last until about 2025.

Paul then finished his enthusiastic talk with a questions and answers session.

Sun 24th June 2018

To celebrate 'International SUN Day', the club hosted an outreach event at Marshlands Community Hall, Saltfleetby, from 2pm to 5pm.

The aim was to invite the public to come and discover more about the star in the centre of our solar system, with a talk by Paul Money and to see how to safely observe the sun using specialised solar telescopes.

The weather was kind to us and visitors were encouraged to look through the scopes to observe the sun. Prominences and the odd small sun spots were clearly visible.

Paul Money gave his talk on our local star, describing what the sun is made of and how the fusion process works, starting with hydrogen atoms fusing together to form helium and then into the heavier elements. He explained how the sun's magnetic fields work, going from solar max to solar min over an approx. eleven year cycle and how the sun affects the earth in the process.

Paul illustrated with images he had took, some of these effects, for example, sun dogs, Auroras, nacreous and noctilucent clouds etc.

Also present at today's event was Michelle from Doncaster displaying her Meteorite collection. These included stoney, stoney/iron and iron examples. A great display intriguing members of the public.

After a break for tea/coffee and cup cakes kindly supplied by Rosie and her team, Paul Cotton gave a short talk on how to observe the sun safely.

He described the various specialist solar telescopes available, with their appropriate filters in the different wavelengths.

We were joined by members of the North Lincs Astro Society who brought a couple of Ha solar telescopes.

Another successful outreach event enjoyed by all and for once the weather played ball!

Sat 21st July 2018

Due to illness the club chairman, Paul Cotton, was unable to give his talk but Paul Money very kindly stepped in at very short notice to give the club a talk.

In fact Paul gave us a choice between two presentations! Put to the vote, we chose the talk about Paul's adventurous trip to the North Pole in 2008.

Paul had been invited to be part of a team as resident astronomer, on a trip to the North Pole on a Russian nuclear powered ice breaker no less. On the return journey they would encompass a total solar eclipse, on which Paul was required to give some talks to the paying passengers.

Having flown to Moscow and doing some sightseeing there, including Red Square, Moscow city centre and St.Basils lit up at night time, Paul met up with the rest of the team the next day.

They did a whistle stop tour of Moscow including a visit to the Yuri Gagarin statue before flying to Murmansk to board the 'Yamal'.

Paul then went on to talk about their adventures on the trip to the North Pole, including a helicopter trip to islands of the Franz Joseph Land, encountering icebergs, before entering the arctic ice and smashing through it!

They caught sights of walruses and a polar bear.

They finally reached the North Pole on day 7 of the trip and found a safe berth within 950 metres of the exact polar spot. Celebrations were held on the ice, including a BBQ and the erection of a large maypole which they danced around to the music of ABBA!

That evening, it was time to start the voyage back to the Franz Joseph Lands and to hopefully witness the solar eclipse with the paying passengers.

Paul gave his talk on the subject and what to expect, to the guests, in readiness for the occasion.

After a discussion with the captain, the best position to view the eclipse was determined and the ship headed for that spot.

On arrival they were met with variable cloud cover, which got worse as the eclipse began, but glimpses of the sun could occasionally be seen. Unfortunately at the time of totality the cloud was too thick to see the spectacle in all its glory, but the passengers still seemed to appreciate the experience.

Paul finished his talk after describing the return journey back to port and said what a great experience it had been.

A very entertaining talk with lots of great memorable images to back it up!

Sat 18th Aug 2018

The club is delighted to announce that Michelle Clark has been added as an honorary club member, in recognition for her recent contributions to club events.

With our scheduled speaker Prof. Brad Gibson having to withdraw at very short notice, for the second consecutive month Paul Money offered his services to give us a talk. This was very much appreciated by club members.

Paul's inspiring talk was entitled 'Gems Of Scorpius & Sagittarius' and covered the vast array of interesting deep sky objects that can be observed in this area of the sky.

Objects included globular and open clusters, nebula, galaxies, dark nebula, double stars, not to mention the odd planet and comet visiting this area of the sky at the moment.

The talk was graphically illustrated with some superb images.

It was good to see our Chairman Paul Cotton back in action and also a special mention for Clare and David for again taking on the tea duties.

Sat 22nd Sep 2018

After welcoming some new members and with no speaker tonight, we got straight down to official club business. First on the agenda was the date and venue for the club Christmas meal, which would be on 15th December. It was agreed to have the meal at Scamblesby village hall again and to invite Sue Kind to do the catering.

The next six points presented by Paul Cotton were then discussed in detail.

1 - Speakers. Paul asked if we thought that the current number of speakers visiting the club to give their talks was about right. This number was about five throughout the summer, which still gave us plenty of opportunity to do observing during the darker nights.

2 - Meeting dates. The members were asked if the current arrangement of having club meetings on the third Saturday of the month was still acceptable, it was agreed that it was.

3 - Upcoming school visit. Paul was asking for volunteers to help the club give an Astronomy presentation, to a class of Physics students at a school in Sleaford on 4th Oct. to celebrate their 'World Space Week'.

4 - Stargazing Lincs. Due to the high cost of staging this event and also the remote location of the hall used, alternative ideas were discussed for any future staging of Stargazing Lincs.

5 - International Sun Day. Similar to Stargazing Lincs, we discussed the pros and cons of staging this event, with the possibility of doing it again but maybe without a speaker. Instead we could possibly have 3 or 4 small workshops going on, to compliment the solar telescopes.

6 - Funding. It was discussed to see if the club could possibly get some future funding, when asked to stage Astronomy events, maybe by way of a donation to the club.

Paul has been approached by a venue near Alford interested in staging an Astronomy event, but no further details were available at this moment in time.

As the nights were now getting darker, it was decided to re-introduce the monthly observing sheets.

This month's targets were: M31 Andromeda Galaxy, M15 Globular Cluster and NGC 7009 The Saturn Nebula.

Unfortunately no observing was possible tonight due to weather conditions.

Thanks go to Mark for keeping us supplied with drinks/biscuits.

Thurs 4th Oct 2018

Visit to Kesteven & Sleaford High School.

The club was invited to give the students and parents a presentation on Astronomy as part of 'World Space Week'.

Paul Cotton started the night's proceedings, by giving a talk on the merits of learning astronomy and highlighting several very successful people who have made careers in it and associated subjects.

He then showed the audience images of the range of objects that astronomers observe and explaining what they were.

When the talk was finished, we proceeded outside where Ron and Paul C set up their telescopes to try and give the students the experience of observing.

Initially it wasn't quite dark, but under clear(ish) skies we managed to view Mars and Saturn, some students using the opportunity to put their smart phones to the eyepiece to take photos!

We also handed out two pairs of binoculars for them to use as well.

As it got darker, Paul C set up his 12" Dobsonian telescope to try and observe some deep sky objects and although the school security lights caused a bit of an issue, we managed to view

M57 The Ring Nebula, M27 Dumbell Nebula, M15 Globular Cluster, M13 Hercules Globular Cluster, M11 The Wild Duck Cluster and the double star Albireo.

Thank you to Paul L, David and Ron for assisting.

Everyone seemed to enjoy the evening as we did too.

Sat 20th Oct 2018

Tonight's club meeting coincided with 'International Observe The Moon Night', so being blessed with clear skies and an 85% waxing gibbous moon, the evening was dedicated to observing.

With Paul C setting up two scopes behind the village hall and providing members with moon maps, we set about trying to observe specific lunar targets.

As well as looking at the moon, we also observed Mars and Saturn, although the latter was very low in the sky, the Cassini Gap was just about visible.

We then went onto trying our luck at some of the brighter DSO's. This was challenging with the bright sky, but did manage to catch up with last month's observing targets, M31 Andromeda Galaxy and M15, Globular Cluster in Pegasus.

M13, Globular Cluster in Hercules, was nicely out of the way of the moon's glow for a reasonable view.

We then had a look at M57 The Ring Nebula, M27 The Dumbell Nebula and M71, Globular Cluster in Sagitta. The Wild Duck Cluster M11 was quite low but still visible. The double cluster Caldwell 14 in Perseus was easily found in binoculars. A comparison was made in the telescopes between double stars Albireo and Almach.

Quite a good haul of DSO's despite the bright moon and a successful evening's observing.

Sat 17th Nov 2018

For the second monthly meeting in a row, we mainly dedicated the evening to observing, with three telescopes set up at the rear of the hall, including Steve's 'big' Dob.

The clear skies were very challenging though, with the 70% illuminated moon and the atmospheric moisture causing problems.

We had a go at one of the more challenging of November's Observation targets, Mirach's Ghost (NGC 404). This proved difficult though due to the conditions, but was just about detectable using averted vision. Other galaxies and open star clusters were also targeted and the old favourite Ring Nebular was also observed.

It was an enjoyable evening despite the unfavourable 'seeing' conditions and good to be out under the stars again.

Thanks to David & Clare for keeping us supplied with tea/coffee and biscuits.

Sat 15th Dec 2018

Tonight was the club Christmas meal, held at Scamblesby village hall again with Sue Kind providing the catering with a three course meal, finishing with a large plateful of mince pies!

Again the food was excellent and enjoyed by all.

A raffle was provided with various prizes, some kindly donated by David and others, with the money raised going into the club funds.

A great night!

Sat 19th Jan 2019

Unfortunately observing was out of the question at tonight's meeting, due to the cloud cover.

With some new faces attending, we had discussions about the pros and cons of the various telescopes available and also aspects of astro-photography.

We then watched a DVD on the Aurora Borealis (Northern Lights) taken from Norway, courtesy of David.

Mark then showed us some wide field images that he had taken of the Aurora, from this locality, showing how it's possible to do so using long exposures.

We ended the evening with an informal chat and also talked about the forthcoming total Luna Eclipse, which was due in the early hours of next Monday morning.

Again, thanks to Clare and David for providing the liquid refreshments/biscuits.

Wed 30th Jan 2019

The club was invited to another Heritage Lincolnshire 'Do Something New' event. The venue this time was St. Botolph's Church (The Stump) in Boston. Once again there were different groups and societies in attendance.

A good number of people came to visit the club's stand many of who showed an interest in astronomy and were keen to know more about ELAC.

Highlight of the day was when Paul C was interviewed live on BBC Radio Lincolnshire, by their reporter Lynsey Bradford, on the 'Melvyn in the Morning' show.

Paul discussed different aspects of the club and also what was currently observable in the night sky and was able to promote the forthcoming South Ormsby event.

Overall the day was deemed to be a success from the club's perspective, so was worth the effort to attend the event.

Thank you to Paul L, David and Rosie for assisting.

Sat 16th Feb 2019

With clear skies earlier in the day it was hoped to do some observing at tonight's meeting, but cloud moved in and only glimpses of the 89% illuminated moon were possible.

We discussed the forthcoming astronomy events that were happening:

- (1) School visit to North Thoresby & Utterby Primary Academies on the evening of 28th February.
- (2) South Ormsby star gazing event on Friday 8th March.
- (3) Practical Astronomy Show 2019 at Kettering Conference Centre on 9th March.
- (4) Club AGM and selection of committee members 16th March.
- (5) SPA Convention in Cambridge 30th March.

Thanks to Clare and David for keeping us supplied with refreshments.

Thurs 28th Feb 2019

At the request of North Thorseby & Utterby Primary Academies near Louth, the club was invited to give a presentation on basic astronomy for the benefit of their young students.

To a packed audience of both children, parents and teachers, Paul C gave a talk on the basic objects that can be seen in the night sky with minimal use of visual aids, as an introduction to astronomy.

These covered the moon and its phases, the planets, open star clusters, globular star clusters, nebulae (fuzzy patches), galaxies (Andromeda and Triangulum), eclipses, aurora (Northern Lights), comets, satellites (international space station) and finally the constellations, particularly Orion that is very prominent in the sky at this time of year.

The talk was accompanied with a slide show of these objects taken by Paul from the local area.

Two telescopes were set up in the meeting room, where interested parents and students came to have a look at and ask questions. The club stand was also on show and students were invited to take the various free educational astro booklets on offer, at the end of the talk.

Unfortunately no observing was possible due to the typical British weather, but teachers, parents and students alike seemed very appreciative of the club's presentation on an introduction to astronomy.

Thank you to Paul L and Rosie for assisting.

Fri 8th March

Go Stargazing - Introduction to Stargazing at South Ormsby Estate.

To celebrate British Science Week, the club was asked to do a presentation on the estate at the old school house. The venue was quite small so numbers were limited to 21 adults and 8 children that booked into the event.

Unfortunately on the night the weather prevented any observing, so Paul Cotton gave a talk about what was visible in the night sky using the naked eye or binoculars.

We had a club display on show with the information boards, Steve's 14" Dobsonian telescope and a 120 mm refractor telescope set up.

During the interval in the talk, the children were given booklets about astronomy and some pre made constellation viewers. Refreshments were provided by the estate staff.

A donation was made by the South Ormsby Estate to the club as a thank you for facilitating the event.

The presentation seemed to be well received and hopefully will lead to more events in the future at this venue.

Thanks to Steve, Jan and Phil for assisting.

In Summary

Overall the club had a successful year with our own events, school visits and public events. We had some setbacks with the cancellation of speakers but everyone pulled together and kept the club going through a difficult period. Special mention must go to Paul Money for his continued support and help over the year.