EAST LINCOLNSHIRE ASTRONOMY CLUB

REVIEW 2019/20

Sat 16th March 2019 (AGM)

The evening began with Paul Cotton giving an update on the club's finances. The membership fees remaining unchanged for the coming year and were now due.

We also discussed the success of the recent presentations the club did at Boston Stump, Utterby Primary Academy and South Ormsby Estate, (the latter giving the club a donation).

A special mention was given to Paul Money for his continued support and for the talks he gives to the club, also to Steve Cansdale for his work on the club's website.

Next on the agenda was the election of the club committee. The members voted as follows : Paul Cotton-Chairman, Mark Shaw-Treasurer/Membership Secretary, Steve Cansdale-Webmaster.

At the conclusion of club business, Paul C gave us an in depth talk on the constellation of Leo, pinpointing the whereabouts of several Messier and NGC/Herschel objects, in and around the constellation and how to locate them using the star-hopping technique. This was accompanied by images of the galaxies etc. that could be seen with an average telescope within that area of the sky.

Also, highlighting the "backward question mark" that symbolises the head of the lion, mentioning that the prominent star Regulus, is actually a four star system in the form of a double double, approximately 79 light years away from earth.

It was suggested that talks on the constellations could become a regular feature on club nights, when no official speakers were booked and observing was not possible because of the weather. With that, the meeting ended.

Thanks to Clare and David for the refreshments.

Fri 13th April 2019 (Star Party)

Paul Cotton and Rosie invited club members to a Star Party at their house, under the dark skies of Saltfleetby, as a reasonably clear night was forecast.

With several telescopes set up the first target was the moon, which was a 63% illuminated waxing gibbous. This gave good views of the craters, mare etc. and presented an opportunity to take some Luna images.

Despite the bright moon and varying amounts of passing cloud throughout the evening, we did manage to observe a few Messier objects. These included M51 (Whirlpool Galaxy), M13 (globular cluster-Hercules), M3 (globular cluster-Canes Venatici), M65 and M66 (spiral galaxies-Leo).

Thanks to Paul and Rosie for providing a very appetising spread of food and drink, which was greatly appreciated by all.

Although it was cold, it was a very enjoyable evening and we look forward to the next one!

Sat 20th April 2019

With the lighter nights now here, our club night commenced with a talk and discussion on the second of the constellations covered, Ursa Major (The Great Bear), which is very well placed in the sky for observing at this time of the year.

With Paul Cotton giving the talk on this most recognisable of constellations, the main focus was on the brighter of the galaxies that populate this part of the sky.

First to be discussed was M51 the Whirlpool, a face on spiral galaxy interacting with its neighbour, although not in Ursa Major, it is Close by.

The next galaxies that were highlighted were as follows: NGC 2841, NGC 30179, M81, M82, NGC 3184, M108, M109 and then the planetary nebula M97 (The Owl Nebula).

All these objects were accompanied with images, some of which Paul had taken himself.

After the break, we headed outside to do some binocular observing.

Early on, in the brighter skies, we found some open clusters : Melotte 111 (Coma cluster), Melotte 20 (Alpha Persei cluster), Caldwell 14 (Double cluster).

Then the darker skies revealed M13 and M35 clusters.

We were also treated to a bright sporadic meteor with a short tail, spotted travelling East to North across the sky through Hercules and above Lyra.

Our meeting concluded at about 10pm as the moon was rising and the sky was brightening again, but a productive evening nonetheless.

Sat 18th May 2019

At a well attended meeting, Paul Money kicked off the first of our official summer talks with his presentation of 'Through The Stargate'.

After having done a review of the Stargate 500 reflector telescope, for the 'Sky At Night' magazine, he was that impressed he purchased it.

Although this 'light bucket' of a telescope was not designed for doing astro photography on DSOs, due to it's altaz system that doesn't follow the stars in an equatorial mode, because of the light capturing ability of the 20" primary mirror, short duration photography was indeed possible.

Paul experimented, by hooking up his Canon 50D DSLR, to see what he could capture.

He managed to photograph many DSOs just using very short exposures, typically 10 secs, then stacking them for really impressive results.

Paul showed us images of some of the targets he had photographed, including the Whirlpool Galaxy, Orion Nebula, the planets, open clusters, globular clusters, moon, double stars and various other nebulae, thus showing the imaging capabilities of 'Stargate 500'.

Even using his iPhone 7, Paul managed to get some impressive shots too.

Thanks to Michelle (Meteorite) Clark who travelled from Doncaster to see the talk and supplying us with boxes of cakes and to Clare & David for providing us with the usual refreshments.

Sat 15th June 2019

This evening the club welcomed Professor Brad Gibson to deliver his talk entitled "Wonders of the Universe : A TripAdvisor top 10".

Brad is the Director of the E.A.Milne Centre for Astrophysics, University of Hull and made reference to some famous local people who have been connected to the space/astronomy world.

His talk was about ten amazing and diverse places to visit in the universe, if it was at all possible and described them in detail giving us the known facts about each object.

His top ten, in no particular order, were as follows :

1 : The wettest place in the known universe.

2 : The driest place.

3 : The hottest place.

4 : The coldest place.

5 : The smelliest place.

6 : The wealthiest place.

7 : The spiniest place.

8 : The rarest place.

9 : The story of everything part 1.

10 : The story of everything part 2.

The story of everything part 1, described how the elements were formed in Stars up to iron in the periodic table, by way of the fusion process.

The story of everything part 2, described how the elements heavier than iron were formed in supernovas etc. where the necessary higher temperatures are obtainable.

Completing his entertaining talk, Brad mentioned some of the bi-products that been developed as a direct result of the space research programme, that we take for granted in our everyday lives, such as WiFi and CCD chips.

He also made an interesting reference to relativity and how inaccurate GPS would be without it.

In conclusion, a lot of interesting facts were learned tonight about some fascinating objects out in space, including black holes, nebulae, neutron stars, pulsars, supernovas and others.

Sat 20th July 2019

With this year celebrating the 50th anniversary of men landing on the moon for the first time, we had a very appropriate talk tonight from Peter Rea, entitled, 'We Choose To Go To The Moon - Personal Recollections Of The First Moon Landing'.

Peter started his talk by explaining the background which led to the Apollo moon missions, instigated by John F. Kennedy. It was in response to the Russians successful space endeavours at the time, including Yuri Gagarin's flight into space, being the first human to achieve this. So the scene was set for the Americans to push to be the first nation to put a man on the moon.

This was achieved on 20th July 1969 with Apollo 11 and Peter as a young boy, remembered watching it live on a small black & white television at his parent’s house.

The lander module touched down on Mare Tranquilitatis, (The Sea of Tranquility), with only about 25 seconds of fuel spare, piloted manually by Neil Armstrong.

He recollected watching the grainy images as Armstrong descended from the lander onto the moon's surface and then saying those famous words, 'That's One Small Step For Man, One Giant Leap For Mankind'.

Peter described that one of Armstrong's first jobs, was to fix a black & white television camera onto a tripod about 20mts. away, to look back towards the lander and send live pictures back to earth, although this only gave a fairly narrow field of view.

19 minutes later, Buzz Aldrin joined him on the lunar surface where they performed several experiments. These included - the 'Soil Mechanics Investigation', for looking at the properties of the lunar soil.

The 'Solar Wind Composition Experiment', collecting samples of the solar wind for analysis back on earth.

The 'Passive Seismic Experiment' for detecting moonquakes.

The 'Lunar Dust Detector', for studying the effects of the lunar dust.

The 'Laser Ranging Retroreflector', mirrors to determine the moon earth distance, using lasers beamed from earth. This experiment is still in use today!

The astronauts took photographs of the lunar landscape and also collected 21.7 kg of lunar rock and soil for analysis back on earth.

The EVA lasted about 2.25 hrs before the two astronauts boarded the lander module again.

The lander module took off from the moon on 21st July, where they rejoined Michael Collins in orbit, in the command module, returning to earth with splashdown on 24th July.

Peter's talk and presentation was very entertaining and interesting and was greatly appreciated by the audience.

At the end of the meeting, for those that could stay behind, with two scopes set up we did some observing at the rear of the hall. Although conditions were not ideal, we did manage to view Saturn and it's rings, Jupiter, the Ring Nebula, double star Albireo (showing impressive colours), and the transiting of the ISS.

SAT 17th AUG 2019

At a very well attended monthly club meeting this evening, we welcomed Carol Wright from Hull, to present her talk entitled 'Cosmic Carol's Chilean Adventure'.

Carol was selected and sponsored, along with seven other people from across the globe, to go to the dark skies of Chile to witness and observe the 2019 total solar eclipse.

In her talk she described her Chilean adventure, reflecting on the emotions she felt when observing the eclipse from the clear skies at an altitude of approx 2,800m and the physical demands of

observing at such an altitude. On the trip they also visited the VLT (Very Large Telescope) in the Atacama Desert.

At the end of the entertaining talk, as it was Carol's birthday, she was presented with a birthday cake with lit candles, curtesy of the club.

Paul Cotton then presented Michelle Clark and Paul Money with their honorary club membership certificates.

Thanks go to David Harley for donating three Astronomy books as raffle prizes and they raised £20 for the club funds.

At the end of the meeting we managed to do a little observing at the rear of the hall in part cloudy conditions. Observed targets were double star Albireo, Saturn, M31 Andromeda Galaxy and M57 The Ring Nebula, but the sky was still too bright for detailed observation.

Fri23rd AUG 2019

IMPROMPTU OBSERVING MEETING.

As the forecast was looking good for this evening, Mark Shaw invited fellow club members to an impromptu observing session up at Badger Farm, to take advantage of the dark skies there. Mark was keen to put his recently acquired 20" Dob through it's paces!

So a few of us met up at about 8pm and set up telescopes, binoculars and imaging equipment (Neil), before the sun went down.

In the twilight, one of the first objects to be observed was Jupiter and that was shortly followed by Saturn.

As the sky darkened, Mark turned the 'big' Dob onto familiar objects to get a comparison against the 12" telescopes that had previously been used for observation. The targets included M13, M15, M57, M27, The Veil Nebula, The Saturn Nebula, M31, M32, M110 and The Wild Duck Cluster.

Compared with previous observations on these objects, using the 20", they looked different, being more detailed and resolved and looking noticeably brighter.

An unsuccessful attempt was made at observing Stephan’s Quintet and The Crescent Nebula, probably due to the deteriorating seeing conditions, as the night progressed.

Overall, it was a very successful and enjoyable evening's session and particularly with some impressive views of the globular clusters, being bright and well resolved.

The Veil Nebula also showed more detail and structure than had previously been observed using smaller scopes.

SAT 7th SEP 2019.

CLEETHORPES - 'FESTIVAL OF THE SKY'

The Festival of the Sky was a new event to Cleethorpes, which was held over three days on 6th, 7th and 8th Sept and included all kinds of performances and art installations taking place.

Our club was invited to take part and do some 'sidewalk astronomy' on the Saturday evening from 8pm to 10:30pm.

The weather forecast was ominous with cloud and wind predicted. Paul Cotton, Steve Cansdale and Jan Patton set up three telescopes for the festival goers to view Jupiter, Saturn and The Moon, which were conveniently lined up across the Southern sky.

The clouds dissipated and although windy at first, this eased as the evening progressed.

We started early, observing the Moon as people were starting to gather. By 8pm Jupiter and Saturn were visible and we had quite a crowd of people queuing to have a look through the telescopes. All ages from young to old were wowed with the great views we had, comments such as 'amazing', 'awesome', 'wonderful', 'wow' and 'so cool', could be heard!

There was even a bright meteor through Perseus which some people saw.

The evening was very busy, with a constant stream of visitors to the club display stand, with queues only reducing to a hardy few after 10pm.

The event co-ordinator and some of the event ambassadors had the opportunity to look through the telescopes and were very impressed.

It was difficult to estimate how many people visited us, but judging by the queues it must have been in the hundreds by the end of the evening. The night was a reminder of the heady early 'Star Gazing Live' days!

Credit:Paul Cotton

SAT 21st SEPT 2019.

With a low turnout at tonight's monthly meeting at Scamblesby and with no official speaker booked, the evening was mainly dedicated to observing.

Whilst waiting for the sky to darken, Paul Cotton showed us some astro images mainly taken from his home in Saltfleetby.

When dark enough, we ventured outside to the rear of the hall where Paul had his 12" Dobsonian set up, to observe a variety of objects.

Starting with the globular clusters in Hercules, NGC 6229 at a distance of 100,000 light years, could be described as the quintessential 'fuzzy blob'. Moving onto M92 at about 27,000 ly, it appeared much brighter resolving many stars. The classic M13 at 22,200 ly was even brighter and showed many more stars.

We visited a few planetary nebula including the summer favourites M27, The Dumbbell and M57 The Ring Nebula. NGC 7662 The Blue Snowball aptly displayed

It’s disc like shape, synonymous with planetary nebula.

We also viewed M76 The Little Dumbbell.

A comparison was made between the double stars Albireo and the similarly coloured, but tighter doubles of Almach.

The open clusters M11 The Wild Duck and double cluster Caldwell 14 were the next targets, followed by the Perseus double cluster.

Galaxies weren't ignored, with a look at the Andromeda Galaxy M31, M32 and M110.

The much harder to see Mirach's Ghost, NGC 404, was then located.

A request to see a super nova remnant, meant fitting an O111 filter and searching out The Eastern and Western Veil nebulae, where the nebulosity could be detected.

During the course of the evening we saw the ISS in it's transit across the sky. We all also spotted a slow moving, extremely bright fireball traveling across the sky from South to Southeast along the horizon.

The final object to be observed, was the asterism Kemble's Cascade, which is always a delight, before the rising moon made an appearance.

At this point, we called it a night, happy to have had such a productive observing session!

SAT 19th OCT 2019

Paul Cotton got the evening underway by briefly mentioning the upcoming events. Firstly, the club has again been invited by Kesteven & Sleaford High School to do a presentation, this time focusing on the moon, (being the 50th anniversary of the first manned luna landing).

The transit of Mercury happening on 11th Nov and followed by the International Astronomy Show on 15th Nov.

Bookings were now being taken for the club Christmas meal.

At the conclusion of the club business, we welcomed Sue Parr from Cleethorpes & District Astronomical Society, to deliver her talk, 'Astronomers By Chance - It Does Happen', this being the final official talk of the summer.

Sue began her talk by showing us slides of artefacts and drawings that have been discovered, dating back thousands of years from the times of our ancient ancestors.

These showed how some of them were aware of the star patterns in the night sky and also the changing phases of the moon.

Evidence for this includes the discovery of a bone carving showing the lunar cycle and it's phases, dating from 30,000 BC and cave drawings of the Orion constellation, also depicting the bright star Sirius.

Ancient stone circles and Stonehenge were also referenced for their connections to the heavens.

Sue then went on to discuss the prominent astronomers that started their careers unrelated to astronomy and later became astronomers by chance. These included Nicolaus Copernicus (1473-1543), who placed the sun rather than the earth at the centre of the universe, Galileo Galilei (1564-1642), who has been called 'the father of observational astronomy' and William Herschel (1738-1822), who discovered Uranus, Enceladus and others.

This very entertaining talk, packed with slides, facts and figures was enjoyed and appreciated by a well turned out audience.

SAT 16th NOV 2019

Unfortunately, the outreach event that was scheduled for Kesteven & Sleaford High School earlier this month, had to be cancelled due to bad weather. It is hoped that it can be rearranged for sometime in the spring next year.

With the weather still very cloudy this evening and observing being out the question, we had a discussion about this year's Christmas meal, with the suggestion to once again have a raffle to raise some additional funds for the club.

It was also pointed out that the club's projector will need replacing with a more modern one as soon as possible, because visiting speakers were having difficulty interfacing with it from their laptops.

Some suggestions were put forward to how we may raise the funds to purchase a new one and further discussions were needed.

Paul Cotton then gave us a slide show with images of the moon, showing various interesting features. Also a short video showing the moon going through its various phases.

The evening concluded with some images of the recent transit of Mercury taken from Saltfleetby.

SAT 14th DEC 2019

(CHRISTMAS MEAL)

Again, Sue Kind provided all of the catering for the club Christmas meal which was held at Scamblesby village hall. It was an excellent three course dinner followed by tea/coffee, which was enjoyed and appreciated by all.

Several prizes were donated by members for the club raffle, which was held at the end of the meal. A special mention to David Harley who donated an equatorial telescope mount, to raise additional funds for the club. It was suggested to try and sell it on eBay to maximise its potential.

SAT 18th JAN 2020

With favourable weather conditions and the prospect of clear skies, tonight's meeting was held up at Badger Farm where several club members and guests gathered with their telescopes etc.

The following detailed report was done by Mark Shaw on his observations of the night sky, using his 20"Dob.

"The sky was clear and it looked to be a promising night, early on hazy cloud came over and there was a feeling that this could be it for the night, but we waited patiently and were rewarded with a lovely clear sky.

We managed to do a lot of observing tonight, both naked eye and through the telescopes.

We also managed to show some of our new visitors some of the brighter objects, which is always nice as it presents us with the opportunity to show members objects in the sky, that they would otherwise perhaps not see.

The Orion Nebula is always a showpiece through any scope, but tonight through the large Dob the amount of detail was jaw dropping. This object takes magnification well and when the magnification was increased, more and more detail became visible within the billowing clouds of the nebula.

The Pleiades star cluster in Taurus showed clear indications of being embedded in delicate milky nebulosity and the stars were bright and pinpoint sharp.

We had a look at the Eskimo nebula in Gemini and again good nebulosity was showing.

M81 and M82 were both looking really impressive through the large Dob, M82 showing a lot of detail with varying surface brightness, brighter knots and two distinct dark lanes.

M81 showing an extended halo but not giving up the faint spiral arms, at least not tonight.

M31 in Andromeda was showing a very distinct dark dust lane and even the inexperienced new observers commented on it.

M33 in Triangulum was visible but faint and not giving up much detail, but to be fair I should have spent more time on this to tease out more detail.

Paul Cotton drew our attention to comet C/2017 T2 (PANSTARRS). It was easily visible and was showing a faint downward extension that was the tail of the comet.

It is always nice to see these unscheduled objects and was a nice addition to the night's targets.

We had a look at the Leo Triplet of galaxies once they had cleared the trees and they all showed great detail, the two main galaxies showed not only bright cores but also extended halos and the fainter NGC member of the Triplet, showing a dark lane dividing the upper and lower parts of the galaxy.

The Owl nebula in Ursa Major showed a clear ghostly disc with hints of the eyes. The addition of an O111 filter enhanced the contrast of the view and made the Nebula stand out more clearly against the background of the sky.

Numerous other galaxies and clusters were also observed during the night, but the highlight of the night for me was M51, the Whirlpool galaxy, showing a clear spiral with direct vision and showing brighter areas within the arms. What was more amazing was that the galaxy was not particularly high in the sky, so this object will give some real wow moments when it is higher up.

A really enjoyable evening and thanks to everyone for joining us."

Credit:Mark Shaw

SAT 15th FEB 2020

On a stormy evening, we welcomed back Sue Parr on her second visit to the club, to present her talk, 'Astronomers By Chance Part 2, It Does Happen'.

Following on from her Part 1 talk back in October 2019, Sue described how the people below, having made significant contributions to the field of astronomy, actually became astronomers purely by chance.

First up was Williamena Fleming (1857-1911), who worked as a teacher and later a maid in the home of Professor Edward Pickering. Later, having been given an opportunity by the Professor, she developed a system for classifying stars and catalogued thousands of them as well as gaseous

nebulae and variable stars. She was also credited with the discovery of the Horsehead Nebula in 1888. This was in a time when women found it very difficult to be accepted in astronomy circles.

The second female astronomer that Sue introduced us to, was Annie Jump Cannon (1863-1941). She is credited with the creation of the Harvard Classification Scheme, which was the first serious attempt to organise and classify stars, based on their temperatures and spectral types.

Harlow Shapley (1885-1972), initially a journalist was next to be discussed, who used RR Lyrae stars to estimate the size of the Milky Way Galaxy and the Sun's position within it, using parallax. (RR Lyrae is a variable star in the constellation of Lyra and stars like these act as important standard candles that are used to measure astronomical distances).

The well known Edwin Hubble (1889-1953), in his younger days was noted for his athletic prowess and is now regarded as one of the most important astronomers of all time, was next on Sue's list.

He discovered that many objects previously thought to be clouds of dust and gas, were actually galaxies beyond the Milky Way and was also involved in determining that the universe is expanding.

The Hubble Space Telescope is named in his honour.

Bernard Lovell (1913-2012), initially had a background in physics and later gained a PhD for his work on the electrical conductivity of thin films. At this time, he also had lessons in music and later became an organist at Bath Abbey.

Before the Second World War he worked on cosmic rays at the University of Manchester.

At the outbreak of war, Lovell worked on developing radar systems and when the war was over, he established the Jodrell Bank Observatory where he developed the then largest steerable radio telescope in the world.

Into the modern era, Sue mentioned local professional astronomer Paul Money, who in his early days worked for Marks & Spencer.

Also a mention for Gary Fildes, who worked for 25 years as a bricklayer, before joining Sunderland Astronomical Society and eventually hosting Kielder Forest Star Camps. He later assisted in the building of the Kielder Observatory.

To conclude her talk, Sue tasked us to determine the identity of the person she was referring to, by showing us a progression of slides as clues.

The person turned out to be Christopher Wren, who in his early days was an astronomer. You learn something every day!

Thank you to Paul Lawrence for compiling this annual review.