The CHESTERFIELD ASTRONOMICAL SOCIETY

Newsletter JUNE 2017

CAS website: www.chesterfield-as.org.uk **Registered Charity No. 514048**

Our Facebook page: Our Facebook Page

Newsletter Editor: Sue Silver **Newsletter: newsletter@chesterfield-as.org.uk**

President – Mark Eustace; Secretary – Marilyn Bentley; Treasurer – Graham Leaver.

Committee Members: - Sue Silver, David Frost, John Marsh and Catherine Wood

Subscriptions - full membership £65
or £6.50 per month by Standing Order (10 months)

Senior citizens (60 yrs and over) and students (18 yrs and over) £45
or £4.50 per month by Standing Order (10 months)

Juniors members - (17 yrs and under) £0.
(All juniors must be accompanied by an adult who must be a fully paid up member).

***Please check out our Facebook page by following this link:-* Our Facebook Page**

Welcome to the JUNE issue of the CAS newsletter.

CAS News

Astrophotography and Videography

On Friday 12th May, Mick Nicholls from the Mexborough and Swinton AS fascinated us with a brilliant talk about his experiences imaging the sun and various astronomical objects. He talked about his journey from his early days imaging on some kit that by today's standards seem almost antique through to the equipment he uses today. He compared and contrasted the gear and the techniques he has used and gave us a great insight into his approach.

One of the themes that stuck with me was his demonstration that you do not have to spend a fortune to get great results. He uses an entry level Canon 1100D DSLR and a fairly low cost ZWO AS1120MC video camera often sitting on a Coronado PST for solar (not so cheap!) and a MAK127 for Astro imaging. He also uses a 70mm APO for some of his astro-work. Much of the software Mick uses is free and available for download from the Internet. Various software included PIPP, IMGALT, Registax5 and 6, IMERGE and Deep Sky Stacker.

Mick produces some really outstanding images that make it into national magazines and websites with good reason. If you'd like to see examples of his work pop along to our Facebook page here<https://www.facebook.com/Mick-Nicholls-Astronomy-Page-533885023349794/?hc_ref=SEARCH> or visit Mick's home page here<https://www.facebook.com/Mick-Nicholls-Astronomy-Page-533885023349794/?hc_ref=SEARCH>.

Our thanks to Mick for sharing his knowledge and for entertaining us with his enthusiasm and humour. I'm sure we'll be inviting Mick back again at some stage to show us more of his great work in his inimitable Yorkshire style!

This was from Mark Eustace. Many thanks.

On Screen view of Jupiter

There has been more work done with regard to the piggy-back telescope on the 18" for the purpose of sending an image from the 8" to the screen in the lecture room at the same time leaving the 18" free for observing. This has been a long and complicated journey with many unseen setbacks on the way. Balance has been one of the problems encountered as the weight of the 8" has altered the balance of the 18" so some of the balancing weight has had to be adjusted.

At last I think we are nearly there. The other Friday we could observe Jupiter through the 18" whilst Jupiter could be seen on screen in the lecture room from the 8" at the same time.

The next step, when it is finalised, would be to possibly invest in a better video camera to produce a better image as the camera was quite old and monochrome.

It is with many thanks to Rob McGregor, John Brown and John Bardwell who have spend many, many hours in the dome over months working to get this right. A job well done!

Messier Objects and the Milky Way – Friday 16th June

This talk will be given by Mark Eustace taking us around the Messier Objects and showing us the Milky Way.

The talk should start around 8:15 pm.

Things to remember.....

Amazon.....

Please remember if you are ordering anything from Amazon follow the link on our website – this earns us commission!!!

Thank you.

Also

Please check out our Facebook page by following the link below:

Our Facebook Page

Photo Gallery.....

These are from Graham Leaver.....

"The first are Jupiter on the 17th Apr with GRS and Europa shadow and disc exiting transit. Times are on the pictures.

The next Comet 41P/Tuttle-Giacobini-Kresak, 60 minutes total, 10x6min stacked in DSS under comets, the trail is because the comet moved by so much in each 6min, learnt my lesson, shorter exp. and many more!

The Sombrero galaxy M104, I had taken this before with the starlight Xpress but this has come out well in full frame. 24min 4x6min exp

The last the Leo triplet, M65, M66 and NGC3628 36min, 6x6min exp".

These are great. Thanks Graham.

More from Graham from 4th May.....

".....having problems collimating the 10" last night I went onto the ED100 with a 2.5x powermate and took the attached....."

This the second of two images sent to me – lots of detail including the moons.

These below also from Graham, he explains..... "I didn't think I was going to get anything decent of Jupiter as I thought the 10" was way out of collimation, visually the image looked washed out and I couldn't see any detail on the screen, so I had done as the book and collimated getting the shadow of the secondary as near to the centre of an un-focussed star's disc. Visually it didn't look brilliant at all compared with the image through the ED100 f9 with a 2.5x powermate which brought the efl of the two close together , the 10" fp at 2350mm and the Ed100 at 2250mm the contrast in the refractor is a lot greater but the aperture does give more resolution.

I was all for consulting John at OOUK as to how I could put it right or go for a 5 or 6" refractor, but tonight now I have processed these images me faith has been restored!"

Thanks Graham.

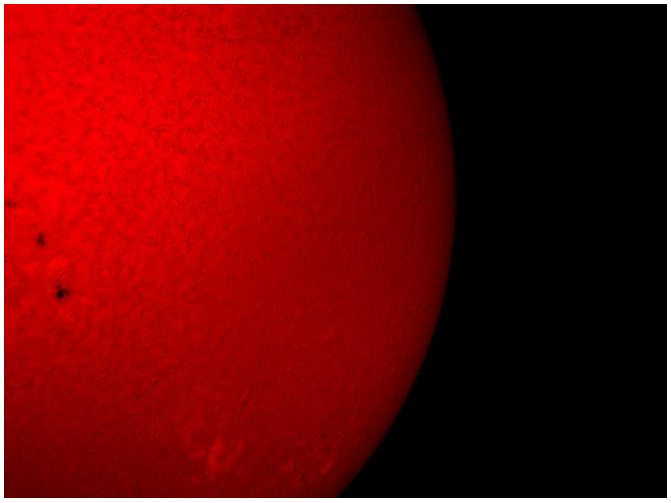
More..... taken 14/05/17.....

"....re polar aligned the scope and tweaked the collimation than some test avis on Jupiter.

I seem to be very close, here are 2 results, I vary the focussing between each shot as the conditions were moving about a bit.
NB the satellite, the small red spot preceding the GRS coming onto the disk.
Possibly the gamma is a bit too low."

Many thanks Graham.

This is from Mark Eustace.....



*"*I decided to have another go at processing a solar image from last year that I had previously not had much success with. One problem was Newton's rings and the other was that I wasn't happy with the colour as I had made it rather golden instead of red. I don't think I circulated it at the time so thought I'd share it with you. This was taken with my PST and a 2x Barlow. I also captured a detached prominence in the video this is made from but it disappeared in the processing. Ah well, you can't have everything!

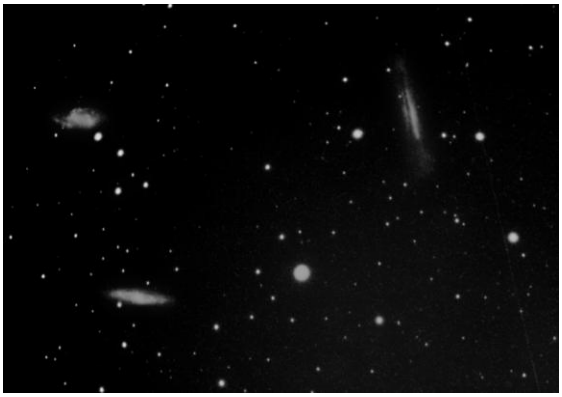
Now if I can just work out how to make plage yellow..."

Thanks Mark, looks good to me.

These are from Dave Simpson.....

"Here are a few images from earlier in the year.

The first image is M51 in Canes Venatici alongside is the smaller interacting galaxy NGC5195



The second image is the Leo Triplet with M65, M66 and NGC3528

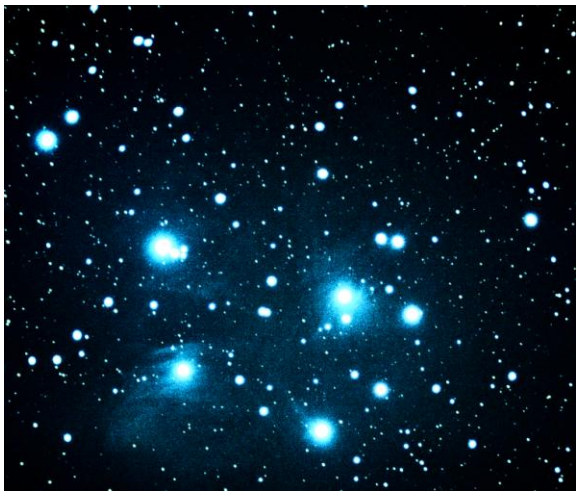


Image three is M45, the Pleiades

image four is M101 in Ursa Major"

Thanks for these Dave.

These are from Peter Davison who was trying to image a comet....."the comet I was looking for last night stayed elusive, not a sign of it. Still the night wasn't a complete waste of time as I managed to get a couple of pictures of fuzzy blobs. M13 and M57, both taken through the 18 inch telescope. Both pictures have been stacked and processed using DeepSky Stacker, and I must say that I am fairly pleased with the result."

.

M13 in Hercules

M57 the Ring Nebula

.....and so you should be! Many thanks

Things to see in June.....

All Month The northern hemisphere's noctilucent cloud season is in full swing during the months of June and July. Watch for these clouds on the edge of space 90-120 minutes after sunset low in the northwest or a similar time before sunrise low in the northeast.

Thursday 1st Comet C/2015 V2 Johnson remains at its peak predicted magnitude of +6.7 until 15th June. The comet travels south through Boȍtes and into Virgo during this period.

Saturday 3rd Venus reaches greatest western elongation today; it will appear to be 46° from the Sun in the morning sky.

Also at 22:30 BST there is a surprisingly uncommon opportunity to catch a perfect family portrait of Jupiter and its four Galilean moons very close to the disc.

Monday 5th There is a double Europa/Io shadow transit of Jupiter tonight. The event begins with Europa itself at 19:29 BST and concludes at 00:13 on the 6th as Europa's shadow leaves the disc.

Friday 9th Saturn will be 2.3° south of the full Moon this evening.

Thursday 15th Saturn is at opposition. It is at this time that its rings can appear brighter than normal thanks to the Seelinger effect.

Saturday 17th The earliest sunrise for the year occurs this morning.

The Moon is currently showing a favourable libration for the northwest limb.

Wednesday 21st Venus appears 4.2° north of the Moon in the morning sky rising in the east-northeast approximately one hour and 20 minutes before the Sun.

The northern hemisphere's summer solstice occurs today.

Thursday 22nd The orange mage +0.9 giant star Aldebaran is occulted by a 3% lit waning crescent Moon at 16:15 BST. Reappearance occurs at 17:09 BST with both events happening during daylight hours.

Sunday 25th Today's sunset is the latest for the year. This is out of alignment with the solstice (21st June) due to a variation between solar and clock time referred to as "the equation of time".

Tuesday 27th The June Boòtid meteor shower reaches its peak. Activity for this shower is very variable and it is not always possible to predict what will be seen.

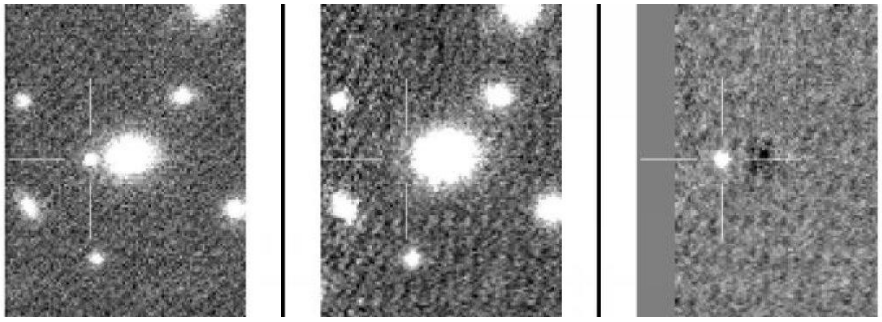
Wednesday 28th Mag -1.3 Mercury and +1.7 Mars appear just 45 arcminutes apart low over in the southwest part of the sky this evening 20 minutes after sunset. Mars will be difficult to spot in the bright evening twilight sky.

Friday 30th The brilliant planet Jupiter will be just 5.8° from the first quarter Moon.

ASTROSTUFF

Volunteers help find star that exploded 970 million years ago, predating the dinosaurs

Online volunteers, including a woman from Belgium and a Scottish man, have helped astronomers at The Australian National University (ANU) find a star that exploded 970 million years ago, predating the dinosaurs' time on Earth.



The left is the "new image" from a couple of nights ago while the middle one is the "reference" image taken a couple of years ago, the right image is the difference between "new" and "reference." The researchers said there is clearly an exploding star in the outskirts of the galaxy.

ANU (The Australian National University)has invited everyone with an interest in astronomy to join the University's search for exploding stars called supernovae, which scientists can use to measure the Universe and acceleration of its growth.

Co-lead researcher Dr Brad Tucker said his team was able to confirm a previously unknown object was a real exploding star in just a day, thanks to the efficiency and dedication of volunteer supernovae hunters -- more than 700 of them.

"The supernova is about 970 million light years away, meaning that it exploded before the dinosaurs were even on the Earth," said Dr Tucker from the ANU Research School of Astronomy and Astrophysics (RSAA).

"This is the exact type of supernova we're looking for -- type Ia supernova -- to measure properties of and distances across the Universe."

Among the amateur co-discoverers are Alan Craggs from Aberdeenshire in Scotland and Elisabeth Baeten from Belgium.

Seven potential supernovae have been reported to the Transient Name Server.

"We are tracking 18 other possible exploding stars," Dr Tucker said.
Co-lead researcher Dr Anais Möller said the Ia supernova discovered through the ANU project had already been named.

"Supernovae have boring names -- it's called SN2017dxh," said Dr Möller from RSAA.

"We are recognising volunteers by listing the first three people to find a previously unknown supernova in the discovery when we report it to the International Astronomical Union.

"In the first 24 hours we had over 30,000 classifications. We've almost reached 40,000 classifications, with more than 1,300 images classified, since the launch of our project."

Astrophysicists use supernovae, which are explosions as bright as 100 million billion billion billion lightning bolts, as light sources to measure how the Universe is growing and better understand dark energy, the cause of the Universe's acceleration.

Scientists can measure the distance of a supernova from Earth by calculating how much the light from the exploding star fades.

The ANU project allows citizen scientists to use a web portal on Zooniverse.org to search images taken by the SkyMapper 1.3-metre telescope at the ANU Siding Spring Observatory for the SkyMapper Transient Survey.

Citizen volunteers scan the SkyMapper images online to look for differences and mark up those differences for the researchers to follow up.

SkyMapper is the only telescope that is doing a comprehensive survey of the southern sky looking for supernovae and other interesting transient events at these distances.

FUN STUFF

A true incident that occurred in my class:

We were celebrating Galileo's birthday. The previous Friday I had given an hour long lecture on computing angular distances using star charts of the Mercator style. After the class sang Happy Birthday in Italian, I asked the following: "All right, who here can tell me the distance from Betelgeuse to Procyon using your standard chart?" A hand shot up immediately and my chest swelled with pride. They have got it, I thought. "About an inch and a half," came the response.

NASA just disclosed details why the Rover wouldn't accept any commands. They took a picture of the Rover's built-in display which showed a Windows screen and the text, "press any key to continue".

That's all folks.

Sue

This newsletter is sent out to all present members without whom the Society could not survive. Also to previous members and people with an interest in astronomy in the hope that they may wish to join/re-join the Society.

If you no longer wish to receive this newsletter by e-mail please let us know. Thank you.