

The CHESTERFIELD ASTRONOMICAL SOCIETY

Newsletter JUNE 2015

CAS website www.chesterfield-as.org.uk

Registered Charity No. 514048

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President – Reinhold Gasser. Secretary – Marilyn Bentley. Treasurer – Graham Leaver.
Newsletter Editor – Sue Silver. Publicity Officer – Sue Torry, CAS Webmaster – Simon Instone, Committee
Member: – Geoff Fell.

Subscriptions - full membership £60
or £6 per month by Standing Order (10 months)

Senior citizens (60 yrs and over) and students (18 yrs and over) £40
or £4 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).

Welcome to the June edition of the News Letter

CAS News

AGM – Held 15th May 2015

This all went well with thanks given to people who attended the group visits and who have given up their time to come up and do talks and help in the dome. We have had about fifteen visits over around six weeks during the first few months of this year from Scouts, Guides, Brownies, Cubs, Rainbows and children from Newbold School. Mark Eustace has given most of the talks in the lecture room with Peter Davison helping out when Mark wasn't available and also in the dome. Rob McGregor, as always, was on hand with his Dob and helped in the dome.

A big thanks to all who helped out with this as it did bring about £150 to the Society.

All the committee stood down and re-election took place.

President: Reinhold Gasser
Treasurer: Graham Leaver
Secretary: Marilyn Bentley.

Geoff Fell stood down from the committee this time and was thanked for his time.

Calvin Karpenko offered up his services and was promptly elected on to the committee, welcome Calvin.

Calvin is giving a talk in July so keep an eye on the news letter and on our diary on the website.

Our New Website

First of all we have to offer our apologies to Mark Eustace as this subject was only briefly mentioned at the AGM but we felt that more time was needed to give justice to Mark's efforts as he has brought our "dead" and out of date website to life.

We had great problems with the website some months ago and it came to a total standstill. It needed an expert on the job and Mark Eustace stepped up to the plate. He has done a sterling job. It looks "lived in" once again but better than ever. He has put

new life into it and it looks great. He has put onto it our diary and calendar, moon phases, loads of great photographs to browse in the Astro Photos section, spot the ISS page, weather watch and back issues of the news letter.

Please take time to have a look through it as there is plenty to see with all the up and coming events and information on the Society.

We would all like to say a big thank you to Mark who has put an awful lot of time, effort and thought, not to mention his expertise, into this and it shows! This has meant a lot to the Society and plays an important part of making people aware of us and our Observatory. Once again it is prompting people to get in touch with us and come up to the Observatory to see us.

Many, many thanks Mark!

Summer Solstice Day – Saturday 20th June 2015

We are having a Summer Solstice Day for **Members and families** on the above date.

Starting at 3pm and carrying on through into the evening.

Depending on the weather and observing conditions we will be using our selection of telescopes including our solar scope in the afternoon and later on our big telescope in the dome and some other telescopes outside on the patio with lectures etc in the lecture room.

It is a "bring and share" day where people attending can bring food to share for the day.

Please see below for full details and hope for a fine day/evening!

There are only a few photographs this month, I think the light nights are making this a little more challenging for our astrophotographers! But please see below (next page but one) their efforts this last month.

We had a visit from Mario Stevenson that last month. Mario, a longstanding member of the Society, and Michelle moved to Austria last summer to live and apparently "living the dream".

Nice to see you again Mario, don't forget where we live!

INVITATION TO MEMBERS

Members and their families are invited to

celebrate the Summer Solstice

at the observatory on

Saturday, 20th June 2015

at 3pm onwards

Get together with other members and families to chat

View the Sun through the solar scope

Bring food to share

Tea and Coffee available

View the sky through the big telescope from dusk 'til late

Listen to talks in the Lecture Room by Mark Eustace

Watch a film show of Eclipse Photos by Graham Leaver

See what the big 'scope is viewing on the lecture room screen

Come and Join Us



Photo gallery.....



The Owl Nebula – Messier 97

This was taken by Graham Jenkinson "1 25 mins 33 secs total exposure time 50 frames".

This is the best photo I have seen which matches anything on the Internet or in books taken by professionals!!

I thought it was worth "cropping and blowing up".

Hope you don't mind Graham.

Many thanks!



This is from Graham Leaver taken 20/05/15 'just after midnight, considering the altitude the result has come out ok.'

(Saturn is very low in the sky this year and is making photography quite difficult.)



Things to see in June.....

- Monday 1st** Saturn lies below and right of the 99% lit waxing gibbous Moon this evening. Look for them towards the southeast shortly after sunset.
- Venus currently sits in line with the stars Castor and Pollux.
- Tuesday 2nd** The Moon's libration favours southern limb features for the first week of June.
- Wednesday 3rd** From now until the early part of July the Sun gets high enough in the sky to create an infrequent atmospheric phenomenon known as a circumhorizontal arc. This looks like a spectrum of colour in hazy cloud running parallel with the horizon.
- Friday 5th** It is noctilucent cloud season once again so keep your eyes peeled low in the northwest 90-120 minutes after sunset and low in the northeast a similar time before sunrise to see whether you can spot these amazing high altitude clouds.
- Saturday 6th** Venus reaches greatest eastern elongation being separated from the Sun by 45° in the evening sky.

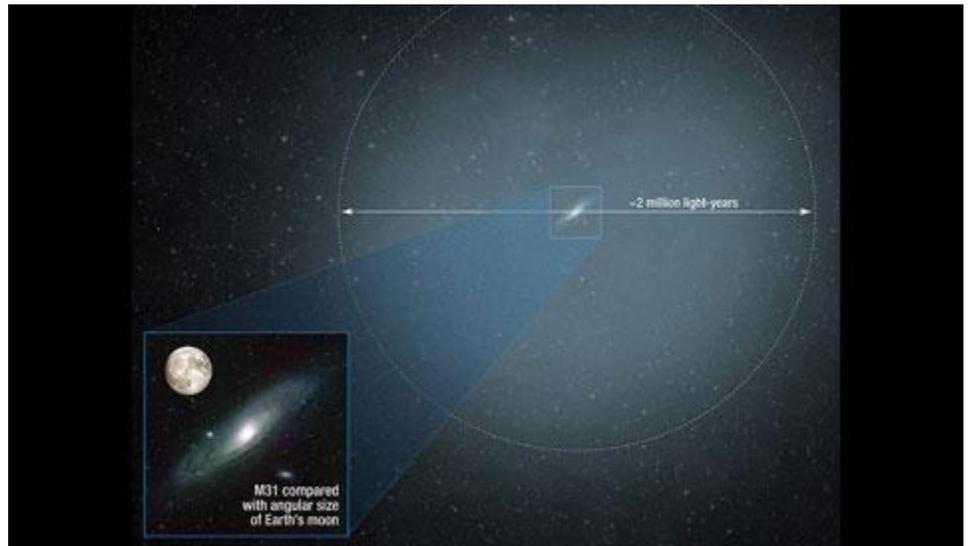
- Wednesday 10th** The first peak of the Ophiuchid meteor shower occurs tonight. There is a second peak on 20th June. Both show a zenithal hourly rate of around five meteors per hour and the low altitude of the radiant favours more southerly latitudes.
- Friday 12th** Look at Venus with binoculars around midnight and see if you can pick out the faint Beehive Cluster, M44, in the background. The planet is low in the west-northwest and appears to pass in front of the cluster tonight and tomorrow night.
- Sunday 14th** The Ring Nebula, M57 in Lyra, hits its highest point in the sky around 02:00 BST.
- Monday 15th** The June Lyrids meteor shower reaches its peak tonight.
- Saturday 20th** The darkening evening twilight will reveal the lovely sight of mag. -4.3 Venus, mag. -1.7 Jupiter and a slender 18% lit waxing crescent Moon low in the west-northwest. The bright star off to the upper left of the trio is mag. +1.4 Regulus.
- Sunday 21st** The Sun reaches its highest point in the sky at 17:38 BST marking a point in time known as the June solstice. After this the Sun will slowly begin its southward journey once again towards the December solstice occurring on 21st December.
- Wednesday 24th** Mercury reaches its greatest western elongation of 22°. Despite this the planet's position in the morning sky makes it quite tricky to spot.
- Sunday 28th** An 88% lit waxing gibbous Moon can be seen close to Saturn after sunset. The Moon will lie just over 1° northwest of Saturn as both begin to set at around 02:30 BST.
- Monday 29th** The fuller phases of the Moon occur when it is in a low part of the sky during the summer months. With a low altitude this is a great time of year to look out for the so called 'Moon illusion' which makes the Moon appear artificially larger than it actually is.
- Tuesday 30th** Venus and Jupiter are just 21 arcminutes apart this evening visible low in the west after sunset and heading for the west-northwest horizon.

ASTROSTUFF

Astronomers have detected a massive yet elusive nimbus of hot gas surrounding Andromeda Galaxy

Andromeda's Halo dwarfs the galaxy itself, extending out to a million light-years from the galaxy's center.

Our sister galaxy, astronomers have discovered, lounges in a gargantuan cushion of hot gas that extends out to at least a million light-years, almost halfway to the Milky Way.

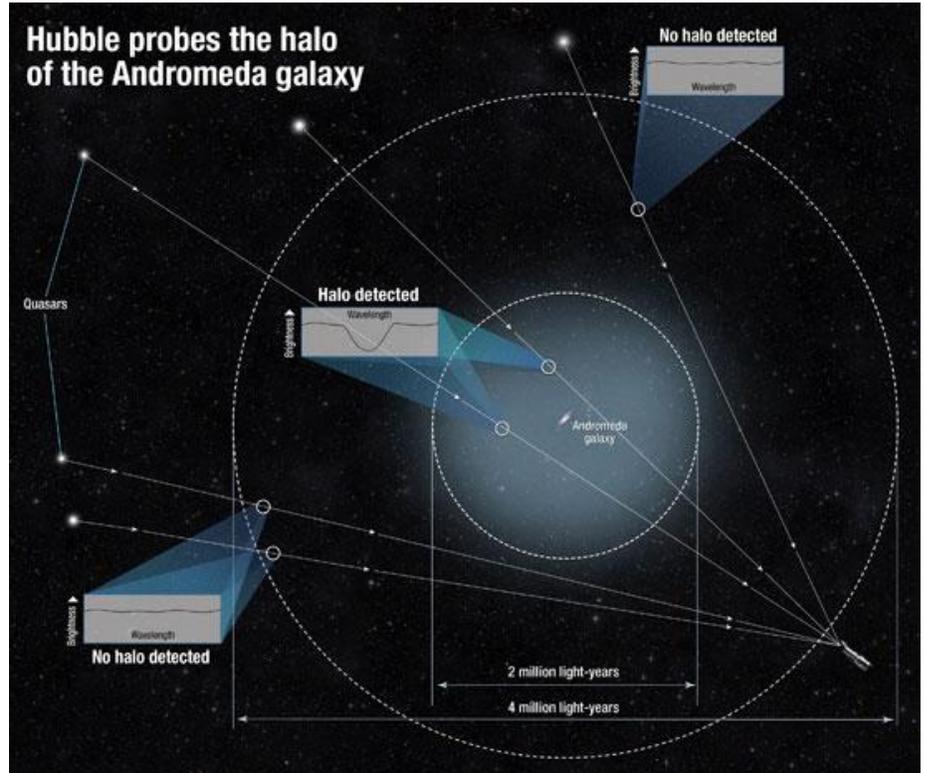


Andromeda Galaxy is in Milky Way's weight class, 220,000 light-years across and containing hundreds of billions of stars. And it turns out its halo is almost as massive as the galaxy itself — Nicolas Lehner (University of Notre Dame) and colleagues calculate in the May 10th *Astrophysical Journal* that at least 10 billion Suns' worth of gas floats outside Andromeda. Despite its mass and extent, this halo has proven difficult to study. Its gas is hot (around 10,000 or 100,000 degrees), mostly made of ionized hydrogen (bare protons and electrons floating in the intergalactic breeze), and so sparse that hydrogen's signal can't be detected. Yet astronomers have long suspected that this kind of halo must surround most galaxies. Of the universe's mass, 17% is normal matter (not the mysterious, dark variety). Based on a galaxy's dark mass, which can be measured for example by the galaxy's rotation curve, you expect a certain amount of accompanying normal matter. But if you add up a galaxy's normal matter in the form of stars, cold interstellar gas and X-ray-emitting (read: very hot) halo gas, you come up short. Only about 40% of normal matter is accounted for. The missing matter must be hiding somewhere, undetected, and the most likely spot is galactic halos.

Simulations agree: hot gas, both inflowing and outflowing, ought to envelop growing galaxies. To reveal this gas, Lehner's team pinpointed 18 distant quasars whose light streams through the space where Andromeda's halo ought to be. Heavier (and rarer) elements stripped of their outer electrons, such as doubly ionized silicon, will cast a shadow on this background light, and the Hubble Space Telescope recorded the specific ultraviolet wavelengths that the halo gas absorbed.

To detect Andromeda's gargantuan halo, Lehner's team looked through the halo to 18 distant quasars (not all of them shown here), measuring where and how the halo.

The measurements show that Andromeda's circumgalactic medium is massive, containing 3 billion Suns' worth of gas within 200,000 light-years and probably 10 times that out to a million light-years. Almost all of this gas is ionized, and in fact, Lehner's team finds that the gas gets even more ionized further from the galaxy, confirming theoretical predictions.



Because the hotter gas is more difficult to detect (and can't be detected within these Hubble observations), it's possible the halo continues even further than what the team was able to record. In short, Lehner says, this study and an accompanying study of halos in more distant galaxies have "essentially solved" the missing matter problem. To read more about the study (and what it means for the pending collision between Andromeda and Milky Way).

FUN STUFF

Reaching the end of a job interview, the Human Resources Officer asks a young engineer fresh out of the Institute of Technology, "And what starting salary are you looking for?"

The engineer replies, "In the region of £125,000 a year, depending on the benefits package."

The interviewer inquires, "Well, what would you say to a package of five weeks vacation, 14 paid holidays, full medical and dental, company matching retirement fund to 50% of salary, and a company car leased every two years, say, a Jaguar?"

The engineer sits up straight and says, "Wow! Are you kidding?"

The interviewer replies, "Yes, but you started it."

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.