

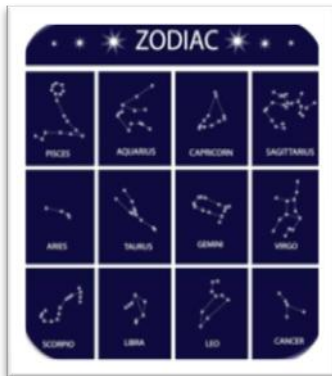
Issue: May 2016



>>> **Ayrshire Astronomical Society Newsletter**

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DONT MISS....

**The feature film shown
on the 23rd May!!**



"I hate it when someone
tall sits in front of us at the movies."

Next Meeting:

23rd May 2016

ANNUAL GENERAL MEETING



You can find a list of volunteers and changes to the constitution in the April newsletter.

Meeting starts at 7pm - please be on time, as we need a sharp start to fit the program! Rather than our usual room we have the cafeteria area in the main entrance foyer.

There is also a free buffet provided for members who attend the AGM meeting, followed by a feature film.



News :

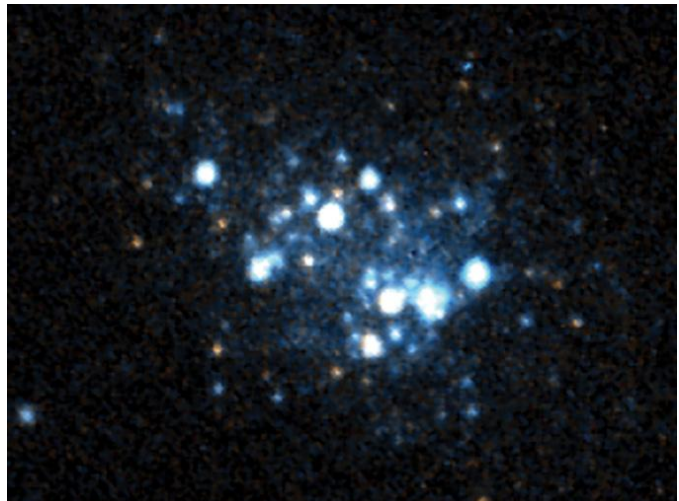


5th May 1961

Astronaut Alan B. Shepard Jr., in his silver pressure suit with the helmet visor closed, prepares for his Mercury Redstone 3 launch on May 5, 1961. Shepard's Freedom 7 Mercury capsule lifted off at 9:34 a.m. and flew a suborbital trajectory lasting 15 minutes and 22 seconds. He became the first American to fly into space.

13th May 2016

Hubble Space Telescope Image of nearby dwarf galaxy AGC 198691 – 'Leoncino'



Astronomers report that they have observed the most metal-poor galaxy ever seen in the Local Universe, a region of space within about one billion light-years from Earth. This faint galaxy, known as AGC 198691 or Leoncino Dwarf, is relatively nearby in the Universe – approximately 30 million light-years away. It's in the direction of the constellation Leo Minor but lies far beyond our own Milky Way Galaxy. According to the astronomers, AGC 198691 contains the lowest level of heavy chemical elements (metals) ever observed in a gravitationally bound system of stars, and is considered a member of the Local Universe.

Finding the most metal-poor galaxy ever is exciting since it could help contribute to a quantitative test of the Big Bang.

A so-called dwarf galaxy, it's only about 1,000 light-years in diameter and composed of several million stars. The Milky Way, by comparison, contains 200 – 400 billion stars. AGC 198691 is also blue in color, due to the presence of recently formed hot stars, but surprisingly dim, with the lowest luminosity level ever observed in a system of its type.

Events:

Working together to give nature a home

giving nature a home **eglington**

Nature's Home @ Eglinton BIOBLITZ

Saturday 23rd April 2016
Eglinton Country Park,
Kilwinning

What's On:
Nature's Home @ Eglinton
A joint celebration of the North Ayrshire RSPB Local Group's 40th year and Eglinton Country Park's 50th year.

A Bioblitz on Eglinton
Citizen science supervised by scientists. This is not a day of passive entertainment, but one of ecological discovery and recording, from lichens and micro-invertebrates to trees, and, of course, birds. Results will be collated at our specially set up Bio-lab and published.

The event will be opened officially on the day by MP Patricia Gibson. Arrive before 10am to get booked up with the planned walks and lobby teams!

Helping to give nature a home

Logos: BTO, Butterfly Conservation, HESSLEHEAD Nature Wildlife, Kilmanning Heritage, North Ayrshire Council, Scottish Wildlife Trust, SOC, RSPB, Eglinton.

23rd April Eglinton Park, Irvine

A good day out in Irvine at the 'Nature's Home at Eglinton Country Park'.

The weather was good but chilly and we were able to use our solar telescopes to show to the public.



8th May

Cars on the Campus, Kilmarnock

Another sunny day to invite the public to have a look at our telescopes and create more interest!

9th May

Mercury Transit, Low Green, Ayr

This event was organised by the solar group of the AAS. We could not have asked for a better day to view the transit. It must have been the hottest day so far this year and blue sky! There was a breeze at the seafront, which made it impossible for some of us to take videos but it did not stop the public viewing the transit. They were amazed to see the tiny planet Mercury, with a diameter of 4800km, orbiting in front of the sun, roughly 100'000'000km away from us.



Thank you to all the helpers and volunteers to make these events fun and successful!

Presidents' Word

This newsletter is the final one before the end of the 2015 -16 winter meetings programme and therefore an opportunity to look back at the last season and forward to the next. It will also save some time at the AGM, thus leaving more time for the buffet and film.

Last year our membership remained fairly constant with the loss of some members but a good influx of new ones. This is a normal profile for a healthy club and is necessary to keep the club current and interesting. Next year we must look to increase our membership further through outreach and word of mouth.

On the topic of outreach, we have been involved in quite a lot this last year, in no small part due to our links with the Kilmarnock Engineering and Science Society, but also due to word of mouth and contacts through members. We have visited fairs, done the transit of Mercury day, schools, cubs, and social groups. This is something we should continue, and perhaps expand, but it requires effort and people to organise things and deliver activities and talks. Many thanks to the few who are continuously involved, thanks also to the occasional helpers, and if you haven't been involved so far but would like to get involved, please let me know.

As in previous years we have had a good range of quality talks from both guest speakers and from within. Thanks to Angela for organising the external speakers and to Paul, Roger, Nick, Allan for their great input – often at short notice.

Thanks to Derrick for his invaluable input as Treasurer, and to the committee for their input in running the society. Oh! and, of course, a special welcome (and thanks) to Isabelle our new newsletter editor. Finally thanks to Alex Baillie for taking on the role of Librarian and trying his best to revive interest in the written word.

Next year? Well! More of the same in that we should continue our existing successes but we need to change and grow - at least that's the current business book wisdom. We need to do more to help members, in particular beginners to move forward in the hobby, we need to engage more with schools and the public, but most of all we need to do more actual observing and that should be our main focus for next year - assuming the clouds actually disperse for a while this next year.

See you at the AGM.

Alex's Space

ONCE UPON A TIME.....

Before the space revolution, planets were hardly more than dots in the sky, which revealed nothing more than blurry details when seen through the first crude telescopes. Now, thanks to advances in technology including surveys by clever probes, planets are shown to be real 'New Worlds' with mountains, valleys, volcanoes, ring systems and vast entourages of moons. Even the moons have their own characteristics. For example Triton with its ice volcanoes and Europa; which may be covered with a warm ocean containing life forms. Astronauts too, have also greatly increased our knowledge about our own planet and its moon, helping to put them in context with our neighbouring planets. However, the planet mostly under scrutiny is.... Mars, which will almost certainly receive a visit from a human crew within our lifetime.

An Alien visiting our Solar System would have a wonderful choice of things to explore – from the rings of Saturn to the volcanic hell of Venus. But the third planet from the sun however, would most intrigue an interstellar visitor. Earth combines many of the features of other planets with some that are all its own. Earth has volcanoes as on Venus and Mars, craters as found on Mercury and swirling weather system (as we well know!) similar to those on Jupiter and Neptune. However, it is the only planet that has both liquid water and frozen ice and also the only planet with an atmosphere rich in oxygen and the only one as far as we know, where life exists.

From Space, Earth stands out as a blue gem, its colour coming from reflection of the vast expanses of water on its surface. Earth is the only planet with a surface temperature between 0 degrees and 100 degrees where water can be liquid at the surface. On Mercury and Venus, which are closer to the Sun, water would boil dry, while on more distant Mars water would be frozen.



Isabelles' Solar Corner

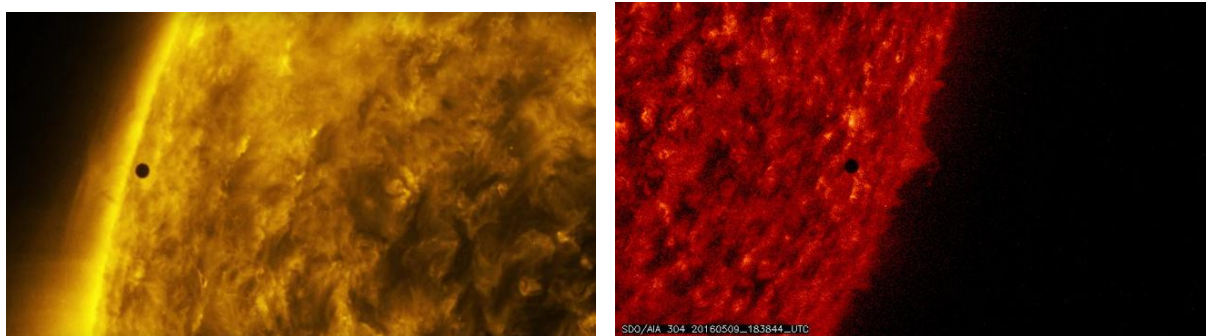


Nowadays, Amateur Astronomers are able to produce some breath taking images of the sun. We can observe and image the sun in mainly white light, hydrogen alpha and Calcium K line. However, we are not able to observe the sun in for example X-Ray or ultraviolet as this is absorbed by Earth's atmosphere. To have an observatory positioned in space, which will observe the sun 24 hours a day has not only given us jaw-dropping images of the sun but also increased our knowledge about the sun massively.

The Solar Dynamics Observatory (SDO) is the most advanced spacecraft ever designed to study the Sun and its dynamic behaviour. NASA's Solar Dynamics Observatory launched aboard an Atlas V rocket on 11th February 2010. After a flawless launch and ascent, the spacecraft separated from the rocket's upper stage to begin a five-year mission to study the sun's energy and its influence on space weather.

SDO contains a suite of instruments that provide observations that will lead to a more complete understanding of the solar dynamics that drive variability in the Earth's environment. This set of instruments does the following:

- 1 Measure the extreme ultraviolet spectral irradiance of the Sun at a rapid cadence
 - 2 Measure the Doppler shifts due to oscillation velocities over the entire visible disk
 - 3 Make high-resolution measurements of the longitudinal and vector magnetic field over the entire visible disk
 - 4 Make images of the chromosphere and inner corona at several temperatures at a rapid cadence
- Make those measurements over a significant portion of a solar cycle to capture the solar variations that may exist in different time periods of a solar cycle.



Mercury transit imaged by the SDO in extreme ultraviolet

AAS Library

Open for business!

THE LIBRARY IS A RESOURCE FOR MEMBERS -PLEASE SUPPORT IT AND MAKE USE OF IT

The Library list is also available on the website under “links” and can be downloaded



The library is now full up – no spaces left for any more items. I would like to thank all members who have loaned or donated items. A special ‘Thank you’ to George Corner for the super collection of books which he donated to the library. Also a very special ‘Thank you’ to Graham Longbottom for his invaluable help in setting up our new library.

What does the AAS library has to offer? A complete updated list will be available asap, in the meantime here is a small sample to whet your appetite.

We can offer a thought provoking read, ‘*A brief history of time*’ or ‘*The universe in a nutshell*’ – both by Stephen Hawking. If you prefer something less ‘taxing’ - how about ‘*Introducing Quotum Theory*’ or maybe ‘*A guided tour of molecules*’.

If you are a science fiction reader, you have not been forgotten. There is a good read by A.C. Clarke '*A fall of moondust*'. This book could surely be made into an exciting film. Stephen Spielberg, if you are reading this.....! In the library we also have '*The Martian*' by Andy Wein, this has already been made into a good film. We hope to obtain it for the library.

Perhaps you are in viewing mode, if so, we have two VHS videos. 2001 '*A Space Odyssey*' and 2010 '*Odyssey Two*'. You may think these are rather dated but the special effects are still spectacular even by today's standard. And don't forget the lovely music throughout the film.

If you are a DVD fan, we have two feature films – '*Gravity*' and '*Interstellar*'. We also have a very good DVD titled '*How to set up and use a telescope*'. This DVD is aimed at beginners but I am sure us old hands would learn something from it.

There is always the option to recline in your favourite armchair and listen to the spoken words. We have an audio book from '*The Hitchhiker's guide to the Galaxy*' phase one, two and three. There are 3 CD's in each phase, but lets not forget the '*podcast lucky dip*'. There are 10 in CD format (PC1 –PC10) and are all space or astronomy related, so, why not be adventurous, pick a PC at random, then relax, listen and enjoy.

Well folks, there you have it, the Ayrshire Astronomical library is well stocked, well established and sort of well run. Please remember, it is your library and to quote popular adage 'Use it or lose it'.

Alex Baillie - Librarian

If you would like to obtain a list or borrow an item – contact Alex at the next meeting or give him a call on 01563 520887.

Unfortunately Alex does not have email, however messages via library@ayrastrom.com will reach him the old fashioned way after a short delay but please contact him directly if at all possible.

And finally..... 😊

