

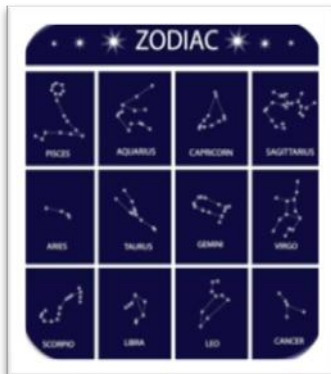
Issue: April 2016



>>> **Ayrshire Astronomical Society Newsletter**

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Next Meeting:

25th April 2016

Speaker and Topic TBC on the night

Doors open at 7pm as usual with activities commencing at 7:30 – don't be late!

23 May 2016

Annual General Meeting

at

Prestwick Academy in the Coffee Bar Area

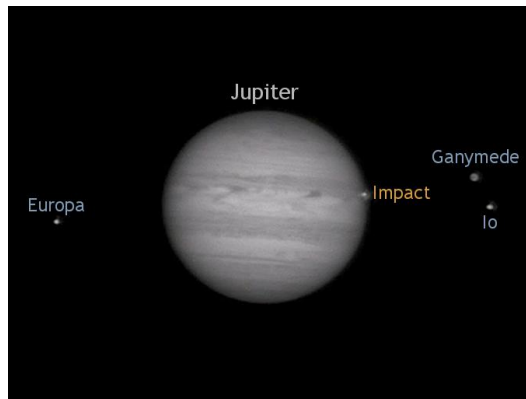
Please come along and elect your committee for the coming year, also put forward your views on activities and the direction of the Society for the coming years. See further details below in Presidents Word

News :



The Cygnus cargo spacecraft sits on top of an Atlas V rocket, ready to launch to the International Space Station on the 22nd March. It has 7500 pounds of scientific equipment and supplies for the crew on board – more than any of the previous five missions. It successfully docked on the ISS on the 26th March.

Here is a processed frame from John McKeon's astrovideo captured with an 11-inch Schmidt-Cassegrain telescope on 17th March. It shows the flash on Jupiter's limb that lasted less than a second and occurred at 00:18:45 UTC according to his calculations. It is possibly from the impact of a comet or asteroid.



Opportunity took the image using its navigation camera (Navcam) on March 31, 2016, during the 4,332nd Martian day, or sol, of the rover's work on Mars. From its perch high on a ridge, NASA's Mars Exploration Rover Opportunity recorded this image of a Martian dust devil twisting through the valley below. The view looks back at the rover's tracks leading up the north-facing slope of "Knudsen Ridge," which forms part of the southern edge of "Marathon Valley." making the vortex visible.

Just as on Earth, a dust devil is created by a rising, rotating column of hot air. When the column whirls fast enough, it picks up tiny grains of dust from the ground,

Upcoming Events:

23 April 2016 RSPB Event at Eglinton, Park Irvine Helpers Wanted

AAS has been invited to have a stall at this local RSPB event where we will be concentrating on solar telescopes as well as displaying normal astronomical telescopes. As you can see below, there are many other interesting events taking place, so this should be a good opportunity to advertise the Society and also have some fun at the same time. Admission is free so if you can come along and give a helping hand tour display, please do so. If we get enough help there should be plenty of time to wander around and see the other events.

The major activity on the day will be a "Bioblitz" to record as many species as we can find. Identification of species will be undertaken in a central "biolab". However, activities such as bird ringing, pond dipping, invertebrate netting and flora identification will take place at various sites under expert supervision. To add context to Eglinton's changing roles over the years we have Local History Societies involved and Ayrshire Astronomical Society will be setting up a telescope to view the Sun.

This is a free event, open to the public but we do not have a trader's licence so we will not be able to sell goods on the day. However, the usual rules about donations and recruitment of new members apply.

There is a café on site but we are trying to organise a tea urn as part of our "participants' rest area".

Participants Include

Arran Natural History Society
Ayrshire Astronomical Society
British Trust for Ornithology
Bumblebee Conservation
Butterfly Conservation*
Cullane Ranger Service
Brodict Castle Ranger service
Clyde Muirshiel Ranger Service

Kilwinning Heritage
North Ayrshire RSPB
RSPB, SW Scotland
Scottish Ornithological Club
Scottish Wildlife Trust
Hessilhead Wildlife Rescue
Field Studies Council
Eglinton Ranger Service

9 the May Public Event: Transit of Mercury – Help Needed!

Some members have expressed interest in participating on the day. There will be hydrogen alpha and white light telescopes, a spectroscope and DIY sun projector set up. We still have some kit requirements as previously mentioned eg wind shields (for fencing around equipment), a small tent (for storing scope cases and the like securely), chairs (for relaxing in the sun ☺).

Mercury enters the limb of the sun at 12.12 local time and lasts all afternoon. We will meet at 11.15, Low Green, to set everything up. We will obviously require sunshine to see the transit. If it is overcast or raining, the event will be cancelled. Isabelle will keep all volunteers involved informed if there is any doubt.

Please contact Isabelle on the next meeting or via solar@ayraastro.com if you want to participate.

Further events: 8th May 2016 Cars on Campus at St Josephs School Kilmarnock 26 June 2016 Public Event: International Sun Day TBC June 2016 "Celebrate Ayrshire" at Culzean Castle Country Park

Presidents' Word

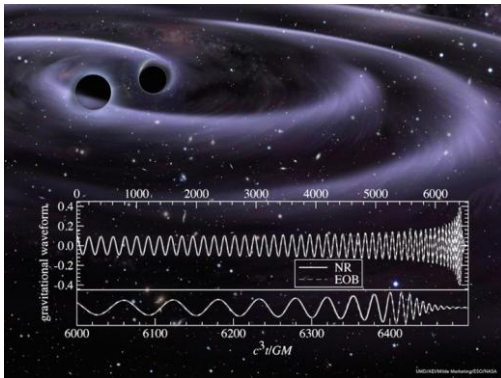
ADVANCE NOTICE

Joint Meeting Kilmarnock Engineering and Science Society and AAS

8th November 2016

"Listening to Einstein's Universe: the hunt for gravitational waves"

Professor Martin Hendry



On September 14th 2015 two giant laser interferometers known as LIGO, the most sensitive scientific instruments ever built, detected gravitational waves from the merger of a pair of massive black holes more than a billion light years from the Earth. LIGO estimated that the peak gravitational wave power radiated during the final moments of this merger was more than ten times greater than the combined light power from all the stars and galaxies in the observable Universe.

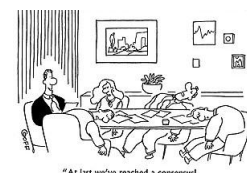
Join Professor Martin Hendry as he recounts the inside story of this remarkable discovery - hailed by many as the scientific breakthrough of the century. Learn about the amazing technology behind the LIGO detectors, which can measure the signatures of spacetime ripples less than a million millionth the width of a human hair, and explore the exciting future that lies ahead for gravitational-wave astronomy as we open an entirely new window on the Universe.

Martin Hendry is Professor of Gravitational Astrophysics and Cosmology at the University of Glasgow, where he is currently head of the School of Physics and Astronomy.

He is a member of the LIGO Scientific Collaboration - an international group of more than 900 scientists who, with their colleagues in the Virgo Collaboration, in February 2016 reported the historic discovery of gravitational waves. The meeting venue (in Kilmarnock) and time to be confirmed.

AGM 2016

Well it's that time of year again and on the 23rd of May we will need to hold our AGM. Rather than our usual room we have the cafeteria area in the main entrance foyer. This is due to our usual room being set out for examination use by the academy. Even though AGMs tend to be looked upon as dull and boring, please come along as it is important that we get member buy in to the election and any proposals for change that come up. The AGM is usually pretty short and to the point and I expect the same this year, although it looks like we may actually have to do a little more than the usual block vote to continue the status quo, as we have more applicants than places. This is good news as it shows interest. Please note the following.....



"At last we've reached a consensus!"

- All positions are open to anyone who is a member – there is no disrespect to a sitting member if you want to have a go at a particular post. If you want to have a go at being President or any other post put your name down and go to the vote!
- Names of those standing for re election or election should be announced at the ordinary meeting before the AGM, but we will take names on the night – better still let Angela (or me) know beforehand.
- The Committee can “co-opt” people for particular roles eg organising events or such, so you can still be involved without holding and “official” post – just make your interest known.
- Committee membership is not arduous, the meetings are short, informal and we only have two or three per year. You do not need to commit a lot of time or be a great orator.

So far we have the following volunteers:

Graham Longbottom (President)	Robin Scott (Ordinary Member)
Roger Harman (Vice president)	William Harding (Ordinary Member)
Derrick Oldfield (Treasurer)	John Sharp (Ordinary Member)
Nick Martin (Instruments Officer)	Karen Smith (Ordinary Member)
Angela Gribbin (Secretary)	Paul Cameron (Ordinary Member)
Isabelle Morris (Newsletter Editor)	
Alex Baillie (Librarian)	

Changes to the Constitution

This year I would like to propose some changes to our constitution to bring it into line with current needs. The changes are related to the committee and its nomination and structure and to setting of the annual subscription.

Section IV Subscriptions

Proposed that additional powers are added to allow the Treasurer to;

- a) set a subscription rate for Junior Members who are joining with a parent or other responsible adult. This shall be a minimum of £1 per year and shall not exceed half the adult subscription. A Junior Member shall be anyone under 18 years of age at the time of joining.

- b) Set a reduced subscription for new members joining after December in any year. A new Member shall be someone who has not been a member before; a rejoining member who has been absent for at minimum of one year or; a rejoining member agreed by the committee to merit a reduced subscription.

Section VI Committee

Proposed that;

- a) The post of Assistant Secretary be changed to that of Newsletter Editor
- b) Nominations for Committee membership may be accepted at the AGM without prior notification at the previous Ordinary Meeting providing a majority of those present at the AGM agree to the nominations being made.
- c) The rule that No Member of the Committee may hold more than one Office at a time be amended to allow the office of Newsletter Editor and of Librarian to be held in addition to another Office in the event of no one standing for either or both of those Offices.

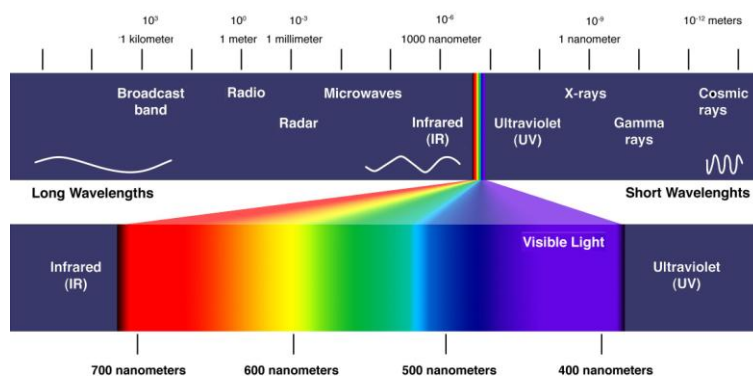
Alex's Space

The Invisible Universe

Until the middle of the 20th century astronomers could only study celestial objects through the radiation they emitted in visible wavelengths. However visible light is only a tiny portion of the spectrum of electromagnetic waves which range from extremely long wavelength radio waves to short wavelength gamma rays. Short wavelengths in particular are very damaging to living tissue but fortunately the Earth's atmosphere blocks nearly all wavelengths except for visible light and some radio waves.

Astronomers only discovered that objects like our Sun emit energy at other wavelengths in 1946, when they sent rockets fitted with detectors into the upper atmosphere. Since then, the arrival of the space age has enabled new fields of invisible astronomy. Orbiting observatories have now mapped the Universe at wavelengths from gamma rays and x rays, where some of the most violent events in the Universe can be detected, through to long wavelength radio emissions. The first of these new radiations to be explored however were the radio waves for the simple reason that many of them reach Earth intact.

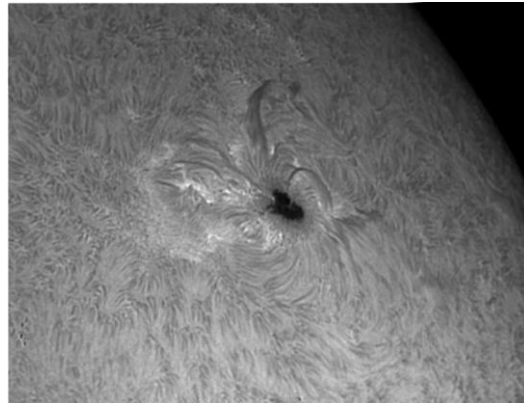
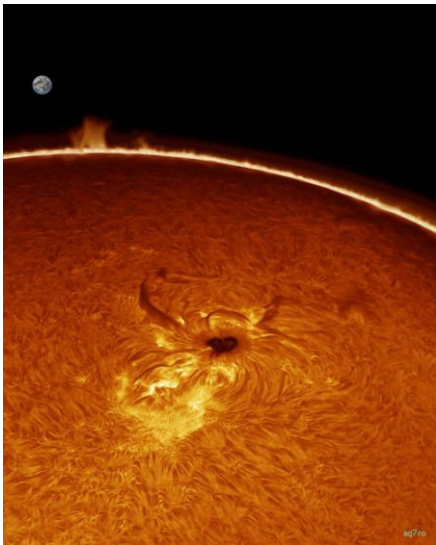
The science of astronomy continues to find methods of inquiry. With the latest generation of telescopes, entire new classes of objects are available for study. As hundreds of new planets are discovered outside our Solar System, the search for life elsewhere in the Universe has intensified using the full electromagnetic spectrum as our window. What will we be able to "see" and discover now that gravity waves have been detected?



Isabelles' Solar Corner



The sun has a heart!



This month was all about the giant sunspot transiting the face of the sun. It is many times the size of Earth and is dubbed as AR (active Region) 2529. It was changing size and shape as it transited the sun but quite clearly, it did look like a heart! 😊

Above pictures are downloaded from the Internet, but below is our very own image taken with the Lunt 152THa and a ZWO174MM camera. A diagonal was used, the spot was actually just appearing on the top left corner of the sun. It takes the spot about 13 days to transit from the western limb until disappearing on the eastern limb at these latitudes.



The spot hasn't been extremely active, although it has produced a few small flares and an accompanying minor coronal mass ejection (CME). But, according to spaceweather.com, high latitude observers should be on the lookout for auroras, anyway. There were some reports of Auroras visible in Ayr.

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 AAS Library is building up a good stock of items, but further items are still sought and books for younger Members would be welcome, as would copies of technical manuals and "instructables". In addition if you have any DVDs, Videos, CDs and audio books, including podcasts (on tape or CD) these would also be welcome. Ownership arrangements remain as before; items can be donated to the library or simply lent to the library with ownership being retained

"The Martian" is now part of our library. Get in contact if you would like to read it.

If you would like to offer items for the library please speak to Alex at the next meeting or contact him by telephone on 01563 520887. Similarly if you would like to obtain a list or borrow an item - catch him at the next meeting or give him a call on 01563 520887.

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

And finally..... 😊

