

Issue: January 2016



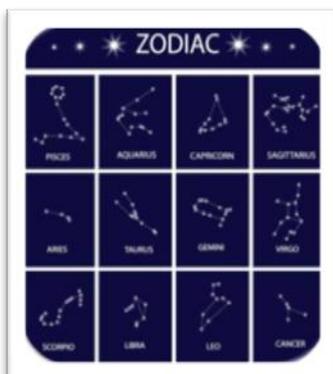
>>> Ayrshire Astronomical Society Newsletter

Special Points of Interest:

| | |
|------------------------|------|
| President Word | Pg 2 |
| Alex's Space | Pg 3 |
| Isabelles Solar Corner | Pg 4 |
| AAS Library List | Pg 8 |

Inside this Issue:

| | |
|------------------------|-------|
| Meeting & News | Cover |
| President Word | Pg 2 |
| Cosmicon Report | Pg 3 |
| Alex Space | Pg 4 |
| Isabelles Solar Corner | Pg 5 |
| AAS Library | Pg 7 |
| AAs Library List | Pg8 |



Next Meeting: 25th January 2016

Equipment Night

An evening to look and talk about telescopes of various types, solar scopes and viewing, cameras and Imaging, software and books. Get help with your own kit – bring it along.



Telescope Corner: See some scopes get help with yours
Solar Corner: Get into solar observing
Imaging Corner: See some kit get some tips
Plus - if you have any interesting or surplus kit bring it along for the **Books and Bits corner**.

Events :

- 12 March 2016** Public Outreach with Kilmarnock Engineering and Science Society Bellsbank Dalmellington
- 23rd April 2016** Eglinton Country Park, Irvine with RSPB
- 8th May 2016** Cars on Campus at St Josephs School Kilmarnock
- 9 May 2016** Public Event: Transit of Mercury
- 26 June 2016** Public Event: International Sun Day
- TBC June 2016** "Celebrate Ayrshire" at Culzean Castle Country Park

Presidents' Word

Happy New Year and let's hope the clouds and rain go away and let's us get some astronomy done this year. I must say I have hardly been out in the obsy this last year as the weather just doesn't seem to have been there. Probably quite a bit of idleness involved too but with a bigger scope now in place this year **I will get out there!**

Looking forward we need to get the solar group into action, maybe around the odd BBQ if the weather is suitable, and we also need to get an evening observing programme arranged. We have a number of public outreach events in mind for the year two in partnership with the Kilmarnock Engineering and Science Society, and a few of our usual venues. Details are on the website and also under the evens section of this newsletter. We could do with more members coming along to help at these events as it always seems to be the same few! The events are usually quite enjoyable as a day out chatting with friends and the public. You do not need any great technical knowledge and you don't have to stay all day so come along.

New Kit: So far this year we have been given two very nice and "as new" full telescope kits. We received a Celestron AstroMaster 90 EQ refractor for Mr Bill Templeton of Ayr, and a Bresser Skylux refractor from Mr Len Kew of New Cumnock. Both telescopes are in excellent condition and are available for members to borrow. They will also be used at our schools and public outreach events. The scopes will also be on display at our January meetings as they are both good beginner models. Thanks to Mr Templeton and Mr Kew for their very generous donations.

Wanted: Newsletter Editor



Well, I have been watching my in box for the last few months and also the mail box but so far I haven't noticed a flood of applications. The job is still there and needs to be filled so have a think and have a go.

Even if you do not want to be the Editor (which is understandable) you can make a massive contribution by sending in short articles or interesting astronomical facts and photos that can be worked up and used in the newsletter. It is hard work trying to come up with an interesting newsletter month on month and all help will be greatly appreciated. Offering do not have to be works of literary genius or even in finished form, those things can be worked – just send it in. Thanks to the regular contributors and also the occasional authors.

Exoplanet Competition: Final Results



At long last the final results of the Exoplanets Competition were announced on the 15th December 2015 by the IAU and, unfortunately, the winning names for upsilon Andromeda were not ours. That honour went to Vega Astronomy Club, Morocco, who put forward some very interesting historically based names; star = Titawan, planet b = Saffar, planet c = Samh and planet d = Majriti. It is interesting to note that Vega Astronomy Club is an associate of the Aldebaran Project of UNAWA Morocco and has some 300 to 599 student members.

Still it was a very good exercise for the AAS and thanks to all those who participated. It would be interesting to know to what extent the process raised awareness of AAS, as we got some pretty good publicity as a result of the social media campaign. We had several good articles on the local BBC News website and a couple of good publicity releases from John Swinney. In addition we got an airing through two short local radio interviews – both in England only – but one of which went out to all BBC English local stations –and a short article in the local press in the area where Sir Patrick Moore used to live.

Cosmicon Report

By John Burns



Last year we received two free tickets to a two day astronomical conference called Cosmicon, held at the Manchester Hilton Airport Hotel. You may recall that tickets were initially offered to members and then advertised on e-bay with no take up either way until John Burns asked if they were still available. John took one of the tickets, attended the conference and has sent in the following short report on his day out

The two days were more or less a repetition of the same events, so one would only need a ticket for one day. This was fortunate as I could only go for one day, but someone else could have gone on Sunday. I would like to think that if many people had wanted one of the tickets, then I would have been given one as a suitable person. In fact, I was at the front of a queue of one.

Manchester Airport might seem a strange venue, but it is easy to get to by car, bus, train and (naturally enough) plane. It was only when you went to the restaurant that conference goers were meeting business travelers or family holiday makers - and there were few of the latter. The venue was fine.

There were three strands to the conference: manned space flight, meteorites and astronomy. Unfortunately, those are listed in descending order of their importance to the organisers. A meteorite stand was given three or four tables and a room of their own, while the amateur astronomy desk with small telescopes, eyepieces etc. had one desk in a corridor on the way out. I would have had a different order of priorities. But, that is to quibble. The stands were generally very good, with the British and Irish Meteorite society room particularly good, having a large map with all the meteorite landings in Britain and Ireland since 1800 marked.

The ticket gave free entry to half of the talks with the others requiring payment. In fact the stalls (not to mention the restaurant) were good enough to mean you did not need to go to anything like all the talks.

Talks like the one on Comets, and the one on the Asteroid defense project, were good, but the best two I went to were by astronauts. Don Thomas flew on the space shuttle four times, but most of his talk was about the time the shuttle he was due to fly on was attacked on the launch pad by a woodpecker. The woodpecker attacked the foam coating on the main fuel tank, and when he pecked down to metal, he shifted to a new site to start again. In total, he made over a hundred holes. The shuttle had to be returned to a hanger and inspected, before the holes could be filled in. When the shuttle was again wheeled out, NASA had the high tech solution of stuffed model owls to drive the woodpecker away! The press had a field day at NASA's expense and the shuttle flew two weeks late. The talk was amusing, but

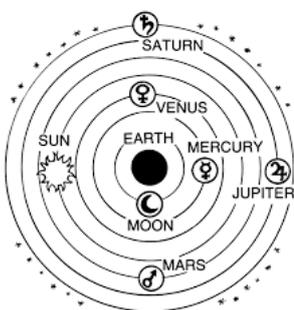
slipped in some technical details along the way.

The only talk I paid extra to hear was by Al Worden. I heard that he was a very interesting speaker, and so he proved to be. Al flew on Apollo 15, whose weight was bigger than that of the earlier Apollos. Indeed, it was right at the limit of what a Saturn 5 could launch. Al was the command module pilot. I had always assumed that such people relaxed in a slightly bored way while the other two were busy on the Moon. In fact, he had plenty to do, especially in taking photos (not just in the visible part of the spectrum) from the module of the Moon as well as of the lunar lander. There was always a danger in the Apollo missions, but Al dealt with all this in his talk in an amusing and informative way. His talk was the high point of the day.

Can I end by thanking the society for allowing me to go to Cosmic-con in their name. If we receive more free tickets for such an event, I would suggest that I should receive more competition for the chance to go.

Alex's Space

Really?



Who was the first to claim that the Earth goes around the

Sun?.....its not who you think it! It was, in fact, a chap called ARISTARCHUS, a Greek from the island of Samas, born a whole 1,800 years before Copernicus. Not only did ARISTARCHUS suggest that the Earth and the Planets travelled around the Sun, he calculated their relative sizes and the distances between the Earth, Moon and Sun, and also worked out that the heavens were not a celestial sphere, but a universe of almost infinite size – but no one paid any attention to himnot very encouraging I would have thought, perhaps it was because ARISTARCHUS was famous as a mathematician

not an astronomer.

Copernicus was certainly aware of ARISTARCHUS because he credits him in the manuscript “REVOLUTIONS OF THE HEAVENLY SPHERES”, however, when the book was presented in 1514, all mentions of ARISTARCHUS had been removed, presumably by the publisher, nervous of it undermining the books claim of originality.



Who invented the Theory of Relativity? you have probably already guessed that the answer will not be Albert Einstein and you would be right! So who was this mystery person? Well it is a male who also invented the pendulum clock after observing a swinging veiling light hanging in a cathedral ... yes! It has to be the one and only GALILEO GALILEI.



To understand relativity we need to understand the theory it replaced and yes, there was an earlier one! It was the theory of “absolute rest” as stated by ARISTOTLE which said that “rest was a natural state of any object and that an object would return to that stat of left to its own devices”.

The theory of relativity says that the motion of all objects is relative to the motion of each other, it follows from this that the speed of an object cannot be stated absolutely but only as “relative” to everything else, which seems like a reasonable conclusion.

GALILEO was also most famous for his support of the Copernican theory that the Earth went around the Sun, this did not please a certain establishment, but that is another story.

Something to think about



Two prisoners looked out through the barred widow of their cell, one saw mud, the other, saw the stars.

Is this an instance of “relativity”?

Isabelles’ Solar Corner

A very happy 2016 to everyone! Let’s hope we get plenty of sunny days to get the solar group up and running.



Here are the solar related events happening in 2016 and hopefully we can arrange some outings to suit.....

8th March – Jupiter at Opposition

The giant planet will be at its closest approach to Earth and its face will be fully illuminated by the Sun. It will be brighter than any other time of the year and will be visible all night long. This is the best time to view and photograph Jupiter and its moons. A medium-sized telescope should be able to show you some of the details in Jupiter's cloud bands. A good pair of binoculars should allow you to see Jupiter's four largest moons, appearing as bright dots on either side of the planet.

March 9 - Total Solar Eclipse

A total solar eclipse occurs when the moon completely blocks the Sun, revealing the Sun's beautiful outer atmosphere known as the corona. The path of totality will only be visible in parts of central Indonesia and the Pacific Ocean. A partial eclipse will be visible in most parts of northern Australia and south east Asia. A spectacle we will have to follow using media devices.

March 20 - March Equinox

The March equinox occurs at 04:30 UTC. The Sun will shine directly on the equator and there will be nearly equal amounts of day and night throughout the world. This is also the first day of spring (vernal equinox) in the Northern Hemisphere and the first day of autumn (autumnal equinox) in the Southern Hemisphere.

May 9 - Rare Transit of Mercury across the Sun

The planet Mercury will move directly between the Earth and the Sun. Viewers with telescopes and approved solar filters will be able to observe the dark disk of the planet Mercury moving across the face of the Sun. This is an extremely rare event that occurs only once every few years. There will be one other transit of Mercury in 2019 and then the next one will not take place until 2039. For us in Scotland, the entire transit will be visible.

May 22 - Mars at Opposition

The red planet will be at its closest approach to Earth and its face will be fully illuminated by the Sun. It will be brighter than any other time of the year and will be visible all night long. This is the best time to view and photograph Mars. A medium-sized telescope will allow you to see some of the dark details on the planet's orange surface.

June 3 - Saturn at Opposition

The ringed planet will be at its closest approach to Earth and its face will be fully illuminated by the Sun. It will be brighter than any other time of the year and will be visible all night long. This is the best time to view and photograph Saturn and its moons. A medium-sized or larger telescope will allow you to see Saturn's rings and a few of its brightest moons.

June 20 - June Solstice

The June solstice occurs at 22:34 UTC. The North Pole of the earth will be tilted toward the Sun, which will have reached its northernmost position in the sky and will be directly over the Tropic of Cancer at 23.44 degrees north latitude. This is the first day of summer (summer solstice) in the Northern Hemisphere and the first day of winter (winter solstice) in the Southern Hemisphere.

September 1 - Annular Solar Eclipse

An annular solar eclipse occurs when the Moon is too far away from the Earth to completely cover the Sun. This results in a ring of light around the darkened Moon. The Sun's corona is not visible during an annular eclipse. The path of the eclipse will begin off the eastern coast of central Africa and travel through Gabon, Congo, Tanzania, and Madagascar before ending in the Indian Ocean. A partial eclipse will be visible throughout most of Africa and the Indian Ocean.

September 22 - September Equinox

The September equinox occurs at 14:21 UTC. The Sun will shine directly on the equator and there will be nearly equal amounts of day and night throughout the world. This is also the first day of fall (autumnal equinox) in the Northern Hemisphere and the first day of spring (vernal equinox) in the Southern Hemisphere

December 21 - December Solstice

The December solstice occurs at 10:44 UTC. The South Pole of the earth will be tilted towards the Sun, which will have reached its southernmost position in the sky and will be directly over the Tropic of Capricorn at 23.44 degrees south latitude. This is the first day of winter (winter solstice) in the Northern Hemisphere and the first day of summer (summer solstice) in the Southern Hemisphere.

AAS Library

Changes taking place!



You may recall that several months ago the AAS Library was resurrected after a very long sojourn. The arrangement put forward was that Members could donate books to the library or, keep ownership and offer them for loan through the library. Books would be borrowed via the librarian who would bring them to the next meeting or agree other arrangements with the borrower. A borrowing fee of 50 pence was suggested to build up a small fund to purchase further books. Well, things are moving on and Alex Baillie has taken on the role of Librarian and with new hands come new ideas.....

Alex would like to expand the library content to include books on astronomy, general science, and science fiction. Books for younger Members would also be welcome, as would copies of technical manuals and “instructables”. In addition he would like to include DVDs, Videos, CDs and audio books, including podcasts (on tape or CD). Ownership arrangements remain as before; items can be donated to the library or simply lent to the library with ownership being retained.

Alex will catalogue the library content, including ownership, what is, or is not, out on loan and to whom. At the moment the library has some twenty books, a couple of DVDs, and some audio books/podcasts. A list will shortly be available from Alex and it will be on the website. A voluntary donation to help buy further items will take the place of the 50p borrowing fee. So, lots of exciting changes and hopefully an interesting and well used library.

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@ayraastro.com will reach him the old fashioned way after a short delay but please contact him directly if at all possible.

Ayrshire Astronomical Society Library List

16 January 2016

To donate or borrow items please contact Alex Baillie on 01563520887**Books**

| Code No. | Title | Author | Notes |
|----------|-------------------------------|-------------------|-------|
| 1 | Earth and Space | Visual Factfinder | |
| 2 | Stars and Planets | Ian Nicholson | |
| 3 | New Astronomy | Carole Stott | |
| 4 | Comets | David Seargent | |
| 5 | Stars in their Courses | Cambridge Press | |
| 6 | Nature of the Universe | Fred Hoyle | |
| 7 | Passion for Astronomy | Patrick Moore | |
| 8 | The Next 50 Years | Patrick Moore | |
| 9 | Superstars | David Clarke | |
| 10 | Between the Planets | Harvard Press | |
| 11 | Engineering Optics | Habell & Cox | |
| 12 | Hubble Telescope | Robin Kerod | |
| 13 | Atlas of the Planets | Paul Doherty | |
| 14 | Night Sky | Martin Jonson | |
| 15 | Space Handbook for the Novice | | |
| 16 | Astronomy | Ian Ridpath | |
| 17 | Stellar Energy & Decay | Martin Johnson | |
| 18 | Astronomical Discovery | Herbert Turner | |
| 19 | Astronomy from Towns | Robin Scagell | |
| 20 | Using Binoculars in Astronomy | Patrick Moore | |
| 21 | Astronomy Handbook | Clare Gibson | |
| 22 | Wonders of the Solar System | Brian Cox | |

Audio Books (CD)

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| 1AB | Hitchhikers Guide to the Galaxy Phase 1 | Six CDs |
| 2AB | Hitchhikers Guide to the Galaxy Phase 2 | Six Cds |

DVDs

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|-----|--------------|--------------|
| 1DV | Gravity | Feature Film |
| 2DV | Interstellar | Feature Film |

VHS

| | | | |
|------|----------------------|----------------|--------------|
| 1VHS | 2001 A Space Odyssey | Arthur C Clark | Feature Film |
| 2VHS | 2010 A Space Odyssey | Arthur C Clark | Feature Film |

Podcasts (CD)

| | | | |
|------|----------------------|----------------|---------------------------|
| 1PC | Hubble Telescope | Astronomy Cast | plus various other topics |
| 2PC | Russian Meteor Fall | Astronomy Cast | plus various other topics |
| 3PC | Space Stations | Astronomy Cast | plus various other topics |
| 4PC | Space Probes | Astronomy Cast | plus various other topics |
| 5PC | Planet Earth | Astronomy Cast | plus various other topics |
| 6PC | Planet Jupiter | Astronomy Cast | plus various other topics |
| 7PC | Planet Mars | Astronomy Cast | plus various other topics |
| 8PC | Galileo and Einstein | Astronomy Cast | plus various other topics |
| 9PC | Radio Active Decay | Astronomy Cast | plus various other topics |
| 10PC | Planet Forming | Astronomy Cast | plus various other topics |