

Ayrshire Astronomical Society

Newsletter January 2015



Please send articles to newsletter@ayraastro.com

Meeting and Topic

26th of January when the speaker will be our very own Paul Cameron. Paul will be giving a talk on "Making and using a barn door camera mount". Paul has given some very informative and useful talks in the past and for anyone thinking of starting out in astro-photography, this is one not to miss.

Loudoun Hall Feedback

Please continue to let us know your thoughts, both positive and negative, on the new venue. Any of the committee members can be approached at the meetings (They don't bite), or just e-mail. president@ayraastro.com.

Subscriptions

Please note that all subscriptions need to be paid up by the end of December if you wish to remain a Member. If you cannot make it along to the meeting then please send your cheque to Derrick Oldfield at 11 Springvale Park, Ayr. (There may still be time)

February Skies:

Venus is less than a degree south of Neptune on 1 Feb.

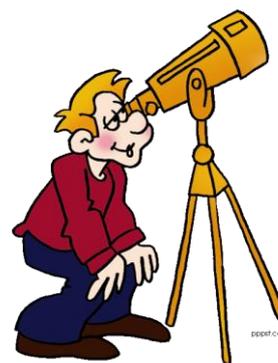
Jupiter comes to opposition on 6 Feb: at its nearest to Earth it is 650 million kilometres, or 36 light minutes away. It shines very brightly all night. The full moon is near it on 4 Feb. (Sorry Paul ☺).

The inner planets, Venus and Mercury, always pass from the morning sky towards the evening on the far side of the sun, and from evening to morning on this side, the latter always more quickly and brightly. This month, Venus continues to rise slowly into the evening, and Mercury falls quickly into the sunset, but you might just be able to see it below Venus.

Mars is now slipping into the evening twilight but, at the beginning of the month, it is still above Venus and Mercury.

By the end of the month, Mercury is climbing rapidly into the morning sky, a great view from the southern hemisphere. From the northern hemisphere, it is low in the SE; on the morning of 17 Feb, look for it below the old moon. Saturn is in the morning sky, in the north of Scorpius. The moon is to its north on the morning of 13 Feb.

Special interest for AAS : The space mission Dawn is, at the time of writing, due to arrive in orbit of the dwarf planet Ceres in February.



Alex's Space

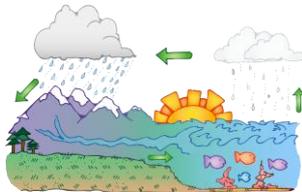


Earth – our Unique Home

Earth's atmosphere and magnetic field truly are marvels of design, but let's not forget Earth's natural cycles - they are just as important and unique to our planet. No other planet in our Solar System has them, so, what are these natural cycles of which I speak? Snuggle up in your favourite armchair and I will tell you:

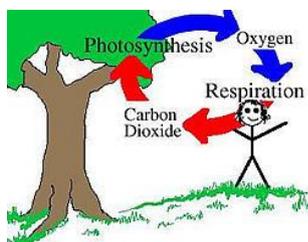
If a city's supply of fresh air and water were cut and its sewers blocked, disease and death would soon follow, but our planet is not like a city, where new food and supplies are brought in from outside and waste is carted away. The clean air and water that we depend on are not shipped in from outer space, nor is waste matter rocketed out. So, how does the earth remain healthy and habitable? The answer is in Earth's "natural cycles", and these are the main ones

The Water Cycle



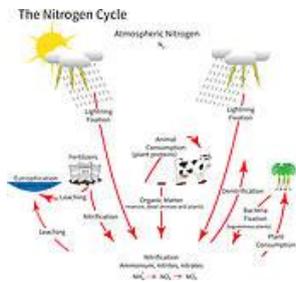
Water is essential to life. None of us can live without it for more than a few days. The water cycle distributes fresh, clean water around the planet, and this involves several stages. Solar power lifts water into the atmosphere by evaporation. Condensation of this purified water produces clouds. These clouds in turn, form hail, sleet, snow or rain, which falls to the ground ready to be evaporated again thus completing the cycle. How much water is recycled annually?....enough to cover the whole of the Earth's surface to a uniform depth of 80 centimetres – that's nearly 32 inches in old money!

The Oxygen Cycle



As you know, in order to live, you need to breathe – to take in oxygen and give out carbon dioxide, but with countless billions of humans, animals and other living things doing the same thing, why does our atmosphere never run out of oxygen and become overloaded with carbon dioxide? The answer is the oxygen cycle in an amazing process called photosynthesis. Plants take in the carbon dioxide that we exhale, using it and the energy from sunlight to produce carbohydrates and oxygen. We then "take in" the oxygen again, to complete the cycle.

The Nitrogen Cycle



The third main cycle is the nitrogen cycle. Life on Earth also depends on the production of such organic molecules as proteins. To produce those proteins, nitrogen is needed. Happily that particular gas makes up about 78% of our atmosphere. Lightening converts nitrogen into organic compounds that plants can absorb. Animals and humans eat those plants and finally when the plants and animals die, the nitrogen compounds in them are broken down by bacteria. That process of decay releases nitrogen into the soil and atmosphere thus completing the cycle.

Humans, with all their advanced technology create countless tons of unrecyclable toxic waste annually, yet Earth recycles ALL its wastes using ingenious chemical and biological engineering, perfect recycling?

It is hard to imagine there being another planet in our galaxy with this combination of unique features that enables life and all living things to exist and proliferate, but, perhaps other "life" forms don't need them and exist perfectly well on a diet of ammonia and sulphuric acid followed by a whiff of methane for dessert!

Back next month,

Alex Baillie

January 201

Name an Exoplanet Competition

During convivial chat at the AAS Christmas Meal it was suggested that the Society should try and get involved in the naming of a number of exoplanets that are supposedly available for naming “by the Public” in what is termed a “crowd sourcing even”. This seemed like a good idea and some initial research has revealed the following information which has been copied from the IAU website:

“The first ever contest allowing members of the public to name ExoWorlds begins its first round today, offering the registered clubs and non-profit organisations the chance to nominate their favourite systems to take through to the next rounds.

As previously [announced](#), the IAU is organising a worldwide contest to give popular names to selected exoplanets along with their host stars, among [a list of hundreds of well-characterized exoplanets](#) it has offered for public naming. Today the IAU officially opens this NameExoWorlds contest. The first round of the competition allows all registered clubs and non-profit organisations to nominate up to 20 ExoWorlds (exoplanetary systems and their host stars) to be made available for the next stage of the contest, where names can be proposed for the most popular ExoWorlds.

Although people have been naming celestial objects for millennia, the IAU was delegated the task of assigning scientifically recognised names to newly discovered celestial bodies by its member countries. The Name ExoWorlds contest is the first opportunity that the public will have to name not only exoplanets, but also, for the first time in centuries, to give popular names to stars — those that have known exoplanets in orbit around them.

To participate in the contest, clubs and non-profit organisations must first register with [the IAU Directory of World Astronomy](#). **The deadline for which has been extended to 23:59 UTC on 15 May 2015.**

The deadline for the first stage of the contest itself is at 23:59 UTC 15 February 2015, when nominations for 20 ExoWorlds to be named will close. In the next phase, once the most popular ExoWorlds have been identified, the stars and planets will be made available to all registered clubs and organisations to submit their desired names. Each club or organisation can then propose a name for one ExoWorld, with all submissions having to abide by the [IAU Exoplanet Naming Conventions](#) and be supported by a detailed argument for their choice. When this stage has concluded, the public worldwide will then be invited to vote on their favourite proposed names.

The final results are expected to be announced at a special public ceremony held during the [IAU XXIX General Assembly in Honolulu, USA, 3–14 August 2015](#).”

Present Position of AAS

From the above it would appear that we may just make the cut off date the selection of the short list of planets. However, it is more likely that we will miss this step but will be able to submit planet names.

AAS has applied for registration with the IAU (on the basis that it is free) and is awaiting confirmation that it will be so registered and placed on the IAU website. This alone will provide us with wider exposure to anyone searching for a local astronomical society.

Some further enquiry is needed to see if we can get involved, although confirmation of Registration may just kick off the process automatically.

In meantime Members are invited to come up with some names and pass these to the Committee by the end of FEBRUARY.

Naming Rules

The public names proposed in naming campaign should follow the naming rules and restrictions adopted for Minor Bodies of the Solar System, by the IAU and by the Minor Planet Center (see <http://www.iau.org/public/naming/#minorplanets>, or, for more details, <http://www.minorplanetcenter.net/iau/info/Astrometry.html#nametype>).

In particular:

Proposed names should be:

- 16 characters or less in length;
- Preferably one word;
- Pronounceable (in some language);
- Non-offensive;
- Not too similar to an existing name of an astronomical object. Names already assigned to astronomical objects can be checked using the links <http://cds.u-strasbg.fr/cgi-bin/sesame> (for galactic and extragalactic names), and the MPC database http://www.minorplanetcenter.net/db_search (for names).

In addition it is not allowed to propose:

- Names of pet animals;

Next year Star Camp Date To be announced soon.

As a taster for the upcoming "Start Camp" here is an article sent in by by Allan McIntyre giving account of the last star camp adventure.

Campervans, dampervans and camping in the back of vans at The walled garden

Yes it was star camp time at The walled garden campsite at Kilkerran, a site chosen by myself and Paul for its potential for great skies and facilities within reasonable travelling distance.

But how would it fare? Well expectations were low after the poor winter with very few windows in the weather and at the last meeting Dave Hancox informed me that the long range forecast was not good, with a bit of a storm brewing. So I took to obsessing over the weather forecasts for the next two weeks, always with some hope and blind ignorance that it would all be fine, but by Thursday evening it was obvious that good weather was not on the cards.

However after consulting with our glorious president Graham he assured me that in Scotland astronomers don't go to star camps for good weather, they go in case they get good weather and that means to hang with forecasts.

The presidential caravan was laden with luxuries, so with the Ayrshire Astronomical Society banner fluttering in the 50 Mph breeze I followed my leader to Kilkerran.

Just as I set off the skies cleared and as if it were pre-arranged the winds dropped as I drove into the campsite and I was not alone, there too were Willie and Dave setting up camp or rather Willie was leaning against Daves car while Dave set up camp. Paul was helping Robin erect a novel tent that looked exactly like a VW camper van and after a quick "drive" round the campsite for comedy effect pitched it in the potential direction of the forecast winds. Paul himself had borrowed a rather tired old Talbot campervan which he christened the dampervan to allow him and Stacey, who is almost due to give birth, to stay over. Stacey was quite rightly having none of it and assured me they were heading home at midnight.



(Robins V.W. Tent)

With the potential high winds I decided to rough it overnight in the back of my works van. so I pitched in the shadow of the presidential caravan and set up my kit. Just before dark Pauls Damper van became a fast food wagon with Stacey having cooked half of Pauls body weight in Chilli con carni. "Yummy". By this time Roger arrived, followed by John who had brought the club telescope. After everyone was fed, the night sky had clouded over somewhat, with only the moon and Jupiter visible and with Paul nearby that meant pointing telescopes at Jupiter. I was trying out my second hand 8 inch reflector that I managed to pick up for £50 at Christmas and this was its first decent outing and it was performing really well. The club scope was also pointing at Jupiter and showing some fantastic detail.

It was great to see some of our newer Members coming along just to observe as well with Karen getting some help to set up and use her new celestron and also Robert with a most excellent telescope that gave us a running commentary. Then the sky cleared, although the moon washed it out sufficiently to deny us any detail of the milky way which I had marvelled at when I first came to check out this site. After looking at my old favourite, the Orion nebula, I decided to see if my scope could pick out the supernova in M 82 but after finding the galaxy easy enough I couldn't pick it out so Graham pointed his larger Dobsonian at it and maybe we saw it or maybe we didn't, I will need to check a photo of it to confirm its position, but for sure its not bright anymore. On to more galaxies then M51, M101 and just as I was about to look at the Leo galaxies the cloud returned and its times like this that are made for devouring biscuits of quality laid on by Willie and of course Stacey.

Unfortunately the cloud was here to stay leaving us to sit round Rogers Tilly lamp drinking beer and chatting into the wee small hours.

The next morning brought higher than expected winds forcing Willie and Dave to pack up as they were in danger of being blown away in Daves family tent. I was expecting the same of Robins novelty campervan tent but after pointing it in to the wind it was coping really well. After spending much of the day dodging branches, bits of awning, panes of glass and general caravan debris the sky cleared in time for dark allowing us a view of a moon Halo, the first I have ever seen, but the wind continued to blow preventing any telescopic observing, so Graham kindly invited us to remove our shoes and make ourselves at home in the presidential caravan which I was surprised to see was not paved with gold, but instead a sort of clear polythene sheeting but then at his age spills and soiling are a regular problem.

Many hours of good company and chat, not to mention a few beers, passed and as I negotiated the wind on the way back to my swaying van under a starry sky I was glad we all made the effort to come.

Heres to the next one.

Allan.