

Our meeting last month was fun packed and very busy. The October meeting promises to be even busier. If last year's practical session is anything to go by prepare yourself for a great night of learning and sharing.

The Christmas meal has been booked and will take place at the Tree House in Ayr on the 16th December at 7 p.m. We've had to book early this year, and payments need to be made at the October meeting. Meals cost £15 for 2 courses and £18 for 3 courses. Drinks are paid individually on the night.

I would like to say thank you to all the contributors to the newsletter this month; Graham, Paul, Allan and Alex. If you have something to contribute, feel free to send it to stephanie@galacticpoint.com.

See you all on Monday! Stephanie

Beginners Night

This month the meeting will be focused (get it?) on information that a beginner is likely to need to get set up and looking at the sky. The session will start with four short practical talks;

Setting up a telescope: Dave Cossar will demonstrate how to set up the Society's main telescope on the EQ6 equatorial go to mount. This will bring out the main requirements for setting up any telescope and there will be other telescope mount types available in the room for members to look at / practice on in the open part of the meeting.

Planning an Observing Session: Paul Cameron will show how to plan a simple observing session. This will cover the basics of clothing, equipment, site, and how to select objects to view.

Star Hopping: Allan McIntyre will describe how to find your way around the sky without a go-to telescope using the method of star hopping. This method can help find quite difficult to spot objects if you plan your route.

Collimation: Nick Martin will give a non-technical overview of what collimation is, and why it is important.

He will also describe how to identify if you have a collimation problem, and what methods are available to fix the problem. Equipment and experts will be available in the open session to get your scope checked and sorted.

The intention is that the talks will be at a basic level and that they will be followed by an open session in which members can get hands on with telescopes, bring their own telescopes, ask from general to detailed questions to the speakers or other knowledgeable members.

This is your chance! So don't be shy about asking those embarrassing silly questions – we have all been beginners and even the most experienced members will have a "silly" question that needs an answer.

If you have specific equipment questions or problems bring the kit down and ask around.

Graham Longbottom

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Ayrshire Astronomical Society has the pleasure to welcome

Professor John Brown

The 10th Astronomer Royal for Scotland

to present a talk entitled

Supersonic Snowballs in Hell Sun / Comet Impacts

at

Loudoun Hall, 1 Boat Vennal, Ayr KA71HR

The meeting is open to members of the public. Doors will open at 7:15 p.m and the meeting will close at 9:00 p.m. There is no entrance charge although seating is limited and the Society reserves the right to refuse admission.



Loudoun Hall is across the road from our usual meeting place - see map \rightarrow



Cleaning A Reflector



Many people have reflector type scopes, but the open tube design means that even if you carefully replace the lens covers before storage, eventually dust and other material starts to build up on the primary and secondary mirrors. Airborne particles, foliage, dead insects etc. all gather on the scopes optics. But when do we decide to clean?

Well, I have read if you can still see a reflection you should leave it alone! Personally if there are larger particles than dust, or anything looks like it is stuck to the mirror, or any fungus or biological material I would give it a clean. Try an air puffer first to dislodge the stuff, if that does not work, you will need to carefully wash the mirror.

First remove the mirror cell from the telescope. Put a bit of sticky tape over the tube and the mirror cell so when they are separated it will be simple to line them back up later. Using a big plastic bowl run some tepid water over the mirror for a few minutes, this should get rid of the largest particles. If the mirror looks clean at this stage, quit while you're ahead, you can't scratch a mirror you have not touched! If not, take a wad of cotton

and, starting at one edge, swab the mirror in one direction, applying no pressure beyond the weight of the cotton itself. Grit is less abrasive wet than dry, so do this step under water if you can. Turn the cotton over in a backward-rolling motion as you go, so that as soon as a part of it rubs the surface, that part is carried up and away from the glass. Throw out the wad when it has been turned completely. For a big mirror, the job may take a lot of cotton. It's good to have the house to yourself for this job, no distractions, take your time and work slowly. Drain the sink and run lukewarm water over the mirror for a minute. Finish with a rinse of distilled water, and tilt the mirror on edge to dry. Repeat the process with the small secondary mirror. Remember, mirrors often have specialised coatings on them to help increase the transmission of light, so if you are in any doubt leave it alone!!

> One more wee tip, if like my reflector, the bolts holding the mirror cell are made of cheese, this would be a good time to replace them. Cheers!

> > PaulC@darvelastroshed

Earth's Dynamic Duo

No, not Morecombe and Wise or Ant and Dec, but the Earth's magnetic field and the atmosphere! Space is a dangerous place where lethal radiation is common and meteoroids are an ever-present danger. Yet, our blue planet seems to fly through this galactic 'shooting gallery' with relative impunity. why? Because Earth is protected by an amazing armour - a powerful magnetic field and a custom-made atmosphere.

Let's start with the magnetic field: the centre of the Earth is a spinning ball of molten iron, which causes our planet to have a huge and powerful magnetic field that stretches far into space. This shield protects us from the full intensity of cosmic radiation and from potentially deadly forces emanating from the sun. The later include the solar wind, which is a steady stream of energetic particles; solar flares, which in minutes release as much energy as billion of hydrogen bombs, and explosions in the outer region, or corona of the sun, which blasts billions of tons of matter into space. You can see visible reminders of the prot ection you receive from the earth's magnetic field in the intense auroras, colourful displays near Earth's magnetic poles.

Earth's atmosphere: this blanket of gases not only keeps us breathing but also provides additional protection. An outer layer of the atmosphere, the stratosphere, contains

Astrofest 2014

The European AstroFest is the world's premier space conference and exhibition, bringing together the professional and amateur communities.

The conference will take place on the 7th and 8th February 2014 at Kensington Conference and Events Centre in London. Tickets are already on sale and going fast.

It receives raving reviews, and many people go back year after year.



a form of oxygen called ozone which absorbs up to 99% of incoming ultraviolet (UV) radiation. This ozone layer helps to protect many forms of life including also humans and the plankton we depend on to produce much of our oxygen - from dangerous radiation. The amount of stratospheric ozone is not fixed, rather it changes, growing as the intensity of UV radiation rises. The atmosphere also protects us from a daily barrage of debris from space millions of obiects ranging from tinv particles to boulders. By far the majority HowStufWorks of these burn up in the atmosphere, becoming bright flashes of light called meteors. However, Earth's shields do not block radiation that is essential to life, such as heat and visible light. The atmosphere even helps to distribute the heat around the globe, and at night the atmosphere acts as a blanket, slowing the escape of heat. Earth's atmosphere and magnetic field truly are marvels but he same thing could be said about the three natural cycles that sustain life on this planet. I will tell you about them next month.

And finally:

What do you call an overweight alien? An extra-cholesterol!

Alex Baillie

Busy November Night Sky

Look out for the Northern Taurids Meteor shower mid-November. The peak number is said to be about 7 meteors an hour.

Comet Encke (early Novembre) will make an appearance in Virgo and Comet ISON (mid-Novembre) will be a fascinating naked eye object to observe.

Mercury will be your morning companion. Don't forget to look close to Saturn and Spica in Virgo.

We will also get quite a show from Jupiter with the shadow transits of Io and Europa. These transits will take place on the 5th and 6th as well as on the 12th and 13th.

Happy Viewing!!!

Tubes on tour - Paul and Allan get there tubes out at Barrhill Holiday Park

For reasons best left till another issue Paul and I decided to check out the dark sky above Barrhill holiday park on the date of the October new moon. A changeable forecast meant we were hoping for, rather than expecting clear skies. It was a sunny day when I left Ayr but by the time I met up with Paul for fish and chips in Girvan, it had pretty well clouded over. This was the first time we had both left the safety of our homes to go out observing together for some months, and after both missing the well-attended trip to Loch Doon the previous weekend, we were determined to make the most of this adventure. So tummies filled and wind broken, we headed off for the caravan park.

Barrhill unbelievably is still in Ayrshire, just, and it is right on the edge of the Galloway forest park. We had originally planned to camp overnight but all the signs from the many forecasts we had checked were that cloud would be with us to stay by midnight at the latest. So we were using the good will of the holiday park manager to allow us to set up on his deserted tent pitches just for the evening. Just as we arrived the sky cleared, and we set up as daylight was beginning to fade. Paul had brought his astro pup Bella with him, and she was very patient for a young dog as we assembled our kit. As is always the case, as soon as we were about to polar align our mounts the cloud returned leaving us nothing to do but take Bella for a walk. Time for a hot drink, at least that's what Paul promised me when he set up his old camping stove; "it will boil in no time just you wait and see. Look I can see steam" Two lukewarm cups of tea later, and the sky had cleared this time for good, and we set about our final alignments.

Paul likes to leave his kit set up outside at home, but coming this far south meant a small adjustment of the tilt of his EQ mount by a few degrees. Unfortunately the harsh Darvel climate had seized the adjusting knobs. With a bit

of straining here and there we were ready to go, and 'My, what a sky!' I couldn't believe the amount of detail I could see in the Milky Way as soon as it became reasonably dark. I was very impressed, but my experience of really dark skies is small compared to Paul's. He assured me that the sky was being significantly spoiled by the lights from the caravan park across the main road, not to mention the odd passing car. As the observing began I soon found how different it was looking up at the highest point in the Milky Way for a few minutes, accidentally catching an eye full of sodium lighting and trying to see anything. The manager came to see us at this point and kindly offered to switch off a few of the lights closest to us. This did help but no matter how hard you tried to angle the eyepiece so that you were not looking at any other lights, as soon as a car came past it was back to square one for your night vision. Shame, but no matter we were still managing to tick off a few McIntyre challenge objects, M34, M31, M57, M33 just, M76. Came to Caldwell though, an edge on spiral galaxy and we were defeated with Paul's scope so I didn't even bother with mine. We tried for ages with averted vision but nothing... which left Paul to doubt the alignment of his scope. So Paul set up his camera very quickly (it has to be said), and took some shots, and sure enough a very faint line of light was just discernible. Time for another cuppa. I should now mention the size of Paul's cups; a small child could easily fit its head in one. I had brought a flask and decanted it into his freezing cold china buckets, and two lukewarm cups of tea latter and the cloud signalled home time.

Great night of observing but it could have been a brilliant night were it not for the light pollution. The search for the perfect observing location continues.



Allan McIntyre

Programme of main speakers for 2013/2014 Club Meeting Nights

30th September	"The Scottish Dark Observatory"	Robert Ince
28th October	Beginners Night	
25th November	"Supersonic Snowballs in Hell"	Prof. John Brown
16th December	Christmas Dinner	
27th January	"Start Gazing"	Paul Cameron & Allan McIntyre
24th February	"Scottish Astronomy: A Historical Perspective"	John Pressly
24th March	"Nano-spaceships and Their Astronomical	Robin Sampson
	Applications"	
28th April	ТВС	Dr. Giles Hammond
20th May	AGM and social evening	

And for a Beautiful Finish!

Nick had one his pictures published on the NASA's picture of the day website. You can see it here: <u>http://apod.nasa.gov/apod/ap130720.html</u>. This is an image of Comet Lemmon and Deep Sky. Near centre is open star cluster M52 and below is the red glowing nebula NGC 7635. Left of M52 is is the Bubble Nebula.

