



Ayrshire Astronomical Society

January 2014

Issue 45, 13/14

Happy New Year everyone! Wishing you a 2014 full of clear skies, and astronomical wonders.

The Christmas dinner last month was a success, and it was a pleasure to see everyone.

At this month's meeting, Paul and Allan will give us a presentation on Stargazing. The details of this presentation remain a mystery...you'll have to come to the meeting on Monday to find out more.

*As you know this is my last newsletter as editor, so I would like to say thank you to all who have contributed to it over the years I've been producing it (including this month's contributors: Roger, Paul and Allan). The group has grown a lot over that time, and I'd like to think the newsletter has been an important part of that: and now we are looking for a new editor; someone keen to share their love of astronomy, and keep the group strong. If **you** would like to be that person, please contact Graham at president@ayraastro.com.*

*See you all on Monday! **Stephanie***





Society's Christmas Dinner

As is the tradition, the Christmas dinner was a great success. There was a good turn up, and delicious food. You can see lots more photos at:

<http://ayraastro.com/newsite/activities/>



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Starcamp

Happy new year everyone!

The final arrangements for our starcamp at The Walled Garden campsite near Dailly have been made. We have unfortunately had to move the dates to Friday 7th and Saturday 8th of March as this is the official opening weekend for the campsite and council red tape prevents us from coming the weekend before which would have been a new moon. Nonetheless the setting moon shouldn't ruin our excellent views to the southeast into the Galloway forest park. Of course you may like looking at the moon anyway just don't tell Paul.

Prices are £7.00 per head per night for campers with a £3.00 per night deposit due at Monday's meeting. If you don't want to stay over then you can come along and observe for £3.00 per head per night. These prices get you full usage of the toilet, showers and warm recreational room with an enclosed wood burner. The Presidential caravan will be on site which has a cappuccino machine,

ice making facilities, heating and a gold plated toilet seat. All campers are invited to sleep in it if they feel a bit nippy, subject to Graham's agreement which, up till now, hasn't been forthcoming. During the summer we had an excellent BBQ at the starfarm provided by Stacey and Paul, but as the weather at this time of year may be unpredictable it would be great if everyone staying over can bring something tasty we can throw it all together and have a buffet. I'm sure we can manage hot drinks for those not staying, but you might want to bring your own mug as I don't intend to be doing your dishes for you. Mind you, there might be a dishwasher in the Presidential caravan, hmmm. Feel free to bring biscuits of quality in large numbers. We are not fussy as long as they are not cheap. Oh and please, no cakes! We don't like that sort of thing.

See you on Monday

Allan

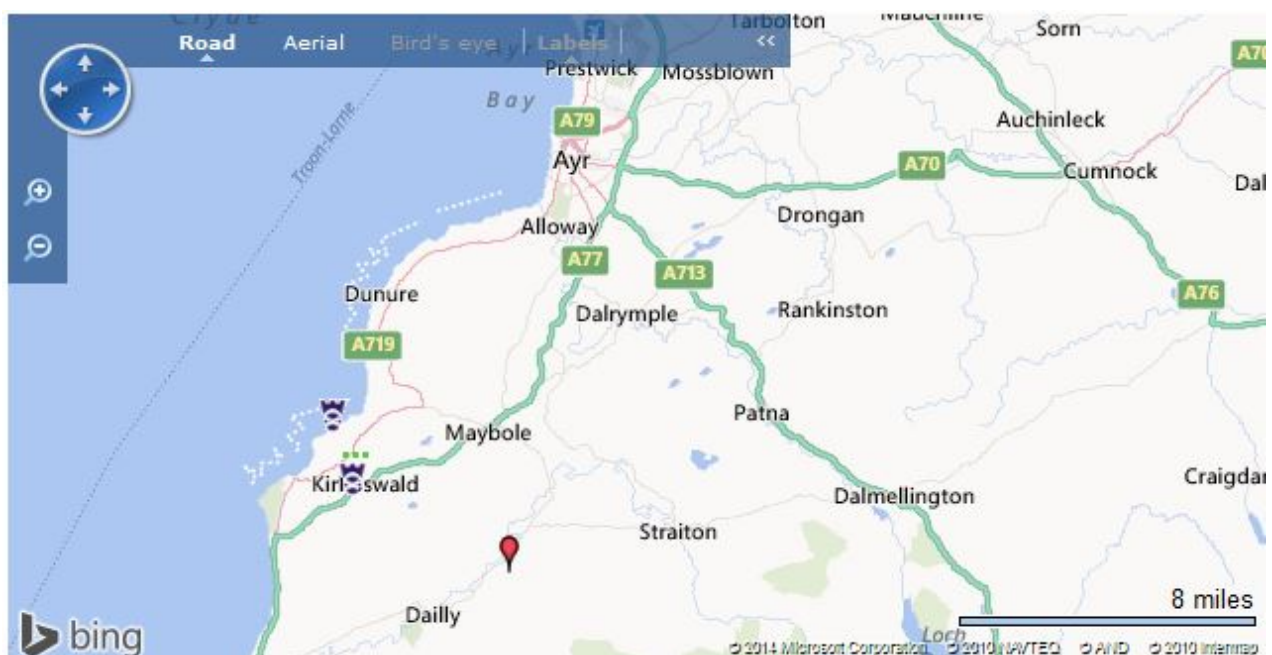
How to Find the Campsite

Directions:

Turn off the A77 south of Ayr, 400 metres south of the Minishant onto the B7045 and follow the brown and white caravan and camping signs to the park (8 miles).

Join the B741 from the A713 just north of Dalmellington - follow the B741 until you see the park signs on the left.

From the roundabout on the outskirts to the north of Girvan on the A77 take the B734. Follow this road through Old Dailly to Dailly where it joins the B741. Drive a further 3 miles until you see the park signs.



Stargazing Live Party 2014 at The Low Green, Irvine North Ayrshire

Although the weather was often cloudy, we did manage to observe on all 3 days, and encouraged members of the public to come down with their own telescopes to help them with setup and observing issues.

The society had a few telescopes set up (SCT /Reflector and Reflector) to allow people who don't have telescopes to observe the night sky. No-one went away disappointed as on all nights we managed views of Jupiter and the Galilean moons, our own moon and its mountains and craters. Various galaxies including The Andromeda Galaxy M31, Bodes Galaxy M81, Cigar Galaxy M82, Pinwheel Galaxy M101 and The Great Nebula in Orion M42 as well as The Pleiades cluster M45 were also viewed. We also managed to see, and photograph some iridium flares. But we were limited by cloud cover, and rain

over all three days. Attendance was fairly good, and had people coming from all over the Central Belt. Over the three nights around 100 members of the public attended, but unfortunately the variable weather put many off.

We also intend on carrying out 'pop-up' street stargazing events in supermarket car parks, and pedestrianized town centres around the Ayrshire area over the next 2 months or so. These will have to be fairly adhoc as I'm sure you are all aware, the weather plays an important part in astronomy! (to find out about the 'pop-up' event please go to: <http://Facebook.com/Ayraastro> for updates on pop-up street stargazing events.

Roger H. Harman

Vice President - Ayrshire Astronomical Society



Pictures: Roger H. Harman © 2014 R H Harman - All Rights Reserved

Tales From the Astroshed

One of the most amazing things about this pastime or hobby we all share is the never ending way with which it always amazes us. No matter how much you learn or how many years you have spent gazing at the stars there is always something new to see or different to look at; no matter if you're a beginner with your first scope, or an astrophotographer with 30 years of experience. The vastness of the Milky Way or the sheer unimaginable scale of the universe never fails to deliver an amazing array of objects to discover. I can vouch for this; after looking at our Facebook page one evening last year, and reading Nick's North America nebula Challenge, where the idea was to find out who could take the best pic of the famous nebula (sounds simple I hear you say!) ... my first attempts were quite poor. I could take decent pics of around 2 minutes' exposure with my current (at the time) technology and skills. However, to have any chance of capturing the faint light from the North America nebula I would need to take at least 4 minutes' exposures ... this would mean really "upping my game" so to speak. A good quality EQ mount is accurate enough to take around two minutes' exposures, but to go beyond 3 minutes you really need to guide using a laptop,

software, and another small scope attached to the main scope. This is quite a leap in skill and tech! The fact that Nick had offered a decent bottle of wine to the winner was incentive enough ... so I started researching, sorting out my equipment, and found a good small refractor to use as a guide scope. So the learning curve began, with many nights out in the freezing cold, setting up, aligning, calibrating, focusing, adjusting, trying, failing, and starting over, until I eventually had it all working together!!!! Then a clear night arrived, I lined up the scopes on Deneb, focused, and swung slightly to the side, aiming right at the North America Nebula. I started the guiding system, set the camera to take a 4 minutes' exposure, sat back, and waited for 240 seconds to see if all the hard work and expense had worked. And yes it had!!! There, on LCD on

the back of my camera was a pretty good image of the nebula. So in order to win a bottle of wine I really had to learn new skills, and invest in new equipment. The competition really made me try hard, and move out of my comfort zone. But all in it was worthwhile as my pictures have vastly improved. All we need is few clear nights, lol

Paul C

@ the astroshed



Programme of main speakers for 2013/2014 Club Meeting Nights

30th September	"The Scottish Dark Observatory"	Robert Ince
28th October	Beginners Night	
25th November	"Home Observatory"	Graham Longbottom
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 Applications"	Robin Sampson
28th April	TBC	Dr. Giles Hammond
19th May	AGM and social evening	

Rosetta awakens on 20/01/2014

It was a fairy-tale ending to a tense chapter in the story of the Rosetta space mission this evening as ESA heard from its distant spacecraft for the first time in 31 months.

Rosetta is chasing down Comet 67P/Churyumov-Gerasimenko, where it will become the first space mission to rendezvous with a comet, the first to attempt a landing on a comet's surface, and the first to follow a comet as it swings around the Sun.

Since its launch in 2004, Rosetta has made three flybys of Earth and one of Mars to help it on course to its rendezvous with 67P/Churyumov-Gerasimenko, encountering asteroids Steins and Lutetia along the way.

Operating on solar energy alone, Rosetta was placed into a deep space slumber in June 2011 as it cruised out to a distance of nearly 800 million km from the warmth of the Sun, close to the orbit of Jupiter.

Now, as Rosetta's orbit has brought it back to within 'only' 673 million km from the Sun, there is enough solar energy to power the spacecraft fully again.

Thus today, still about 9 million km from the comet, Rosetta's pre-programmed internal 'alarm clock' woke up the spacecraft. After warming up its key navigation instruments, coming out of a stabilising spin, and aiming its main radio antenna at Earth, Rosetta sent a signal to let mission operators know it had survived the most distant part of its journey.

The signal was received by NASA's Goldstone ground station in California at **18:18** GMT, during the first window of opportunity the spacecraft had to communicate with Earth. It was immediately confirmed in ESA's space operations centre in Darmstadt and the successful wake-up announced via the @ESA_Rosetta twitter account, which tweeted: "Hello, world!"

Comets are considered the primitive building blocks of the Solar System and likely helped to 'seed' Earth with water, perhaps even the ingredients for life. But many fundamental questions about these enigmatic objects remain, and through its comprehensive, in situ study of Comet 67P/Churyumov-Gerasimenko, Rosetta aims to unlock the secrets contained within.

After rendezvous, Rosetta will start with two months of extensive mapping of the comet's surface, and will also make important measurements of the comet's gravity, mass and shape, and assess its gaseous, dust-laden atmosphere, or coma. The orbiter will also probe the plasma environment and analyse how it interacts with the Sun's outer atmosphere, the solar wind.

Using these data, scientists will choose a landing site for the mission's 100 kg Philae probe. The landing is currently scheduled for 11 November and will be the first time that a landing on a comet has ever been attempted.

The comet will reach its closest distance to the Sun on 13 August 2015 at about 185 million km, roughly between the orbits of Earth and Mars. Rosetta will follow the comet throughout the remainder of 2015, as it heads away from the Sun and activity begins to subside.

"We will face many challenges this year as we explore the unknown territory of comet 67P/Churyumov-Gerasimenko and I'm sure there will be plenty of surprises, but today we are just extremely happy to be back on speaking terms with our spacecraft," adds Matt Taylor.

Article summarised from:

http://www.esa.int/For_Media/Press_Releases/Rosetta_ESA_s_sleeping_beauty_wakes_up_from_deep_space_hibernation