Ayrshire Astronomical Society

September 2013

Issue 42, 13/14

Welcome to the 2013-2014 session. We had fun last year and this new session promises to be even better! We've had a busy summer despite the rain, and we're aiming to have an even busier winter. There's always some viewing being organised by one of the members, if you see any notification, don't hesitate to join in!

As usual the subscriptions are now due for the new session. Derrick will be available to take the payments, and help with the forms.

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.

It's quite a programme we have this year, let the fun begin! ***Stephanie***

What's the Plan?

Every time I hear that phrase I scream silently inside. Not because it worries me but usually because I know that it is always best to have a plan even though you really don't want to be tied to any particular actions. That's fine for your personal life, but for the AAS you really have to think ahead otherwise you could have a disaster on your hands. So - What is the Plan?

As before it is pleasing to be able to say that the Society is going from strength to strength in terms of membership and enthusiasm. For the second time we have a full committee with quite a few new faces. That helps a lot because it brings new ideas and a push for change. We already have a full programme of speakers and have also managed to get the Astronomer Royal for Scotland to come and speak to us. Plus we have the "Senior Spacecraft Salesman" from Clyde Space - now there is a job title! - well done Angela!

Last year we had two attempts at star camps. Both were rained off, but still resulted in enjoyable social evenings. The first, at Muirshiel Country Park, became an enjoyable pub meal, and the second, at Paul's parents' farm near Loudon Hill, started with a great BBQ (feast actually) and ended a good night's fun sheltering from the rain under the awning to Allan's tent (which was so big it blocked most of the sky line). The result of those has been a will to organise further such events this session, and aim towards one that we could advertise to other clubs. Watch the newsletter, and Facebook for more news as they evolve.

In our first committee meeting of the session we agreed to look at buying a new waterproof gazebo for use at the summer fairs with an eye on also using it for observing events. This is in hand. We have also agreed to attend Dean Castle, Newton Park Fayre, and at least one other event. It was agreed to give the Ayr Holy Fair a miss this year as it has been bad weather for the last two years, and it is becoming expensive to attend. Culzean Castle was a good day last year but it was felt that it was a limited audience due to the Park entry fee, and most people being out of the area visitors. These events are always good fun whatever the weather, so please come along and support them.

The rising membership has increased the number of "beginners" so we decided that we will add more beginner talks this year. In particular, at the October meeting, we will have a full beginner night. The plan is to have a main demonstration on setting up a telescope using the club scope, and then other types of mount. There will also be short talks on; Planning an Observing session, Star Hopping and Collimation. The session will be hands on, and hopefully will allow break out to discuss further topics and look at problems being encountered by individual members. So please come along bring your scopes if you wish and ask your questions.

We are also looking at the possibility of buying some form of clothing bearing the Society Logo, perhaps sweatshirts or beanie hats - please let us know if this is of interest.

The Christmas Meal in December will be continued and it is also planned to add an "end of term meal in May - please let Derrick know if you are interested in either of these - they are good fun so do not be shy.

Personally I am looking forward to the upcoming session as I feel it will be diverse and very interesting with a new emphasis on observing and training. I also look forward to seeing you all again and trying to get through an evening session without too many screw ups!

All the Best

Graham

PS If you have any ideas or gripes please let any member of the committee know and we will look to sort things out - it is your Society so get involved let us know what you

My First Observing Session

It's almost a year now since I went out on my first group observing session with members of the society. I consider this to be the night I started astronomy, although I had bought my scope some months before, and had used it to look at the moon (sorry Paul) and Saturn from my back garden. I had read a couple of beginners' guides to astronomy and thought I knew what I was doing, but this was the first real test of my abilities and my kit away from the comfort of my own home. I was feeling the pressure of not wanting to look an idiot in front of these experienced astronomers. The reality was of course that Roger, Nick and Paul were looking out for me, and only too keen to help me out and offer advice. If you are a beginner or an old hand used to observing in your garden on your own and fancy sharing your hobby with other astronomers, then very soon mobile phones and Facebook pages will be on fire with messages of last minute observing sessions. Please accept these invites, and you won't be disappointed as observing in groups is fantastic, fun, and a great way to learn more about your hobby. I have learned loads this year and I have also made some mistakes along the way. Here are just a few:

1. Dress appropriately. My first time observing at Nick's house we were outside for six hours and I was near hypothermic at the end. Ideally you want to be warm standing still. Remember! Astronomers do it quietly bent over.
2. Don't buy a telescope until you have come along to an observing session, and tried out the wide array of kit that other members have.
3. Plan what you are going to look at before you go out as this saves time, and means you get to see more.
4 .Don't waste your time on setting circles unless you have spent many thousands of pounds on a mount, and have it fixed to a concrete post as they tend to be inaccurate and frustrating. Learn the sky instead. It doesn't take that long if you spend five minutes looking up every clear night.
5. Align your finder scope and red dot finder with your telescope every time you set up. I usually use the pole star as an object to site them on as its movement in the time it takes to do this is negligible. An inaccurate finder scope is the work of Satan and will drive you mad.
6. Don't bring along a white light torch that has a red setting as you will blind everyone every time you accidentally switch the white setting on in the dark. I did this at least five times on my first outing, and Roger was struggling to hide his annoyance.
7. Ask an experienced member to help set your kit up for the first time. It is always different doing it for real than reading the instructions, and if it's already dark it adds another dimension of difficulty.
8. Take an opportunity to observe in a really dark sky as you just can't imagine it if you have never experienced one before.
9. Find out about what you are looking at. This is something you can do whatever the weather, and leads to a much greater understanding of your hobby.
10. Don't be afraid to ask questions however silly or basic they sound. We were all beginners once.

Allan

Oh and if you ever help organise a competition for the society and offer a prize, say, a biscuit of quality for example and someone very kindly offers to make them for you, refuse immediately or a certain person will publicly accuse you of delegating. You know who you are.

The editor's response: it was a perfectly valid observation!

From the Astroshed

Welcome to the Darvel Astroshed, this month we are going to look at astrophotography with just a DSLR camera. You will need a camera, and a tripod or shoe! (see earlier issues of newsletter). Most people who use a DSLR for astrophotography tend to go for widefield shots. These cameras have a much wider Field of View than a telescope has, and much less magnification; meaning you can capture large sections of they sky, like whole constellations or large parts of the milky way. OK, so we have decided to image the Milky Way, so how do we do it? Well you will need to know the "600 rule" .. DSLRs usually come with a zoom type lens, typically 18-55mm, if you set it at 18mm this will give the widest lowest magnification. So now you divide 600/18 = 33 .. so the longest exposure without rotation/star trails would be 33 seconds. This works for all sizes of lenses, for example a 50mm lens would give you 12 secs (600/50mm =12secs) you still with me? Hang in there!! Ok so now camera settings. Switch your DSLR on to manual setting, set the length of exposure to 33 secs, (depending on your lens) ISO, set this one stop below maximum. Set aperture to as low a number as you can, 3 or 4 or lower if your lens lets you.

Now frame your picture, the Milky Way looks great with something in the foreground like a tree or house. So set up your tripod or shoecam, and activate the cameras self timer, this stops any vibrations, and that's just about it! Experiment with different settings for the best results and have fun!

Paul C , Darvel Astroshed

Thanks to Dave Hancox for letting us use his great shots of the Milky Way .. Cheers!

The Night Sky - Autumn

The arrival of autumn brings earlier sunsets that leave the broad band of the Milky Way arching across the sky. Summertime's Scorpion has set already and Sagittarius the Archer looks like a teapot pouring a nice cuppa on the trees and houses on the horizon. Higher up, a trio of fist magnitude stars straddles the softly glowing Milky Way. This is, of course, the summer triangle, which lingers in view well into autumn. the Triangle's lowest point is the white star Altair in Aquila the Eagle. Altair marks the eagle's beak, while the bird's wings are formed from second and third magnitude stars in two triangles. The bird is seen as flying up the Milky Way. The highest point in the Summer Triangle is Deneb in Cygnus the Swan. (Cygnus is also known as the Northern Cross) Deneb's name derives from the Arabic for 'tail' which is the star's position. the rest of the Swan is pretty easy to trace as it glides southbound on outstretched wings. To the right of the Milky Way the third point in the Triangle is the bright star Vega shining like a jewel in the frame of the Lyre. Lyre is a small constellation, but its geometric shape is quite distinctive and binoculars can 'frame' almost all of it in a single view. The star Epsilon is called the 'double-double', a careful look by eye shows two stars close together, and a telescope reveals that each of these is also a double.

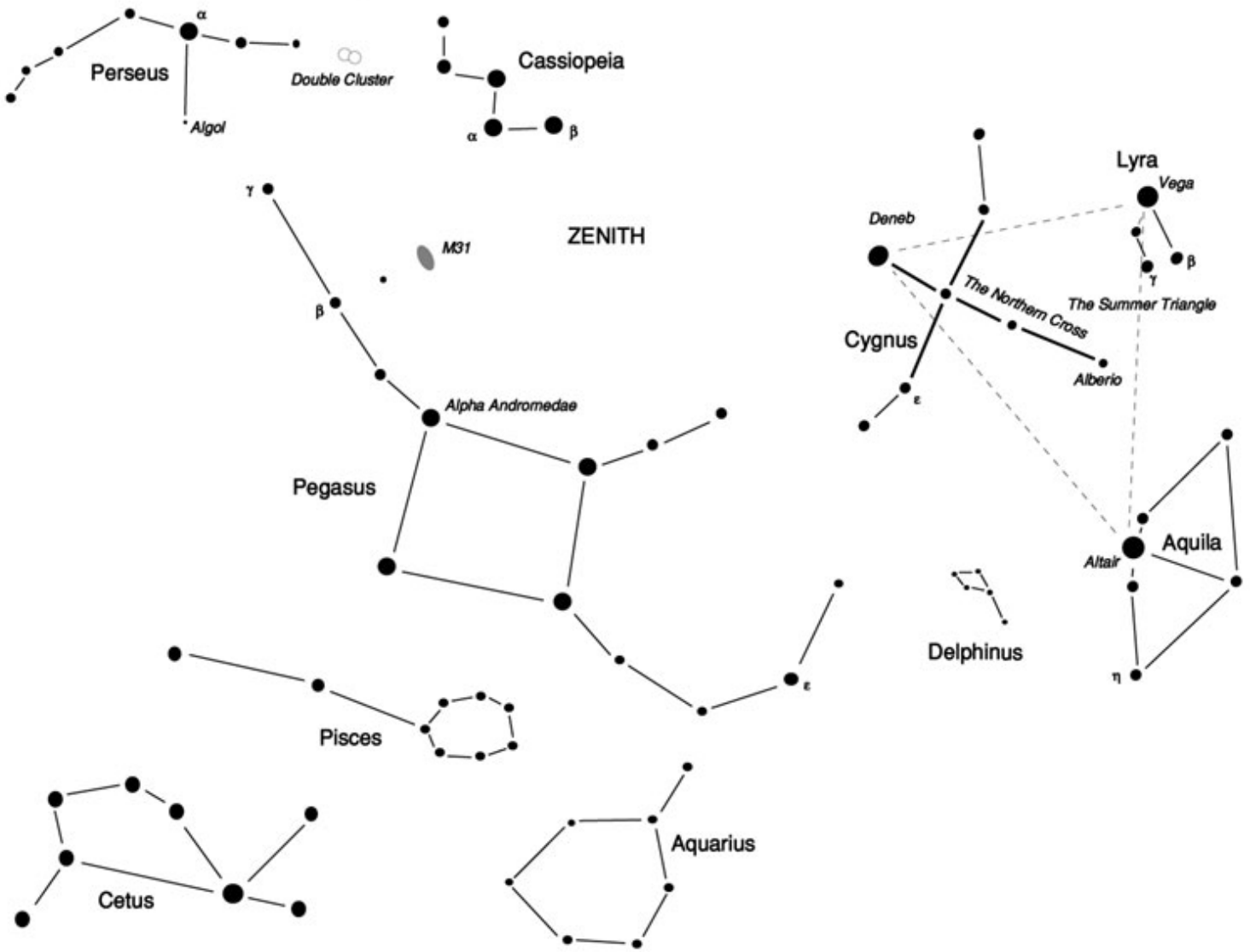
The rest of the sky's major constellations belong to one big story, which involves a sea monster, a princess in mortal peril, her parents, a hero - and even a flying horse! These figures will be easier to see a month or so from now, but we can start exploring them tonight. the flying horse is, of course, Pegasus, whose body and wings are drawn by the Great Square. His neck and head extend west from the Square's lower right corner (yes, he's upside-down!) The damsel-in-distress is Andromeda the chained princess, formed by two lines of stars from one corner of the Great Square, and her hero and rescuer is Perseus. Low in the northeast, her worried parents are Cephus the King and Cassiopeia the queen, both lie in the Milky Way --- and the monster? --- That's Cetus now climbing into view in the southeast.

The seasonal shift toward shorter days and longer nights is changing the evening sky. The Milky Way still curves overhead, but its most star-filled parts have set. For stargazers the best jumping-off point is a square-ish figure lying due south that's made of four second magnitude stars: Pegasus the flying horse. Three stars in the Great Square actually belong to Pegasus, while the one on the upper left is part of Andromeda the chained princess. The four represent the horse's body and wings. His neck hand head are found in a bent line of stars running toward the night and ending at second magnitude ENIF (remember, Pegasus is upside-down!). Near Enif lies the globular cluster M15, a pretty sight through binoculars and telescopes. Andromeda is made from two curving lines of stars that spring from Alpheratz, at the Great Square's upper left corner. Andromeda is not impressive, but if the night sky is dark and moonless, hunt for a faint smudge of light above the star Miracu. This is M31, sometimes called the Great Galaxy. It lies about 2.5 million light-years away and resembles our own galaxy in size, shape and type. Above Andromeda lies Cassiopeia, Queen of Ethopa and mother of Andromeda. Cassiopeia's stars form a wide-spread W or M, depending on how you look at it. She is traditionally seen as seated on a throne, but it looks pretty uncomfortable to me!.

Andromeda's father was Cepheus. This constellation lies just west of Cassiopeia, where it resembles a house drawn by a child! The most famous star in Cepheus is Delta, which varies in brightness between 4.1 and 5.2 magnitude every 5.3 days. Andromeda's rescuer and hero Perseus lies below Cassiopeia. It is a loose collection of second and third magnitude stars, with two objects worth looking for. One is Algol, an eclipsing binary variable star; every 3 days one of its two suns eclipses the other and the brightness drops from 2.1 to 3.4 magnitude. The other object worth looking for is the Double Cluster, two open star clusters that lie in Perseus's sword hilt near Cassiopeia. The naked eye can detect the two as an oval patch o f light, and binoculars confirm them as stars. Stay tuned...back next month.

And Finally:
Why does E.T have such big eyes?
Because he saw his phone bill

Alex Baillie



Andromeda - credit: http://apod.nasa.gov

M15 - credit: http://apod.nasa.gov

Milky Way Though the summer triangle
credit: http://apod.nasa.gov

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 Applications"	Robin Sampson
28th April	TBC	Dr. Giles Hammond
20th May	**AGM and social evening**	

News from Alba Orbital

After a long hard fought battle with the UK Space establishment (namely UK Space Agency and David Willetts office (minister responsible for this area)) we have been unable to secure the required license for our proposed satellite AlbaQube, to deliver a Space Burial service.

(...)We stumbled across an embryonic idea for a new satellite standard called 'PocketQube'. Proposed by Prof Bob Twiggs (Cubesat creator) we really liked the idea of going to a 5cm cube form factor as you solve one of the biggest barriers to entry in satellites, cost.

So after a couple of months in planning we are 'Kickstarting' this new standard by manufacturing the building blocks of Satellites, the structures. We are going to enable others to build their own satellites.

We are doing a Kickstarter with structures as rewards as well as lots of other goodies. Our kick-off date is Tuesday the 24th of September. It would be great to have your support, either getting yourself an AWESOME reward, and/or sharing with your network. We are looking for campaign helpers if you have a free hour or two drop me an email.

Thanks for supporting Alba Orbital so far, the game plan has changed, but we will keep on rolling forward!

Thanks

Tom

Committee Members 2013/2014

President	Graham Longbottom
Vice President	Roger Harman
Treasurer	Derrick Oldfield
Secretary	Angela Gribbin
Instruments Officer	Nick Martin
Newsletter Editor	Stephanie Warren
Ordinary Member	Dave Cossar
Ordinary Member	Paul Cameron
Ordinary Member	Alex Baillie
Ordinary Member	Robin Scott
Ordinary Member	David Weston
Ordinary Member	Allan McIntyre

Voyager 1 is in interstellar space!