

## ASTROKIDS SYMPOSIUM 2013

Our final Astrokids afternoon of the winter started with a brief trip to Clifton Camp, an Iron Age hill fort that is also home to Clifton Observatory. Unfortunately the weather wasn't right to use the camera obscurer, but we enjoyed the view of the suspension bridge and over to Stokeleigh and Burwalls Camps on the other side of the gorge. We then embarked on a gripping game of football although Hannah seemed convinced we were playing rugby in continually replicating the antics of William Webb Ellis! This was followed by some explorations around the banks and ditches of the hill fort.



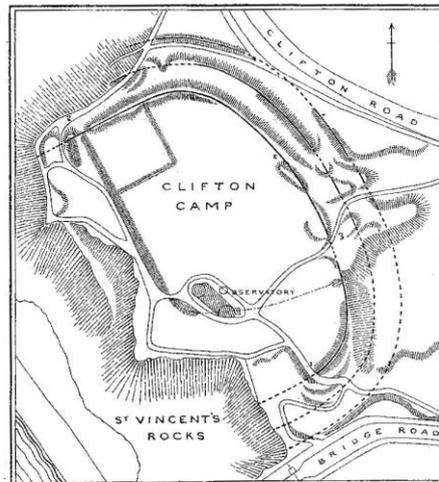
The view over the Bridge to Burwalls Camp and Clifton Observatory.



Clifton Camp hill fort (and CAC Kid for scale)



William Barrett, writing in 1789 attributed Clifton Camp to Roman construction, and the site may feature in the Club's forthcoming "Exploring Barrett's Bristol" walks in the summer, which will be of interest to the grown up members of the Club. In fact Clifton Camp is now known to be of earlier Iron Age construction although there was certainly some Roman activity there. During a visit by the Clifton Antiquarian Club in 1891, Roman coins found on the site were exhibited to members by John E Pritchard. Clifton Camp, alongside Stokeleigh and Burwalls are the subject of a paper that can be found in our own proceedings from 1900.



**Plan of Clifton Camp by Prof. C Lloyd Morgan)**  
(Proceedings of the Clifton Antiquarian, 1900, Volume 5, pp 8-24)

Returning home there was a buzz of excitement in the air in anticipation of our inaugural CAC Astrokids symposium. After a special pizza and dough ball dinner, our Astrokids lecture theatre gradually filled to capacity as academics, young astronomers and even lawyers sought out the best seats. The sound of Gustav Holst's Planets Suite faded away, the lights dimmed and our symposium was underway.

The brief introduction included a comment or two on numbers, and in particular, big numbers as the audience were asked to contemplate googols and googolplexes, just as a fun exercise to warm up the brain in preparation of our first presentation. We also sneaked the USS Enterprise into our PowerPoint presentation to illustrate how best to explore the galaxy, provided you can get hold of one!



**We definitely need one of these at Astrokids**



First to take to the lectern was Jaimee Ellwood to deliver her paper on the birth of stars. Focussing on the Great Orion Nebula that Jaimee has been studying this winter, she explained how stars are formed from the gasses that make up this nebula, and how it is illuminated by very young blue stars, in particular the Trapezium cluster right in the centre, which is just 300,000 years old. Jaimee also showed us how these young stars drift apart, using the Pleiades in nearby Taurus as an example.



Jaimee concluded by putting some time and distance into context by comparison with the dinosaurs (age of the Pleiades) and the arrival of the Anglo Saxons in Britain (the time it has taken for the light we see today to arrive from the Trapezium). This was a very complex theme excellently presented by one of our leading Astrokids astronomers.



Jaimee delivering her paper

Next up was George Swann with his paper tackling the subject of stars in middle age. With some NASA images, (we don't point anything at the Sun at Astrokids) George spoke about the Sun itself,



and explored the relative sizes of stars including some fascinating comparisons of the Sun, Betelgeuse and Antares. George moved on to the topic of double stars, using Orion as a case study, he showed us an image of Mintaka and challenged the audience to split Mizar and Alcor in Ursa Major with the naked eye.



George in presentation action

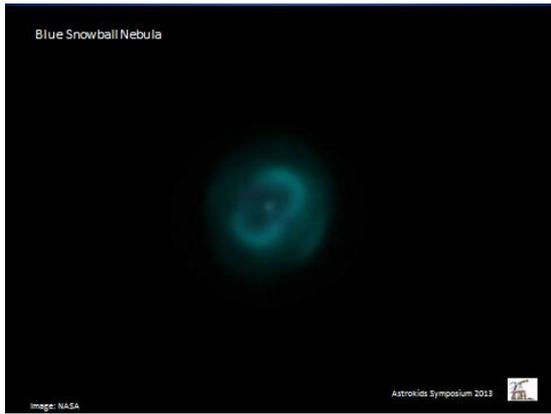


Mintaka and companion

Finally, George's Dad took to the podium to comment on the end of a star's life cycle, comparing the likely explosive supernova demise of Betelgeuse that has lived its life in the fast lane, to that of the Sun. The latter we expect to have a rather more graceful end, finishing its days as a lovely planetary nebula out of which eventually new stars will be born, and thus the cycle starts again.

During the winter we have been studying planetary nebula and particularly the Blue Snowball in the constellation of Andromeda and Eskimo Nebula in Gemini. We had spectacular photographs of both.





All of the presentations were illustrated with images from two key sources – The Hubble Space Telescope, and, as a special treat for all our delegates, previously unpublished images from the Astrokids Observatory on Fishpool Hill.

All our own photographs were taken the previous Wednesday, when, in anticipation of cloud on the Symposium evening, we took advantage of a lovely crisp, clear and moonless sky for a short notice Astrokids observing session.

For those interested in the technical detail, our photographs were taken using our state of the art, 12 inch F/5 Newtonian telescope on a Dobsonian mount, at prime focus with a Nikon D5100 DSLR camera, ISO set to 800 and 5 – 10 second exposures. The stellar and Eskimo Nebula photographs were taken with a 2x Barlow lens. The NASA photographs were taken with some old 2.4m Newtonian telescope with CCD cameras and an unspecified (something to do with gyroscopes), mounting system hanging around in Space.

Our symposium was excellent with our two key speakers tackling some really quite challenging and complex subjects, in our view, well above their age group. Their talks were the subject of observations they have conducted over the winter, with a bit of crash revision the prior day through a visit to the National Space Centre in Leicester. There are plans afoot to hold a summer CAC Kids symposium on archaeological or historical subjects.

So this ends our Astrokids season for the winter 2012/13, although naturally we shall be taking a telescope on CAC Kids camping trips. For those coming to Scotland, we shall be visiting the Galloway Astronomy Centre and, if the skies are clear, will be able to have a look through their 16 inch Newtonian Reflector.

