Issue 19

Sirius Issues

Freshers 2009

-- www.astrosoc.org.uk --

From the Chair

By Sean Elvidge

Hello and welcome back to another year at the University of Birmingham! I especially want to welcome all the new students to the University; I hope you have a wonderful time here. We have a fantastic and wide range of events planned for the year ahead, from an introduction to observing, to deep sky astronomy. A particular highlight I'm sure will be a talk from Lucy Hawking. We have activities for all levels of skill and experience, so please come along to learn and be amazed by the wonders of the Universe, but most of all come along and have fun!

Events This Semester

As always, Astrosoc has an exciting range of events planned for the coming term. These include our regular Thursday evening meetings, as well as a few extras here and there for special occasions.

1st October – Astronomy ice-breakers and tour of the roof;
7th October – Lucy Hawking talk (see below);
8th October – Introduction to telescopes, come and see some of the equipment we have and learn how to use it;
15th October – The Second Annual Space Race, Astrosoc's own pub crawl through Selly Oak;
22nd October – Objects in Space: planets and meteors;
29th October – Astrosoc guest lecturer Rod Jenkins: "Struggle in Space – What I did with my physics degree";
30th October – IYA event: Moonwatch
5th November – Astrosoc does the Vale fireworks;
12th November – Activity night;
19th November – Astrosoc film night: The War of the Worlds;
26th November – Post grad talk;
3rd December – Lunar observing;
9th December – Astrosoc AGM followed by curry;
10th December – Christmas Quiz;

Tea, Talk and Telescope

By Joseph Walshe

Our Tea, Talk and Telescope event for this term is "Travel through space with Lucy Hawking". It is on Wednesday 7th of October, starting at 6:30 with tea and biscuits from 6pm.

"Explore the wonders of the Universe with author Lucy Hawking as she presents a young person's guide through the galaxy! Lucy will be talking about her latest book, `George's Cosmic Treasure Hunt,' the follow-up to the brilliant 'George's secret key to the universe'. Discover the mysteries of physics, science and the universe with George, his new friends next door - the scientist Eric and his daughter, Annie - and a super-intelligent computer known as Cosmos, which can take them to the edge of a black hole and back again."

Remember that the Tea, Talk and Telescope events are completely free to everyone, so come along!

For more information see: http://www.talkandtelescope.org.uk/

The Grubb

By Joseph Walshe

The Grubb telescope is Astrosoc's oldest telescope, the mount of which dates from 1872. Over the past two years it has undergone a complete refurbishment, and now it is ready to use again! The 4" refracting telescope (made by Cooke in 1910) sits on a permanent mount on the roof of the Poynting building, and when used the shed in which it is housed rolls back on tracks to expose it to the stars.

Refracting telescopes typically have better contrast than the more common reflecting type, as they have no central obstruction. Also, as the telescope is permanently mounted, we will be able to use astronomical coordinate scales (right ascension and declination) to find objects in the sky easily.

We are all very excited about using the Grubb for our routine observing, and we will be running training for new members early on in the term, so that everyone has a chance to get their hands on the Grubb!.

David Levy Visit

By Keelia Scott

Last year we were fortunate to have one of our most famous guests, astronomer David Levy join us, all the way from America, to give a series of lectures for Astrosoc and the Birmingham Astronomical Society (BAS). With no formal physics or astronomy training David has discovered 22 comets and written over 30 books. He is most famous for the co-discovery of comet Shoemaker-Levy 9 in 1993 which later collided with Jupiter.

As well as lectures about the ways people are attracted to astronomy, he himself was inspired by a book he read as a child. A group from Astrosoc as well as a few from the BAS were lucky enough to spend an evening with him at a fantastic restaurant in Brindley Place. We had an outstanding meal and got the chance to talk to David about his life and his love of astronomy. And although there were no stars visible that evening we decided that the white fairy lights in the trees outside the window made a good cloudy weather alternative.

Over the few days he stayed in Birmingham he gave a whole new perspective on the reasons people get into astronomy. He is currently working on a PhD for the Hebrew University in Jerusalem exploring the links between science and early English literature.

Best Event Award

By Eleanor Jenkins

At the Guild Awards last term Astrosoc won the Best Event award for our activity day, Space Day. It was a very successful event with over 200 people participating. The two talks, 'The Music of the Sun' by Dr W Chaplin and 'Einstein's Outrageous Legacy – Black Holes, Cosmic Illusions and Dark Energy' by Dr S Raychaudhury were packed, the many hands-on sessions were enjoyed by all and the inflatable planetarium was a huge hit. We are pleased that our hard work was recognised and hope to have many more events in future.

Once a Member…

Here we take a look at some of the past members of Astrosoc, and find out where they are now. We start with long time member Samuel George who left Astrosoc last year.

Name: Dr Samuel George
Awarded Life Membership: Christmas 2007
Left Astrosoc: June 2009
Up to now: Postdoctoral Researcher, University of Calgary. I'm working on polarization calibration and widefield maping for the next generation of radio telescopes, in particularly the Square Kilometre Array (SKA).
Best memory of Astrosoc: I think its hard to put things down to one memory, I have lots, probably the most important thing was meeting my better half (I even proposed after a Thursday night in Joes). One of the most exciting event was the Venus Transit of 2004 - we had 1000 people along and dealing with television and radio crews was daunting but lots of fun - this really set me down the path I'm now following.

At The Observatory

By Richard Pearson

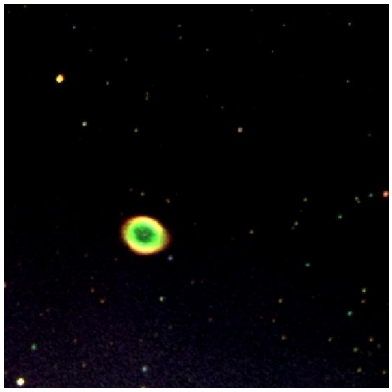
Despite a washed out autumn term, the spring and summer of 2009 offered some of the best and clearest skies that astrosoc has seen for many years. Taking advantage of these clear nights, the society, with the Birmingham Astronomical Society (BAS) as our frequent guests, travelled to the University's observatory at Wast Hills to see what we could find.

A common theme on these evenings took advantage not of the actual observatory at Wast Hills but the good dark skies. Dark skies which allowed us to practise a little bit of naked eye and binocular astronomy, watching meteors streak through the atmosphere and satellites soaring overhead. We were also fortunate enough to see not only Iridium Flares (very bright reflections of sunlight from the antennae of the Iridium Constellation satellite system) but to also see NASA's Space Shuttle orbiting along with the International Space Station.

With the aid of a small telescope (such as the society's Go-To instrument and several brought along by the BAS) we were also able to see several of the planets such as Saturn, Jupiter (as well as a collection of both planet's moons) and Neptune.

But as you expect, one of the reasons we go to the Observatory is to actually use the telescopes within the Observatory. More specifically, the 14 inch Meade Cassegrain we use specifically for optical astronomy. Throughout the observing session of spring and summer we took many amazing images of star clusters, galaxies and nebulae, with few problems other than the occasional satellite passing through the field of view of the telescope during the long exposures necessary to image such faint objects (something that resulted in images with long streaks of light through them marking the satellite path). Here are a selection of the best images we took, two of which (The Whirlpool Galaxy and the Ring Nebula) were shortlisted for the Royal Greenwich Observatory Astronomy Photographer of the Year Competition (though they unfortunately didn't win).

The Whirlpool Galaxy



The Ring Nebula

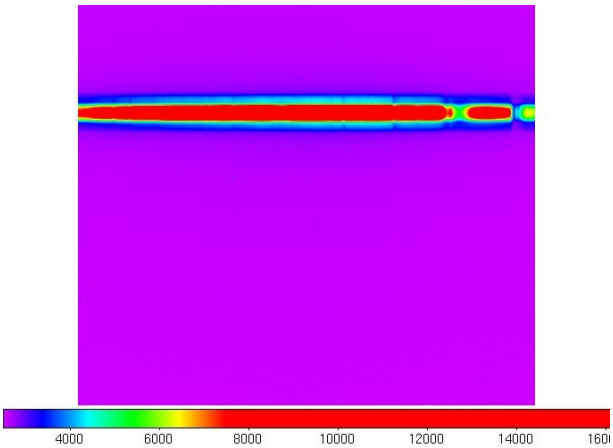
The Sombrero Galaxy

The Veil Nebula

The Moon

(A risky observation on a very bright object! The exposure lasted only 0.0001 seconds through a very low transmission filter).

Taking pretty pictures is only one aspect of using the observatory though. Another is actual scientific observations, something routinely done as part of the Astrophysics undergraduate course here at the University of Birmingham, but also something amateur groups such as the society can do. Some of the things we did was make several observations of the dwarf planets Pluto and Ceres at different times of the year which can be used to determine their respective orbits. We also made a spectrographic observation of Saturn which can be used to determine the composition and the rotation rate of the gas giant and its amazing ring system.



Saturn's Spectrum

(All images processed by Dr Samuel George)

Astrosoc Recognises Lynne Long

By Richard Pearson

After many years of helping the society promote its events in general but especially to schools in the local area, the members of the society in their last Annual General Meeting last Christmas decided it was time to thank Lynne Long for all her help. She has been awarded Life Membership with the society. We would again like to express our thanks for all the work she has done and continues to do for us. Thank you Lynne!

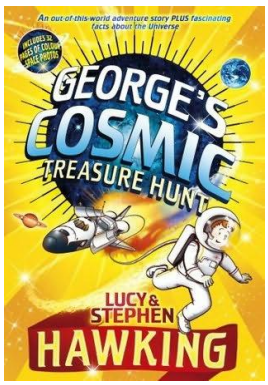
Annual Dinner

By Joseph Walshe

For the 2009 Astrosoc annual dinner we went to Edgbaston Golf Club, and a great time was had by everyone! The evening started with a few drinks in very pleasant surroundings in the club's bar, before heading upstairs for the meal. The food was excellent, and was followed by a few words from the guest speaker, our own Samuel George. Sam handed round a few pictures of Astrosoc over the years which were great to see, and provided a unique perspective on how Astrosoc had changed in his time (over eight years!) in the society.

Book Review

By Sean Elvidge



We are going,' said Annie, 'on a great cosmic journey. So listen up, Savers of Planet Earth, and prepare to meet the Universe.' George's best friend Annie needs help. Her scientist father, Eric, is working on a space project - and it's all going wrong. A robot has landed on Mars, but is behaving very oddly. And now Annie has discovered something weird on her dad's super-computer. Is it a message from an alien? Could there be life out there? How do you find a planet in outer space? And if you could talk to aliens, what would you say?

George's Cosmic Treasure Hunt is the second book by Lucy Hawking and her father Stephen, with illustrations by Garry Parsons. It takes readers, young and old, into new and real worlds; the illustrations are lively, original, fantastically executed and full of interest. It is sure to keep you on the edge of your seat, with suspense throughout; this terrific adventure is filled with the latest scientific knowledge about our Universe, including special essays from some of the top scientists in the world! A must read for all!

New Hubble Images

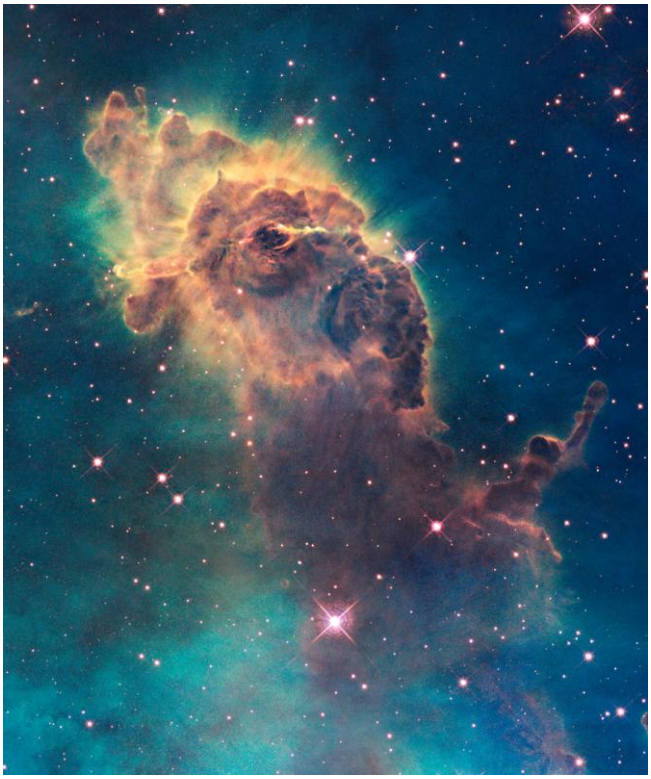
By Joseph Walshe

Back in May this year, shuttle mission STS-125 was sent to upgrade the Hubble space telescope for the final time. Gyroscopes were replaced, batteries were recharged, and a new camera was added. This camera, called Wide Field Camera 3 (WFC3) was used to take some of the most spectacular images which were released to the public recently.

The images, released on Wednesday 9th of September, show that the upgrade to Hubble was a complete success. Particularly striking are the images of the Butterfly and Carina Nebulae (NGC 6302 and 3372) shown below.

The plan for Hubble now is that it will stay in service until 2020, when a robotic mission will be sent to decelerate the telescope and force it to be destroyed in the atmosphere. It will be a sad end for what is possibly astronomy's most important scientific instrument, but for now we can look forward to many more spectacular images over the coming years.

Butterfly nebula



Jet in the Carina Nebula

Image credit: NASA

Edited by Joseph Walshe; www.astrosoc.org.uk