



## **Bulletin Issue 3 October 2009**

### **Editorial**

The new season started with a very well-received lecture by Sir Michael Pitt on the 2007 floods. This prompted the first two “occasional papers” to be posted on the website in accordance with the recently published guidelines. The Public Lecture on Climate Change and the Energy Challenge given by Professor Chris Rapley attracted a large audience at the Bouffour Hall. It was unfortunate that Professor Rapley had to leave to catch a plane and was therefore unable to answer many questions, because his lecture created a lot of interest.

The editor would welcome members’ contributions for future bulletins.

### **Members**

We welcome the following members who have joined the Society since the previous Bulletin. Dr Mary Astle, Miss Barbara Billing and Dr Ian Gronow. The Chairman, Committee and members of the CSTS offer their congratulations to our oldest member, Professor Pat Clarke on her 90<sup>th</sup> birthday on 29 July.

### **Forthcoming Events**

The Corinium Museum is working in partnership with the Cotswold Astronomical Society to present an illuminating exhibition about astronomy. The exhibition is supported by the Royal Astronomical Society and opens on Saturday 14<sup>th</sup> November.

Visitors to the Museum’s temporary exhibition will explore space, constellations and the planets and the links with Greek and Roman gods, myths and legends. The exhibition celebrates the International Year of Astronomy 2009. It profiles the valuable work of local astronomers past and present. These include Reverend James Bradley and Nathaniel Bliss from Gloucestershire who were both awarded the title ‘Astronomer Royal’ in the 18th century and Cirencester-born Elizabeth Brown who was appointed Director of the Solar Section of the Liverpool Astronomy Society in 1883.

Visitors will learn about the work of the Cotswold Astronomical Society and enjoy some incredible views of space photographed by their members from Gloucestershire soil.

The exhibition will feature the artistic creations of Chris Williams, member of the International Association of Astronomical Artists (IAAA.) and Garry Harwood, lifetime member and Fellow of the IAAA.

Pupils from Northleach C of E primary school will be participating in this exhibition by producing an exciting planetary painting and there will be a chance to view samples of moon rock from NASA on loan through the STFC loans scheme.

The International Year of Astronomy is a global celebration of astronomy and its contributions to society and culture. A number of associated events will take place across the District to celebrate the International year of Astronomy 2009.

Thursday 12<sup>th</sup> November - Bob Mizon F.R.A.S, Coordinator of the BAA's Campaign for Darker Skies and author of 'Light Pollution: Responses and Remedies.' Bob will give two lectures: 2 – 3.30pm "Night Blight" and 7 – 8.30pm "Astronomy and the Ancients."

From 2pm to 4pm on Thursday 19<sup>th</sup> November at Moreton in Marsh, Art Historian Juliet Heslewood, will explore the work of Van Gogh's night and his work depicting starry, starry nights. For more information and to book call Moreton Area Centre on 01608 650881.

On Saturday 28<sup>th</sup> November, The Corinium Museum is hosting a Planetarium with Explorer Dome for one day only. Suitable for adults and children over 5 (all children under 8 need to be accompanied by an adult) Shows will run at various times throughout the day 10.15am to 11.00am • 11.15am to 12pm • 12.15pm to 1pm • 2.15pm to 3pm • 3.15pm to 4pm. Please call the museum for more information and prices. Booking is essential.

On Thursday 3<sup>rd</sup> December, Tim Porter will explore the compositions of John Dunstable, Medieval Composer-Astronomer and will try to evoke his life and background, and introduce his beautiful intricate music, which may well be derived from the patterns of the stars. On Thursday 10<sup>th</sup> December, Tim will explore the works of Gustav Holst. Born in Cheltenham of a Cirencester mother, Gustav Holst is most famous for the Planets, written at the time of the First World War. This talk will introduce his early life and adventures, and the curious influences which led to the writing of his great astronomical (or is it astrological?) masterpiece. Both talks run from 2pm to 4pm in the afternoon. Booking is highly recommended to avoid disappointment.

October half term holiday activities for children will take place in libraries across the District. Youngsters will be encouraged to explore the world of Roman gods, the planets and constellations and create an astral mobile. Join Museum Outreach Officer, Emma Stuart and listen to some of the myths and

legends behind the constellations and create your own night sky mobile to take home. Please telephone the relevant library to book your place.

Wednesday 28th October 10am - 11am, Tetbury Library Tel. 01666 502258  
Thursday 29th October 10am - 11am, Cirencester Library Tel. 01258 659813  
Thursday 29th October 2pm - 3pm, Moreton-in-Marsh Library Tel. 01608 650780.

The Times Cheltenham Science Festival will take place on 9 – 13 June 2010. Details can be found on [cheltenhamfestivals.com](http://cheltenhamfestivals.com). One member has provided a brief review of two of this year's lectures.

### **Cheltenham Science Festival 2009**

What! You're taking a half day holiday to listen to scientists?! Such was the reaction of one colleague. I have been disappointed in past years, but this year I found both sessions to be on a par with the best of our society's lectures - high praise indeed.

#### **Good Bugs, Bad Bugs** Mike Wilson - UCL Hospital

First some astounding sounding figures - 90% of adult humans are microbial (nobody asked what was being measured - weight? number of cells?). We would be better described as a symbiotic colony. It's estimated we each have 100 million, million microbes. The human part of this colony has 30,000 genes in its DNA, while there are 4,000,000 genes in all the microbes. The microbes are bacteria, viruses, fungi, algae, protoctista (?) and a new virus like entity called alchaea, which was only discovered 10 years ago.

They have many functions - repelling pathogens - developing our immune functions - promoting differentiation of tissue and organs - providing vitamins - detoxifying food - digesting polymers.

All of this microbiota live externally to our bodies, with the vast majority in our gut, the next largest set in our lungs and the smallest set on our skin. As might be imagined they have developed into very complex colonies of interdependent organisms and for the most part it is a stable system. Everyone's microbiota is as individual as they are.

About 15 years ago it was discovered that about 90% of the identified microbes cannot be cultured. So knowledge is still very partial.

Moving to more practical matters Wilson proved to be very rational and down to earth. He stated what most of us know - that while antibiotics are helpful, even life saving, they cause temporary chaos in our colony balance, plus they encourage the development of resistant microbes.

So is it possible to combat illness by encouraging a beneficial microbiota? The two ways touted these days are probiotics and prebiotics. With probiotics we ingest the microbes, while prebiotics provide food for microbes. He is very

sceptical about probiotics - current products are not part of the human microbiota and he is not aware of any successful double blind trials, although some trials showed a 25% success rate for diahorrea. He thinks that prebiotics make more sense. Eating vegetables and fruit go a long way to encouraging 'good' microbes.

After enthusiastic clapping, the nearly 300 strong audience treated him like a health guru! Titbits from that session –

- Disinfection of surfaces at home is unhelpful - he doesn't use any antiseptics.
- Within 2 days of being in hospital the microbes on the skin have been replaced by more antibiotic resistant varieties (scary!).
- The only thing that he would do to try and help himself recover after antibiotics is to store some of his saliva in the fridge and swallow it after treatment (he didn't say whether he'd actually done this).
- Daily showering isn't necessary, as our skin and microbes are being shed all the time - washing can however help with body odour!
- He can't see the point of body scrubs; mouthwashes should be avoided, both from the antiseptic point of view and their use of alcohol; but clean your teeth, as they are the only non-shedding surfaces in our bodies, and the microbes that congregate around sugars can be very powerful.

**Greener Homes** - panel chaired by Jonathon Porritt.

Porritt started by joking that the speakers were surprised to see a packed room of over 100 people at 4:30 on a Friday afternoon!

The speakers gave a 10-minute intro each. The policy advisor, the man from the Technology Strategy Board (didn't know we had one of those! - see [www.innovateuk.org](http://www.innovateuk.org)) and an architect who specialises in using wood and straw/hemp and lime blocks for buildings - much more high tech than it sounds.

Some key points that I can remember

Both government chaps presented different aspects of the following themes -

- we have to plan for climate change - warmer, more extreme and rising water levels
- SCALE is key - the amount of change to all our buildings has to be huge - 45% of energy usage is by buildings, with over half of that used to heat space and water
- technologies in the plural are needed - fast. Whilst behaviour change does help (turn off those appliances), it won't be nearly enough
- we need to ensure that our national grid is upgraded and changed to match new sources of energy with changing needs
- it is expected that government owned buildings (1/3 of all buildings) will be used to spearhead the introduction of affordable, CO<sup>2</sup> saving changes

- change is key for both reducing CO<sup>2</sup> and for energy security
- we're not ready to implement as more technologies need to be developed/proved/refined, but we need to be able to start within a few years
- Architects and builders must all be moving towards these new goals - many are, e.g. our third panellist
- the HE and FE syllabus needs to be at the forefront of new technologies and skills, not lagging as it usually does - planning and investment needed

All in all optimistic, in spite of the enormity of the task, and as Porritt said - 'very different to any discussions on the same topic 8 years ago or even 2 years ago'.

*Janette Kidman*

### **Tailpiece**

One day, many of the world's famous physicists decided to get together for lunch. The doorman was able to observe some of the guests and came to the following conclusions.

- Everyone gravitated toward Newton, but he just kept moving around at a constant velocity and showed no reaction.
- Einstein thought it was a relatively good time.
- Coulomb got a real charge out of the whole thing.
- Thompson enjoyed the plum pudding.
- Pauli came late, but was mostly excluded from things, so he split.
- Ohm spent most of the time resisting Ampere's opinions on current events.
- Volt thought the event had a lot of potential.
- Heisenberg may or may not have been there.
- The Curies were there and just glowed the whole time.
- Millikan dropped his Italian oil dressing.
- Everyone was attracted to Tesla's magnetic personality.
- Compton was a little scatter-brained at times.
- Bohr ate too much and got atomic ache.
- Watt turned out to be a powerful speaker.
- Hertz went back to the buffet table several times a minute.
- Faraday had quite a capacity for food.
- Oppenheimer got bombed.