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Dark Energy Revisited



(Left to right:) Dr Cyril Isenberg, our Kent Centre representative, introduced Dr John Kemp, the Secretary of the South East Kent Astronomical Society (SEKAS) to Professor Ofer Lahav following the lecture in the University of Kent Rutherford lecture theatre

Prof Lahev's lecture (1 Feb 2011) considered one of the greatest mysteries in the whole of science; the prospect that 75% of the Universe is made from a mysterious substance known as 'Dark Energy', which causes an acceleration of the cosmic expansion. He also reviewed the current evidence for Dark Energy and future international projects such as the "Dark Energy Survey".

Ofer Lahav is Perren Professor of Astronomy and Head of Astrophysics at University College London (UCL). He is heavily involved in new large galaxy surveys. Among them is the international "Dark Energy Survey", where he coordinates the science activities of over 100 scientists in 5 countries. He is currently Vice-President of the Royal Astronomical and a holder of a Wolfson Royal Society research merit award.

For the Dark Energy Survey see: -
<https://www.darkenergysurvey.org/>

Diverse Audience for Inaugural Lecture

The newly set up Berkshire Centre's inaugural lecture was held at AWE Aldermaston on January 17th. For a first time event the lecture was very well attended with 120 people packing into the William Penney Theatre to see Sir Peter Knight's lecture "From Bits to Qubits."



Below : (Left to Right)
Eamonn Harding, Stephen Elsmere, Peter Knight and David Parkes

Eamonn Harding, AWE's Head of Profession for Physics, welcomed everyone to the lecture before introducing Peter Knight. Peter gave a very engaging lecture covering some of the information processing tasks peculiar to the quantum world such as secure encryption, quantum teleportation and algorithmic speedup. The audience was a broad mixture of students, teachers, physics professionals and even some none physicists. Despite the mix of abilities Peter's lecture was very well received and enjoyed by all.

The success of the event means that lectures at the Berkshire Centre will continue. A further 3 lectures are planned this year. Details will be released through the L&SE Branch as soon as speakers have been confirmed.

The event was organised by David Parkes (david.parkes@awe.co.uk) and Stephen Elsmere (Stephen.elsmere@awe.co.uk). Please contact them for details of future events or to volunteer as speaker. We would like to thank all at AWE who helped make the event a success and the Boundary Players who kindly let us use their stage and equipment.

Upcoming Events

Hertfordshire Centre:

23 March 2011
Astronomy and the digital revolution – portrait of a modern Milky Way survey
Speaker: Prof Janet Drew

Kent Centre:

19 April 2011
Colour Vision
Speaker: Prof. Mohamed Sobhy

London Centre (The IOP):

2 March 2011

The Carbon Revolution
Speakers: Dr Nicole Grobert & Dr Jonathan Hare
Suitable for 16-19 aged members

16 March 2011

Out with the old? In with the new?

Speaker: Professor Peter Hobson

30 March 2011

Alzheimer's Disease and Yoghurt - a Physicist's Exploration of Proteins
Speaker: Prof Dame Athene Donald FRS

Milton Keynes Centre

8 March 2011

How round is an electron and why does it matter?

Speaker: Dr Michael Tarbutt

Next Committee Meeting

The Meeting will be at the IOP on 30 March 2011

If you have any items you wish to raise please e-mail the branch secretary

londonsoutheast@physics.org

EEESTA's Regional Events List.

The East of England Engineering Science & Technology Association (EEESTA) covers part of our branch region. Those of you interested in lectures/events by other Institutes can find information at

<http://www.eeesta.org.uk/events.php>

The branch is a supporter of EEESTA and their 2011 prestige seminar is

"Engineering the Olympics"
Planning - Construction – Legacy

on Wednesday 9th November 2011
at the Weston Auditorium, De Havilland Campus, University of Hertfordshire, Hatfield. AL10 9EU.

Speakers are: -

Alison Nimmo, ODA Director of
Planning and Design

Howard Shiplee, ODA Director of
Construction

Lord Mawson, Olympic Park Legacy
Company

The chairman is John Armit, Chairman of the Olympic Development Authority

The event is free but registration is essential

An advance notice is available at: -
http://www.eeesta.org.uk/Resources/seminar_2011/EEESTA_InformationSheet_2011_Iss1b.pdf

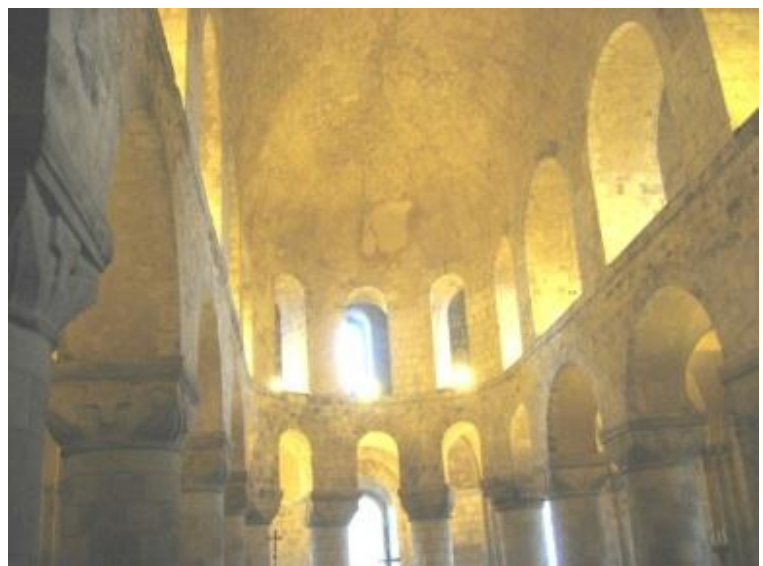
E-newsletters are on the branch page of MyIOP. The newsletter archive is in the Files section as are various branch documents and reports & various events lists.

REMS visit the Tower of London and Trinity House



25 members met on 7th February in the Liberty Bounds pub for coffee and an introduction to this name and to the Tower by our Blue Badge guide Martin Olutniks. We started by looking at the public execution site (34 beheadings) and Traitors Gate outside the Tower. Inside, after looking at the architecture over the centuries from William's initial structures, the Crown Jewels and the White Tower with its armour and architecture kept us busy most of the time.

The private execution site only had 10 beheadings, 2 were Henry's wives! One morning is not enough to see it all. Continued page 4



St John's Chapel in the Tower

The Beefeaters were dressed-up in their red and gold for the Duke of Edinburgh's birthday gun salute. Some members went outside to watch. Within a few minutes of finishing, the Beefeaters were dressed-down in their blue uniform.

After a pub lunch, we went to Trinity House, the Georgian building to the North of the Tower.



Above & Below: The REMS group listening to Geoff Boyd

From 1830 Trinity House has looked after all the light houses, light ships, navigation buoys and pilots in UK waters. It is a private organisation and gets its income from ships using its services. Geoff Boyd, a blue badge guide, told us of the history of the organisation and the house. During the war it was fire-bombed and the reconstruction is excellent. We saw models of the various ships and light ships Trinity House uses. Our tour ended with tea.

We hope to go to their operational base, Trinity House and Buoy Yard, in Harwich in May.

George Freeman



REMS EVENTS 2011

07/04/11: Lord's Cricket Ground & Canal boat

08/04/11: 10 Downing Street & Banqueting House

14/04/11: Painshill Park, Cobham, Surrey

30/04/11: Capital Ring Walk – 7: Richmond to Osterley Lock

12/05/11: Trinity House & Buoy Yard at Harwich

05/05/11: Cavendish, Cambridge: tour of the museum and laboratories

19/05/11: Oxford: River cruise to Iffley, historic walk via river and canal, taking in Oxford Castle

28/05/11: London Loop Walk - 15: Chingford - Chigwell Row ~7m

06/06/11: Skinners' Hall, Dowgate Hill, City of London

09/06/11: Loseley House and Park

16/06/11: Down House - home of Charles Darwin

18/06/11: Capital Ring Walk – 8: Osterley Lock to Greenford

21/06/11: Rye House Gatehouse and Whitewebbs Museum

07/07/11: At Home

16/07/11: London Loop Walk - 16: Chigwell Row - Harold Wood ~8m

24/07/11 - 29/7/11: Trip to Paris

18/08/11: Buckingham Palace

27/08/11: Capital Ring Walk – 9: Greenford to South Kenton

24/09/11: London Loop Walk - 17: Harold Wood - Rainham ~9m

08/10/11: London Loop Walk - 18: Rainham - Purfleet 4.5m

22/10/11: Capital Ring Walk - 10

12/01/12: At Home

05/07/12: At Home

Full details & booking form at: -
<http://www.johnabelling.webspace.virginmedia.com/>

The forgotten contribution of the medieval physicists



Above: -

Serena Yuen and Prof Al-Khalili at the networking session before the evening lecture

The Rutherford lecture theatre was required for Prof J. S. Al-Khalili's lecture On the Shoulders of Eastern Giants: the forgotten contribution of the medieval physicists on 16 February. This was a most entertaining event and covered people and events from the golden age of Arabic scholarship.

"He who finds a new path is a pathfinder, even if the trail has to be found again by others; and he who walks far ahead of his contemporaries is a leader, even though centuries pass before he is recognized as such." This quotation is often attributed to Ibn Khaldun, one of the great medieval scholars of the Arabic World.

The talk began in Baghdad showing the Round city of 762 against a map of the modern city. The round city flourished during the 8-10th centuries and was the first city with the population of 1,000,000.

The son of Caliph Harun al-Rashid, al-Mamun built a new academy „Bayt al-Hikmah" The House of Wisdom where many texts of the ancient world were translated into Arabic and it is likely that this synthesis of translated texts began the flourishing of sciences as Arabic scholars spotted inconsistencies between texts and began to investigate these problems.

The Arabic system of numerals, was inherited in the west, was based on an Indian system of numerals, including a zero. Mathematicians added a decimal point to this system, numbers being written right to left with the first decimal point more like an apostrophe. Al-Khwarizimi is regarded as the father of Algebra and the greatest mathematician of the medieval world. Whilst his „Book of Algebra" contained no symbolic logic he was the first person to set out a set of ground rules for solving quadratic equations.

Abu Rayhan al-Biruni, a Persian polymath can be regarded as a genius to rival Leonardo da Vinci. He measured the circumference of the Earth to within 1% of the modern value by measuring the height of a mountain and the use of some geometry.

A modern scientific method was used by Ibn al-Haytham in the eleventh century, 600 years before Bacon and Descartes and founded the field of modern optics long before Newton.

2011 sees the millennial celebrations of al-Haytham's book of optics.

The above only gives a flavour of a very enjoyable evening

Prof. Al-Khalili's book 'Pathfinders'
See: -

<http://www.jimal-khalili.com/blog/book-title.html>

You can find out more about Prof J. S. Al-Khalili at: -

<http://www.jimal-khalili.com/>

http://en.wikipedia.org/wiki/Jim_Al-Khalili

http://www2.surrey.ac.uk/physics/people/jim_al-khalili/

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The contents do not necessarily represent the views or policies of the Institute of Physics, except where explicitly stated.

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Above: - Prof Al-Khalili & Tracey Dlsen