Information
All our lectures are free to all and last about one hour. There is usually 10 to 15 minutes afterwards for the audience to ask the questions.

School parties are most welcome but please register numbers beforehand with the relevant venue organiser (see below).

All venues are wheelchair accessible. Details herein are subject to possible alteration – check branch webpages. Any views expressed in here are not necessarily those of the Institute of Physics.

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Lecture venue information and times are as follows:

London
Lectures held at 6.30pm, Franklin Room, Institute of Physics, 80 Portland Place, London, W1B 1NT. Refreshments are served from 6pm on the day of the lecture. Please register online to attend lectures.

Berkshire
Lectures held at 7.30pm in the William Penny Theatre, Recreational Society, West Gate, AWE, Aldermaston, Reading, RG7 4PR. The theatre entrance can be found on the A340 Basingstoke to Newbury road, just before the Heath End Roundabout at Tadley. Do not use the main gate entrance; the correct gate is signposted as the West Gate or AWE Staff + Deliveries (picture of a lorry). Email iop.lectures@awe.co.uk for further information.

Herts
Lectures usually held at 7pm in the Lindop Building, University of Hertfordshire, College Lane, Hatfield, AL10 9AB. To book a place or for further information on this season’s events please contact Diane Crann (email d.crann@herts.ac.uk, tel 07770 444614).

Kent
Unless stated otherwise, lectures held at 7.30pm in Rutherford Lecture Theatre 1, University of Kent, Canterbury, CT2 7NZ. Further information can be obtained from Dr Cyril Isenberg (email c.isenberg@kent.ac.uk, tel 01227 823768).

Milton Keynes
Lectures held at 7.30pm in the Berrill Lecture Theatre, Open University, Walton Hall, Milton Keynes, MK7 6AA. For further information contact Prof. Ray Mackintosh (email raymond.mackintosh@open.ac.uk) No need to register.

December 2016

London • Wednesday 7 December 6.30pm • Prof. James Hough
Detecting Gravitational Waves – a new Window on the Universe
Please refer to the Milton Keynes talk on 8th November for the abstract.

Herts • Wednesday 7 December 7pm • Dr Melanie Windridge
Aurora: in Search of the Northern Lights
Please refer to the Berkshire talk on 10th October for the abstract.

Berkshire • Monday 12 December 7.30pm • Dr Marek Kukula
Scientific Secrets of Doctor Who
Please refer to the London talk on 16th November for the abstract.

Milton Keynes • Tuesday 13 December 7.30pm • Prof. Andrew Stockman
Human Colour Vision
Please refer to the London talk on 30th November for the abstract.

London • Wednesday 16 November 6.30pm • Dr Marek Kukula
Scientific Secrets of Doctor Who
When Doctor Who was first broadcast in 1963 the show was intended to educate as well as entertain. Fifty three years later the programme is more popular than ever and, although teaching science may have slipped from its agenda, a show featuring black holes, time travel and alien worlds still presents a great opportunity to engage audiences with the real science behind the fiction. Dr Kukula explains how he teamed up with writer Simon Guerrier to explore The Scientific Secrets of Doctor Who.

London • Wednesday 30 November 6.30pm • Prof. Andrew Stockman
Human Colour Vision
Although we perceive a seemingly endless variety of hues, the first stage of human colour vision is relatively simple, since individual photoreceptors are blind to colour and generate a univariant signal that depends solely on the number of photons that each absorbs. The existence of three different daytime cone photoreceptor types with distinct spectral sensitivities means that human colour vision is a three-variable, trichromatic system, such that colour matches can be defined by just three numbers. We are able to perceive colour by comparing the outputs of the three cone types: the long-wavelength, middle-wavelength and short-wavelength sensitive cones. Yet, despite the simplicity of the underlying cone signals, the colours that we perceive depend on many other factors, including individual differences, chromatic adaptation, the influence of surround colours, the influence of preceding colours, colour constancy and cognitive factors.

London • Thursday 5 January • Various Speakers
REMS At Home: Water
A selection of talks about water ranging from the History of Inland Waterways to Climate Change. Please see the website for further details.
September 2016

London • Wednesday 21 September 6.30pm • Dr Laurie Winkless

London: The Mechanics Behind the Metropolis
More than half of us now live in urban areas, but that doesn’t mean people understand how cities work. Science, engineering and technology surround us, and nowhere is that truer than London. Join physicist-turned-writer Laurie Winkless on a whistle-stop tour of the city, inspired by her book Science and the City.

Kent • Tuesday 27 September 7.30pm • Dr Lucie Green

15 Million degrees: A journey from the centre of the Sun
This talk will take you on a journey from the centre of the Sun (1.5 x 10^8 C) to its surface (6x10^3 C) and beyond to the Earth. Light takes eight minutes to reach the Earth, but hundreds of thousands of years to reach the surface from the centre. What threats does this affect make on our lives and technology on Earth?

October 2016

London • Wednesday 5 October 6.30pm • Mr Paul Ranford

The Antikythera Mechanism
A description of the workings of the Antikythera mechanism (a 2000-year-old device for predicting the movement of planets, discovered near Crete in 1900) and of how those workings reflect Ancient Greek understandings of the workings of the cosmos. This story also considers the significant implications for our understanding of Ancient Greek science and technology.

Herts • Wednesday 5 October 7pm • Mr Phil Atkins

Mapping the Underworld
In Europe there are 20M km of pipes and cables beneath us and it’s not uncommon for utility records to be wrong or incomplete. Phil will describe how low-frequency electrical resistivity mapping techniques might be used to help solve these problems.

Berkshire • Monday 10 October 7.30pm • Dr Melanie Windridge

Aurora: In Search of the Northern Lights
Do we really understand the science behind the aurora? We investigate, bringing together space, place and science in style. Speaking about her new book and describing a journey that takes her through Scandinavia, Canada and Svalbard – culminating in a spectacular solar eclipse – Dr Melanie Windridge delves into the Northern Lights.

London • Wednesday 19 October 6.30pm • Dr Matin Durrani and Dr Liz Kalaugher

Furry Logic: The physics of animal life
To mark the launch of their new popular-science book Furry Logic, science journalists Matin Durrani and Liz Kalaugher unveil the ways that many animals – from cats and dogs to snakes, turtles, elephants and bees – exploit physics to eat, drink, mate and dodge death in their daily battle for survival.

November 2016

London • Wednesday 2nd November 6.30pm • Dr James Beacham

Gravitons, Exotic Higgs Bosons, or Nothing At All: The Large Hadron Collider at 13 TeV
In 2015, the Large Hadron Collider at CERN achieved a milestone in human history – operating at 13 TeV, the highest energy achieved by an accelerator experiment. Dr Beacham will review what we’ve learned so far about gravitons, Higgs bosons, dark matter, and discuss what’s next for the LHC.

Milton Keynes • Tuesday 11 October 7.30pm • Dr Claire Murray

Atoms, patterns and powders at Diamond Light Source
Diamond Light Source (Diamond) is the UK’s national synchrotron science facility, based in Oxfordshire. It speeds up electrons to near light speeds, producing a light 10 billion times brighter than the Sun. Scientists use this light to study a range of materials from viruses to jet engines. On beamline I11 we use the light for diffraction experiments to study very fast and very slow changes in powders. But what is diffraction? And what does it tell us? Come along to learn about diffraction, beamline I11 and the science we do at Diamond.

Milton Keynes • Tuesday 8 November 7.30pm • Prof. Roy Sambles

Detecting gravitational waves: a new window on the universe
100 years after the prediction of the existence of gravitational waves by Albert Einstein, the advanced detectors of the Laser Interferometer Gravitational-wave Observatory (LIGO) have detected such signals for the first time, the source being coalescing black holes considerably heavier than the Sun. This heralds the opening of a new window in astronomy. In this talk I will explain the nature of gravitational waves, describe what sources can produce them, explain how they are detected and discuss plans for the future.