



THE UNIVERSITY *of* EDINBURGH

News Release

Issued: Tuesday 9 February 2016

UNDER STRICT EMBARGO UNTIL 1500 EST SATURDAY 13 FEBRUARY 2016

Dark matter scientists on brink of discovering elusive particles

Technological advances are ushering in a new era of understanding in the search for fundamental physical particles – including dark matter – scientists will tell a public event.

Researchers are using analysis of deep space observations together with experiments far underground to hunt for dark matter – an elusive material which, together with dark energy, is thought to account for about 95 per cent of the universe.

Scientists will tell a public symposium in Washington, DC how current theories and experiment point to the existence of dark matter, but how it is little understood by scientists. Its discovery would be a fundamental development in understanding the physical universe, a meeting of the American Association for the Advancement of Science (AAAS) will hear.

Professor Alex Murphy, of the University of Edinburgh's School of Physics and Astronomy, will describe ongoing global collaborations by scientists around the world to detect and define the nature of dark matter. These include astronomy studies to examine its effect on galaxies and light in space, and experiments deep underground that seek to detect it by minimising interference from other particles.

The most sensitive of these experiments is Large Underground Xenon, or LUX, detector – which is located a mile underground in South Dakota, US. Recent improvements have increased the device's chances of identifying sub-atomic particles called WIMPs – weakly interacting massive particles – which are believed to be the main component of dark matter.

Professor Murphy said: "Technology has enabled us to ramp up our search for this fundamental material, and its place in the physical realm."

Professor Murphy will explain the research at a symposium entitled *Astroparticle Physics: Understanding Mysteries of the Universe* on 3pm, Saturday 13 February at the Marriot Wardman Park, Washington DC. He will be joined by Professor Angela Olinto of the University of Chicago and Professor Eun-Suk Seo of the University of Maryland.

For further information, please contact:

Catriona Kelly, Press & PR Office, tel 44 7791 355940, email Catriona.Kelly@ed.ac.uk

Ranked among the top universities in the world