



The Derby and District Astronomical Society

Friday 4th SEPTEMBER - 7:30pm

PROFESSOR EMMA BUNCE

OCEANS, ICES & FIRE **THE MYSTERIOUS MOONS OF JUPITER**

The talk will take place at the Friend's Meeting House, St Helen's Street, Derby, DE1 3GY. Please note that the fee for non members is £3.

Jupiter has many natural satellites, more than 60 in total but when people talk about the Jovian moons they are speaking of the Galilean moons, they have changed the way we view the Universe: Fiery Io, Smooth Icy Europa, Planet-sized Ganymede and scar-covered Callisto.

Not only are they fascinating in their own right, but together they form a Solar System in miniature around majestic Jupiter, interacting with their parent planet and the surrounding environment through the forces of gravity and electromagnetism. The spectacular results of these processes range from sub-surface oceans to auroral emissions.

This talk will introduce the basic properties of these mysterious moons and showcase the recently selected European Space Agency mission, the JUpiter ICy moons Explorer, (JUICE), which will tour Jupiter, make multiple visits to Europa and Callisto and finally be the first spacecraft to orbit Icy Ganymede.

Please note that occasionally due to events beyond the control of the Society there may be changes made to this programme. For the latest information please refer to the DDAS Website - <http://www.derbyastronomy.org>

Professor Emma Bunce



Emma started her career 20 years ago at the University of Leicester where she completed her 4yr Undergraduate Degree in Physics with Space Science and Technology.

She was awarded her PhD in 2001 studying the magnetosphere of Jupiter and on her thesis entitled “*large-scale current systems in the Jovian Magnetosphere*”. In 2003 she was awarded a prestigious post-Doctoral fellowship to study Saturn's magnetosphere, she was then appointed to the departments teaching staff in 2005 and she has enjoyed teaching undergraduates ever since.

She was promoted to Professor in 2013 and to date she has published ~ 90 papers in the scientific literature and her work has received both National and International recognition. She won the Royal Astronomical Society's prize for best PhD thesis (2002) the Prix Baron Nicolet award for space physics (2003), the European geophysical Union's Young Talents in Geoscience award (2005), she gave the RAS sir Harold Jeffrey's lecture in 2009 and was awarded a Philip Leverhulme prize for ' Astronomy and Astrophysics' in 2011.

She is involved in numerous space missions and is currently co-investigator on NASA's Cassini magnetometer team, and has worked on data from multiple instruments from that mission for 10 years.

Recently she acted as one of the deputy lead scientists for the Jupiter, Ganymede Orbiter proposed to ESA under the L-Class mission competition, which was selected as the Jupiter Icy Moons Explorer (JUICE) mission in 2012. The mission is due to launch in 2022 to arrive at Jupiter and Ganymede in 2030.

She is currently acting as the Deputy PI on the Imperial College JUICE magnetometer and is co-investigator on the JUICE UVS Instrument.

She has recently taken on the roll of PI for the BepiColumbo Mercury Imaging X-Ray Spectrometer – Which is being built in Leicester and will be launched to Mercury in mid 2016.