



## RSPP seminars



UNIVERSITY OF  
**LEICESTER**

# **Dr Marina Galand**

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### **“Energy deposition in cometary comae and planetary upper atmospheres”**

Illumination by extreme ultraviolet solar radiation and bombardment by energetic particles deposit energy in neutral environment, such as the comae of comets and the upper atmospheres of planets and moons. They excite neutrals which yield to airglow and the spectacular auroral emissions. They also ionise neutrals, which yields the formation of an ionosphere, allows currents to flow and close large current system. In the first part of the seminar I will focus on the energy deposition in the coma of comet 67P, prime target of the Rosetta mission. Unlike previous cometary missions which were just flybys, the Rosetta spacecraft escorted comet 67P for 2 years from an heliocentric distance of 3.6 AU to perihelion at 1.2 AU, to the end of mission on the nucleus' surface at 3.8 AU. Through a multi-instrument approach linking Rosetta dataset with a physics-based model, I will highlight the evolution of the ionosphere as the outgassing rate and the solar wind-comet interaction changed. In the second part, I will focus on the energy deposition of solar radiation at Saturn and how it affects the ionisation and dissociation rates. This has ultimately implication on the electrical conductivities and magnetospheric models.

**Tuesday, June 25<sup>th</sup> at 2 pm in**

**George Porter LTA**