Professor Sarah Matthews: 2020 RAS James Dungey Lecture

Professor Sarah Matthews is a renowned expert on the storage and release of energy in the solar atmosphere. She has extensively studied the white light emission in solar flares, developing models that determine the dominant physical processes and has conducted statistical studies of these energetic events, proving that this emission is not just a consequence of so-called “Big Flare Syndrome”.

Her work on white light flares and the related acoustic disturbances called sunquakes, unexpectedly found offsets from the hard X-ray source in the flares with the strongest emission. This discovery has led to a new approach that has highlighted how significant channelling of the flare energy might be controlled by the topology and evolution of the reconnecting magnetic field.

Professor Matthews is known world-wide for her expertise in sunquakes, which has led to her representing the UK solar physics community on the board of the European Association of Solar Telescopes, to design and develop the European Solar Telescope, and she is actively involved in planning observing campaigns for the new US Daniel K Inoue Solar Telescope, yielding novel datasets that will reveal new insights into sunquakes.

Sarah is an excellent and enthusiastic communicator of solar physics and her James Dungey lecture will help inspire the community with the revelation of these fantastic new facilities.

For these reasons, Professor Sarah Matthews is awarded the James Dungey Lectureship.

Short citation

Professor Sarah Matthews is an expert on the storage and release of energy in the solar atmosphere and has extensively studied the white light and related sunquakes in solar flares. Her discoveries have revealed insights into the dominant physical process involved and have shown that white-light flares are not a mere consequence of so-called “Big Flare Syndrome”.

Sarah is an excellent and enthusiastic communicator of solar physics and her James Dungey lecture will help inspire the community with her research on these flares and the fantastic new solar telescopes to study them.