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RAS Chapman Medal 2022
Professor Sandra Chapman

The 2022 Chapman Medal is awarded to Professor Sandra Catherine Chapman. In a series of related papers, and through the application of nonlinear physics, Professor Chapman pioneered paradigm shifting research to show that planetary magnetospheres release energy in unpredictable intervals. Further, this work has demonstrated that planetary magnetospheres behave as truly multi-scale, coupled, dynamical systems. Most prominent is Professor Chapman's research on multiscale processes in space environments, including turbulence, shock physics, and energy release in magnetic storms. This research is now shaping current areas of research with multi-spacecraft space missions such as the Magnetospheric Multiscale Mission and Cluster. This research includes work Professor Chapman supervised with PhD students, such as the first identification of turbulence in reconnection outflow regions of fully kinetic 3D simulations. Professor Chapman has also extended this work into fusion physics. For these reasons Professor Chapman is awarded the Chapman Medal.