



Results from the European Sprite2003 campaign

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During the northern hemisphere summer of 2003, a sprite observation campaign was conducted with co-ordinated measurements from Southern Europe and from the magnetically conjugate region in South Africa. The goals of the campaign were to investigate the effects of sprites on the mesosphere, and look for signatures of the relativistic electron acceleration process in the magnetically conjugate hemisphere. Measurements in Europe included optical video imaging from a remotely controlled, semi-automatic camera system located at the Observatoire du Pic du Midi, in the Pyrénées mountains in Southern France, infra-sound observations north-west of Paris, and ULF-HF electromagnetic observations from a number of locations. The measurements in South Africa included observations of optical emissions by an array of 6 photometers and of VLF electromagnetic waves. The campaign was successful, with more than 130 sprites observed during 10 storms. The presentation will give an overview of the campaign, the meteorological conditions, and present results on (1) first clear identification of infra-sound from sprites, (2) first observation suggesting sprite triggered by intra-cloud lightning, and (3) clear one-to-one relationship with sprites and early VLF events. No signatures of relativistic electrons were identified.