

## First Results from the 2003 Brazil Sprite Campaign

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We will present and discuss new observations from the 2003 Brazil sprite campaign. This campaign combined low light video equipment and a balloon instrument payload to study sprites. Near sunset on 6-December-2002, a balloon was launched from Cachoeira Paulista, Brazil during a period of local active thunderstorms in order to obtain *in situ* electrodynamic, optical, and x-ray measurements of sprites. The balloon flew within 50 km of 279 lightning network cataloged strokes and within 50–100 km of another 379 detected strokes. The instrumentation consisted of optical flash detectors, x-ray spectrometers, and vector electric and magnetic field probes covering the frequency range from DC–10 kHz. Two different electric field instruments were used in order to cover a wide dynamic range of 0.001–250 V/m.

Following the University of Houston campaign in the United States during summer 1999, this campaign is the second effort to make near measurements of conductivity, the quasi-static electric field environment, and electromagnetic changes at sprite-producing thunderstorms. An unexpectedly high and extensive cloud cover blocked views of high altitudes from the aircraft and prevented camera confirmation of sprite activity during the first balloon flight. Nevertheless, instrumentation on the balloon functioned nominally and we obtained good measurements. Specific new observations include the first ground and aircraft sprite images from Brazil, and stratospheric electric fields an order of magnitude larger than has been previously reported.