



Atmospheric electrical effects of the 1859 Carrington flare

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Space weather events represent a hazard to modern society, and evaluating the extent of previous extreme events in the historical record such as the 1859 “Carrington flare” is therefore important. Quantitative sources of information are particularly valuable, and here the hitherto unexplored resource in atmospheric electricity measurements, from Greenwich (London, UK) and Melbourne (Australia) is considered. The Melbourne data is of particularly high quality, and anomalously high potential gradients in the days after the flare were observed at this site that cannot be explained by meteorological or other local effects. The expected effects of high energy particles on the global electric circuit can be used to suggest a possible energy distribution for the particles emitted by the “Carrington flare”.