



Lord Kelvin's atmospheric electricity measurements

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Lord Kelvin (William Thomson), one of the greatest Victorian scientists, made a substantial but little-recognised contribution to geophysics through his work on atmospheric electricity. He developed sensitive instrumentation for measuring the atmospheric electric field, including invention of a portable electrometer, which made mobile measurements possible for the first time. Kelvin's measurements of the atmospheric electric field in 1859, made during development of the portable electrometer, can be used to deduce the substantial levels of particulate pollution blown over the Scottish island of Arran from the industrial mainland. Kelvin was also testing the electrometer during the largest solar flare ever recorded, the "Carrington event" in the late summer of 1859. Subsequently, Lord Kelvin also developed a water dropper sensor, and employed photographic techniques for "incessant recording" of the atmospheric electric field, which led to the long series of measurements recorded at UK observatories for the remainder of the 19th and much of the 20th century. These data sets have been valuable in both studies of historical pollution and cosmic ray effects on atmospheric processes.