

Observations of a Solar Energetic Particle event from inside the comet 67P coma and upstream of the comet

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Abstract

We used ESA's Standard Radiation Environment Monitors (SREM) on-board Rosetta to identify a number of Solar Energetic Particle (SEP) events from inside the comet 67P's coma. In this study we focus on one of these which was observed at Rosetta on 7 March 2015 at a perihelion distance of 2.15AU and a cometocentric distance of about 70km. We show observations of the SEPs and associated events upstream of the comet by other spacecraft such as STEREO and SOHO. The SEPs appear to be linked to a CME and flare observed at the Sun on 6 March 2015. We also show other Rosetta data, such as from RPC (Rosetta Plasma Consortium), in order to study and discuss the effects of the SEPs on the comet's coma.