
PEM021-02

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Persistently quiet relativistic electrons at geosynchronous orbit in 2009

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Relativistic electrons at geosynchronous orbit (GEO) were persistently quiet in 2009 for almost a whole year. The solar wind speed, which has been known as a primary parameter controlling the outer belt electrons, was very slow in 2009 as expected, but still at a comparably low level as of 1997 when we did not observe such a persistently quiet condition. Here we show that the extremely weak interplanetary magnetic field of the very slow solar wind plays an essential role to diminish the source processes themselves such as magnetic storms and substorms, and in turn to suppress the relativistic electron flux at GEO over the time scale of a year, as an inevitable consequence of extremely weak open magnetic field of the Sun just after the extremely weak solar minimum in 2008.