

Abstract Submitted
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Solar EUV irradiance and geomagnetic energy variation during last solar cycle YANSHI HUANG, YUE DENG, University of Texas at Arlington — The record-low thermospheric density during last solar minimum has been reported and it has been mainly explained as the consequence of the anomalously low solar extreme ultraviolet (EUV) irradiance. However, relative little attention has been paid to the variation of geomagnetic energy. The geomagnetic energy is dissipated into upper atmosphere by Joule heating and particle precipitation. In this study, to understand and explain the anomalously low density during the solar minimum 23/24, we examine the energy budget to the Earth's upper atmosphere from solar EUV irradiance, Joule heating and particle precipitation heating from 1995 to 2010. The solar EUV power is derived using the latest version of SOLAR2000 solar irradiance specification model and also from the measurement of SOHO/SEM. The empirical model Weimer05 is used to derive the globally integrated joule heating power. The global hemispheric power data is collected from NOAA to show the variation of particle precipitation heating. The variation of different energy inputs and their significance to the neutral density will be discussed.

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