

## Magnetospheric Response during the Carrington Event of 1859

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Based on an estimated solar wind condition around 1-2 September 1859, we were able to reproduce the Carrington magnetic storm magnetometer record, with the Hdepression of -1600 nT, component made at Colaba Observatory in Bombay/Mumbai, India. We used an updated Dst prediction model from Temerin and Li [2002], which provides a prediction efficiency of 0.91 for 1995-2002 interval using a fixed set of modeling parameters. The negative depression in the magnetometer record could be explained by assumptions as to the condition of the solar wind that do not seem improbable given the known speed of the interplanetary shock for this event. The extremely fast recovery of the magnetometer record, however, required that the dynamic pressure of the solar wind also be substantially larger than has ever been observed. We also showed how the strength of the magnetic storm would have depended on the season and the time of day. For the same solar wind conditions in GSM coordinates, the largest magnetic storms occur around the fall equinox and at the time of day when the dipole axis is most perpendicular to the solar wind velocity.