

Can we estimate the variation of the z-component of the interplanetary magnetic field from the sun shadow?

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It is known that the prominent southward z-component of the interplanetary magnetic field (IMF) sometimes reconnects with the geomagnetic field and causes major geomagnetic storms. Observing B_z (z-component of the IMF) between the sun and earth is one of the important clues for the space weather, but it is difficult to detect B_z before the arrival of IMF at the earth on the solar wind. Tibet AS reported that the sun shadow has the information of the y-component and average IMF strength. In this work, we will report the comparison of the B_z and sun shadow observed by Tibet AS and discuss the possibility of remote sensing of B_z using the sun shadow.

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