

**Supporting Information for “Interhemispheric Asymmetry due to IMF By within the Cusp Spherical Elementary Currents”**

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Video of 28 July 2016 event: 20160728\_1740-1840.mp4

**Each image shows the combined field-aligned like current densities (red and blue colors) and equivalent currents. The red indicates current upward out of the ionosphere and the blue indicates current into the ionosphere. The yellow vertical bar marks local noon, the key for the equivalent current is given in the lower right corner, and the color bar indicates the current density values at the bottom of the figure.**