



## **Interhemispheric observations of transpolar arcs for long-duration radial IMF events**

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It is well known that the auroral arcs extending poleward from the main auroral oval, called transpolar arcs (TPAs), predominantly occur under northward interplanetary magnetic field (IMF) conditions, with the magnetic local time determined by the dawn-dusk IMF orientation. However, their responses to the radial (sunward-antisunward) IMF orientation are yet poorly understood. In this study, we examine the TPAs which occur under long-duration radial IMF intervals (dominant radial IMF lasting more than four hours). Auroral images taken by DMSP and TIMED satellite instruments from February 2002 to December 2017 show that for 5 (14) of 53 long-duration radial IMF events, TPAs were formed in both hemispheres (one hemisphere). Based on these results, we will discuss the physical mechanisms for TPAs occurring under long-duration radial IMF conditions.