

Simultaneous two hemisphere observations of the presence of polar patches in the nightside ionosphere

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Abstract. The presence of polar patches as observed simultaneously in the same magnetic meridian of opposite nightside ionospheres by coherent and incoherent scatter radars are described. The patches appear to be related to variations either in the B_z or B_y component of the interplanetary magnetic field which cause transient merging on the dayside magnetopause. The passage and characteristics of polar patches as they traverse the polar cap into the nightside auroral oval are not significantly affected by the occurrence of small substorms. This study illustrates how the observations of polar patches in the nightside high-latitude ionosphere could be of great value in determining their formation process.

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