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Field Line Currents in the Polar Cap KELLY HALLMAN, JASON SEILER, SALVADOR HERNANDEZ, JORGE LANDIVAR, RAMON LOPEZ, Florida Institute of Technology, Department of Physics and Space Sciences — Using satellite data, we have been searching for evidence of field aligned current flow on open magnetic field lines (Earth field lines that are connected to the solar wind). We collect magnotometer data from the DMSP F13 satellite, which flys at low altitudes over the polar cap. We identify the polar cap boundaries from precipitating particle data. The magnotometer data allows us to determine where field aligned currents flow. We believe we have found several cases of current flow on open field lines when the solar wind electric field is large. We will discuss the implications of these observations.

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