

Abstract Submitted  
for the DPP07 Meeting of  
The American Physical Society

**Remote Measurements of Ion Temperatures in the Terrestrial Magnetotail** AMY KEESEE, EARL SCIME, West Virginia University — The plasma in the terrestrial magnetotail plays a central role in magnetospheric storms and substorms. Reconnection in the magnetotail yields flows in the tailward and earthward directions, redistribution of energetic particles throughout the inner magnetosphere, and possibly direct ion heating by waves. The magnetotail, out to 30-40 Earth radii, lies in the field of view of the instruments on the Imager for Magnetopause-to-Aurora Global Explorer (IMAGE) satellite when the spacecraft is in a favorable position in its orbit. *McComas et al.* (2002) showed that the Medium Energetic Neutral Atom (MENA) imager onboard IMAGE measures significant neutral flux from this region during periods of intense magnetospheric activity, i.e., when the plasmashet density is enhanced by plasma injections from the solar wind and ionospheric outflows. We present remote ion temperature measurements calculated from MENA neutral flux measurements from 1 – 60 Earth radii during a substorm on 4-5 October 2000 (DOY 278-279). During the evolution of the substorm, a wave of increasing ion temperature appears to propagate earthward through the magnetotail.

Amy Keese  
West Virginia University

Date submitted: 18 Jul 2007

Electronic form version 1.4