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A double spacecraft imaging mission to study reconnection and ion outflow

N. Ostgaard (1), J. Stadsnes (1), J. Moen (2), J. C. Gerard (3)

 Department of physics and technology, University of Bergen, Norway (Nikolai.Ostgaard@ift.uib.no [+47 5558 2794]), (2) Department of physics, University of Oslo, Norway, (3) Laboratory for atmospheric and planetary physics, University of Liege, Belgium

We propose a double spacecraft mission for remote sensing of the cusp simultaneously in the conjugate hemispheres to resolve relative reconnection locations and rates and the associated ion outflows. The mission will address the question of conjugate asymmetries of these processes and what controls the efficiency and their asymmetries. In addition, a wide range of other unresolved questions related to conjugate and nonconjugate phenomena will be addressed. With the requirement of high spatial, spectral and time resolution of the imaging instruments in the UV range as well as the hard and soft X rays, this mission calls for development of new technology.