

Numerical Investigation of the August 22, 2005 CME from Anemone Active Region 10798

M10a

‘ ’ N. Lugaz (JSPS Fellow, Kyoto University, Institute for Astronomy, University of Hawaii), C. Downs (Institute for Astronomy, University of Hawaii), K. Shibata (Kyoto University), A. Asai (Kyoto University), I. Roussev (Institute for Astronomy, University of Hawaii), T. Gombosi (CSEM, University of Michigan)

We present a numerical investigation of the initial stage of the coronal mass ejection (CME) on August 22, 2005 using a magneto-hydrodynamic (MHD) simulation with the space weather modeling framework (SWMF). This eruption originated from the anemone active region 10798, which was situated in the middle of a coronal hole. We discuss the initial magnetic topology of the active region as well as its evolution during the first hour of the eruption as revealed by the three-dimensional (3-D) MHD simulation. We present on-disk extreme ultra-violet (EUV) synthetic images and white-light synthetic coronagraphic images, which we compare to EIT and LASCO images. Because the active region is situated in a region of unipolar magnetic field, we find that one footprint of the flux rope quickly reconnects but the flux rope maintains its integrity.