MMT ADAPTIVE OPTICS IMAGES OF VESTA IN L' AND M' DURING THE 2007 APPARITION. A. Heinze, F. Vilas, P. Hinz, and M. Kenworthy, ¹Dept. Physics & Astronomy, Swarthmore College, 500 College Ave., Swarthmore, PA, 19081 (aheinzel@swarthmore.edu), ²MMT Observatory, PO Box 210065, University of Arizona, Tucson, AZ (fvilas@mmto.org), ³CAAO, PO Box 210065, University of Arizona, Tucson, AZ, 85721.

Introduction: We observed the asteroid 4 Vesta on the dates of UT April 28, 30, and May 1, 2007, using the 6.5-m MMO telescope with f/15 natural guide star adaptive optics and a photometer cycled periodically between L' (3.8 µm) and M' (4.7 µm) filters. Coupled with the 5.342-hr rotational period, these observations covered longitudinal intervals across Vesta of 150.7–240.6° (28 Apr), 67.1–291.7° (Apr 30), and 241.2–36.2° (May 1), representing almost full longitudinal coverage coupled with some overlap. The sub-Earth latitude varied between -20.2 to -20.0°; mean Earth–Vesta distance varied between 1.27 – 1.26 AU. Figs. 1 and 2 show sample images of Vesta taken in the L' band and M' band respectively, along with corresponding point spread function observations taken on 1 May. The pixel scale is 0.03"/pixel, producing resolved images that have ~5 resolution elements across the major axis for L', and ~4 resolution elements across the major axis for M'. These data will be reduced and correlated with the southern hemisphere topography.

Fig. 1.  L' band observation of Vesta and PSF, 1 May 2007.

Fig. 2.  M' band observation of Vesta and PSF, 1 May 2007.