

TRAVERSE ACROSS LOWER STRATA OF MERIDIANI PLANUM LAYERED DEPOSITS. A. D. Howard¹, ¹Department of Environmental Sciences, University of Virginia, Charlottesville, VA 22904, ah6p@virginia.edu.

Introduction: The Opportunity MER rover exploring the upper layers of the ~800 m thick sequence of layered deposits of Meridiani Planum [1-3] has yielded the most compelling *in-situ* evidence for water-related processes on Mars (e.g., [4, 5]). A considerable proportion of the stratigraphic sequence at Meridiani Planum has not been accessible, however. The lower layers of the sequence contain well-layered deposits, intriguing semi-reticulate ridge-forming units, and interbedded channel deposits [2]. Locations that expose a thick sequence of the stratigraphic pile at Meridiani Planum in a small area with trafficability by a rover are rare. In this abstract I suggest that the western boundary of the Meridiani Planum deposits offers the best chance for observation of a thick stratigraphic sequence, plus the possibility of examining repetitively layered deposits that preferentially are found in the interior of craters [2, 6]. There are several locations along the western boundary exposing a thick sequence of layered deposits within a short horizontal distance. Examples include 353.5°E & 2.5°N, 353°E & 5°N, and the region discussed here (Figure 1) centered on 354°E and 7.5°N.

Proposed Site: The proposed site is well within the elevational and latitudinal constraints. The region shown in the THEMIS IR mosaic of Figure 1 is about 76 km across and 101 km high. A possible landing site is located at “X”, on the smooth surface above the lower scarp-forming unit of [2] and below the etched terrain at “E”. A traverse from “X” could progress outward to the etched deposits at “E” and north or west to exposures of the scarp-forming unit. THEMIS VIS and MOC NA images appear to offer, gentle ramps (passes) through the stratigraphic sequence while visiting good exposures of the units. Craters to the west of the landing site (at “L”) expose the intriguing rhythmically-layered deposits (inset “A”, MOC R1401690) that are found on the floor of some impact craters. Access to these deposits might be possible in the northern crater at “1” or “2”. Alternatively the crater marked “L?” (inset “B”, MOC E2200081) appears to contain intricately layered deposits.

References: [1] Arvidson, R. E. *et al.* (2003) *JGR* 108, 8073, doi:10.1029/2002JE001982; [2] Edgett, K. S. (2005) *Mars: Intern. J. Mars Sci. Expl.*, 1, 5-58, doi:10.1555/mars.2005.0002. [3] Hynek, B. M. *et al.* (2002) *JGR* 107, 18-1; [4] Grotzinger, J. P. *et al.*

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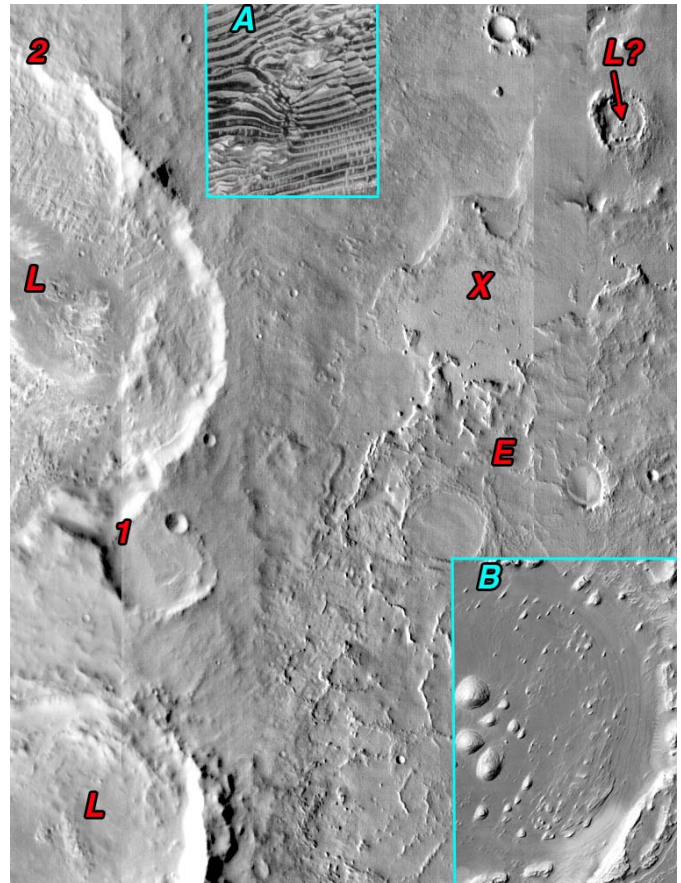


Figure 1. Proposed landing site at 354°E and 7.5°N at the western edge of Meridiani Planum.