



Geological Mapping of the Ac-H-13 Urvara Quadrangle of Ceres from NASA's Dawn Mission

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The Dawn Science Team is conducting a geologic mapping campaign for Ceres similar to that done for Vesta [1,2], including production of a Survey- and High Altitude Mapping Orbit (HAMO)-based global map, and a series of 15 Low Altitude Mapping Orbit (LAMO)-based quadrangle maps. In this abstract we discuss the geologic evolution of the Ac-H-13 Urvara Quadrangle.

At the time of this writing LAMO images (35 m/pixel) are just becoming available. Thus, our geologic maps are based on HAMO images (140 m/pixel) and Survey (400 m/pixel) digital terrain models (for topographic information). Dawn Framing Camera (FC) color images are also used to provide context for map unit identification. The maps to be presented as posters will be updated from analyses of LAMO images.

The Urvara Quadrangle is dominated by the 170-km diameter impact basin Urvara (46.4°S, 248.6°E) and includes cratered terrain to the west. Named features include the impact craters Meanderi (40.9°S, 193.7°E, 103 km diameter), Sekhet (66.4°S, 254.9°E, 41 km diameter), and Fluusa (31.5°S, 277.9°E), as well as the crater chains Gerber Catena (38.1°S, 214.8°E) and Sam-hain Catena (19.6°S, 210.3°E). Based on preliminary geologic mapping [3,4], we interpret the two prominent catenae as pit craters associated with large scale tectonism rather than secondary impacts. We interpret two large curvilinear depressions near the eastern quadrangle boundary as secondary crater chains resulting from the Urvara impact. Textural and morphological asymmetries in crater materials within the quadrangle indicate heterogeneities in subsurface composition and volatile content. Features on the Urvara basin floor are consistent with impact fluidization of target materials; post impact extrusion of volatile rich material may have also played a minor role.

References: [1] Williams D.A. et al. (2014) *Icarus*, 244, 1-12. [2] Yingst R.A. et al. (2014) *PSS*, 103, 2-23. [3] Sizemore et al. (2015) *GSA Abstracts with Program*, Abstract 308-13. [4] Sizemore et al. (2015) *AGU Fall Meeting*, Abstract P53E-2180.