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## INITIAL GEOLOGIC MAPPING OF THE AC-H-6 HAULANI QUADRANGLE OF DWARF PLANET CERES USING *DAWN* SPACECRAFT DATA

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We are using geological mapping to identify the geologic processes that have modified the surface of dwarf planet Ceres, which NASA's Dawn spacecraft began orbiting in April 2015. Framing Camera data from the Approach (1.3 km/px) and Survey (415 m/px) orbits, including grayscale and color images and digital terrain models derived from stereo images, have enabled an initial characterization of the surface. Ceres has been divided into 15 quadrangles, and this abstract discusses the geology of the Ac-H-6 Haulani quadrangle, located between -22-22˚ and 0-72˚E. The 31 km diameter Haulani crater in the east is the dominant feature in the quadrangle. It shows a bright interior and ejecta, which preferentially extends westward. Small rays, identified in photometrically corrected data, radially extend over several hundred kilometers to the west. A heavily cratered elevated plain extends around the equator to the NE, interrupted by a trough in the east. This plain seems to be part of a dominant geological unit crossing Ceres. Linear depressions cross the quadrangle in W-E direction, with a slight tendency to NW. A set of small linear depressions close to each other are found in the SE, orientated in NW direction crossed by one in WE direction. Various craters have a modified floor with smooth infilling, melted material, central peaks, possible domes or mass wasting material. A crater in the southern part of the plain reveals possible flow features extending to the NW, maybe of volcanic origin. Candidate volcanic domes occur in the NW and S parts of the quadrangle. Linear depressions could be also an indication for volcanic origin. Key goals of the ongoing mapping are to analyze the origin of the bright material of Haulani crater, whether the excavation was endogenic or exogenic, and to analyze the origin of the candidate volcanic features. Future work includes more detailed definition and characterization of surface units and estimates of their compositional variations through study of color images and Visible and Infrared spectrometer data, and application of crater statistical techniques to obtain model ages of surface units.

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