



Lunar geological structure catalog for Dawn

Katrin Krohn (1,2), Jaumann Ralf (1,2), Russel Christopher T. (3), Raymond Carol A. (4), Pieters Carle M. (5), Wagner Roland (1), and van Gasselt Stephan (2)

(1) Institute of Planetary Research, German Aerospace Center (DLR), Berlin, Germany (katrin.krohn@dlr.de), (2) Freie Universitaet Berlin, Institute of Geosciences, Planetology and Remote Sensing, (3) UCLA, Institute of Geophysics, Los Angeles, CA 90095-1567, USA, (4) Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA 91109-8099, USA, (5) Brown University, Planetary Geosciences Group, Providence, RI 02912, USA

Except for a number of low-resolution full-globe images obtained by the Hubble Space Telescope the surface of Vesta remains largely unknown. New image data from NASA's Dawn mission (launched in September 2007) that will arrive at asteroid Vesta in mid 2011 for a 9 month systematic mapping phase will provide a new basis for systematic geologic and geomorphologic mapping in order to characterize the lithology and stratigraphic relationships and surface structures in terms of geologic indicators for endogenic processes and impact cratering. Vesta is known to be a differentiated body with surface features known from other planetary objects mostly Earth's moon. Comparisons will be important in order to assess characteristic landform features that are potentially observed in the image data.

In order to establish a basis for comparing structures we are currently developing a landform catalog which is intended to form a science basis for comparing in particular volcanic and tectonic landforms to constrain the endogenic geological evolution, and impact structures as well as landslides in order to infer properties of target materials.

This catalog is built upon medium to low-resolution image data from the Clementine and Lunar Orbiter missions as well as high-resolution image data obtained from the Lunar Reconnaissance Orbiter (LRO) and Kaguya camera experiments. The initial approach and catalog contents are presented at the conference.