



Conception of a geo-database as well as an application-oriented query system for geological mapping of Martian surface illustrated by an "analysis and interpretation of valley networks on Mars"

A. Nass (1,2), R. Jaumann (2,3), and H. Asche (1)

(1) University Potsdam, Faculty of Mathematics and Natural Sciences, Institute for Geography, Division Geoinformatic, Potsdam, Germany, (2) German Aerospace Center (DLR), Institute for Planetary Research, Department of Planetary Geology, Berlin, Germany, (3) Freie University Berlin, Department of Earth Sciences, Institute of Geological Sciences, Division Planetary Sciences and Remote Sensing, Berlin, Germany

Mars raises special attention in the field of planetary research because of its geological similarity to Earth. Based on this increasing interest, the rapid technical development as well as the increase of missions to Mars, more different but complementary datasets are collected (e.g. images, digital terrain models, spectral data, maps etc.). This datasets get more and more quantified and evaluation yield complex mapping interpretations and results. For a better and more efficient use of this great quantity of data (basis data, different analysis methods, and derived information) a database concept to combine and correlate different data, maps and interpretations is being developed and will be presented here. "The analysis and interpretation of valley networks on Mars" is used as working example for the database conception.

The first step will enable the user to create an individually useable database by a special query system. Based on this data collection multi-dimensional mapping needed for the interpretation can then be executed. After completion of this task the results will be stored in the database, defined as metadata. Through this the results will be available as secondary base data for further cross-correlations of basic and derived data to add additional values in interpretation.