

Japan Geoscience Union Meeting 2011

(May 22-27 2011 at Makuhari, Chiba, Japan)

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SCG064-01

会場:202

時間:5月24日 14:15-14:30

火星における堆積学的研究の現状と課題 A review of sedimentary research on Mars

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A large volume of data is now available for sedimentary research on Mars. The data include topographic data from the Mars Orbiter Laser Altimeter (MOLA) and several kinds of satellite imageries. The spatial resolution of the images obtained from the High Resolution Imaging Science Experiment (HiRISE) reaches up to approximately 25 cm/pixel. This resolution is high enough to analyze large boulders (>25 cm) on the Martian surface, which might have been deposited through several processes such as meteorite impacts, slope failures, and hydrological activities. Sedimentary rocks, formed through various processes including aeolian, impact cratering, fluvial/lacustrine, have already been reported from many places on Mars, and such rocks are selected as possible landing sites for future rover missions by NASA and ESA. In this study, we will review the current understanding of sedimentary rocks on Mars, and will discuss how field geologists can contribute to the sedimentary research on Mars. In addition, we will briefly introduce how to use the available topographic and satellite datasets through the use of GIS software.