

## **Advances in terrain modelling and multispectral mapping for Phobos**

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Images obtained by the High Resolution Stereo Camera (HRSC) during the Phobos flybys in March 2010 were used to study the proposed new landing site area of the Russian Phobos-Grunt mission, scheduled for launch in 2011 [1]. From the stereo images, with a resolution of up to 4.4m/pixel, a digital terrain model (DTM) with a lateral resolution of 100m per pixel and a relative point accuracy of +/-15m, was determined. Images and DTM were registered to the established Phobos control point network [3]. A map of the landing site area, located between 210 to 240 degree West and 0 to 30 degree North, was produced enabling mission planners and scientists to extract accurate body-fixed coordinates of features in the Phobos Grunt landing site area. Outlook: we have recently upgraded our processing scheme which will be used to improve our established global DTM [2] for large parts of Phobos. Furthermore, we have developed a gravity field model which will allow us to study dynamic heights and effective surface slopes in the Phobos maps. Our current work also includes the registration of HRSC color images to the DTM reference for spectral analysis and surface compositional studies.

[1] Basilevsky, A. T. and Shingareva, T. V.: The selection and characterization of the Phobos-Soil landing sites, *SoSysRe*, (44), 38-43, Feb. 2010.

[2] Waehlich, M. et al.: A new topographic image atlas of Phobos, *EPSL*, In Press, Corrected Proof, 2009.

[3] Willner, K. et al.: Phobos control point network, rotation, and shape, *EPSL*, In Press, Corrected Proof, 2009.