Improved Phobos Atlas from Mars Express HRSC/SRC Image Data

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Image data from the HRSC (High Resolution Stereo Camera) and SRC (Super Resolution Channel), onboard the European Mars Express mission were used to derive a global image mosaic of Phobos [1]. We have now taken important steps towards an improved mosaic and Phobos atlas. We have updated the Phobos Digital Terrain Model which provided us with the opportunity to enhance the geometry of the mosaic. As the images were acquired under various illumination and viewing angles and show anomalous bright and dark areas, we applied Hapke photometric corrections. Illumination and viewing geometries were derived from the improved DTM [1,2]. Furthermore, images with the highest ground sampling resolution of close flybys between 2008 and 2011 were added to the mosaic.
To complete the atlas, we plan to add thematic map sheets displaying e.g. grooves or boulder distributions. Dynamic heights computed on the basis of the shape model will also be added. The information, collected in the atlas, already proved to be a valuable tool for planning and landing site selection for the Russian Phobos Grunt mission [3].

References:

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