

Shape model and reference system definition of 67P/Churyumov-Gerasimenko from stereo-photogrammetric analysis of Rosetta/OSIRIS image data

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In August/September 2014 the OSIRIS camera system [1] onboard ESA's Rosetta spacecraft has been acquired more than 200 OSIRIS NAC images (SHAP4S image sequence) with about 1 m image resolution of comet 67P/Churyumov-Gerasimenko (67P/C-G). We applied stereo-photogrammetric (SPG) methods and derived a three-dimensional representation of the very irregular shaped nucleus of the comet [2]. Here, we achieved a SPG shape model at 2 m lateral sampling and a typical vertical accuracy at the decimeter scale (see Fig. 1). Furthermore, we used SPG methods to analyze the rotational elements of 67P/C-G. Based on the determined spin pole orientation and spin rate we defined the reference frame of 67P/C-G using fixed landmark coordinates [2]. Because of the illumination conditions during observation period, the SPG SHAP4S shape model is limited to the northern hemisphere and low southern latitudes [3,4]. We will present recent results and additional views at the conference.

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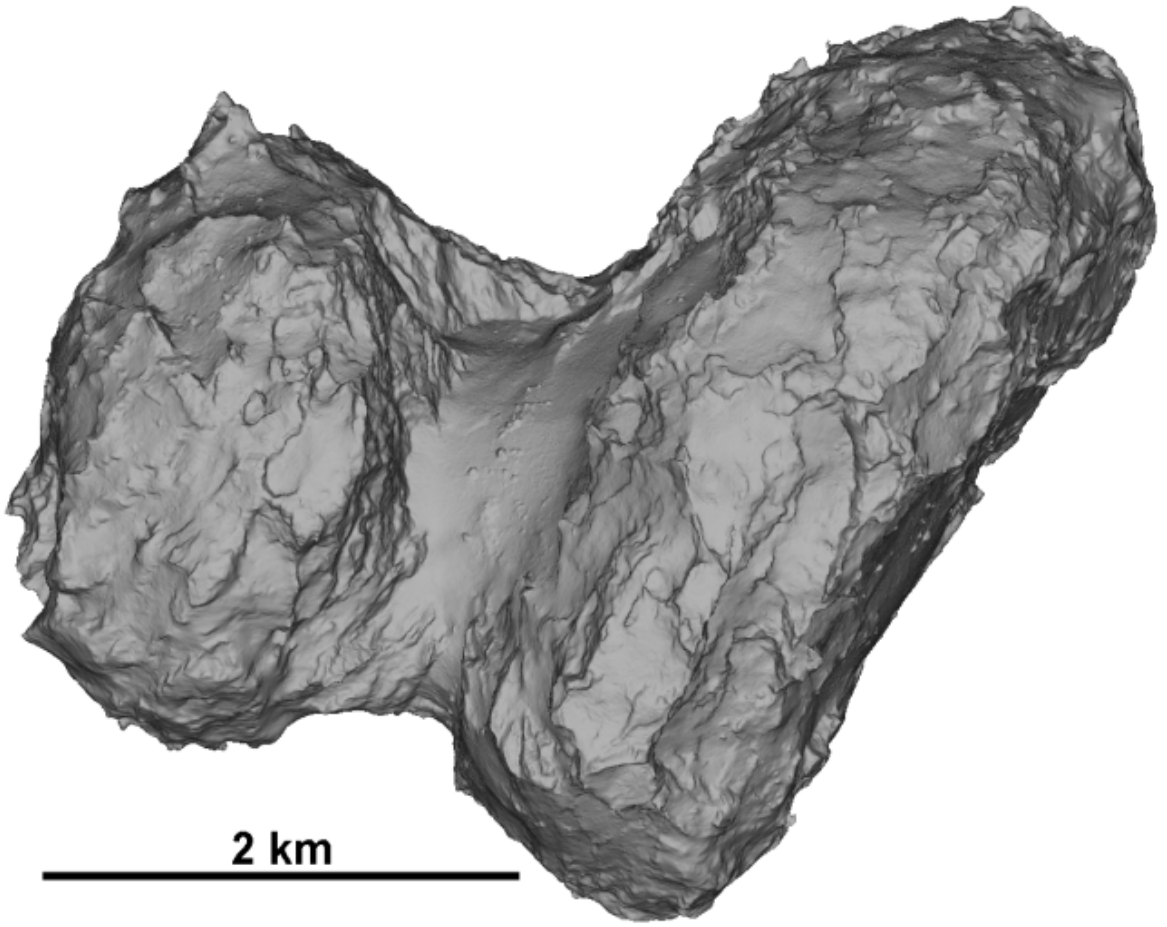


Figure 1: Global view of the SPG SHAP4S shape model of C-G [2].