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PCG30-P02 Room:Convention Hall Time:May 26 18:15-19:30

Accuracy Evaluation of Asteroid Shape Reconstruction by Structure-from-Motion Method with a asteroid scale model

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Here we report results on application of open source shape reconstruction tools to an asteroid image data set. We test two tools that cooperatively work to reconstruct an object shape from images. Bundler is an open source implementation of a stereo shape reconstruction method called Structure from Motion (SfM). PMVS2 gives a more dense shape model, since Bundler only estimates 3D locations of a limited number of feature points. The target of our test is a scale model of an asteroid. The shape of the model is accurately measured by a laser scanner, and this shape data is used as a reference to evaluate a shape model obtained by Bundler and PMVS2 from imaged of the scale model. This procedure is more appropriate to evaluate in a more objective way than our previous procedure (Hirata et al., 2014, JPGU meeting), because two shape models are independently obtained with different methods.

Keywords: Asteroid, shape reconstruction, bundler, PMVS2, Structure-from-Motion, Hayabusa-2