Volume Measurements of Laser-generated Pits for In Situ Geochronology Using KArl-E (Potassium-Argon Laser Experiment)

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Abstract

EPSC2013-2071. Critical to the success of the KArl-E experiment, or any LIBS-IS geochronology investigation (e.g., [3–4]), is the accurate measurement of the LIBS-ablated pit. This study shows that either a stacking or stereo imaging using available micro-imaging cameras are suitable methods for determining the volume of LIBS pits in flight designs (Fig. 9). In a pinch, material properties (hardness, heterogeneity, porosity, and grain size) can be used to estimate the likely range of pit volume per shot and a functional fit using pit width and depth can estimate the pit volume within a larger uncertainty.

7. Acknowledgements

The majority of this work was completed during the summer of 2013 as part of the Marshall Space Flight Center Summer Internship program. Author Discussions with Zhang-Hua Li helped refine methods that contributed to the foundation of the project.

8. References