

Tentative white paper title:

User-focused Data Catalogs to Enhance the Long-term Results of Planetary Missions

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Link for interested co-authors/signatories:

<https://forms.gle/1fghgyC6YQwjVgDN9>

Brief description of the intended white paper's content:

Mission teams should incorporate procedures that enable others to analyze their data.

Navigating the Planetary Data System (PDS) to find the data one wants to work with is nontrivial, as are evaluating (e.g., where on a geologic target were spectra acquired, what are the signal-to-noise ratios, etc.) and analyzing the data without the guidance of the mission team's corporate knowledge. A survey¹ conducted by the MER Data Catalog Project indicates that everyone from homeschooling parents to PhD planetary scientists would like to access spacecraft data, but they cannot find the data products they want, do not have time to look through the full mission dataset to find data on their target(s) of interest, and lack the context or background to use the data they can find.

A catalog designed with the end-user in mind, supplemented with documentation aimed at introducing non-team researchers to the nuances of analyzing the spacecraft's data, can enable professional scientists and students who were not selected as team members to contribute to the mission's long-term results. This can expand the range of researchers to include people who typically do not work on spacecraft missions, such as faculty and students at teaching-focused institutions including but not limited to tribal colleges, Historically Black Colleges and Universities (HBCUs), and community colleges. Additionally, easily accessible and usable data catalogs will enable future astronauts exploring extraterrestrial sites *in situ* to groundtruth the interpretations of robotically acquired data.

Status of the white paper effort so far:

We plan to start writing the white paper in late April. We, with other co-authors, submitted an LPSC-2020 abstract and poster on this concept in the context of the Mars Exploration Rovers (MER) mission, and we are conducting a survey, aimed at everyone who has an interest in using MER data, to determine the community's needs for a MER-specific data catalog. Preliminary survey results indicate that workers from a wide variety of research, commercial, and formal and informal educational institutions would like to use MER data. Participants requested that the catalog's documentation include tips written by science and operations teams, and guides to the science and engineering payloads.

Link to LPSC abstract: <https://www.hou.usra.edu/meetings/lpsc2020/pdf/1709.pdf>

Link to LPSC e-poster: <https://www.hou.usra.edu/meetings/lpsc2020/eposter/1709.pdf>

¹ <https://www.hou.usra.edu/meetings/lpsc2020/eposter/1709.pdf>

Involvement/collaboration we are seeking from other members of the community:

We are looking for co-authors and co-signatories who agree with this white paper concept. Involvement can range from contributing paragraphs and editing the white paper to simply indicating support by co-signing. We are particularly interested in co-authors and co-signatories who would like to be involved in creating catalogs for specific missions, whether or not they were members of those missions.