Mapping and Planetary Spatial Infrastructure Team (MAPSIT)

Findings for the Planetary Advisory Committee (PAC), March 4–5, 2024 Meeting

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David Williams (Arizona State Univ.)

MAPSIT Findings (1) – Geologic Mapping

Finding 1: MAPSIT strongly emphasizes the critical importance of planetary maps for research and exploration, including systematic Venus and Lunar geologic mapping. MAPSIT endorses and appreciates PSD's support of geologic maps and applauds the inclusion of the Lunar Mapping Program element in ROSES 2024 (NNH24ZDA001N-LMAP).

- This element enables participation in a "geologic mapping team in the planning and execution of campaign-style mapping of selected regions of the Moon." A central objective would be to produce "targeted, innovative, and content-diverse geologic maps that will aid in lunar exploration as context for scientific investigations, guidance for region and site down selection, and/or surface operations."

- This follows the recommendations of the Lunar Surface Science Workshop, *"Geological Mapping to Support Artemis Strategic Decisions"* Aug 16–17, 2023 (Virtual). Organizers: J. Skinner (USGS), A. Huff (ASU), J. Luna (TNTech), R. Watkins (NASA HQ)

- The MAPSIT Geologic Mapping (GEMS) subcommittee is regularly meeting to engage with the planetary mapping communities (researchers, MAPSIT, NASA, USGS) and helping to prioritize cross-body mapping goals. Contact GEMS chair Jeannette Luna for more information.

MAPSIT Findings (2) – Software for Planetary Data

Finding 2: MAPSIT sees a community-wide need to discuss and identify critical software gaps for planetary data analysis. MAPSIT urges a Specific Action Team (SAT) be formulated and requests direct involvement in this effort

- Some efforts (e.g., through STMD) seek to identify and fill technology gaps; however, MAPSIT sees a particular need for continued development of software relevant to planetary science and data analysis.

- MAPSIT views this assessment as essential for the long-term planning of infrastructure investments and analyses of planetary data, as well as for upcoming missions (one example, software to visualize data collected on the Moon's surface).

- This assessment need fits with the recommendations of the Lunar Critical Data Products SAT Report (2021) https://doi.org/10.5281/zenodo.7236426

Additional MAPSIT Findings

Finding 3: MAPSIT endorses NASA's ongoing efforts to support researchers and promote training and accessibility in the planetary data ecosystem.

- MAPSIT endorses the PSD support of planetary data workshops, and other opportunities and resources

Finding 4: MAPSIT encourages the continued NASA support of efforts producing analysis-ready data products in a platform-agnostic format.

- These products maximize accessibility and findability of PSD data in the planetary data ecosystem

Finding 5: MAPSIT encourages continued support for planetary spatial data infrastructures.

- SDIs engage the community and help formulate standards and maximize accessibility and findability of PSD data

Finding 6: MAPSIT urges extremely careful consideration and assessment prior to NASA's support of any major revisions to the planetary reference systems (e.g., for the Moon)

- Such revisions can have wide-sweeping effects for PSD data and should be assessed extensively before adoption

Upcoming community activities

- **MAPSIT Town Hall at LPSC**
  5:30 to 6:30 pm, March 11 (Tuesday), 2024

- **Planetary Geology Mappers' Meeting**
  August 14-16, 2024, adjacent to the Workshop on Terrestrial Analogs for Planetary Exploration, Flagstaff AZ. Hybrid format.
  - Organizers: Jim Skinner (USGS), Jeanette Luna (TN Tech) and Amber Gullikson (USGS)

- **Planetary Data Training Workshops**
  Organizers: David Williams et al.
  - 8 events over 5 dates planned for 2024
    (see https://rgcps.asu.edu/gis-pdtw/)