

FINDINGS

2019 Planetary Geologic Mappers' Meeting

Flagstaff, Arizona

June 13, 2019

Presented to MAPSIT Steering Committee

Finding #1

The Planetary Geologic Mapping Community is concerned that the rigor with which planetary geologic maps must be prepared, reviewed, and edited en route to possible USGS SIM production may be unclear. We recognize that the onus is upon us to:

- Clearly present the steps to publication within mapping proposal and delineate and justify estimated efforts with respect to specific roles, responsibilities, and anticipated hours for the preparation, review, and editorial process
- Educate the broader planetary science community on the process and product of planetary geologic maps
- Volunteer to serve on review panels where mapping proposals are present, or do external reviews of geologic mapping proposals when requested

Furthermore, we encourage the managers for NASA programs that fund planetary geologic mapping projects to include experienced planetary geologic mappers on their review panels, request external reviews from experienced planetary geologic mappers, and make geologic mapping proposal submission guidelines and protocols familiar to review panel members

Finding #2

The Planetary Geologic Mapping Community recognizes the importance of the higher-order data products required to make geologic maps. We thus resolve to:

- Promote the proper citation of higher-order data products, and encourage that technical aspects upon which planetary geologic maps rely are properly cited
- Encourage the producers of higher-order data products to publish those products and the supportive technical aspects in relevant peer-reviewed journal articles, or other places higher order datasets might be published or archived (e.g., the Annex)

Finding #3

The USGS provides statistics on the volume of NASA proposals that seek to publish a USGS SIM series map as well as the rate of selection per body and per NASA program since 2015. However, to better understand these statistics, particularly in comparison to the NASA PSD R&A programmatic re-organization, the planetary geologic mapping community requests that NASA PSD Program Officers:

- Provide the number of proposals submitted to NASA programs from 2009 through 2014 that include publication of a USGS SIM series map as well as the rate of selection of mapping proposals per body and per NASA program of those proposals

Finding #4

We support the Findings and Recommendations in the recently published Planetary Geologic Mapping - Program Status and Future Needs (Skinner et al., 2019; USGS Open File Report 2019-1012). Specifically, we find:

- *RECOMMENDATION 2A*—The planetary science community should prioritize **making standardized global to hemisphere scale geoscience maps for all Solar System bodies for which they do not already exist.** Specifically, the community should prioritize making standardized geoscience maps at global to hemispheric scales of **Mercury, Venus, Deimos, Phobos, Vesta, Ceres, Europa, all mid-sized Saturnian satellites, Pluto, and Charon**
- *RECOMMENDATION 2B*—The planetary science community should prioritize making **local to regional scale geoscience maps of the Moon and Mars at consistent scales** or within a narrow range of scales (between approximately 1:50,000 and 1:500,000) to refine existing context and promote comparability.

Finding #5

Following up from last year's Finding, the Mapping community remains concerned about the transfer of planetary mapping skills to the next generation of scientists, as well as broadening our community to colleagues who wish to learn planetary mapping. We therefore have implemented the following actions:

- We now include a session on 'Teaching Planetary Mapping' in our annual meeting
- We promote sharing of mapping tutorials or other teaching products
- We formed a new working group for development of Mapping Workshop, Dr. Devon Burr (Northern Arizona University) will be contact person to move forward toward a Workshops proposal for ROSES-2019

Finding #6

The PLANMAP initiative of our European colleagues, which seeks to produce geologic maps of various regions of the Moon, Mars, and Mercury, is an excellent opportunity to increase collaboration and promote standardization of the process and product of planetary geologic maps. The US planetary mapping community would therefore suggest:

- Having a joint meeting(s) between US and PLANMAP mappers at major conferences, such as LPSC or EPSC

Status Update on Global Geologic Maps

Object (Basemap):

Mercury (MESSENGER)

Venus (Magellan)

The Moon (LROC-WAC/other?)

Mars (Various)

Vesta (Dawn)

Ceres (Dawn)

Io (Galileo-Voyager)

Europa (Galileo-Voyager)

Ganymede (Galileo-Voyager)

Callisto (Galileo-Voyager)

Enceladus (Cassini)

Titan (Cassini)

Dione (Cassini)

Uranian Satellites (Voyager)

Triton (Voyager)

Pluto (New Horizons)

Charon (New Horizons)

Comet 67/P C-G

USGS SIM Status

In Progress

Not yet proposed

Not yet proposed (NOTE: 6 Apollo-era geologic maps covering the Moon have been digitized and are online)

Published, Tanaka et al. (2014)

In Progress

Not yet proposed

Published, Williams et al. (2011)

In Progress

Published, Collins et al. (2014)

Not yet proposed (Voyager-era map published in 1999; subsequent Galileo SSI coverage of Voyager gaps)

In Progress

Proposed, not funded

Proposed, not funded

Proposed, not funded

In Progress

In Progress

Not yet proposed

Not yet proposed

Leadership Change & Next Meeting

- Peter Mougini-Mark of the University of Hawaii now takes over from David Williams of ASU as the Planetary Geologic Mapping Community Representative on the MAPSIT Steering Committee, pending approval
- David Williams will continue to serve on MAPSIT Steering Committee as the RPIF Representative, replacing Justin Hagerty
- D. Alex Patthoff of the Planetary Science Institute has volunteered to host the 2020 PGMM at the PSI Offices in Denver, Colorado
- The 2020 PGMM will take place sometime during the week of June 15-19, 2020