



USGS Planetary Geologic Map Coordinator Comments

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OUTLINE

- Contribution
- Program status
- Backlog
- Resources update
- PGM Community Survey

CONTRIBUTION

- USGS-published community maps
 - >40 year history of NASA/USGS
 - >240 maps
 - Mercury, Venus, Moon, Mars, Jovian satellites
 - >5400 citations
 - ~25 active community maps for USGS publication
- Geoscience maps (any)
 - Recognized need (missions)
 - Know are used (landing site)
 - Continued programmatic funding
 - Various programs, support mechanism
 - Examine and clarify use and investment
 - Diversify map type and community

CONTRIBUTION

- There are levels of geoscience maps

End member

- High response
- Innovative
- Multiple bases
- Multiple scale
- Flexible
- Data release not required



End member

- Low response
- Innovative (~)
- Single base
- Single scale
- Rigid
- Data release required

- Critical co-contributors
 - Define levels and promote data capture

PROGRAM STATUS

- 74 projects currently in USGS database
 - 43 Mars, 19 Venus, 5 Moon, 3 Mercury, Vesta, Enceladus, Triton, Europa
- 6 in technical review
- 2 published in FY2017
 - Meridiani Planum by Hynek and Di Achille (complete)
 - Candor Chasma by Okubo and Gaither (being printed)
- ROSES 2016
 - 17 submitted (7 declined, 4 accepted, 6 TBD)
 - Triton (Martin), Mercury global (Byrne), Mercury (H-10) (Whitten), Moon (LQ-24) (Petro)

BACKLOG

- Delinquency, as defined by GEMS in 2009 (?)
 - >10 years past proposal year
 - >3 years past return data of initial review
 - >5 years since progress reported to community (PGM)
- NASA HQ requested report (May 18)
- 74 projects currently in USGS database
 - 46 “active” (demonstrated progress)
 - 30 Mars, 5 Moon, 4 Venus, 3 Mercury, Vesta, Enceladus, Triton, Europa
 - Average start year 2011
 - 28 “delinquent” (lacking demonstrated progress)
 - 15 Venus, 13 Mars
 - Average start year 2001
- ~5 getting funded per year, <5 being completed ...

BACKLOG (cont'd)

- USGS has previously addressed backlog
 - Contacting PI, timeline, update project, etc.
 - Complicates USGS support and funding
- NASA sees this as outside of USGS purview
 - PI agreement with NASA (not USGS)
 - Funding has long expired
- NASA determined course of action (n=28)
 - Alert PI and establish realistic deadline for submission
 - Alert PI and remove from USGS database
 - Re-propose is option (e.g., PDART), if value can be demonstrated in peer review proposal
 - Considering “sunset clause” for mapping proposals
 - The time when map needs to be accepted for production
- 25 to 30 “active” maps a target inventory

RESOURCES

- Author and reviewer guidelines updated
- Geologic mapping handbook updated
 - Clarify role of “standardized maps”, remove proposal guidance, update process summary, etc.
- PGM website database updated
 - Duplicates, sorting, links, dates, notes, stages, toggle layers on webmap, past abstract volumes
- Hard-copy conversions to GIS
- Standard operating procedures (SOPs) added
 - Contours, grids, map layouts, multi-user editing, hard copy → GIS
- PGM toolset added
 - Automates GIS workflows common to geo mapping (e.g., build poly, check topology, merge files, etc.) ... input requested
- If there are community needs that are not being addressed, by USGS or otherwise, compile discussion point → MAPSIT finding to capture and force some action

PGM COMMUNITY SURVEY

- Prepared by USGS (with community input) on behalf of MAPSIT (part of roadmap)
 - Establish current and future needs for PGM
 - Likely to be used by NASA to guide funds
 - Not for or about USGS (though we play a role)
 - Discriminated standard and non-standard maps
 - Geoscience map = maps that discretely delineate and describe units or terrains using base product
- Released week of LPSC, closed June 2
- 265 responses
 - “Self-selected”
 - 60 optional comments submitted

PGM COMMUNITY SURVEY

Responses

- Relevant bodies:
 - Mars, Moon, Earth, Jovian, Saturnian, Mercury
- Relevant data:
 - Topo, orthoimages, controlled mosaics, elemental/compositional
- Frequency map created:
 - Often (35%), Occasionally (42%), Never (23%)
- Frequency map used:
 - Often (62%), Occasionally (35%), Never (3%)
- Map scale very relevant:
 - Very local (64%), Local to regional (75%), Regional to hemispheric (58%), Hemispheric to global (55%)

PGM COMMUNITY SURVEY

Responses

- Geoscience map type very relevant:
 - Geologic (68%), geomorph (63%), surficial (63%), compositional (46%)
- Unit, terrain, feature very relevant:
 - Volcanic (61%), impact (60%), stratified (42%), ancient crustal (39%), fluvial/alluvial (38%)
- Map components very relevant:
 - Control to standard coordinate system (71%), objectivity of unit description (67%), consistent use of symbols (58%)
- Map format very important:
 - GIS (70%), PDF (46%), hard copy (18%)

PGM COMMUNITY SURVEY (cont'd)

- *Current architecture of GIS-only ... requires excessive effort ... unnecessarily complicated ... excludes major mapping talents*
- *Important to access USGS maps and use on various platforms, particularly GIS*
- *Nice to have repository for maps published (e.g., journal articles)*
- *Slow peer review process is the primary reason so many non-standardized maps exist ... weakens relevance to science and mission planning*
- *Effort and expense of standard maps is too great for scientific return*
- *De-emphasize regional maps and emphasize local scales (CTX and HiRISE)*
- *Elitism toward standard maps and map makers poisons the community*
- *Importance of geoscience maps for exploration cannot be overstated*
- *Standardized maps are an integral and fundamental part of science*
- *Now is the time to reinvigorate mapping program with science-specific maps*

Now is the time.

- Survey results are part of the foundation for:
 - Making PGM findings to MAPSIT
 - Helping MAPSIT compile their roadmap on community needs w.r.t. products and processes
 - Creating white paper on PGM stance w.r.t. products and processes
- Skinner and Williams will write white paper ... seeking volunteers to assist
- Community discussion → action items and plans are critical
- See Alex today to get emailed PDF summary

Questions / Comments

Extra Slide

Author responsibilities

- Properly scope project
- Examine and justify need in proposal
 - Could ≠ should
- Get community help end-to-end
- Mimic existing elements
- Think (and work) outside the box
- Identify areas of improvement
- Submit in recommended format
 - Importance cannot be overstated
- Provide thorough technical reviews
 - Importance cannot be overstated
- Address and implement technical reviews
 - Importance cannot be overstated