

SUMMARY AND RECOMMENDATIONS FROM THE 2015 ESAC PLANETARY GIS WORKSHOP. N. Manaud¹, A. P. Rossi², T. Hare³, S. van Gassel⁴, J. McAuliffe¹, S. Martinez¹, ¹European Space Astronomy Center, Spain (nmanaud@gmail.com), ²Jacobs University Bremen, Germany, ³United States Geological Survey, USA, ⁴Freie Universität Berlin, Germany

Background: Recent data dissemination initiatives aim at facilitating exchange of knowledge, tools, data on planetary data processing and analysis [1].

ESA's first Planetary Geographic Information System (GIS) Workshop took place in May 2015 at ESA's European Space Astronomy Centre (ESAC) establishment. This report contains both input collected and condensed during the workshop and post-workshop survey results. The entire combined report is publicly available and has also been submitted to the Planetary Science Archive (PSA) User Group [2] and ESA's PSA.

Objectives: The objectives of the Workshop included: (a) evaluation of the state-of-art in mapping and visualization of planetary geospatial data, (b) identification (and sharing) of prospective scientific use cases and technologies, (c) identification of the geospatial mapping community and capacity building at European level, (d) facilitation of possible future open, collaborative, community-driven planetary data exploitation efforts, (e) the use of geospatial standards and the approach and tools for non-traditional applications.

Participants: Over 80 participants from over 40 institutions in 12 countries (including USA, Russia and China) joined the workshop, mainly from the surface-science sub-community (geology, geography and cartography, ~80%), the atmospheric-science community (~10%), and from magnetospheric and plasma physics (~10%). Actors represented at the workshop include: data users, data producers (e.g. from experiment teams), data providers/archivers, software developers (mainly linked to data producer/provider categories).

Recommendations: One of the main results of the workshop, highlighted by participants, was that it facilitated new cooperation, networking and sharing of knowledge.

Participants have clearly expressed the need for periodic workshops of this kind (~95%) to be held periodically, similarly to [1]. Needs strongly expressed by participants include: more extensive hands-ons, extended open session and dedicated tracks for geological mapping, addressing new challenges and solving problems with the involvement of software developers. This is addressed by periodic workshops such as [1] as well, on another level as research infrastructure such as EuroPlanet-RI and its VESPA activity [3].

90% of the participants who responded the survey have clearly expressed the desire to discuss and share further in the near future – among the participants and

beyond. One direct outcome of the workshop is an initial community-driven effort [4] to stay connected and share information related to and beyond the workshop; to work out online solutions for all to share knowledge, resources, code, tools and services); to organise online events such as tool demos and surveys, hackathons and tutorials, or topical discussions; as a follow-up of the (too-short) open session at the workshop (and in anticipation of the next workshops, or conference splinters). This online initiative has been also used and linked to/from the second Planetary Data Workshop held in Flagstaff (AZ, USA) in June 2015 [1], thus, directly linking and potentially sparking cooperation and sharing across European and US communities.

The core target community for the Planetary GIS/Mapping workshop was surface/geoscience-oriented, similar to [1]. However such type of workshop would be also valuable for neighboring communities. In this respect, discussion and development of use cases beyond surface science investigations are needed. Also, other communities (atmospheres, plasma, magnetospheres, etc.) might need additional, dedicated spaces/workshops and this could be addressed with the respective communities and through [2]. In all cases, surveys and listings of available and upcoming tools of relevance for planetary data analysis are desirable and, meanwhile, being collected and shared openly through [4], complementary to existing tool directories such as those from PDS and International Planetary Data Alliance (IPDA).

Among workshop participants, data providers are seen to play an important role

The full version of this report, including figures from participants' feedback is available from the workshop web page:

<https://issues.cosmos.esa.int/psawiki/display/GISWS>

References: [1] Gaddis, L., T. Hare (2015) Eos, 96, doi:10.1029/2015EO041125. [2] Rossi, A. P., et al. (2014) EPSC, Vol. 9, #EPSC2014-435. [3] Erard, S., et al. (2015) EPSC, Vol. 10, #EPSC2014-270. [4] OpenPlanetary web site, <http://openplanetary.github.io>

Educational aspects: The entire workshop abstract, wiki and materials are available on: <https://issues.cosmos.esa.int/psawiki/display/GISWS/Programme>.

All sessions have been filmed and are available on: https://www.youtube.com/channel/UCInI_6ucOIvZ75NSNlf6jMw.