

PSA–UG Final Report of the 2013-2016 Group

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Abstract

The PSA User Group's (PSA-UG, established in 2013) main tasks are to advise ESA on the future PSA developments and engage community. Feedback from its first consultation (2014) with the community including the need for improved data search, preview and usage capabilities, was translated into recommendation by PSA–UG and actual implementations within the PSA. The organisation of a topical workshop on topics highly demanded by the community was carried out in 2015. Areas for further action and improvement have been highlighted in the course of 2016.

1 Background

The Planetary Science Archive User Group (PSA–UG) has been established in 2013 and its tasks include: Advising ESA on the future development of the PSA (Heather et al., 2013), acting as a focus group for the interests of the scientific community, acting as an advocate for the PSA, Monitoring the PSA activities. The 2013–2016 members are: Angelo Pio Rossi (Chair) - Remote Sensing: Solid Surfaces; Thomas Widemann - Remote Sensing: Atmospheres; Axel Hagermann - Auxilliary data; Pascal Rosenblatt - Radio Science; Baptiste Cecconi - Magnetospheres and Plasmas. The role of secretary is taken by the relevant ESA staff, initially David Heather - ESA PSA Coordinator, later Sebastien Besse and Claire Vallat, PSA Science Leads. Also participating to PSA–UG is a representative of ESA Project Scientists: Hakan Svedhem.

2 Activities 2013–2016

The PSA–UG had regular meetings in the 2013–2016 period, roughly every 6 months with teleconferences in between.

During its term PSA–UG consulted the community through dedicated questionnaires (Rossi et al., 2014) which contributed to build, together with PSA–UG members' own judgement, the recommendations to ESA PSA.

Activities carried out include:

- 1st open consultation (questionnaire) of community future needs for PSA.
- Promotion of PSA and make PSA-UG known to community at main conferences.
- 2nd targeted questionnaire with concrete for potential implementation.
- 2014 recommendation for PSA-related actions for data exploitation.

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Based on the questionnaire results, the PSA–UG had recommended to PSA:

- The provision of a global web form search / query interface, while maintaining a specialized map interface for surface users.
- The provision of postcard or browse data for all PSA data holdings.
- The provision of tools to allow all PSA data holdings to be visualised, converted into common formats for science usage, and for higher level processing.

These recommendations have been included in the new iteration of the PSA search interface¹ or are being developed at the time of writing of this report (Besse, 2016).

The second part of the term of PSA–UG was concentrated on:

- Engagement of the community through direct addressing of experiment teams, sub–communities and the planetary community at large.
- Participation of PSA-UG members to relevant conferences promoting/presenting PSA/PSA–UG relevant matters.
- Support of topical workshops, such as the ESA–led Planetary GIS (Geographic Information System) and mapping workshop in May 2015.

The first ESA Planetary GIS workshop was indeed organized with the strong backing of PSA–UG and direct involvement of several PSA–UG members. Although not a periodic appointment, the workshop itself is planned to have its ideal continuation² within the activities of the EuroPlanet-RI H2020 VESPA activity³ and the creation of an independent community–driven effort that originated from the GIS workshop itself, OpenPlanetary⁴.

3 Summary of recommendations

The PSA–UG recommended to:

- Address stakeholders beyond the planetary surface science community in future PSA iterations and provide support for fields such as atmospheres and plasma science. This could be achieved through:
 - A workshop to address the needs of the atmospheric science community.
 - A mechanism for the plasma community (which is already well organised) to share their data analysis tools.
- Search for community feedback on existing or recently implemented/planned PSA features (e.g., based on interim recommendations of PSA–UG 2013–2016).
- Achievement of more direct engagement/support of PI Teams.
- Organisation of topical workshops in further areas and potential repetition of small workshops, possibly in association with Data Workshops related to mission experiments.
- Appropriate timing for eventual science/archive use case sessions at future workshop (lessons learned from 2015 GIS workshop, during which they were too short).

In addition, as partially mentioned during the discussion and handover with the new PSA–UG 2016+ members, at the end of 2016, some aspects might be useful to consider:

- PSA could support teams proposing higher level data sets for archiving, e.g. with a set of guidelines on standards, data format and metadata, such as:
 - Select standard data formats that can be used by the community with open source libraries to read them (i.e., not ASCII, not proprietary binary, but FITS, CDF, VOTable).

¹<https://archives.esac.esa.int/psa/>

²<https://epn-vespa.github.io/mapping2017/>

³<http://euromap-ri-vespa.eu/>

⁴<http://openplanetary.co/>

- Facilitate the processing by PSA: a limited set of formats with selected metadata will help a lot the ingestion mechanism.
- Facilitate the building of tools by PSA and others, thanks to the standardization of format and metadata.
- We suggest to archive all available radio-tracking raw data (Level1) for each ESA mission as well as weather (humidity, pressure and temperature) measurements at each tracking station site.
- The use of questionnaires is useful, but difficult to have large portions of the community engaged. When questionnaires are long and complex, they might cause too much overhead to target individuals and groups.
- PSA-UG did not use much social media during its first term. Their use could ease the collection of inputs from the community, beyond long, formal and more time consuming questionnaires.
- Implementation of data citation within the PSA, in order to acknowledge efforts of both PI science and archiving Teams.
- Implementation of public data use and citation metrics of PSA-hosted datasets;
- Support for mapping/planetary cartography data from non-ESA, non-archive data, e.g., geological maps (PDS Geosciences Node does have such service).
- Creation of a web page that list the web services and archives relevant to the PSA would be valuable.
- Creation of a web page that list the projects supported under various funding schemes (FP7, H2020 Space, etc.) with potential implications to the PSA would be valuable.

Detailed information on the discussion items, deliberations and recommendations from each meeting are available from the PSA-UG landing page⁵.

References

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Heather, D. J., Barthelemy, M., Manaud, N., Martinez, S., Szumlas, M., Vazquez, J. L. & Osuna, P. (2013). ESA's Planetary Science Archive: Status, Activities and Plans. *European Planetary Science Congress 2013*, **8**: EPSC2013-626.

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⁵<https://www.cosmos.esa.int/web/psa/psa-user-group>