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DOCUMENT

Heliophysics Science Archive User Group Terms of Reference

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1 INTRODUCTION

ESA supports cutting-edge Heliophysics research worldwide thanks to missions like Ulysses, SOHO, Cluster and soon Solar Orbiter. The on-going scientific success of these missions is partially due to the online availability and data quality of its individual science archives. These archives serve the scientific communities in Europe and worldwide with the best calibrated data, value added data products, and visualization services. Some of these archives also include documentation in the form of user guides and calibration reports.

For ESA's Heliophysics Missions, the responsibilities of the PIs normally include the development, building and operation of their instruments, as well as the delivery of their data to the ESA Heliophysics archives. The PIs have an obligation to process and deliver the data and relevant documentation to the individual archives according to agreed standards and schedule. After the end of a mission, the ESAC Science Data Centre (ESDC) is responsible for the maintenance of the legacy archives, including making updates and corrections to calibrated data, as necessary, and for ensuring their long-term accessibility.

In order to better serve the needs of the heliophysics scientific communities, ESA has established an Heliophysics User Group (Helio-UG).

2 TASKS

The Helio-UG shall advise ESA and provide suggestions and recommendations on the following topics

- Identify the most important functionalities of a future overarching multi-missions Solar Archive (e.g. combining data from SOHO, PROBA-2, ISS-SOLACES and the upcoming Proba-3 and SOLO missions).
- Advise on the main functionalities of a future web service linking the Heliophysics archives and the Planetary Science Archive. One key aspect offered by this service would be the ability to identify and download data of a solar transient observed on the Sun and to compare its impact on the various planets/solar system objects captured by missions throughout the solar system (e.g. VEX, Cluster, MEX, TGO and Rosetta). This service may include online modelling (e.g. ENLIL, EUFHORIA) and/or the Heliophysics Events Knowledgebase (HEK) with a propagation model.
- Address shortcomings or missing functionality in individual archives (e.g. Ulysses data visualization; ISS-SOLACES value added products; visualisation of SOHO in-situ instruments data...)



- Review the development of the overarching Heliophysics web services activities to ensure they best meet the needs of the user community within the available resources.

3 MEMBERSHIP

The Helio-UG shall be composed of 6-8 members chosen to ensure an appropriate range of expertise in key heliophysics disciplines including helioseismology, solar atmosphere, solar and interplanetary transients, heliophysics energetic particles and thermal plasmas, and heliophysics fields.

- The Helio-UG members should be active users of the heliophysics archives, and/or scientists involved in the generation of scientific datasets.
- Ideally, the members should not be formally affiliated with any of the instrument teams providing data to the heliophysics archives. However, given the large overlap between membership of the instrument teams and the Helio archives users, rigorously applying such a rule would mean that important expertise would not be available to the Helio-UG. For this reason, membership of instrument team members who are not part of the management of the instrument teams will be considered.
- Members are appointed by D/SCI for an initial period not exceeding 3 years.
- H/SCI-OO, H/SCI-OE and H/SCI-S jointly propose membership of the Helio-UG to D/SCI for approval, after consultation with the Solar System Exploration working Group (SSEWG).
- The chair, appointed by D/SCI, will serve as the official representative of the working group and will ensure the transition to the following panel of the Helio-UG.

4 MEETINGS

The Helio-UG shall meet in person once to twice per year, at ESAC in Madrid, Spain as a baseline. Additional meetings may be organised by tele- and/or video-conference as required, at the request of the chairperson.

- The ESA Heliophysics Archives Science Lead will act as the secretary of the Helio-UG and take care of the organisation of the meetings.
- The following should be invited to attend the Helio-UG meetings: H/SCI-S and H/SCI-OO, H/SCI-OE, the ESA archives overarching science lead, the ESA Heliophysics Archives Technical Lead, a Project Scientist from SCI-S and representatives of ESA's heliophysics missions as required.
- Travel expenses of members based at institutes within the ESA Member States will be paid by ESA.



5 OUTPUT AND REPORTING

The Helio-UG output and reporting shall be as follows:

- The Helio-UG will make written recommendations to the ESA Heliophysics Archives Science Lead.
- Written minutes shall be produced after each meeting within a reasonable interval of time and made publically available by posting on the relevant website.
- The chair of the Helio-UG shall make an annual report to the Operations department head of the Science directorate and the Solar System Exploration Working Group (SSEWG).
- The chair of the Helio-UG shall make a final report of their activity during the mandate of the panel.