

LIVING WITH A STAR  
PROGRAM ANALYSIS GROUP (LPAG)

TERMS OF REFERENCE

The Living With a Star Program Analysis Group (LPAG) serves as a community-based, interdisciplinary forum for soliciting and coordinating community analysis and input in support of Living With a Star (LWS) objectives and of their implications for architecture planning and activity prioritization and for future exploration. It provides information and analyses to the NASA Heliophysics Division Director.

The strategic goal of NASA's LWS Program is to develop the scientific understanding necessary to effectively address those aspects of the connected Sun-Earth system that directly affect life and society. The objectives of the Program are to understand and model the variable sources of mass and energy from our Star, the associated reactions of heliospheric and geospace regions, and the implications for life and habitability at the Earth and beyond.

The LPAG enables direct regular communication between NASA and the heliophysics community, and within the heliophysics community, through public meetings that provide opportunities for scientific and programmatic input to the NASA Heliophysics Division. Structurally, two LPAG Co-Chairs and the LPAG Executive Committee (EC) are appointed members whose responsibilities include organizing meetings, collecting and summarizing community input, and the preparation of any subsequent reporting to the NASA Heliophysics Division Director (HDD). The full LPAG consists of all members of the community who participate in the open meetings.

Examples of the broad range of activities that the LPAG may be called on to address include the following and are to be accomplished with the widest possible community involvement:

- Articulate the key scientific drivers for LWS research including focused science topics (FSTs), strategic capabilities, cross-cutting research, and others;
- Evaluate the expected capabilities of potential LWS missions for achieving the science goals of the Program;
- Evaluate LWS goals, objectives, investigations, and required measurements;
- Articulate focus areas for needed targeted research topics and mission technologies; and
- Provide analysis on related activities such as ground-based observing, theory and modeling programs, laboratory heliophysics, suborbital investigations, data archiving, and community engagement.

## MEMBERSHIP

The two Co-Chairs of the LPAG are drawn from the U.S. heliophysics community and are appointed by the Heliophysics Division Director. The Co-Chairs are assisted by both a Heliophysics Division staff member, who is the liaison between the LPAG and NASA, and by the LPAG Executive Committee, which supports planning and conducting activities of the

LPAG. The liaison between the LPAG and NASA is usually the LWS Program Scientist or LWS Science Lead, and is appointed by the HDD. Nominations for the LPAG Executive Committee are solicited through an open "Dear Colleague" letter to the community. Recommendations for appointment are made by the LPAG Co-Chairs, in consultation with the NASA liaison, and approved by the HDD. The LPAG Executive Committee is constituted to achieve a functional balance and diversity among members of the Heliophysics community. The nominal term for the members of the Executive Committee is three years. To maintain continuity yet also provide continued opportunity to the community, roughly one third of the LPAG Executive Committee membership will be replaced annually.

## MEETINGS

The LPAG will typically meet biannually or as otherwise needed based on the requirements of ongoing LPAG activities. LPAG activities will be initiated from the Heliophysics Division, in consultation with the LPAG Co-Chairs. The LPAG Co-Chairs and Executive Committee will set the annual meeting schedule and plan for community input through the LWS web site, online discussions, sessions at scientific meetings, or Town Halls.

The LPAG may choose to organize sub-groups (e.g., Science Analysis Groups – SAGs, Science Interest Groups - SIGs) to deal with specific issues and report their findings to the full group. A SAG is typically tasked with reporting on a specific issue, and when the analysis of that issue is complete the SAG is disbanded. A SIG is typically tasked with collecting community input from a specific community on a longer-term basis. Establishment of such subgroups should address a clearly-defined NASA programmatic need or represent an acknowledged component of NASA's LPAG portfolio (in the case of SIGs), and must be approved by the Heliophysics Division Director.

## REPORTING

The findings and analysis activities of the LPAG will be reported through written reports to NASA as well as presentations at public forums including, when requested by the Heliophysics Division Director, meetings of the NASA Heliophysics Advisory Committee (HPAC). All findings and analysis submitted to NASA by the LPAG will be made publicly available through the LWS website.

## ADMINISTRATIVE PROVISIONS

Logistical and organizational support to the LPAG Co-Chairs and Executive Committee members will be provided through Heliophysics Science Division staff members at the Goddard Space Flight Center (GSFC) and/or the NRESS support contractor on behalf of the SMD Heliophysics Division. The support by GSFC will include maintaining the LWS website and email notification list, collecting and posting LPAG reports and associated HPAC findings on the LWS web site, and other needed communication activities. The support by NRESS includes arranging logistics for LPAG meetings (e.g. arranging for meeting space, travel for Executive Committee members).

DURATION

The LPAG may be terminated at the discretion of the Heliophysics Division Director. If the LPAG terminates, the LPAG terms of reference also terminate, and all appointments to the LPAG Executive Committee terminate.



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Peg Luce  
Acting Heliophysics Division Director  
Science Missions Directorate

10/19/2017

\_\_\_\_\_  
Date

## Appendix A: Science Analysis Groups (SAGs)

In order to address a specific LWS Program issue, a SAG may be established in order to perform analysis and report findings to the LPAG. SAGs are established with the approval of the Heliophysics Division Director and the concurrence of the LPAG chair, the LWS Program Scientist, and the LWS Program Chief Scientist. The Heliophysics Division Director may consult with the Heliophysics Advisory Committee before approving the establishment of a SAG.

Once the findings are reported, the SAG is closed out. The report may take the form of a white paper, or a presentation to the LPAG. The Heliophysics Division Director may require the SAG report to be accepted by the Heliophysics Advisory Committee before it is closed out.

The Chair of a SAG is either a member of the LPAG Executive Committee (EC) or a member of the wider LPAG, and membership is drawn from the EC and the wider LPAG community.

## Appendix B: Science Interest Groups (SIGs)

In order to collect community input and address longer-term community interests, SIGs may be established. A SIG will have a single, well-defined area of interest (for example, a wavelength band or science topic). SIGs will report to the LPAG at each face-to-face meeting. SIGs are established with the approval of the Heliophysics Division Director and the concurrence of the LPAG chair, the LWS Program Scientist, and the LWS Chief Scientist. The Heliophysics Division Director may consult with the Heliophysics Advisory Committee before approving the establishment of a SIG.

The Chair of a SIG is either a member of the LPAG EC or a member of the wider LPAG, and membership is drawn from the EC and the wider LPAG community.