

B.14 HELIOPHYSICS SYSTEM OBSERVATORY DATA SUPPORT

NOTICE: 8-page Proposals are due August 1, 2019. As a result of this shortened timeline, no preliminary statement such as an NOI or Step-1 proposal is requested. Awards to non-governmental organizations will be as cooperative agreements. This program element only accepts proposals submitted by U.S. institutions, regardless of an observatory's location or management.

When proposers contact the Solar Data Analysis Center (SDAC) for the statement of support (see Section 2.3), the latter will discuss the archive's requirements not included in this program element. Proposers are strongly encouraged to contact SDAC as soon as possible. The SDAC point of contact may be found on the SDAC website: <https://umbra.nascom.nasa.gov/index.html/>.

1. Scope of Program

The Heliophysics System Observatory Data Support (HSO Data Support) program solicits proposals for ground-based solar and coronagraphic observations that would complement and provide context for the Parker Solar Probe (PSP) data set, and enable an enhanced science return from the mission. These observations are expected to cover as much as possible of the 30 days before and 30 days after the 2019 and 2020 perihelia: 1 September 2019, 29 January 2020, 07 June 2020, and 27 September 2020.

HSO Data Support requires the acquisition, processing, and archiving of data from ground-based observatories; a limited amount of funding is available to cover required tasks in excess of normal operations.

While NASA expects observatories to interact with the PSP science team and the Solar Data Analysis Center (SDAC) to optimize data acquisition and archiving, this solicitation does not support science investigations or any other task beyond those necessary for the archiving of the specified observations.

The HSO Data Support program is a component of the Heliophysics Research Program. Proposers interested in this program element are encouraged to read ROSES Appendix B.1, Heliophysics Research Program Overview.

2. Proposal Guidelines

Guidelines for the content and formatting of proposals are specified in Table 1 of the *ROSES Summary of Solicitation*, and the *NASA Guidebook for Proposers*. Those guidelines apply except where superseded by this program element.

2.1 Required Archival Products

Proposals to this program element shall commit to archiving the following products for the proposed observations:

- Level 0 data. (i.e., unprocessed data, along with any instrumental measurements needed to remove those effects – flat-fields, darks, reference spectra, etc.);
- Level 1 data. (i.e., science data with instrumental effects removed);

- Level 2 data, if put into physical units. (i.e., spectra converted into wavelength and fluxes, as opposed to pixels and DN);
- Documentation describing the observation method. (This should be an outline of the instruments used, the modes (if any) of said instruments, and the weather conditions while the data were obtained);
- Documentation describing the Level 0 and the Level 1 processing. (If a pipeline was used to obtaining Level 1 and Level 2 data, the algorithm used in the pipeline. The FITS headers will have the appropriate usual parameters so that the provenance of the data can be traced);
- All data files shall be produced in the Flexible Image Transport System (FITS) format and delivered (with metadata and other documentation) to the Solar Data Analysis Center (SDAC). All accompanying documentation shall be delivered as PDFs. Delivery of every processed set of observations shall be completed no more than 90 days after the respective perihelion. The data will be subject to verification on the NASA archive side to ensure that the data delivered meet the requirements of the points enumerated above.

2.2 Proposal Participants

The proposal PI shall, in addition to tasks related to the project's leadership, be responsible to NASA for 1) leading necessary interactions with the PSP science team and SDAC, 2) ensuring that the observation acquisition are optimized to complement the PSP data set, and 3) ensuring that the acquired observations are delivered to SDAC consistent with the requirements of this program element.

The proposal team shall include a cognizant representative of the observatory as Co-/Institutional PI, if that individual is not the proposal PI. Technical individuals at the observatory do not need to be identified by name but their roles and responsibilities must be clearly described.

The proposal need not identify postdoctoral researchers and students by name, but shall clearly describe their roles and responsibilities within the Scientific/Technical/Management section.

2.3 Proposal Content

Proposals may only include tasks that are necessary for the acquisition, processing, and archiving of the ground-based observations. As part of those tasks, proposals may request support for necessary virtual and face-to-face meetings with the PSP science team and SDAC.

Proposals shall include a letter of resource support from their observatory's relevant management, as described by the *NASA Guidebook for Proposers* (Section 3.17). This requirement holds regardless of whether the observatory is managed by the proposing institution or the observatory's geographic location.

Proposals shall include a statement of support from SDAC. Proposers are strongly encouraged to email the SDAC point of contact as soon as possible to ensure receipt of the statement before the proposal due date. As part of this interaction with SDAC, the archive will discuss the archive's requirements not included in this program element.

Contact information for the SDAC POC may be found on the SDAC webpage:
<https://umbra.nascom.nasa.gov/index.html/>.

Proposals shall adequately describe the observations to be acquired and address how those observations would complement and provide context for the PSP data set, and enable an enhanced science return from the mission. This includes, but is not limited to:

- A description of the observatory and observation method(s);
- A description of the observations, including measurement characteristics (e.g. field of view, physical units, accuracy, precision, sensitivity);
- A description of the plan to optimize the acquisition and the archiving of the observations;
- The expected duration of coverage (barring weather) around each perihelion; and
- The expected cadence during observing times.

Proposals shall adequately address the preparation of data products and their delivery to SDAC. This includes, but is not limited to:

- A description of the observation processing and calibration;
- A description of the files documenting the observations, and their processing and calibration for archiving with SDAC;
- The estimated organization, number, and size of the archival files;
- The estimated level of effort to acquire, process, and calibrate the data;
- The estimated level of effort to produce the accompanying documentation; and
- The estimated schedule for deliveries to SDAC.

2.4 Proposal Format

All proposals submitted to ROSES must strictly conform to the formatting rules in the *ROSES Summary of Solicitation*, except where superseded by this program element.

- Scientific/Technical/Management section: No more than 8 pages.
- Margins: No less than 1 inch on all sides, with a page size of 8.5 × 11 inches.
- Font: Times New Roman, 12-point or larger. If an alternate font is used, it must meet the requirement of having, on average, no more than 15 characters per inch.
- Line spacing: Font and line spacing settings must produce text that contains, on average, no more than 5.5 lines per inch.
- Figure captions: Captions must follow the same font and spacing rules as the main text.
- Figures and tables: For text in figures and tables, font and spacing rules listed above do not apply, but all text must be judged to be legible to reviewers without magnification above 100%. Expository text necessary for the proposal may not be located solely in figures or tables, or their captions.

3. Proposal Submission, Evaluation, and Selection

3.1 Proposal Submission

This program element does not request a Notice of Intent nor a Step-1 proposal. Full proposals are due 30 days after the release of this program element. See Tables [2](#) and [3](#) of this ROSES NRA.

This program element only accepts proposals submitted by U.S. institutions. Those institutions are responsible for the execution of the proposed work and the management of all sub-award/sub-contract activities, consistent with requirements specified in Sections III(a) and IV(d) of the *ROSES Summary of Solicitation*. That is, participation in ROSES-funded research by non-U.S. organizations in this program is welcome, but on a "no exchange of funds" basis. However, the acquisition of observations, processing, and delivery of archival products from non-U.S. sources by U.S. award recipients is permitted. See [ROSES FAQ #14 on this topic](#) and guidebook references therein.

3.2 Proposal Evaluation

Given the time-sensitive nature of the solicited observations, proposals submitted to this program element will be subject to a rapid evaluation process and proposers will receive an abridged evaluation, consistent with NASA policy.

Compliant proposals will be evaluated according to the criteria specified in Section VI(a) of the *ROSES Summary of Solicitation* and the *NASA Guidebook for Proposers*. In addition, proposals to this program element will be evaluated according to the following specifics:

- Intrinsic Merit will include consideration of how the ground-based observations would complement and provide context for the PSP data set, including related to points listed in and similar to those listed in Section 2.2 of this program element.
- Intrinsic Merit will include consideration of how the ground-based observations would enable an enhanced science return from the PSP mission, including related to points listed in and similar to those listed in Section 2.2 of this program element.
- Intrinsic Merit will include consideration of the usefulness and usability of the archival data products and their accompanying documentation, including related to points listed in and similar to those listed in Section 2.2 of this program element.
- Intrinsic Merit will include consideration of the plan to optimize both the acquisition and the archiving of the observations, including communications with the PSP science team and SDAC.

3.3 Proposal Selection

Selections for this program element will weigh NASA programmatic interests more than research-focused programs. Programmatic interests include, but are not limited to, type of observation, observation temporal coverage, and observatory geographic coverage.

Proposals may be declined for non-compliance, non-responsiveness to this program element, and/or non-adherence to the program element's requirements. If warranted and appropriate, this decline may be without review.

4. Award Types

This program element will award funds through three vehicles: (1) cooperative agreements, (2) interagency transfers, and (3) awards to NASA Centers. This program element will not award contracts or grants.

Because of the required interactions between the proposer and the PSP Mission Science Team and the SDAC, awards to non-governmental organizations will be cooperative agreements.

5. Summary of Key Information

Expected annual program budget for new awards.	\$600k
Number of new awards pending adequate proposals of merit	4
Maximum duration of awards	2 years; shorter-term proposals are allowed
No NOIs or Step-1 Proposals	No NOIs or Step-1 Proposals
Due date for full proposals	See Tables 2 and 3 of this ROSES NRA
Page limit for the central Science-Technical-Management section of proposals	8 pp; see also Table 1 of ROSES and the <i>NASA Guidebook for Proposers</i>
Planning date for start of investigation	3 months after proposal due date
Relevance	Proposals that are relevant to this program are, by definition, relevant to NASA.
General information and overview of this solicitation	See the ROSES-2019 Summary of Solicitation .
General requirements for content of proposals	See Section 3 of the NASA Guidebook for Proposers and Section IV and Table 1 of the ROSES-2019 Summary of Solicitation .
Detailed instructions for the submission of proposals	See https://nspires.nasaprs.com/tutorials/ Sections 3.22-4.4 of the NASA Guidebook for Proposers and Section IV(b) of the ROSES-2019 Summary of Solicitation .
Submission medium	Electronic proposal submission is required; no hard copy is permitted
Web site for submission of proposal via NSPIRES	http://nspires.nasaprs.com/ (help desk available at nspires-help@nasaprs.com or (202 479-9376)
Funding opportunity number for downloading an application package from Grants.gov	NNH19ZDA001N-HSODS

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