

F.3 EXOPLANETS RESEARCH PROGRAM

NOTICE: Step-2 proposals submitted to this program will be evaluated using a dual-anonymous review process. Proposals must be prepared according to the guidelines in Section 3.4 and in the associated "Guidelines for Anonymous Proposals" document under other documents on the NSPIRES page for this program element. The OSDMP now must be placed in its own section, no longer than two pages in length, immediately following the References and Citations for the 15-page S/T/M Section of the proposal, see Section 3.5.

1. Scope of Program

The Exoplanets Research Program (XRP) element solicits basic research proposals to conduct scientific investigations that significantly improve our understanding of exoplanets and exoplanet formation. This program element is cross-divisional and jointly managed by four of the Divisions within NASA's Science Mission Directorate: Astrophysics, Planetary Science, Heliophysics, and Earth Science. Proposed investigations that combine multiple scientific disciplines or cross traditional Divisional science boundaries, in particular by including topics or analysis techniques from the Heliophysics and/or Earth Science disciplines, are highly encouraged.

Proposed XRP investigations should involve one or more of the following:

- Detection of exoplanets and/or confirmation of exoplanet candidates;
- Characterization of exoplanets and exoplanetary systems (including statistical and demographic studies);
- Studies of exoplanet interactions with their host stars and/or of host star properties that directly impact our understanding of exoplanetary systems;
- Exploration of the chemical and physical processes of exoplanets (including the state and evolution of their surfaces, interiors, and/or atmospheres);
- Improvements to our understanding of the formation and evolution of exoplanets and exoplanetary systems, including studies of protoplanetary/debris disks.

XRP supports observational, laboratory, modeling, and theoretical studies. Proposed investigations should involve the collection and analysis of new data, analysis of archival data, collection and interpretation of laboratory data, and/or development of an observationally testable prediction or theory. Proposals must also clearly describe how results will facilitate the interpretation of data from NASA space missions and/or lead to predictions that can be tested with NASA space mission observations.

2. Programmatic Information

2.1 Scope Clarifications

XRP supports observations made at any ground-based facility, public or private, especially those supported by NASA. Proposals with ground-based observational components must provide clear and compelling justification that they support NASA missions. If future observations are proposed, the facility and all instrumentation specific to the investigation must be in scientific operation at the time of proposal submission, and the proposal must provide evidence of current instrument performance and data

quality. Additionally, the proposal must state whether the observing time to support the proposed investigation has been awarded, and provide (in the "Expertise and Resources Not Anonymized" document, see Section 3.4) any documentation needed to support this statement. Furthermore, the purchase of any ground-based telescope time must be integral to the proposed investigation and account for < 25% of the total cost.

The following are also within scope of XRP, but only if the proposal convincingly demonstrates that the focus of the investigation is the advancement of exoplanet science:

- Observational proposals focused on detecting, validating, or characterizing potentially habitable planets;
- Observational proposals focused on supporting the detection of biosignatures using current or future space telescopes;
- Observational, archival, theoretical, and modeling proposals focused on the detection of technosignatures;
- Observational, archival, theoretical, and modeling proposals focused on stellar objects or brown dwarfs;
- Studies that use comparisons to bodies within our Solar System;
- Software/algorithm development proposals for data analysis;
- Cross-disciplinary proposals that utilize Heliophysics and/or Earth science concepts, instruments, laboratory facilities, models, and/or other techniques;
- Archival investigations using data from NASA astrophysics missions.

For programs that may have potential scope issues, consultation with an XRP Program Officer before the Step-1 proposal submission deadline is highly encouraged.

2.2 Exclusions

XRP is intended to encompass the majority of research investigations where exoplanets are the primary focus. However, some overlap with other ROSES program elements remains, resulting in the following exclusions:

- Studies focused on understanding the formation of our own Solar System (see instead program element C.2 Emerging Worlds);
- Theoretical or laboratory investigations focused on defining, understanding, or characterizing biosignatures (see instead C.5 Exobiology);
- Theoretical or laboratory investigations focused on habitable environments (see instead F.4 Habitable Worlds);
- Investigations focused on technology development for exoplanet space missions or suborbital-class experiments that advance exoplanet science (see instead D.3 Astrophysics Research and Analysis Program).

For proposals that may fall within these exclusion areas, consultation with an XRP Program Officer before the Step-1 deadline is highly encouraged in order to identify the most appropriate program element for submission.

Additionally, the following are excluded from XRP:

- Investigations containing major work elements for collecting and/or analyzing data from a single current or future Great Observatory that has a General Observer or Archival Research program (Hubble, Chandra, Fermi, Webb). Use of

archival data from these missions is compliant only when analyzed in conjunction with data from one or more other NASA space astrophysics missions.

- Investigations containing major work elements for collecting data from any NASA mission that has a General Investigator program (e.g., TESS). Such investigations should respond directly to the General Investigator programs of the relevant missions.
- Investigations with the primary objective of maintaining and/or operating observing facilities, or installing, developing, commissioning, and/or determining the integrated performance of instrumentation.
- Proposals that are essentially identical to another proposal submitted to a different but concurrent program element within ROSES (those for which selection decisions have not yet been made).

As a general guideline, proposed investigations may include a small (<25%) fraction of the effort for otherwise-excluded elements, however these must be well justified within the context of the overall proposal.

2.3 Facilities Available to Proposers

Investigators whose research requires high-performance computing should refer to the *ROSES Summary of Solicitation*, Section I(e), "NASA-provided High-End Computing Resources" under "Announcement Documents" on the NSPIRES page for this program. This section describes the opportunity for successful proposers to XRP to apply for computing time on either of two NASA computing facilities at the Goddard Space Flight Center's Computational and Information Sciences and Technology Office or at the Ames Research Center's Advanced Supercomputing Division.

2.4 Early Career Programs

XRP will participate in the Planetary Science Division's Early Career Award (ECA; see C.18 for details), with the aim of supporting the research and professional development of outstanding early-career scientists in areas relevant to the Planetary Science Division. Potential ECA proposers should carefully read C.18 for guidelines and restrictions on such proposals.

2.5 Duration of Awards

Most XRP proposals are anticipated to seek three years of funding. Proposals for fewer than three years are encouraged for projects that can be completed on shorter timescales. Four-year proposals are allowed but must clearly justify the need for the longer duration; this justification will be considered as part of the evaluation process.

2.6 Selecting Officials

Selections for XRP will be jointly made by the appointed Selection Officials of all participating Divisions of the Science Mission Directorate.

2.7 Research Coordination Networks

PIs of proposals selected for funding from XRP are eligible to become members of the Steering Committees of the Research Coordination Networks (RCNs) provided that the proposed investigation is aligned with the goals of a currently active RCN. For more information, see <https://astrobiology.nasa.gov/news/astrobiology-program-faqs/>.

Relevance to an RCN is not an evaluation criterion for the proposals submitted to this program element, and eligibility for participation in an RCN does not indicate that additional research funding will be provided.

3. Proposal Preparation, Submission, and Evaluation

3.1 Step-1 Proposal

XRP will use a two-step proposal submission process (see Section IV(b)vii of the *ROSES Summary of Solicitation*). Step-1 proposals are required and must be submitted electronically by the Authorized Organizational Representative (AOR) of the proposing organization; only proposers who submit Step-1 proposals will be eligible to submit Step-2 proposals. Budgets are not required for Step-1 proposals. Submission of a Step-1 proposal does not obligate a proposer to submit a Step-2 (full) proposal.

Proposers should refer to the “Instructions for Submitting a Step-1 Proposal” under “Other Documents” on the NASA Solicitation and Proposal Integrated Review and Evaluation System (NSPIRES) web page for this program. The Step-1 proposal is entered directly into a text field on the NSPIRES web interface and is restricted to 4,000 characters; no attachments are required or permitted. The Step-1 proposal should include the PI and team members, a description of the science goals and objectives to be addressed by the proposal, a brief description of the methodology to be used to address the science goals and objectives, and the relevance of the proposed research to this call. The Step-1 proposal may be used to determine whether the proposal was submitted to the correct program element, but no further evaluation is performed for Step-1 proposals. The Step-1 proposal need not be anonymized. NSPIRES will notify proposers whether their Step-1 proposal is encouraged or discouraged, at which point they will be able to create a Step-2 proposal via NSPIRES.

3.2 Step-2 (Full) Proposal

Proposers should refer to the document entitled “How to submit a Step-2 proposal” under “Other Documents” on the NSPIRES page for this program. Full (Step-2) proposals must broadly contain the same scientific goals proposed in the Step-1 proposal. Between the Step-1 and Step-2 proposals, to change the PI (only to listed Co-Is at the proposing organization) or to add funded investigators, proposers must inform the point(s) of contact identified in the summary table of key information and cc sara@nasa.gov at least two weeks in advance of the Step-2 proposal due date. The Step-2 proposals are due by the date given in Tables [2](#) and [3](#) of this ROSES NRA. Proposals must follow all formatting requirements that are described in Section IV(b)ii of the *ROSES Summary of Solicitation* and the [NASA Proposer's Guide](#). Violation of these rules is sufficient grounds to reject a proposal without review.

3.3 Evaluation

All proposals will be evaluated for Intrinsic Merit, Relevance, and Cost Reasonableness, as specified in Section V(a) of the *ROSES Summary of Solicitation*.

XRP proposals will be evaluated, in part, on their significance to and impact on the advancement of exoplanetary science. Proposals that have a near-term impact (within 5 years) are particularly encouraged.

XRP proposals will be evaluated, in part, on how the proposed work would support past and current NASA missions and/or how it would facilitate the formulation and development of future NASA missions and strategic exoplanet programs. Proposers are encouraged to familiarize themselves with the Exoplanet Exploration Program's Science Gap List (which can be downloaded from <https://exoplanets.nasa.gov/exep/science-overview>). However, the identification of novel science investigations beyond these plans and gaps is highly encouraged.

3.4 Dual-Anonymous Peer Review

Step-2 Proposals submitted to this program will be evaluated using a dual-anonymous peer review (DAPR) process in which not only are proposers unaware of the identity of the reviewers, the reviewers are not told the identity of the proposers until after the evaluation of the anonymized proposal (see below). The objective of dual-anonymous peer review is to minimize bias in the evaluation of a proposal.

Proposers must follow the instructions in the "Guidelines for Anonymous Proposals" document under "Other Documents" on the NSPIRES page for this program element that explains how to properly prepare the proposal for dual-anonymous peer review.

The forms filled out on the NSPIRES web pages with Proposal Summary, Budget, Proposal Team and Program Specific and Business Data known as the NSPIRES "cover pages" will be partly hidden for the peer reviewers. The Proposal Summary must be anonymized but all other sections of the NSPIRES cover page should be completed as normal and NSPIRES will hide the identifying information from the reviewers. The proposal document must be anonymized, and proposers must upload a separate "Expertise and Resources Not Anonymized" document, that contains all of the personally (and organizational) identifying information.

Review panels will be instructed to evaluate the anonymized proposals without taking into account the qualifications and capabilities of the proposers. After the evaluation of the anonymized proposal has been finalized for all proposals, panelists will be provided with the "Expertise and Resources Not Anonymized" documents, typically for a subset of proposals that scored highly (depending on the grades and projected selection rates). The panel will then assess the qualifications and capabilities of the team for these proposals and provide comments to NASA.

A summary of the key requirements for anonymized Step-2 proposals, reproduced from the "Guidelines for Anonymous Proposals" document, is listed in the table below. For additional details regarding DAPR, please visit the Science Mission Directorate's DAPR page: <https://science.nasa.gov/researchers/dual-anonymous-peer-review>.

Table F.3-1 Key Requirements for Anonymized Step-2 Proposals

Item	Requirement
Proposal Document PDF file	In addition to anonymizing the content, ensure that any PDF bookmarks are anonymous, and the document properties do not reveal names of author or organization.
Science-Technical-Management	The S/T/M section must be anonymized. Omit all names of team members and names of their organizations.

(S/T/M) section of proposal	
Open Science and Data Management Plan (OSDMP)	OSDMP must be anonymized and placed in its own section, no longer than two pages in length, immediately following the References and Citations for the 15-page S/T/M Section of the proposal. See also Section 3.5 of this program element.
References	References must be in the [1], [2] format.
Biographical Sketches	Do not include in main proposal document. Include in separate "Expertise and Resources Not Anonymized" document.
Table of Personnel and Work Effort	Include in an anonymized fashion (e.g., PI; Co-I#1; Co-I#2) in the main proposal document and in non-anonymized fashion in the separate "Expertise and Resources Not Anonymized" document. Proposers are encouraged to use the Planetary Science Division template, which may be found here .
Current and Pending Support	Do not include in main proposal document. Include in separate "Expertise and Resources Not Anonymized" document.
Letters or Statements	All Statements of Commitment and Letters of Support, Feasibility or Endorsement are to be included in the separate "Expertise and Resources Not Anonymized" document.
Redacted Budget and Narrative	Include both redacted budget and narrative in proposal document in an anonymized format. Redacted budgets must not include institutional logos or insignia.
Facilities and Equipment	The Facilities and Equipment Section is to be placed only in the separate "Expertise and Resources Not Anonymized" document. However, the S/T/M Section of the anonymized proposal should address the need for and capabilities of facilities and equipment necessary for the proposed research in an anonymized fashion. Any unique/identifying descriptions of facilities and evidence of access to or affiliation with facilities are to be included in the separate "Expertise and Resources Not Anonymized" document.
Separate "Expertise and Resources Not Anonymized" document	Upload as a separate document in NSPIRES. Choose Attachment Type = "Expertise and Resources Not Anonymized". This document provides a list of all team members, their roles, institutional affiliations, expertise, and contributions to the work. The document should also discuss any specific resources, including facilities and equipment, that are key to completing the proposed work, as well as a summary of work effort. Statements of Current and Pending Support must also be included. Any formal relationship with the sponsoring agency's mission shall be described in this section. Membership in ongoing mission science teams that may overlap with the proposed research shall be described in this section. Letters of support, e.g., from facilities or archives, must be included in this section.

Total Budget	Upload as a separate document in NSPIRES. Choose Attachment Type = Total Budget. The mandatory total budget file is full and complete with all costs for those at U.S. organizations, including those at government laboratories. It is not redacted or anonymized.
High-End Computing request	Submit optional not-anonymized PDF HEC form as attachment type "Optional HEC request" in NSPIRES. The S/T/M section in the main proposal must state that a HEC request is included and must provide an outline of the computing resources required in an anonymized fashion.

3.5 Open Science and Data Management Plan

Proposals submitted to XRP must include an anonymized Open Science and Data Management Plan (OSDMP). The OSDMP must be no longer than 2 pages and located in its own section immediately following the References and Citations for the 15-page S/T/M Section of the Step-2 proposal. The quality of the OSDMP will be evaluated as part of Intrinsic Merit. For additional information on the required components of an OSDMP, see Section 2 of F.1 The Cross Division Research Overview, the [ROSES Open Science and Data Management Plan FAQ](#) and the [SMD Open-Source Science Guidance](#).

4. Summary of Key Information

Expected program budget for first year of new awards	~ \$4.0 M
Number of new awards pending adequate proposals of Intrinsic Merit	~ 25
Maximum duration of awards	3 years; 4 years if well-justified (see Section 2.5)
Due date for Step-1 proposals	See Tables 2 and 3 of this ROSES NRA.
Due date for full Step-2 proposals	See Tables 2 and 3 of this ROSES NRA.
Planning date for start of investigation	January 1, 2025
Page limit for the central Science/Technical/Management section of proposal	15 pp; see also Table 1 of <i>ROSES-2024</i> .
Relevance	This program is relevant to the questions and goals of the Science Mission Directorate as described in the NASA Science Plan. Proposals that are relevant to this program are, by definition, relevant to NASA.
General information and overview of this solicitation	See the <i>ROSES Summary of Solicitation</i> .
General requirements for content of proposals	See Table 1 and Section IV of <i>the ROSES Summary of Solicitation</i> , and Section 3 of the NASA Proposer's Guide .

Detailed instructions for the submission of proposals	See NSPIRES Online Help , Sections 3.22-4.4 of the NASA Proposer's Guide and Section IV(b) of the <i>ROSES Summary of Solicitation</i> .
Submission medium	Electronic proposal submission is required; no hard copy is permitted.
Web site for submission of proposals via NSPIRES	http://nspires.nasaprs.com/ (help desk available at nspires-help@nasaprs.com or (202) 479-9376)
Web site for submission of proposals via Grants.gov	https://www.grants.gov/ (help desk available at support@grants.gov or (800) 518-4726)
Funding opportunity number for downloading an application package from Grants.gov	NNH24ZDA001N-XRP
Main Point of contact concerning this program	John Wisniewski Email: hq-xrp@mail.nasa.gov