



National Aeronautics and
Space Administration

NASA's Astrophysics Funding and Proposal Opportunities

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Science Funding: Meet ROSES

The bulk of NASA funding for individual investigators within the Science Mission Directorate (SMD) comes through Research Opportunities in Space and Earth Sciences (ROSES; <https://science.nasa.gov/researchers/solicitations/roses-2024/research-opportunities-in-space-and-earth-science-roses-2024-released/>)

- An omnibus solicitation with ~170 separate programs across all 5 Divisions in NASA's Science Mission Directorate
- ROSES is released once per year on Valentine's Day (Aww...)
- While ROSES is released in February, the submission dates can be as early as April of that calendar year, they can be as late as May of the following year
- Some ROSES programs have a Step 1 / Step 2 format, or Notice of Intent to submit (NOI)
 - Some have Step 1s / NOIs *required*, for others they are *optional*

Science Funding: Meet ROSES

There are about 20 ROSES programs in Astrophysics (ROSES Appendix D)

- Big, broad programs: Astrophysics Data Analysis (ADAP; D.2), Astrophysics Theory (ATP; D.4), Theoretical and Computational Astrophysics Networks (TCAN; D.12)
- Guest Investigator/Observer programs: Swift GI (D.5), Fermi GI (D.6), NuSTAR GO (D.9), TESS GI (D.10), NICER GO (D.11), IXPE GO (D.16), XRISM GO (D.17), Euclid (D.18)
- Technology programs: Astrophysics Research and Analysis (APRA; D.3), Strategic Astrophysics Technology (SAT; D.7)
- One-off or special programs: Nancy Grace Roman Space Telescope Research and Support Participation Opportunities (D.14), LISA Preparatory Science (D.15), Euclid General Investigator Program (D.18), Habitable Worlds Observatory System Technology Demonstrations and Mission Architecture Studies (D.19), Exoplanet Mass Measurement Program (EMMP; D.20), U.S. Contributions to Ariel Preparatory Science (D.21)
- Fellowships: Nancy Grace Roman Technology Fellowships in Space Astrophysics for Early Career Researchers (Part of APRA & SAT; D.8)
- Mission Opportunities: Astrophysics Pioneers (D.13)
- Also some cross-divisional programs in Appendix F: Exoplanet Research Program (XRP; F.3), Future Investigators in NASA Earth and Space Science and Technology (FINESST; F.5), Support for Open-Source Tools, Frameworks, and Libraries (F.7), Citizen Science Seed Funding Program (F.9)

Science Funding: Meet ROSES

Things to know or read for ROSES

- **ROSES Summary of Solicitation:**
<https://nspires.nasaprs.com/external/viewrepositorydocument?cmdocumentid=983947&solicitationId={600EE5E5-E9D5-FF55-0CAD-764F6D4BEEA9}&viewSolicitationDocument=1>
- **ROSES Appendix D Summary, Astrophysics Research Program Overview (D.1):**
<https://nspires.nasaprs.com/external/viewrepositorydocument?cmdocumentid=974340&solicitationId={3C497801-DB33-9F39-7636-1208E074A711}&viewSolicitationDocument=1>
- **ROSES list of Programs (Due Date Order):**
https://nspires.nasaprs.com/external/viewrepositorydocument/cmdocumentid=974327/solicitationId=%7B600EE5E5-E9D5-FF55-0CAD-764F6D4BEEA9%7D/viewSolicitationDocument=1/Table%20%20ROSES-2024%20Amend65_HWOTAS.html
- **ROSES list of Programs (Appendix Order):**
https://nspires.nasaprs.com/external/viewrepositorydocument/cmdocumentid=974328/solicitationId=%7B600EE5E5-E9D5-FF55-0CAD-764F6D4BEEA9%7D/viewSolicitationDocument=1/Table%203%20ROSES-2024%20Amend%2065_HWOTAS.html

These are references, not fast-paced or exciting reads!

Ways to learn more

- All programs have Program Officers in charge of writing the solicitation, organizing the reviews and preparing the selections. Contact the relevant Program Officer with questions! Ask if your idea would be suitable for that program.

Science Funding: Mechanics

Nuts and Bolts

- All ROSES programs go through NASA Solicitation and Proposal Integrated Review and Evaluation System (NSPIRES): <https://nspires.nasaprs.com/external/index.do>. Sign up for an NSPIRES account!
- In general, there are 4 roles for people in a proposal:
 - **Principal Investigator (PI):** The main person who presumably writes the bulk of the proposal and is responsible for carrying out the project.
 - **Co-Investigator (Co-I):** Someone part of the project whose participation is essential to the work who will be receiving funding in some way.
 - **Collaborator:** Someone part of the project whose participation may or may not be essential to the work, who will NOT be receiving funding (these can be non-US participants).
 - **Graduate Students:** Students who will be participating in the project.
- The federal government does not give grants to individuals, but rather to *institutions*. All institutions have a grants office (e.g., Office of Research, Office of Sponsored Programs, etc.) that handles the actual submissions. NASA refers to these offices as your Authorized Organizational Representative (AOR). Go talk to them before you propose to know their rules.
- Some institutions only allow certain categories of employees to be a PI on a grant; this is often an issue for postdocs. Many institutions may be willing to give a postdoc a title like “research assistant professor” which has no change to pay or benefits, but does allow them to be a PI.

Science Funding: Mechanics

More Nuts and Bolts

- Program Officers cannot tell you ahead of time if your proposal idea is competitive, but they can tell you whether it appears to be compliant.
- (Almost) all programs operate under Dual Anonymous Peer Review (DAPR):
 - The proposal has to be written without mentioning your identity or affiliation. You must write the proposal with reference to the proposed science, not your own background, expertise, or resources. That information will typically go into an Expertise and Resources (E&R) document that you also submit.
- Your Authorized Organizational Representative (AOR; i.e., your local grants office) will likely require you to provide the full proposal to them days or weeks before the NASA deadline.
- The best way to learn how to write good proposals is to serve on review panels:
 - Volunteer here: <https://science.nasa.gov/researchers/volunteer-review-panels/>
 - You must be post-PhD, but no other constraints. Any institution, domestic or international, any citizenship.
 - You get paid!
- Other ways to learn more:
 - NASA Town Halls at conferences
 - Mission Project Offices to learn about that mission's GI/GO program
 - Program Offices ([PhysCOS](#), [COR](#), [ExEP](#))