National Aeronautics and Space Administration



SPD-41a: Scientific Information Policy for the Science Mission Directorate NASA Science Mission Directorate (SMD)

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SPD-41a is SMD's updated Scientific Information Policy.

- <u>SPD-41a</u> updates the previously released <u>SPD-41</u>, which consolidated existing Federal and NASA policy on sharing scientific information.
- Policy updates were developed with:
 - Science Mission Directorate (SMD) community input via workshops and RFIs
 - National Academies studies
 - OSTP Memo on Ensuring Free, Immediate, and Equitable Access to Federally Funded Research
- One component of NASA's broader <u>Open-Source Science Initiative</u> (OSSI)





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Scientific Information Policy Website

SPD-41a is built on the Open-Source Science Principles of Accessibility, Reproducibility, and Inclusion



SPD-41a aims to make SMD science as open as possible, as restricted as required, and always secure.

SPD-41a looks to maximize openness while minimizing the burden on researchers.



SPD-41a Policy Updates





SPD-41a is forward looking - applies to future SMD activities

- Updated policy requirements will apply to new missions and new grants starting with ROSES-2023 (to be released in Feb 2023). New missions are missions that have not yet reached Key Decision Point B by March 2023.
- Existing missions and grants are not required to adopt new guidance, but they are encouraged to do so if feasible with available resources.



Major Policy Updates

- Peer-reviewed publications are made openly available with no embargo period.
- Research data and software are shared at the time of publication or the end of the funding award.
- Mission data are released as soon as possible and unrestricted mission software is developed openly.
- Science workshops and meetings are held openly to enable broad participation.



Additional Highlights of SPD-41a:

- SMD funded investigators are required to have a PID such as ORCID.
- Awarded proposals will be assigned a DOI.
- Peer-reviewed data and software will have commensurate value as peer-reviewed publications.
- Introduces a requirement for a Software Management Plan.
- Encourage the adoption of Open Source Software and contributing to **Open Source Software.**
- Encourage participation in community standards. \bigcirc
- The policy also provides a clear variance process. \bigcirc





Exclusive Access





Exclusive Use in SPD-41a

- SPD-41a applies to new missions; exclusive use periods on existing missions (e.g., Hubble, Chandra, JWST) will be discussed on a case-by-case basis.
- SPD-41a does not take precedence over existing international agreements for missions like the James Webb Space Telescope that set a period of exclusive use for targeted observations, and any changes to those agreements will take place in consultation with our partners.
- The first variance for SPD-41 allows PI/project scientist to adjust exclusive use period in exceptional circumstances (e.g., to protect the timely completion of a graduate student's thesis).



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Exclusive Access in SPD-41a

"There shall be no period of exclusive access to Mission data. A period after the data have been obtained may be allowed for activities such as calibration and validation of the data. This period shall be as short as possible and shall not exceed six months."

- This period provides researchers time to validate the scientific quality of their targeted observations and experiments.
- SPD-41a also includes a process for variances when a longer period of time for calibration and validation is warranted for data from missions for exceptional reasons.





Additional Resources





SPD-41a aims to minimize burden on SMD-funded missions and researchers. Support from NASA's OSSI includes:

Open-Source Science Guidance for SMD-funded researchers

Scientific Information Policy FAQs TOPS Open Science training

Core services for cataloging, search and discovery, and computing Funding opportunities to support the adoption of open-source science practices



Scientific Information Policy Website



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Open-Source Science Guidance

- Narrative guidance on how to comply with SPD-41a; options and examples
- High-level, for relevance across SMD Divisions
- Adopts guidance published by other agencies
- Living document to be developed over time
- Contains:
 - Background and Motivation
 - Open Science and Data Management Plan
 - Sharing Publications
 - Data Management and Sharing
 - Software Management and Sharing
 - Sharing Materials for Science Events
 - Glossary of Open-Source Science Terms

Open-Source Science Guidance NASA Science Mission Directorate December 8, 2022 2022 EXPLORE SCIENCE





NASA OSSI Funding

F.2 Topical Workshops, Symposia, and Conferences

Events, Hackathons, un-conferences, and challenges that build open science skills, Training in open science. Rolling deadline.

Open Calls

F.8 Supplemental Open Source Software Awards

Supplemental award to encourage the conversion of legacy software to open source. \$200K awarded in ROSES20 to 6 awards. Yearly, \$250K available, rolling deadline.

F.15 High Priority Open-Source Science

Supporting innovative open source tools, software, frameworks, data formats, and libraries. Budget ~\$1M. Yearly, rolling deadline.

F.14 Transform to Open Science Training



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Tutorials showcasing open science in action and NASA cloud data, summer schools, virtual cohorts. Budget of \$4.5M per year. Once every three years. F.7 Support for Open Source Tools, Frameworks, and Libraries

Support and maintain open source tools, frameworks, and libraries that are significantly used by the SMD community.

F.16 Supplement for Software Platforms

Supplemental support to existing awards for usage of scientific platforms. Budget TBD.



Infrastructure: Core Services

Science Discovery Engine

Science Explorer

Develop and implement an SMD data catalog to support discovery and access to complex scientific data across Divisions.

Hyperwall talk on Wednesday Extend the primary digital library portal for researchers in astrophysics, planetary science & heliophysics, the Astrophysics Data System (ADS), to support Earth and Biological and Physical Sciences

Visit the ADS Booth

Data and Computing Infrastructure

On-going <u>Data & Computing</u> <u>Architecture</u> study to identify scientific data and computing capabilities and architectures that enable Open Science.

RFI closes Feb 21



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NASA's 2023 Year of Open Science

TOPS Priorities:

- 1. Release an introduction to open science curriculum, OpenCore
- 2. Engage with historically underrepresented groups
- 3. Develop open science incentives

Hear more at the NASA hyperwall talk Sunday at 7 pm

