National Science Foundation (NSF): NSF-AST: Astronomical Sciences

Products of the research

Describe the types of data and products that will be generated in the research, such as images of astronomical objects, spectra, data tables, time series, theoretical formalisms, computational strategies, software, and curriculum materials.

**Guidance:**
- NSF-AST Advice to PIs on DMPs
- NSF Proposal & Award Policies & Procedures Guide (PAPPG)
- NSF plans for data management and sharing of the products of research (PAPPG)
- NSF Frequently Asked Questions (FAQs) for Public Access

Data format

Describe the format in which the data or products are stored (e.g., ASCII, html, FITS, VO-compliant tables, XML files, etc.). Include a description of the metadata that will make the actual data products useful to the general researcher. Where data are stored in unusual or not generally accessible formats, explain how the data may be converted to a more accessible format or otherwise made available to interested parties. In general, solutions and remedies should be provided.

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- NSF Frequently Asked Questions (FAQs) for Public Access
- Ten Simple Rules for the Care and Feeding of Scientific Data (Suggestions on effective methods for sharing astronomical data)

Access to data and data sharing practices and policies

"Access to data" refers to data made accessible without explicit request from the interested party, for example those posted on a website or made available to a public database. Describe your plans, if any, for providing such general access to data, including websites maintained by your research group, and direct contributions to public databases. If maintenance of a web site or data base is the direct responsibility of your group, provide information about the period of time the web site or data base is expected to be maintained. Note that data taken at national or private observatories may be accessible through public archives (perhaps after a standard proprietary period). Various forms of data (e.g., FITS image and tables, other data tables) also may be deposited with published articles in the AAS journals and other journals. Particular attention should be paid to data sets that are products of well-defined surveys. Also describe your practice before or after formal publication.

"Data sharing" refers to the release of data in response to a specific request from an interested party. Describe your policies for data sharing, including where applicable provisions for protection of privacy, confidentiality, intellectual property, national security, or other rights or requirements.

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Policies for re-use, re-distribution and production of derivatives

Describe your policies regarding the use of data provided via general access or sharing. For example, if you plan to provide data and images on your website, will the website contain disclaimers, or conditions regarding the use of the data in other publications or products? If the data or products (e.g., images) are copyrighted (by a journal, for example), how will this be noted on the website?

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Archiving of data

Describe whether and how data will be archived and how preservation of access will be handled. If the data will be archived by a third party (e.g., national observatory or journal), please refer to their preservation plans if available.

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Software

Providing software to read and analyze scientific data products can greatly increase value of these products. Investigators should use one of many software collaboration sites, like Github.com. These sites enable code sharing, collaboration and documentation at one location.

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