

C.11 DISCOVERY DATA ANALYSIS

NOTICE: August 11, 2016, the point of contact for this program has been changed to Thomas Statler. See Section 5 for more information.

Clarified on June 20, 2016. The requirements on the archiving of data products have been modified for clarity and to make them more consistent with requirements in the other Data Analysis program elements. See Section 1.2. The due dates are unchanged. New text is in bold, deleted text is struck through.

Amended on March 10, 2016. This program element has been modified to permit proposals for work on Kepler/K2 observations of solar system targets. See Sections 1.1 and 1.3. New text is in bold, deleted text is struck through.

This Program Element continues to use a two-step proposal submission process described in Section 2 of Appendix C.1.

1. Scope of Program

The objective of the Discovery Data Analysis Program (DDAP) is to enhance the scientific return of Discovery Program missions by broadening the scientific participation in the analysis of data, both recent and archived, collected by Discovery missions.

1.1. Sources and Analysis of Mission Data

It is the responsibility of the proposers to DDAP to specifically identify any needed mission data and to ascertain that those data are publically available. Proposals dealing with mission data should provide convincing evidence that the data have sufficient quality and are available in sufficient quantity to achieve the goals set forth in the proposal. The proposer should demonstrate a familiarity with the data and an understanding of the work required to refine the data for the purposes of the analysis.

The following is a list of Discovery Missions for which archived data is available:

- [NEAR](#)
- [Stardust](#)
- [Genesis](#)
- [Deep Impact](#)
- [MESSENGER](#)
- [Dawn](#)
- [Kepler/K2](#) [Added March 10, 2016]

The following is a list of Discovery Missions of Opportunity for which archived data is available:

- [EPOXI](#)

- [Stardust-NExT](#)

Please note, proposals focusing on data returned from Mars Pathfinder and [ASPERA-3](#) should be submitted to C.9 Mars Data Analysis Program (MDAP), and proposals focusing on data from GRAIL, Lunar Prospector, and the Moon Mineralogy Mapper (M3) should be submitted to C.8 Lunar Data Analysis Program (LDAP). Proposals primarily focusing on data from these Martian and Lunar missions are not eligible for submission to DDAP.

Also note that DDAP investigations using Kepler/K2 data are limited to those using observations of Solar System objects. Proposals using Kepler/K2 observations of objects outside the Solar System are not eligible for submission to DDAP, and should be submitted to the Astrophysics Data Analysis Program (D.2). [Added March 10, 2016]

The DDAP supports investigations that use only data available in the Planetary Data System (PDS; <http://pds.nasa.gov/>) or equivalent publicly accessible archive(s), such as Genesis data at <http://genesis.janl.gov/plots/>. The data must be archived and publicly available 30 days prior to the Step-2 submission deadline for DDAP proposals. Spacecraft data that have not been placed in such archives are not eligible for use in DDAP investigations. In all cases, it is the responsibility of the DDAP investigator to acquire any necessary data. Investigators are encouraged to contact the **PDS archive** for assistance in identifying specifics of available datasets. Datasets to be used in the proposed work must be clearly and specifically identified in the proposal. Regardless of the archive(s) used, if the data to be analyzed have known issues that might represent an obstacle to analysis, the proposers must demonstrate clearly and satisfactorily how such potential difficulties will be overcome.

Proposals to DDAP must include a science investigation. Proposals to produce a higher order data product that enhances the science return from one or more missions, but does not include a science investigation, should be submitted to the C.7. Planetary Data Archiving, Restoration, and Tools (PDART) Program.

Proposals should make significant use of, or greatly enhance the use of, data returned by one or more Discovery Program missions. Proposals to work with Discovery Program data and also use ground-based or other data are acceptable, provided that the success of the proposal, as written, is dependent upon the Discovery data. Investigations that incorporate theory, modeling, laboratory studies, correlative analyses, and/or other research that would greatly increase the use of, or significantly facilitate the interpretation of, data from Discovery Program missions are also eligible. Such proposals that don't directly analyze data, but are intended to amplify its interpretation, will be judged upon the perceived impact of the proposed work on the interpretation of data from the Discovery Program mission(s) emphasized.

It is the responsibility of the proposers to DDAP to specifically identify any needed data and to ascertain that these data are available. Proposals dealing with mission data should provide convincing evidence that the data have sufficient quality and are available in sufficient quantity to achieve the goals set forth in the proposal. The proposer should demonstrate a familiarity with the data and an understanding of the work required to refine the data for the purposes of the analysis.

1.2. Data Archiving into PDS Archiving of Data Products

Data products produced by funded DDAP investigations must be **made publicly available, following the guidelines described in Section 4.3 of C.1 Planetary Science Overview ("Data Management Plans and Archiving")**. Proposed data products for delivery to the PDS must be clearly described, appropriate time and effort for delivery and ingestion must be budgeted, and the proposal must include a letter from the manager of the appropriate PDS data node. For additional information, refer to the PDS Proposer's Archiving guide at <http://pds.nasa.gov/documents/pag/index.html>. **Data products, including maps, improved calibrations, etc., must be submitted to the PDS or the U.S. Geological Survey (USGS), as appropriate, by the end of the funded research period, unless the investigator explicitly makes a case in the proposal for a later date.** ~~archived in the Planetary Data System. When proposing the archiving of products into the PDS, an archive plan must be included, identifying schedule and budget to go through the PDS ingestion process. Data products should be submitted to the PDS by the end of the funded research period, unless the investigator explicitly makes a case in the proposal for a later date. For more information, please contact the Planetary Data System (<http://pds.nasa.gov/>). This requirement supersedes the general requirement found in Appendix C.1.~~ [Text Updated June 20, 2016].

1.3 Program Exclusions

The Discovery Data Analysis Program is not intended to overlap other active data analysis or core research and analysis programs. Therefore, the DDAP does not support the analysis of:

- Lunar data (see LDAP in C.8);
- Mars data obtained by missions to Mars (see MDAP in C.9);
- Data from Cassini (see the Cassini Data Analysis program in C.10);
- **Data from Kepler/K2 on objects outside the Solar System (see ADAP in D.2).**
[Added March 10, 2016]

The Planetary Science Division solicits proposals whose work efforts are primarily analysis of planetary mission data through this and other Data Analysis Programs. If a proposal would analyze data within the scope of more than one of the data analysis programs in order to perform comparative studies across the Solar System, but is not appropriate to any one data analysis program, then submission to a Core Research Program is encouraged. If a proposal is not appropriate for one of the Data Analysis programs, but does fit within the bounds of a Core Research Program (i.e., Solar System Workings or Emerging Worlds), it should be submitted to that Core Program.

Proposers to this Program Element should also note that DDAP is not intended to support:

- Investigations whose primary emphasis is fundamental theoretical research, the development of numerical models, laboratory measurements (unless clearly demonstrating the research would greatly increase the use of, or significantly facilitate

the interpretation of, data from Discovery Program missions), or detector development (other NASA programs support these research activities);

- Investigations with a focus on Exoplanets (see E.3 Exoplanets Research for support of these research activities); and
- Proposals for organizing and/or hosting scientific meetings (which should be submitted to Topical Workshops, Symposia, and Conferences, E.2).

Spacecraft data that have not yet been obtained (i.e., future mission data), or those that have not been accepted into approved archives, as indicated above, may not be proposed for use in DDAP investigations.

Please note that Dawn VIR data in the three-micron region are currently unavailable because they have not been submitted for archiving in the PDS.

Members of Discovery Program mission teams who wish to apply to DDAP must clearly demonstrate that their proposed investigation will use only released and publicly available data. Flight team members must scrupulously comply with the 30-days-prior-to-submission rule (above). Additionally, flight team members must clearly demonstrate how the proposed DDAP research does not overlap and is not redundant with data analysis duties, responsibilities already funded by their respective mission.

2. The Two-Step Submission Process

This Program Element uses a two-step proposal submission process described in Appendix C.1, §2.

Proposers are reminded that Step-1 proposals are mandatory and must be submitted by the proposing organization

Proposals must follow all formatting requirements that are described Appendix C.1 and in Chapter 2 of the *NASA Guidebook for Proposers*. Note that these requirements have been updated in 2016. Violation of these rules is sufficient ground for a proposal to be rejected.

3. Programmatic Information

3.1 Progress Reports

An Annual Progress Report will be due no later than 60 days in advance of the anniversary date of the award. Awards to NASA Centers, including the Jet Propulsion Laboratory (JPL), always have an anniversary date of the start of the Federal fiscal year, October 1.

3.2 Duration of Awards

Typical proposals to this program seek three years of funding or fewer. Please refer to Appendix C.1, §3.2, for instructions on submitting requests for more than three years.

3.3 Planetary Science Division Early Career Fellowship Program

Early career researchers are encouraged to apply for the Early Career Fellowship (ECF) Program. See Section C.16 of ROSES for a description of the application and evaluation process.

4. Resources: Information, Data, and Facilities

4.1 Limits on Use of Mission Data

Proposals to this Program Element must follow the rules for use of mission data given in Appendix C.1, §3.3. If the data to be analyzed have issues that might represent an obstacle to analysis, the proposers must demonstrate clearly and satisfactorily how such potential difficulties will be overcome.

4.2 Data Management Plans (DMPs)

Proposals submitted to this Program Element must include a Data Management Plan (see Appendix C.1, Section 3.5). This must be placed in a special section, not to exceed two pages in length, immediately following the References and Citations section for the Scientific/Technical/Management portion of the proposal.

4.3 Facilities and Data Sources Available to Proposers

Proposers are advised to read C.1. The Planetary Science Division Research Program Overview, for information on facilities and data sources that are available to supported investigators. If their use is anticipated, this should be discussed and justified in the submitted proposals (especially note the provision for such discussion in the proposal section entitled Facilities and Equipment). Also note that, per the directions in Section 2.3 of the *NASA Guidebook for Proposers*, a letter of support may be required from any facility required for the proposed effort.

4.4 Geologic Maps

Proposers who plan investigations involving geologic mapping should consult Appendix C.1. Section 3.6, for guidance on submission and requirements for publication of U.S. Geological Survey (USGS) maps. The scientific goal of such a geologic map product should be clearly explained and justified.

5. Summary of Key Information

Expected program budget for first year of new awards	~\$1.5 M
Number of new awards pending adequate proposals of merit	~10-13

Maximum duration of awards	4 years; shorter-term proposals (1-3 years) are typical; fourth year must be explicitly and scientifically justified.
Due date for Step-1 proposals	See Tables 2 and 3 in the <i>Summary of Solicitation of this NRA</i> .
Due date for Step-2 proposals	See Tables 2 and 3 in the <i>Summary of Solicitation of this NRA</i> .
Planning date for start of investigation	~Six months after Step-2 proposal due date.
Page limit for the central Science/Technical/Management section of proposal	15 pp; see also Chapter 2 of the <i>NASA Guidebook for Proposers</i>
Relevance	This program is relevant to the Planetary Science questions and goals 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> .
Detailed instructions for the preparation and submission of proposals	See the <i>NASA Guidebook for Proposers</i> at http://www.hq.nasa.gov/office/procurement/nraguidebook/ .
Submission medium	Electronic proposal submission is required; no hard copy is required or permitted. See also Section IV of the <i>ROSES Summary of Solicitation</i> and Chapter 3 of the <i>NASA Guidebook for Proposers</i> .
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	http://grants.gov (help desk available at support@grants.gov or (800) 518-4726)
Funding opportunity number for downloading an application package from Grants.gov	NNH16ZDA001N-DDAP
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