NOTICE: Clarified on February 27, 2014. Additional information on data archiving and map publications has been added as Section 2.3, the two-step proposal submission process was updated in Section 4, and the default for start date for investigations in the Summary Table (Section 6) is now given as "~6 months after Step-2 proposal due date". New text is bold, deleted text strikethrough.

Proposals to this program will be taken by a two-step process, in which the Notice of Intent is replaced by a required Step-1 proposal submitted by an Authorized Organizational Representative. Only proposers who submit a Step-1 proposal are eligible to submit a Step-2 (full) proposal. See Section 4 for details. Step-1 proposals are due July 28, 2014, and Step-2 proposals are due September 26, 2014.

1. Scope of Program

The objective of the Cassini Data Analysis and Participating Scientists (CDAPS) Program is to enhance the scientific return of the Cassini mission by broadening the scientific participation in the analysis and interpretation of the data returned by the mission. A subset of CDAPS selectees will also serve as Participating Scientists, which will further broaden participation in the mission by augmenting the existing science team. This program solicits research proposals to conduct scientific investigations utilizing data obtained by the Cassini and Huygens spacecraft. Proposers are encouraged to read the abstracts of investigations that were selected from previous competitions, which are available online at http://science.nasa.gov/researchers/sara/grant-stats/ (select the relevant ROSES year and the awards abstracts PDF beneath "Cassini Data Analysis").

All proposals to CDAPS should identify and address a clear objective with science research that will be a significant, not incremental, advance in our understanding of the Saturn system.

In order to be considered, data analysis proposals must use data that are in the public domain 30 days before the CDAPS Step-2 proposal due date, and they must make clear to the peer reviewers that the data are publicly available. Proposals that do not comply with this rule may be declared noncompliant and declined without evaluation. It is understood, however, that once the grant is awarded, succeeding years of work may address data that have subsequently come into the archive. Proposers selected as Participating Scientists will have access to data prior to its release to the public domain but the DAP portion of their proposal (which may be funded separately) should still conform to the 30 day rule, above.

NASA’s organization for archiving and distributing Cassini data is the Planetary Data System (PDS). In accordance with the approved mission data-archiving plan, Cassini data is archived in the PDS in three-month increments, nine to twelve months after it is received on Earth. PDS archived Cassini data can be found at http://pds-atmospheres.nmsu.edu/data_and_services/atmospheres_data/Cassini/Cassini.html. Data that are otherwise in the public domain via open literature publications and other freely available sources are also eligible, but proposers are cautioned that it may not be calibrated and validated. To the
extent that lack of calibration and validation may affect the scientific quality and value of the end product of the investigation, the peer reviewers may note this as a weakness. Whether from the PDS or another source, if the data to be analyzed are not certified or otherwise have issues that might represent an obstacle to analysis, the proposers must clearly demonstrate that such potential difficulties can be overcome.

Proposals should be focused on the Saturn system and make significant use of (or greatly enhance the use of) data returned by Cassini instruments. Additionally, data from the Cassini Jupiter flyby in 2000 is eligible. Proposals to work with Cassini data and also use ground-based or other data are acceptable, provided that the success of the proposal, as written, is dependent upon the Cassini data. If this is not the case, the proposal should be submitted to another ROSES element, as appropriate; see Appendix C of this ROSES NRA.

Proposals should describe a unique science investigation for which proposers are not currently funded. For example, members of the Cassini team applying to CDAPS should explain clearly how the proposed research does not overlap with data analysis duties/responsibilities already funded as a member of the mission team.

Proposals to CDAPS 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 Planetary Data Archiving, Restoration, and Tools (PDART) Program, C.7.

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 the mission are also eligible for CDAPS. 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 Cassini data. Proposers are encouraged to seek collaborations with Cassini scientists and to utilize data from more than one instrument, if appropriate, in order to produce the most useful contributions to understanding the Saturn system.

Proposed data products for delivery to the PDS should be clearly described, and the proposer should consult with the manager of the appropriate PDS data node to insure that they will be PDS compliant and constructed as efficiently as possible. 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., 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. Each research proposal must constitute a stand-alone scientific investigation, with stated lines of inquiry, and result in one or more peer-reviewed publications.

2. Resources: Information, Data, and Facilities

2.1 Limits on Use of Mission Data

For proposals that contain mission data analysis, planetary spacecraft mission data to be used in proposed investigations must be available in the Planetary Data System (PDS) or equivalent
publicly accessible archive at least 30 days prior to the proposal submission date. Spacecraft data that have not been obtained yet (i.e., future mission data) or those that have not been accepted for distribution in approved archives are not eligible for use in investigations. Regardless of the archive(s) used, 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. Investigators funded by spacecraft missions who wish to apply must demonstrate clearly how the proposed research does not overlap and is not redundant with data analysis, duties, or responsibilities already funded by their respective mission(s). Please see Appendix C.1, The Planetary Science Division Research Program Overview, for more information.

- The PDS Cassini data table of contents page is located at http://pds-atmospheres.nmsu.edu/data_and_services/atmospheres_data/Cassini/Cassini.html.
- Links to Cassini support pages of all the PDS Discipline Nodes can be obtained at http://pds-rings.seti.org/cassini/.

2.2 Facilities and Data Sources Available to Proposers

Proposers are advised to read Appendix 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.

2.3 Data Archiving and Map Publication

Selected investigations may result in data products that are of broad use to the science community, including maps, data with improved calibrations, etc. NASA strongly encourages that such data be archived in the Planetary Data System (http://pds.nasa.gov/), or equivalent public archive, by the end of the award period. Proposers are advised to read Appendix C.1, The Planetary Science Division Research Program Overview, for information on including an archiving plan in the proposal.

Proposed investigations of any planetary or satellite surface that are intended to result in the publication of a Scientific Investigations Map (SIM) by the U.S. Geological Survey (USGS) should check the relevant box on the proposal Cover Page and clearly indicate this intention in the Proposal Summary, as well as in the text of the proposal. The scientific goal of such a geologic map product should be clearly explained and justified. Proposers are advised to read Appendix C.1, The Planetary Science Division Research Program
Overview, for the USGS’ information on and requirements for map production and publication. [Added February 27, 2014]

3. Participating Scientists

3.1 Background

As stated in the original Cassini Announcement of Opportunity (AO), Participating Scientist investigations are carried out by scientists who wish to participate only in the data collection and analysis phases of the mission. These investigations can either be instrument-specific or multidisciplinary. Proposers interested in becoming a Participating Scientist should propose a science investigation that addresses one or more of the Cassini science objectives listed below. These investigations, and the expertise of the proposer, should complement or extend the existing investigations and expertise of the science team. Selected Participating Scientists will become independent members of the Cassini science team for the duration of their CDAPS grant and be encouraged to work in a collaborative manner with other Cassini science team members after selection. Participating Scientists may be attached to existing groups or teams, if appropriate. All science team members will be bound by the Cassini Project "Rules of the Road" document that describes the data access rights, data-sharing responsibilities, and data release policies of the Cassini science team. This rules of the road document is downloadable as a PDF file from the NSPIRES web page for this program element. After selection, Participating Scientists will also need to negotiate and abide by secondary agreements with specific instrument teams as necessary. For more information about these secondary agreements, please contact Curt Niebur, the NASA Cassini Program Scientist (curt.niebur@nasa.gov, (202) 358-0390) or Nicolas Altobelli, ESA Cassini-Huygens Project Scientist (nicolas.altobelli@sciops.esa.int, +34 91 813 1201).

Participating Scientists may propose any investigation that addresses the goal of the Cassini Solstice mission, which is to observe seasonal and temporal change in the Saturn system to understand underlying processes and prepare for future missions. Science objectives supporting this goal, as well pursuing new questions posed for the Solstice mission, are posted in the CSM Traceability Matrices PDF in the other documents section on the NSPIRES web page where this call (C.10) is found. NASA, ESA, and ASI are open to considering any outstanding proposals that address these science objectives.

Participating Scientists will be joining a well-established Cassini science team. Proposers are encouraged to consider how they will most efficiently integrate themselves with the science team and any necessary instrument teams or working groups.

The Cassini project has already created a high fidelity mission plan. The role of the Participating Scientists is focused on data analysis to suggest further refinements to this mission plan. It is not anticipated that Participating Scientists will be deeply involved in the tactical operations process. To accomplish this goal, Participating Scientists are expected to participate in all necessary team meetings. This includes, but is not limited to, Project Science Group meetings (lasting four days each and held three times each year for the entire science team, with two of the meetings held in the United States) and any relevant instrument or discipline working group meetings (lasting two
days each and held approximately twice each year per instrument or working group). In addition to meetings, Participating Scientists should plan to participate in regular teleconferences totaling approximately one day per month.

The selection process for Cassini Participating Scientists is expected to be extremely competitive and highly selective, with a selection rate below that for CDAPS program overall. NASA encourages proposals from people who have not previously participated in the Cassini or other missions. The opportunity to become a Participating Scientist is not open to those already serving on the Cassini mission as a Team Leader or Team Member on a facility instrument, Principal Investigator (PI) or Co-Investigator (Co-I) on a PI-led instrument team, or as an Interdisciplinary Scientist. The opportunity is open to all current Cassini team associates and affiliates. The Participating Scientist opportunity will be solicited annually for at least three years. Proposers are encouraged to also refer to the FAQ in the "Other Documents" section of the CDAPS program element page.

3.2 Proposal Guidelines

Proposers interested in consideration as a Participating Scientist should submit a proposal for a scientific investigation utilizing Cassini data containing the elements described in Section 2 of the Guidebook for Proposers. The proposer must select the Participating Scientist checkbox on the Cover Page of the proposal. NASA desires to keep the budget request for the proposed research investigation separate from the budget request for the Participating Scientist role. Therefore, for U.S. investigators, the budget associated with the Participating Scientist request should be listed as "Other" in the budget information. The research proposal must contain an appendix entitled "Participating Scientist Request." This appendix should include a maximum of five (5) pages describing the Participating Scientist Request, including: (a) a description of how serving as a Participating Scientist will contribute to the research described in the main body of the science research proposal; (b) a description of how the proposed investigation will fit into the broader body of scientific research being conducted by the Cassini science team; (c) a statement listing (along with rationale) which instrument team(s), working group(s), and/or Interdisciplinary Scientists with which the Participating Scientist needs to work; (d) a statement that the proposer will abide by the appropriate Cassini team rules; and (e) a detailed budget narrative and spreadsheet describing and justifying the budget requested for the Participating Scientist role, including any cost-sharing arrangements.

Although not encouraged, proposals may include funded Co-investigators and/or unfunded Collaborators only if they are critical to complete the proposed science investigation. The participation of graduate students and postdoctoral researchers is encouraged in all proposals, however. Only the Principal Investigator (or Science Principal Investigator) from each proposal will be designated as a Participating Scientist on the Cassini Solstice mission; any Co-investigators, Collaborators, graduate students, and postdoctoral researchers on the proposal will be designated as Cassini associates.

Proposals from scientists employed at non-U.S. institutions are encouraged and will be considered on a no-exchange-of-funds basis. The expected budget listed below in the summary table is only for NASA. Non-U.S. proposals will be reviewed to the same standards as proposals.
from U.S. institutions. Proposers from non-U.S. institutions should read the Foreign PI Affiliation instructions document, which is downloadable as a PDF file from the NSPIRES web page for this program element. These proposers are strongly encouraged to include a letter of commitment promising financial support for both the investigation and the Participating Scientist duties.

3.3 Evaluation Criteria for Participating Scientists

Evaluation criteria are given in the Guidebook for Proposers. These criteria are intrinsic merit, relevance, and cost realism/reasonableness. In addition to the factors for each criterion given in the Proposers Guidebook, evaluation of proposals requesting consideration for a Participating Scientist position includes the following factors:

• Relevance will additionally include evaluation of the extent to which the proposal meets both goals and the applicable mission-level science objectives of the Cassini Solstice mission.
• Relevance will additionally include the extent to which the proposed investigation and the expertise of the proposer complements or extends the existing investigations and expertise of the science team
• Cost realism/reasonableness will additionally include budget analysis to ensure that participation in science team activities and meetings is sufficiently supported.

The evaluation and selection process for Participating Scientists will be conducted jointly among NASA, the European Space Agency (ESA), and the Italian Space Agency (ASI).

4. The Two-Step Submission Process

To facilitate the early recruitment of a conflict-free review panel, given the nature of the new calls, and to ensure proposals are submitted to the appropriate program, this program uses a two-step proposal submission process (see Section IV. (b) vii of the ROSES Summary of Solicitation.)

A Step-1 proposal is required and must be submitted electronically by the Authorized Organizational Representative (AOR). No budget is required. Only proposers who submit a Step-1 proposal are eligible to submit a Step-2 proposal. Full (Step-2) proposals must broadly contain the same scientific goals proposed in the Step-1 proposal. The Step-1 proposal title and Principal Investigator cannot be adjusted. nor can funded team members be added between the Step-1 and Step-2 proposals, unless with the written approval of the NASA Program Officer. This approval must be To add funded investigators between the Step-1 and Step-2 proposals proposers should write to the point(s) of contact below and cc sara@nasa.gov at least two weeks in advance of the Step-2 due date. NASA intends to respond within two working days. Submission of the Step-1 proposal does not obligate the proposer to submit a Step-2 (full) proposal later. [This section was updated February 27, 2014]
4.1 Step-1 Proposal

The Scientific/Technical/Management section of the Step-1 proposal is restricted to one page in length and should include 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 relevance section will be used to confirm that the proposal is submitted to the correct program element. No evaluation of intrinsic merit will be performed on Step-1 proposals.

The NASA Solicitation and Proposal Integrated Review and Evaluation System (NSPIRES) system for proposal submission requires that Step-1 proposals include a summary describing the proposed work and the proposal be uploaded as the PDF "Proposal Attachment." NASA will provide feedback to Step-1 proposals on whether the proposal is in the proper program. If the Step-2 is more appropriate for another program (i.e. PDART), proposers will receive instructions on how to properly submit their proposal.

4.2 Step-2 Proposal

All proposals to ROSES must strictly conform to the formatting rules in Chapter IV of this announcement and Chapter 2 of the NASA Guidebook for Proposers. Those that violate the rules may be rejected without review. In previous years, problems with the formatting of the Scientific/Technical/Management section proposals have been noted. Please pay particular attention to:

- Margins: 1 inch on all sides, with a standard page size of 8.5 × 11 inches.
- Font: The NASA Guidebook for Proposers requires that proposers use a 12-point or larger font. The selected font must meet the requirement of having, on average, no more than 15 characters per inch (e.g., Times New Roman and Arial). Proposers may not adjust the character spacing or otherwise condense a font from its default appearance.
- Line spacing: Font and line-spacing settings should produce text that contains no more than 5.5 lines per inch. Proposers may not adjust line spacing settings for a selected font below single-spaced.
- Figure captions: must follow the same font and spacing rules as the main text.
- Figures and tables: for text in figures and tables, font and spacing rules listed above do not apply, but all text must be judged to be legible to reviewers without magnification above 100%. Do not place expository text in tables or figures in order to gain space

5. Programmatic Information

5.1 Progress Reports

An Annual Progress Report will be due no later than 60 days in advance of the anniversary date of the award. U.S. scientists will submit their progress reports to NASA and non-U.S. scientists will submit progress reports to their funding institution. Awards to NASA Centers including JPL always have an anniversary date of the start of the fiscal year, October 1.
Newly archived data will have appeared in the PDS since the original proposal was submitted; therefore, somewhat longer than usual progress reports will be expected. The PI should specifically identify any needed data for the second- or third-year work and ascertain that they are available, devoting the same amount of care to this issue as in the original proposal. It is generally assumed that the analysis and interpretation of the new data will closely parallel that of the data analyzed in year one. If this is not true, then sufficient detail must be provided so that qualified peers can review and evaluate the work plan. In those cases where the original proposal promised to deliver a higher order data product, the progress report must show satisfactory progress toward that goal. A revised budget for the second or third year is neither necessary nor expected; the multiple-year budget approved at the time of the original award is considered binding barring the development of unforeseen issues (see Section D.4 of Appendix D of the NASA Guidebook for Proposers for further details).

5.2 Early Career Fellowship Program

Early career researchers are encouraged to apply for the Early Career Fellowships (ECF) Program. The purpose of the ECF program (see C.16) is to support the development of individual research programs of outstanding scientists early in their careers and to stimulate research careers in the areas supported by the Planetary Sciences Division. This Program is based on the idea that supporting key individuals is a critical mechanism for achieving high impact science that will lead the field forward with new concepts, technologies, methods, and more.

Applicants requesting consideration for ECF may include an additional page to their Curriculum Vitae to provide information that can be used by reviewers to evaluate the Principal Investigator’s (PI’s) future research contributions and the potential for leadership within the scientific community. Please see C.16 of ROSES for more information on the two-step process for the ECF program and the criteria for evaluating candidates.

6. Summary of Key Information

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<thead>
<tr>
<th>Expected program budget for first year of new awards</th>
<th>~ $1.2-1.7 M/Year</th>
</tr>
</thead>
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<tr>
<td>Number of new awards pending adequate proposals of merit</td>
<td>~ 10-15 CDAP awards (and ~2 Participating Scientists)</td>
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<tr>
<td>Maximum duration of awards</td>
<td>3 years</td>
</tr>
<tr>
<td>Due date for Step-1 proposals</td>
<td>See Tables 2 and 3 in the ROSES Summary of Solicitation.</td>
</tr>
<tr>
<td>Due date for Step-2 proposals</td>
<td>See Tables 2 and 3 in the ROSES Summary of Solicitation.</td>
</tr>
<tr>
<td>Planning date for start of investigation</td>
<td>~6 months after Step-2 proposal due date. [Changed February 27, 2014]</td>
</tr>
<tr>
<td>Page limit for the central Science-Technical-Management section of proposal</td>
<td>Step-1 proposals: 1 pp; Step-2 proposals: 15 pp; plus up to 5 additional pages for Participating Scientist proposals; see also Chapter 2 of the <em>NASA Guidebook for Proposers</em>.</td>
</tr>
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<tr>
<td>Relevance</td>
<td>This program is relevant to the Planetary Science questions and goals in the NASA Science Plan; see Table 1 of ROSES and the reference therein. Proposals that are relevant to this program are, by definition, relevant to NASA.</td>
</tr>
<tr>
<td>General information and overview of this solicitation</td>
<td>See the <em>ROSES Summary of Solicitation</em>.</td>
</tr>
<tr>
<td>Submission medium</td>
<td>Electronic proposal submission is required; no hard copy is required or permitted. See also Section IV of the <em>ROSES Summary of Solicitation</em> and Chapter 3 of the <em>NASA Guidebook for Proposers</em>.</td>
</tr>
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<td>Web site for submission of Step-1 and Step-2 proposals via NSPIRES</td>
<td><a href="http://nspires.nasaprs.com/">http://nspires.nasaprs.com/</a> (help desk available at <a href="mailto:nspires-help@nasaprs.com">nspires-help@nasaprs.com</a> or (202) 479-9376)</td>
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<td>Web site for submission of Step-1 and Step-2 proposals via Grants.gov</td>
<td><a href="http://grants.gov">http://grants.gov</a> (help desk available at <a href="mailto:support@grants.gov">support@grants.gov</a> or (800) 518-4726)</td>
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<tr>
<td>Funding opportunity number for downloading an application package from Grants.gov</td>
<td>NNH14ZDA001N-CDAPS</td>
</tr>
</tbody>
</table>
| NASA point of contact concerning this program | Christina Richey  
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