

B.2 COSMOCHEMISTRY

1. Scope of Program

The Cosmochemistry Program (CCP) supports investigations of a variety of extraterrestrial materials (meteorites, cosmic dust, and lunar samples) that are aimed at understanding the geochemistry of the Solar System bodies (planets, satellites including the Earth's Moon, and small Solar System bodies). The goal of this program is to support cosmochemical research projects that increase the understanding of the origin of the Solar System and the processes by which its planets and small bodies have evolved to their present states. NASA is particularly interested in proposals for sample-focused research projects that closely support its activities for exploring the Solar System or that contribute to the development of techniques for such further exploration. Individual investigations may contribute new data, analyze and synthesize existing data, or combine both kinds of activities.

Examples of the kinds of research supported by this program include:

- Measurements of mineral compositions, major and trace element chemistry, isotopic compositions, radiometric ages, magnetism, or radiation exposure effects;
- Petrologic studies of extraterrestrial materials;
- Laboratory studies of phase stability, chemical partitioning, and other processes necessary to interpret planetary data; and
- Synthesis of previously obtained geochemical data.

Although no priorities are imposed on the general kinds of investigations, an ideal program is envisaged as a balance among them, consistent with the quality of submitted proposals and their relevance to the current CCP.

This program might also support certain types of research on terrestrial analog samples when such efforts contribute to overall program goals in cosmochemistry. Terrestrial research should address key geochemical processes in early planetary evolution, terrestrial history in terms of general Solar System processes, or the reasons for differences in evolution among the various planetary bodies, including Earth, the Moon, and parent bodies of meteorites. Proposals to analyze terrestrial samples should clearly develop the nature of the planetary connection; this will be a key factor in determining the success of such proposals.

Proposals for topical conferences, workshops, consortia, symposia, or other new initiatives related to the Cosmochemistry program and that are generated through the initiative of the proposer may also be proposed through this NRA. For more information about the type of research supported by this program, abstracts for currently funded investigations are available online at <http://spacescience.nasa.gov/>, link through "Research Solicitations" to "Past/Archive Solicitations & Selections."

An important goal of the Solar System Exploration efforts is to facilitate access to data and extraterrestrial sample material for certain scientific and educational purposes, in addition to NASA-supported research projects. The NASA Johnson Space Center, Houston, Texas, is responsible for the security of and access to all returned extraterrestrial samples, as well as the interplanetary dust particles collected by high altitude aircraft and the meteorites collected in the Antarctic by field parties supported by the National Science Foundation (NSF). For information on how to obtain any of the specimens in these collections, contact:

Office of the Curator
Code ST
Johnson Space Center
National Aeronautics and Space Administration
Houston, TX 77058-3696

Finally, note that to enable the NASA Office of Space Science to properly evaluate the relevance of proposals submitted to its programs, as well as to track its progress towards achieving its goals as mandated by the Government Performance Review Act (GPRA), all research supported by NASA's programs must now demonstrate its relationship to NASA Goals and Research Focus Areas (RFAs) as stated in the latest version of its Strategic Plan (follow links from the Web site <http://spacescience.nasa.gov/>); see also the discussion in Section I of the *Summary of Solicitation* of this NRA. Therefore, all proposers to this program element are asked to state their perception of this relevance in terms of the Goals, Science Objectives, and RFAs given in Table 1 found in the *Summary of Solicitation*. In particular, this program element is designed to help fulfill all of the RFAs 1(a), (b), (c) and (d), 2(a), and 4 (b), (c) and (d) for Goal II of the Solar System Exploration science theme.

2. Programmatic Considerations

The National Science Foundation (NSF) may consider a wide range of proposals (from domestic organizations only) that contribute new knowledge in the area of cosmochemistry and related fields. The same proposal may be submitted to both NASA and NSF if desired; however, such proposals must clearly state they are being submitted to both agencies in the proposal section entitled *Current and Pending Support* (see Chapter 2 of the *NASA Guidebook for Proposers* as discussed in this NRA's *Summary of Solicitation*).

Proposed periods of performance may be up to three years each. It is estimated that the funding level for this program for Fiscal Year 2005 will be approximately \$13.0M, of which about \$4.2M will be available for support of new research. It is anticipated that this level of funding will support approximately 40 new research investigations.

As a change from past practices for this program, and in anticipation of a new master data base for OSS research awards that is being implemented on an evolving basis, *Annual*

Progress Reports (called "Progress" or "Status" Reports in previous research solicitations) for ongoing multiple-year awards are no longer required at the time that new proposals are due. Instead, a single *Annual Progress Report* will be due no later than 60 days in advance of the anniversary date of the award and is to be submitted as an attachment to an E-mail message to the Program Scientist for this program. Note that as an additional change from past practice, a revised budget for any remaining years of an approved award 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, extreme issues (see Section D.4 of Appendix D of the *Guidebook for Proposers* for further details).

- *Instrumentation*

The *Planetary Major Equipment* program described in Appendix B.12 of this NRA allows proposals for upgrading the analytical, computational, telescopic, and other instrumentation required by investigations for certain programs sponsored by the Solar System Exploration Division, including this one. New, analytical instrumentation requests, as well as requests for upgrades to existing instruments, costing more than \$25,000 should be identified and requested in a special section of each proposal, to be titled "Major Equipment Request." However, note that a Planetary Major Equipment proposal must be affiliated with a "parent" OSS research proposal in order to be considered; see Appendix B.12 for details.

IMPORTANT INFORMATION

The *Summary of Solicitation* of this NRA points out that NASA Headquarters now uses a single, unified set of instructions, entitled *NASA Guidebook for Proposers Responding to NASA Research Announcements – 2004*, that provides detailed guidance for the preparation and submission of proposals to most of its NRA's. By reference is the current edition, *Guidebook for Proposers*, is incorporated into this Office of Space Science solicitation and is accessible by linking through the menu item "Helpful References" at the Web site <http://research.hq.nasa.gov> or it may be directly accessed at <http://www.hq.nasa.gov/office/procurement/nraguidebook/>. Proposers to this Program Element are urged to familiarize themselves with this document, in particular its Chapters 1, 2, and 3, before preparing a proposal. This NRA's *Summary of Solicitation* also contains the schedule and instructions for the electronic submission of both a *Notice of Intent* (NOI) to propose, as well as a proposal's *Cover Page/Proposal Summary/Budget Summary* for the proposal, and the mailing address for the submission of proposals.

Questions about this program element may be addressed to the cognizant Program Officer

Dr. David J. Lindstrom
Solar System Exploration Division
Code SE
Office of Space Science
NASA Headquarters
Washington, DC 20546
Telephone: (202) 358-0311
E-mail: David.Lindstrom@nasa.gov
