

### A.4.3 Origins of Solar Systems

#### 1. Scope of Program

This program element solicits basic research proposals to conduct scientific investigations related to understanding the formation and early evolution of planetary systems and to provide the fundamental research and analysis necessary to detect and characterize other planetary systems. These investigations may involve analytical and numerical modeling, laboratory research, and observational studies in the following areas: star formation and the relationship to planetary system formation, solar nebula processes, accumulation and dynamical evolution, analysis of primitive materials, and the detection of other planetary systems. The investigations supported through this NRA should directly support the goals related to understanding planetary system formation.

For example, key questions addressed by the research activities supported by this program may include: What was the initial mass, structure, motions, and temperature of the solar nebula, and the time scales over which planets formed? What are the conditions of star formation that lead to a single star surrounded by a protoplanetary disk? How was angular momentum transported in the nebula? What determined the masses of the giant planets? By what mechanism did the most primitive bodies in the solar system accumulate? What factors influence the growth of planetary embryos into planets? What processes were responsible for the patterns of chemical fractionation observed in the primitive meteorites and the volatile abundances in the planets? What is the frequency of the occurrence of planetary systems?

This Origins program realizes the existing potential for complementary interdisciplinary efforts to solve key scientific questions. To achieve this goal, proposals are encouraged that involve joint research efforts by investigators from different scientific communities. Interdisciplinary investigations may include, for example, studies of nebular chemistry and dynamics to understand the composition of primitive volatile-rich solar system bodies, or collaborations between observational astronomers and modelers to study the initial collapse of a protostellar cloud to form a nebula. Proposals that involve joint efforts may be submitted as separate proposals from participating institutions for each of their respective part of the investigation or as an a single all inclusive proposal. With respect to all inclusive proposals, proposers should keep in mind that it is the OSS policy that all subcontracts for work at an institution other than the lead institution must be handled by the lead institution.

Proposals for topical conferences, workshops, symposia, or other new initiatives related to the Origins program are also solicited through this NRA. For more information about the type of research supported by this program, abstracts for currently funded investigations are available at <http://spacescience.nasa.gov/codesr/welcome.html> .

## 2. Programmatic Information

It is estimated that the funding level for this program for fiscal year 2002 will be approximately \$5M and that this level of funding will support approximately 105 research investigations, including both new proposals and in-progress multiple year proposals. Awards under this NRA are subject to the availability of program funds.

Annual Progress Reports: Holders of existing multiple year awards that are entering their second or third year of a three-year award from a previous NRA for this program element must submit a request for an annual funding allotment for their award. This request, in the form of a *Annual Progress Report*, is due by the same deadline as for new proposals for this program element (see Table 1 or 2 in the Summary of Solicitation of this NRA). These *Progress Reports* will be screened by the same peer review panel that will be convened to review new proposals as an aid to NASA's evaluation of existing awards. Such a *Progress Report* should not exceed three single-spaced, typewritten pages with roughly two pages used for a description of the progress made during the previous year and the remainder to a statement of the work planned for the coming year (Note: this three page limit does not include references, figures, reprints, or appendices). The *Progress Report* should be prefaced by a copy of the proposal's original Cover Page/Proposal Summary and a copy of the original approved budget. Note that any request for an augmentation to the budget must be supported by detailed information in conformance with Section 2.3.10 of the *OSS Guidebook-2001* (see further in section entitled "Important Information" below).

### IMPORTANT INFORMATION

As discussed in the [Summary of Solicitation](#) of this NRA, the Office of Space Science (OSS) is now using a single, unified set of instructions for the submission of proposals. This material is contained in the document entitled *OSS Guidebook for Proposers Responding to NASA Research Announcement – 2001* (or "*OSS Guidebook – 2001*" for short) that is accessible by opening "Research Opportunities and Data" from the menu at URL <http://spacescience.nasa.gov>, or directly at URL <http://spacescience.nasa.gov/research/ossguidebook/>. This NRA's [Summary of Solicitation](#) also contains the schedule and instructions for the electronic submission of a Notice of Intent (NOI) to propose and a proposal's *Cover Page/Proposal Summary*, for electronic access to the required *Budget Summary* form, and the mailing address for the submission of a proposal.

Questions about this program element may be directed to the cognizant Discipline Scientist:

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