

## A.2.4 Astrophysics Data Program (ADP)

### 1. Scope of Program

This NRA solicits proposals for (A) research involving the NASA space astrophysics data sets currently archived in the public domain, and (B) the analysis of new observations obtained by the ASCA, RXTE, or BeppoSAX satellites and awarded through competitive peer review. The period of performance for solicited proposals may be from one to three years. Abstracts of currently funded Astrophysics Data projects can be found at < <http://www.hq.nasa.gov/office/oss/research.htm>.>

Proposers to the previous ADP Type 2 opportunity for applied research (tools for data analysis and/or data management) should note that this category has been transferred from the ADP program to the Applied Information Systems Research (AISR) Program. Proposers are referred to the AISR opportunity in Appendix A.5.2 of this ROSS NRA.

#### • *Type A Proposals*

This Announcement solicits Type A proposals for research in astrophysics whose dominant emphasis is the analysis and interpretation of public-domain, archival data from past, current, and upcoming space astrophysics missions. In particular, public-domain data sets now exist for the following missions that have undergone considerable calibrations, ordering, and refinements, and for which extensive data analysis software tools exist:

- Advanced Satellite for Cosmology and Astrophysics (ASCA);
- Astro Shuttle Experiments [Hopkins Ultraviolet Telescope (HUT), Wisconsin Ultraviolet Photopolarimetry Experiment (WUPPE), Ultraviolet Imaging Telescope (UIT), and Broad-Band X-Ray Telescope (BBXRT)];
- Beppo Satellite di Astronomia X (SAX);
- Cosmic Background Explorer (COBE);
- European X-Ray Astronomy Satellite (EXOSAT);
- Extreme Ultraviolet Explorer (EUVE);
- Ginga;
- High Energy Astronomy Observatories (HEAO-1, 2, and 3);
- Infrared Astronomical Satellite (IRAS);
- Infrared Space Observatory (ISO);
- International Ultraviolet Explorer (IUE);
- ORFEUS-SPAS I
- Roentgen Satellite (ROSAT);
- Rossi X-ray Timing Explorer (RXTE);
- Voyager Ultraviolet Spectrometer (UVS).

Note that public domain archival data from the preceding and other space astrophysics missions are included in this NRA, but that proposals for archival research using data from the Hubble Space Telescope (HST) and the Compton Gamma Ray Observatory (CGRO) are solicited through separate announcements.

• *Type B Proposals*

This ADP proposal solicitation includes a Type B category for proposers who have already been awarded observing time on current observing cycles RXTE (Cycle 4), ASCA (Cycle 7), or BeppoSAX (Cycle 3) and seek funding support for data reduction and analysis of the resulting observations. Type B Proposals may supplement the primary RXTE/ASCA/SAX data reduction and analysis of new observations with data analysis of relevant public-domain, archival data from RXTE, ASCA, SAX, and other space astrophysics missions. Type B Proposals may contain either the text originally submitted to RXTE/ASCA/SAX for observing time, or merged/reviced text, provided they comply with the generic guidelines for preparation of proposals in Appendix C, Section 5. Note that Type A and Type B proposals will compete together in the same science panels. Proposals for data reduction and analysis of new observations (only) should have a duration of one year, whereas proposals that also include relevant public-domain archival data analysis may request periods of performance for up to three years.

RXTE Targets Of Opportunity (TOO): Type B proposals may be submitted for support of approved RXTE Cycle 4 TOO observations. If selected, funding of such 'conditional awards' will not be initiated until after the TOO observation(s) have been satisfactorily completed.

• *Requirements for Type A and Type B Proposals*

In support of these activities, but as a secondary emphasis, the proposed research may include theoretical research, numerical modeling, use of existing data from ground-based or suborbital observations, and laboratory astrophysics measurements. In addition, NASA will consider requests for support for new ground-based observations provided that the requests are clearly described, the observations are important to the success of the proposed effort, and their expense (including salary, travel, etc.) constitutes no more than 10 percent of the proposal's total budget.

Proposers to this NRA should note that the ADP is not intended to support:

- investigations whose primary emphasis is theoretical research, numerical modeling, laboratory astrophysics measurements, or detector development, since there exist other NASA programs that support research with these kinds of emphases;
- investigations whose primary focus is on solar system objects or on the solar-terrestrial interaction, since other NASA programs support this kind of research;
- proposals primarily for the education and training of students;

- proposals for the organizing and/or hosting of scientific meetings; and
- proposals for the acquisition of substantial computing facilities or resources, beyond nominal workstation or network requests.

Prospective submitters should also be aware that considerable research has already been done using these archival data sets both by the original mission science teams, as well as previously selected participants in the ADP. Therefore, proposals should demonstrate how the proposed research clearly extends the frontier of existing knowledge in a fundamental and important manner rather than merely repeating a type of analysis on heretofore unstudied objects of some class or type. If this proposal is itself based on a previously funded research effort, the proposal should identify that work and clearly summarize all significant results from it.

## 2. Proposal Type, Data Sets, and Research Area

Each proposal must be identified as to Type A or B by checking the appropriate box on the *Cover Page* (see Section 5.3 in Appendix C). For all Types of proposals, the *Cover Page* also provides for designation of the data sets proposed to be used and also of the Research Area, as defined below, that designates the primary focus of the proposal. The primary use of these Research Areas is to facilitate the assignment of each proposal, regardless of Type, to the appropriate review panel. Note that each proposal, regardless of Type, must identify one primary Research Area (a secondary Area may be designated, if necessary). In any case, NASA reserves the right to reassign a proposal to a different primary or secondary Research Area(s). As in previous ADP NRA's, the eight defined Research Areas are:

1. *Solar System* (note: proposals whose primary focus is solar system research using the IRAS Asteroid and Comet Survey or Voyager data should be submitted to other NRA's or program elements in this NRA that are relevant to those objectives);
2. *Star Formation and Pre-Main Sequence Stars* (star forming clouds, protoplanetary and debris disks, protostars, T Tauri stars);
3. *Main Sequence Stars*;
4. *Post-Main Sequence Stars and Collapsed Objects* (giants, isolated white dwarfs, isolated neutron stars, central stars of planetary nebulae);
5. *Binary Systems* (cataclysmic variables, x-ray binaries, black hole binaries);
6. *Interstellar Medium and Galactic Structure* (supernova remnants, dark clouds, interstellar dust, H II regions, diffuse galactic emission, planetary nebulae);
7. *Galaxies* (normal galaxies, interacting galaxies, starburst galaxies, Seyfert galaxies, quasars, radio galaxies);
8. *Large Scale Cosmic Structures* (clusters of galaxies, galaxy environment and evolution, intracluster medium, diffuse x-ray background, cosmology).

### 3. Programmatic Information

It is anticipated that approximately \$2.5M will be available through this ROSS-99 NRA for the funding of new Type A and B awards for the Astrophysics Data Program, to fund proposals of a maximum of three years duration. The typical level of support per year is expected to be in the range of \$50K.

NOTE: Appendix C contains critical information necessary for the preparation and submission of proposals submitted in response to this NRA. In particular, Section C.5.3 contains detailed standards concerning the format, page limits, and contents of a proposal. The submission of a proposal not in compliance with these standards may complicate and/or hinder its efficient and complete evaluation. Therefore, deficiencies in format and/or omission of key information may result in a proposal being found unacceptable for evaluation, or if evaluated, being adversely affected during the evaluation process.

See Table 1 of this NRA's summary cover letter for the due dates for both the NOI and for the proposal. The World Wide Web site for submitting both the NOI and the *Cover Page/Proposal Summary* (see Appendix C.5.3) is <<http://props.oss.hq.nasa.gov/>>; proposers without access to the Web or who experience difficulty in using this site may contact Ms. Debra Tripp (E-mail: [deb.tripp@hq.nasa.gov](mailto:deb.tripp@hq.nasa.gov)) for assistance. Hard copies of the proposals are to be delivered to:

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Jorge Scientific Corporation  
Suite 700  
400 Virginia Avenue, SW  
Washington, DC 20024  
Phone number for commercial delivery: (202) 554-2775

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