A.4.4 Magnetospheric Physics

1. Scope of Program

Proposers interested in submitting in response to this program element should also read Section A.4.0 of this Appendix for an overview of The Sun-Earth Connection space science theme of the NASA Office of Space Science.

The Magnetospheric Physics program supports the studies of the structure and dynamics of magnetospheres and the interactions of solar system space plasmas with planetary magnetospheres and natural space bodies. The discipline focus is on naturally occurring space plasma phenomena with attention given to both the large-scale system structures and processes and to the underlying physics giving rise to those structures and processes. Within that focus, the emphasis is on the geospace portion of the solar-terrestrial linkage including solar-wind magnetosphere interactions and the behavior of particles and fields within the magnetosphere whether as a consequence of those interactions or other, internal processes. Research addressing science questions concerning comparative magnetospheres and plasma-solar system body interactions are also appropriate. Research activities include development of fundamental theories, numerical modeling and simulation, and the analysis and interpretation of data obtained by space-based *in situ* and remote sensing techniques and ground-based observations that are complementary to and supportive of the space data.

This program element supports theoretical research, the development and exercise of models and simulations, and the analysis and interpretation of data for the purposes of identifying and understanding the physical processes important to magnetospheric structure and dynamics. The development and testing of new instrument concepts or of new observing techniques that are pertinent to discipline goals may also be supported, providing the proposed activity is in the context of a clearly defined magnetospheric physics science problem. The program does not support the development of specific engineering, protoflight, or flight instrumentation nor the routine, long-term gathering of observational data.

2. Programmatic Information

Total funding in this program element has been about $4M per year. Of the approximately 65 investigations currently being funded, about one third will expire in FY 1998.

NASA OSS also supports research on magnetospheric, ionospheric, thermospheric, and mesospheric physics using a variety of methods for providing low cost access to space, including standard and long-duration balloons, sounding rockets, Shuttle-based carriers, Space Station, and

sounding rocket-class payloads flown as secondary payloads or on other flights of opportunity. See the separate Magnetospheric and ITM Suborbital Program description in Section A.4.6 of this Appendix for further details.

The schedules for submission of the Notice of Intent and proposal are given in Table 1 of the cover letter of this NRA. The World Wide Web site for submitting both the NOI and the proposal *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) for assistance. Hard copies of the proposals are to be delivered to:

ROSS-98 NASA Research Announcement
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Obtain further information about this program element from the Discipline Scientist:

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