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Dear Colleague:

With the accompanying *Call for Proposals (CP)*, issued on behalf of NASA and the SIRTf Project, we are soliciting proposals for the **first** General Observer Cycle for the *Space Infrared Telescope Facility (SIRTf)*.

For those of us who have worked on SIRTf for decades, this is an exciting time. We are in the last, frenzied months before launch. The Observatory is about to be shipped from Lockheed – Martin in Sunnyvale, California to Florida's Kennedy Space Flight Center. The Instrument Teams and the Mission Operations and Science Operations teams are rehearsing the activities that must be conducted during flight. The final work is ongoing in getting the pipelines ready to reduce the data that will be arriving at the SIRTf Science Center (SSC) in a few months, the final refinements to our in-orbit checkout and our observation plans are being made, and myriad other activities are occurring that are all part of the final preparations for the launch of a NASA Great Observatory.

SIRTf is an Observatory for the entire astronomical community and we welcome proposals from all. We have gone to some lengths to make the user's view of SIRTf as similar to their view of the other Great Observatories as makes sense. Scientifically, SIRTf is a *different* Observatory, and I want to highlight some of the special features of the Observatory before you begin preparing your SIRTf proposal.

First and foremost, SIRTf is expected to be orders of magnitude more sensitive than any ground-based infrared facility and, in most regards, is more powerful than any previous space-borne infrared observatory. You will find that the speed with which you can make a familiar observation will be astonishingly fast, so that careful thought will be required to define a program which fully exploits SIRTf's capabilities. As other space infrared missions have demonstrated, ensuring adequate redundancy will be particularly important to achieving a scientifically successful program. (See the *SIRTf Observer's Cookbook*, available on the SSC public Web site at <http://sirtf.caltech.edu/SSC/> for some example programs).

Because the detectors on SIRTf are cooled with super-fluid Helium, SIRTf is a mission with a finite lifetime. [While the formal lifetime requirement is 2.5 years, our goal is to achieve a 5-year lifetime.] This might well affect your strategy for using SIRTf. The lifetime uncertainty should be substantially reduced by the end of the on-orbit characterization of the Observatory, and this information will be posted online within four months of launch.

The timeline for Cycle-1 is as follows: This *Call for Proposals* is released to the public about two months before launch. Following launch, the first two months of the mission will be devoted to the In-Orbit Checkout (IOC) period, during which the basic functionality of the Observatory will be demonstrated. Following IOC, there will be a one month Science Verification (SV) phase, in which the science performance of the Observatory, including the three focal-plane instruments, will be characterized. 'Normal' science operations will commence at the start of the fourth month after launch. We will begin

executing the science mission with the First-Look Survey (FLS), the Guaranteed Time Observations and the Legacy Science Program (each described on the SSC public Web site). The Observatory performance characteristics will be updated, based on the SV data, and a technical *Update* to this CP will be released online within four months of launch. The *Update* will highlight the differences between the pre-launch expectations and the on-orbit realities for SIRTf. Cycle-1 proposals will be due about six weeks after the CP Update and Observatory performance data are released. We expect to start executing the SIRTf Cycle-1 program nine months after launch. It is anticipated that subsequent *Calls for Proposals* will be issued by the SSC on an annual basis.

One difference between SIRTf and most space observatories is the timing of the Cycle-1 CP with respect to the launch. As described above, proposals are due *after* we have had an opportunity to characterize the on-orbit performance of SIRTf. In other words, you will be proposing to use the Observatory based on its operating characteristics. We anticipate that the on-orbit performance of SIRTf may vary from pre-launch expectations by factors of up to two. These changes will be important for you to take into account in designing your observing program.

A significant difference in proposing for SIRTf, compared with *Hubble* or *Chandra*, is the single-phase proposal submission process. In addition to submitting a scientific proposal, General Observers submit the actual observations to execute their science program. These observations are called Astronomical Observation Requests (AORs). You will be able to create these AORs using our planning tool, the SIRTf Planning Observations Tool (SPOT). This is a Web-based tool that you will have to download to plan your observations and to submit your proposal. [Note that SPOT is the proposal submission tool for both General Observer and Archival Research proposals, which are limited to analysis of FLS data.] If your proposal is accepted, your observations will be accepted as well. *In general, there will be no additional opportunity to modify the proposed (and accepted) observations.*

Another difference between SIRTf and other Great Observatories is that we will be operating SIRTf in the “instrument campaign” mode. It is possible to operate only one science instrument at a time, and we will schedule instrument campaigns of about a week in duration. In this way we are able to maximize the observing efficiency of SIRTf. This means that it is very unlikely that any single program will be completed within a short period of time. Observations for a given program will most likely be executed over much of the observing year, and data for each observation will be available to Principal Investigators shortly after it has been processed by data reduction pipelines here at the SSC.

We will update the *SIRTf Observer’s Manual* after completing the Science Verification phase, and you will not be able to submit your proposals until then. However, we encourage you to start familiarizing yourself with the proposal input process and to begin planning your program well before the proposal submission window opens, so that you can prepare the final proposal once the submission period opens. Be sure to keep abreast of the SIRTf post-launch activities on the SSC public Web site. We will update the online information regularly, and will post the dates at which we will have characterized the Observatory for final performance estimation.

It is now two months before the planned launch of SIRTf. The Cycle-1 proposals will be due about five months after the launch. While this may seem like a long interval, much will be happening in the coming months and the proposal submission deadline will be upon us before we know it. We invite you to participate in this exciting adventure, and we all look forward to the many exciting discoveries and results that will come from NASA’s Infrared Great Observatory.

B. Thomas Soifer
Director