SIRTF USERS PANEL (SUP) REPORT: MEETING 10   MAY 1-2, 2002

INTRODUCTORY COMMENTS

The SUP met with SSC staff and management on May 2 and 3, 2002 -- just 8 months prior to the long-awaited launch of SIRTF. Not surprisingly, the pace of activities, already brisk, has accelerated markedly since SUP 9. At its 10th meeting, SUP reviewed the status of the SIRTF facility, its instruments, operational status and issues; pipeline and analysis tool development; the interaction between the SIRTF Legacy teams and the SSC; the staffing profile for SSC prior to and after launch; Phase E funding issues; and the balance between functional responsibility and research time for SSC scientific staff.

Detailed presentations regarding these issues were made by SSC management and key team leads, and by Dan Clemens, who summarized issues raised by the SIRTF Legacy Science Teams.

SUP is extraordinarily impressed by the efforts underway at SSC in preparation for launch. A number of externally-driven issues -- especially compression of the test schedule at Lockheed -- have resulted in significant increases above the anticipated workload at SSC. That progress has been as swift as reported is testimony to the dedication of staff and management at SSC.

The quality of the presentations to the SUP was extremely high -- well beyond community norms. Furthermore, SSC management has in general been extremely responsive to SUP requests. SUP wishes to use this report as the occasion for a formal 'thanks' to staff and management for their efforts.

SUP summaries and requests for SSC response regarding specific issues follows.

(1) IMPACT OF SIRTF BUDGET ON THE SSC AND THE COMMUNITY

The delays in SIRTF launch have had significant impact both on the project budget and on the SSC staff: (i) the Project has been forced to restructure the budget for Phase E, while (ii) at SSC, staff have been diverted from originally planned tasks to support spacecraft and instrument software testing on a highly compressed schedule. SUP is deeply concerned that SSC may be understaffed to meet its primary tasks: efficiently operating SIRTF; providing well-calibrated data and technical support to the community; and overseeing an adequately funded program of individual investigator grants at or near the currently approved levels. We urge NASA Headquarters to work with SSC to ensure that funding adequate to meeting these fundamental responsibilities is available.

Presentations from SSC management make it clear that SSC is working vigorously with the SIRTF Project and with NASA Headquarters to advocate budget scenarios that will maximize the scientific return from SIRTF -- via efficient operation of the spacecraft,

provision of well-understood, well-calibrated data, of strong technical support and adequate funding for the user community.

The SUP commends the SSC for its efforts to represent the scientific interests of the community, and to balance investments in critical pipelines and analysis software and individual investigator grants. Because reassessing and balancing budgetary priorities and allocations is an ongoing, dynamic process, SUP recommends to the SSC, the SIRTF Project and NASA Headquarters the following prioritized guidelines to inform decisions:

(i) maximizing science return of SIRTF to the community is the highest priority mission of SSC

(ii) providing deeply understood, high fidelity data along with efficient reduction and analysis tools are central to SIRTF's scientific productivity, as is optimized use of the SIRTF facility under changing conditions.

(iii) staffing with sufficient margin to ensure high fidelity data, efficient operation and an appropriate level of technical support to the community should represent the highest priority of NASA, SSC and the community

(iv) providing adequate funding for the community to carry out effective, high impact science programs with SIRTF -- an essential component of the mission's success

(v) if funds to the SSC are reduced, the SSC do fewer tasks well rather than many tasks marginally.

(vi) fundamental authority and responsibility for the amount and allocation of SIRTF funds among project needs, SSC needs and user community funding should reside at NASA HQ.

If budget constraints require trades between support of SSC tasks (pipelining; provision of analysis tools; AOT development; contract administration, etc.) and support of science by GTO, GO, and Legacy scientists, they must be done in the context of an appropriate cost/benefit analysis that considers carefully the existing commitments and potential productivity within the entire SIRTF community. Such analysis must specifically consider whether additional investment in SSC and project capability would offset loss in scientific productivity necessitated by decreased GO contract funding.

In this context, we strongly urge that SSC involve SUP and OC (at least through telecons with the chairs) if such trades are under consideration. It is essential that SSC not be placed in the position of evaluating trades between user community resources and SSC resources without open and visible consultation with the community.

(2) SCIENTIFIC STAFF AT THE SSC

 The SIRTF Science Center's mission is to ensure maximum scientific return from SIRTF via (1) deep understanding of the facility and its instruments; (2) provision of pipelines, quality analysis and data analysis tools that enable rapid reduction of high fidelity science data; and (3) full engagement of the broad scientific community through public outreach, and ongoing technical support. All these functions require a high quality staff, fully engaged in the SSC and SIRTF mission, both as a result of their character and temperament, and via vigorous SIRTF research programs of their own.

Based on SUP's observations over the past years, the SSC has done a superb job in recruiting highly motivated and dedicated, largely young scientific staff. Ensuring their continued scientific engagement and productivity as well as motivation toward their service responsibilities is critical to SSC's ability to carry out all aspects of its mission at a high level over the long run. SUP wishes to ensure that the functional burden on the SSC staff not be so high that the staff cannot carry out an appropriately vigorous research program -- critical for all staff, but particularly for those early in their careers.

Because SUP believes strongly that excellent service to the community begins with an excellent staff, we urge SSC management to develop metrics to track time available for research and research productivity. These might include some reportable division between research and functional time, as well as metrics of ongoing productivity: publication and citation rates, awards of observing time and/or external support, etc. SUP also urges that SSC management pay especial attention to providing time and incentives to ensure high participation of the staff in the GO-1 SIRTF competition.

At its next meeting, SUP requests that SSC management provide a summary of procedures it intends to follow in assessing the split between functional and research time, as well as other research productivity indices. We believe that these will be helpful in guiding SSC management in ensuring the proper balance between service and science -- critical to 'right sizing' the scientific staff and arguing persuasively for appropriate staffing levels to support the SSC mission. SUP is particularly concerned with ensuring that after launch, commitments of 50/50 and 20/80 science/service splits are being met, and if not, how SSC management plans to address any imbalances in future.

(3) TIMELY AVAILABILITY OF FUNDING FROM JPL

Based on the experience of the Legacy teams, delays in timely funding have seriously impaired the hiring of key personnel, slowed science program planning and delayed delivery of key software and other items. This situation must be rectified as soon as possible, and certainly well in advance of GO cycle 1 funding.

The SUP urges SSC to work with JPL management and NASA Headquarters to develop a plan that ensures smooth and timely funding of Legacy and later, GO contracts.

SUP requests that SSC management discuss progress towards resolving contracting issue with the SUP chair in July, and provide a full report to SUP at its next meeting.

While solving the problem of timely funding is of primary concern to SUP, the projected cost of contract administration is also a significant issue over the lifetime of the SIRTF mission. SUP thus also requests that SSC work with JPL management to prepare a comparison of projected contract administration costs with extant examples (HST; Chandra).

(4) AVAILABILITY OF LONG RANGE PLANNING WINDOW DATA

SUP requests that selected output from scheduling simulations be made available to GTOs and Legacy teams in order for these groups to assess the impact of likely sequencing/timing of observations on their teams' schedules for data acquisition and scientific analysis during SIRTF's first year. In particular, SUP urges timely release of "long range planning windows" which SUP understands could be provided without significant additional effort by SSC staff.

SUP requests feedback regarding implementation of this recommendation at its next meeting, and of the feasibility of providing all observers with such output during GO cycles.

(5) SIRTF DATA ARCHIVE AND LINKAGE TO THE NVO

Archived SIRTF data -- particularly large, coherent datasets such as FLS, Legacy and GTO surveys -- will guide and enable a broad range of research. Providing first rate archive access and data mining tools as well as the proper architecture to link through the NVO to other databases (2MASS; Chandra; HST; ground-based surveys) is essential to making the SIRTF archive a living, dynamic research tool. The SUP requests that SSC work with IRSA to provide an evaluation of the manpower commitment that would be required in order to facilitate merging of SIRTF archival data into the evolving NVO framework. A brief presentation at the next SUP meeting is requested.

(6) TELESCOPE ALLOCATION PROCEDURES

The SUP requests a dialog with SSC aimed at discussing the proposed TAC structure, charges, and procedures (including proposal technical review processes, timely dissemination of TAC comments to proposers, etc.) for GO-1, and for GO-2 and beyond. In particular, SUP would like to understand (i) the philosophy SSC intends to adopt with respect to assessing small, medium and large requests, and (ii) the number of discipline-specific TACs, and the breakdown among disciplines.

SUP would like to work interactively with SSC during early discussions to ensure that TAC processes will serve and will be perceived as serving the overall goals of maximizing science with SIRTF and ensuring broad community participation.

(7) AVAILABILITY AND SUPPORT OF ANALYSIS TOOLS

SUP requests an update at its next meeting regarding the analysis tools (e.g. post-BCD modules developed at SSC; the SMART package) that are likely to be available and disseminated to the community in time for GO-1 and GO-2 and beyond. The SUP also requests that SSC outline how it plans to support, upgrade, and maintain the scientific fidelity of any community-accessible tools and data analysis packages.

(8) WEBSITE UPDATE

SUP appreciates the effort that SSC management and staff has invested in posting both current presentations on the web, along with past SUP reports and SSC responses. We note, however, that the SUP page is hard to find and not current. SUP realizes that in view of the other pressures on SSC, it is not surprising that the website is not as up to date as it might be under 'steady state' conditions.

We understand that Tony Marston is now responsible for updating the website. SUP supports SSC efforts to review the science support website with the aim of making the presentation of material more uniform and bringing it up to date. We also appreciate the intent to update the pages devoted to SUP-SSC dialog and making them more visible to the community. We urge as well that current contact data for SUP members be included in these latter pages.

(9) NEXT MEETING OF SUP

SUP requests that the next meeting be held during the last two weeks of October and urges that SSC management pin down the dates for the meeting prior to the end of June.

◆ Response to SUP Report May 2002

Issues and Recommendations (1)

(1) IMPACT OF SIRTF BUDGET ON SSC AND COMMUNITY

▸ *The SUP commends the SSC for its efforts to represent the scientific interests of the community, and to balance investments in critical pipelines and analysis software and individual investigator grants.*

▸ *SUP recommends to the SSC, the SIRTF Project and NASA Headquarters the following prioritized guidelines to inform decisions:*

  (i) maximizing science return of SIRTF to the community

  (ii) providing deeply understood, high fidelity data along with efficient analysis tools

  (iii) staffing with sufficient margin to ensure high fidelity data, efficient operation and an appropriate level of technical support to the community

  (iv) providing adequate funding for the community

  (v) if funds to the SSC are reduced, the SSC do fewer tasks well

  (vi) fundamental authority and responsibility for the amount and allocation of funds to project needs, SSC needs and user community funding should reside at NASA HQ.

▸ *SUP strongly urges that SSC involve SUP and OC (at least through telecons with the chairs) if such trades are under consideration. It is essential that SSC not be placed in the position of evaluating trades between user community resources and SSC resources without open and visible consultation with the community*

◆ SSC will consult with SUP for community's perspective, as permitted by time-scales of such processes in the future

◆ Authority of budget allocation is indeed at HQ: SSC comments on impacts

(2) SCIENTIFIC STAFF AT THE SSC

- ▸ *SUP observes the SSC has done a superb job in recruiting highly motivated and dedicated, largely young scientific staff. SUP wishes to ensure that the functional burden on the SSC staff not be so high that the staff cannot carry out an appropriately vigorous research program*
- ▸ *SUP urges SSC management to develop metrics to track time available for research and research productivity. These might include some reportable division between research and functional time, as well as metrics of ongoing productivity: publication and citation rates, awards of observing time, external support, etc.*
- ▸ *SUP also urges that SSC management pay especial attention to providing time and incentives to ensure high participation of the staff in the GO-1 SIRTF competition.*

◆ Response

- ▸ *SSC management has directed task leads to identify periods of time on individuals' schedules when science (or training & edu) is highest priority*
- ▸ *SSC is gathering and will report <u>productivity</u> metrics*
- ▸ *Time will be identified around observatory ship (Nov-Dec) for SSC staff to focus on preparing and getting started on GO-1 proposals. This should provide foundation for final submission at L+5 months*

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(3) TIMELY AVAILABILITY OF FUNDING FROM JPL

- ▸ *The SUP urges SSC to work with JPL management and NASA Headquarters to develop a plan that ensures smooth and timely funding of Legacy and later, GO contracts.*
- ▸ *SUP thus also requests that SSC work with JPL management to prepare a comparison of projected contract administration costs with HST & Chandra*

◆ Response:

- ▸ *Issues are constantly being worked – see M.D. Bicay's report tomorrow*

Issues and Recommendations (4)

SIRTF

(4) AVAILABILITY OF LONG RANGE PLANNING WINDOW DATA

◆ *SUP requests that selected output from scheduling simulations be made available to GTOs and Legacy teams in order for these groups to assess the impact of likely sequencing/timing of observations on their teams' schedules for data acquisition and scientific analysis during SIRTF's first year.*

◆ Response:
  ▸ *SSC will propose a set of products from planning and scheduling to be publicized to all users during normal operations – see Levine and Marston reports*
  ▸ *More detailed products will be provided as samples with caveats to Legacy Science Teams and GTOs from the pre-Launch planning and scheduling exercise. -- see Levine and Marston reports*

Issues and Recommendations (5)

SIRTF

(5) SIRTF DATA ARCHIVE AND LINKAGE TO THE NVO

  ▸ *The SUP requests that SSC work with IRSA to provide an evaluation of the manpower commitment that would be required in order to facilitate merging of SIRTF archival data into the evolving NVO framework.*

◆ Response:
  ▸ *Current SIRTF Science Archive design takes into account the need for NVO-style access to the archive. Detailed requirements and cost of implementing such access is being derived as part of the detailed design now under way. IRSA expertise and experience is already engaged in this work. – see Storrie-Lombardi report*

(6) TELESCOPE ALLOCATION PROCEDURES

- *SUP requests a dialog with SSC aimed at discussing the proposed TAC structure, charges, and procedures for GO-1, and for GO-2 and beyond. In particular, SUP would like to understand*
  - (i) the philosophy SSC intends to adopt with respect to assessing small, medium and large requests, and
  - (ii) the number of discipline-specific TACs, and the breakdown among disciplines.
- *SUP would like to work interactively with SSC during early discussions to ensure that TAC processes will serve and will be perceived as serving the overall goals of maximizing science with SIRTF and ensuring broad community participation*

- Response – see Bicay report
  - *SSC will invite comments from SUP on philosophy of proposal size balancing, and approach to achieving balance in GO Calls*
  - *SSC will invite comments from SUP on structure of TAC and overview of process, plans for feedback to proposers. Note that TAC procedures and sizing may change with realities and number of proposals received*

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(7) AVAILABILITY AND SUPPORT OF ANALYSIS TOOLS

- *SUP requests an update at its next meeting regarding the analysis tools (e.g. post-BCD modules developed at SSC; the SMART package) that are likely to be available and disseminated to the community in time for GO-1 and GO-2 and beyond. The SUP also requests that SSC outline how it plans to support, upgrade, and maintain the scientific fidelity of any community-accessible tools and data analysis packages.*

- Response:
  - *SSC will continue to report plans for analysis tools to SUP.*
  - *SSC will gather information from SMART developers and Legacy Science Teams planning tools to formulate answers to the questions about schedule and modes of support. This area is still evolving, and is best revisited at next meeting.*

Issues and Recommendations (8) — SIRTF

(8) WEBSITE UPDATE

- *SUP supports SSC efforts to review the science support website with the aim of making the presentation of material more uniform and bringing it up to date. We also appreciate the intent to update the pages devoted to SUP-SSC dialog and making them more visible to the community.*
- *We urge as well that current contact data for SUP members be included in these latter pages.*

◆ Response:
- *Work is on-going, and results are already visible on-line*

Issues and Recommendations (9) — SIRTF

(9) NEXT MEETING OF SUP

- *SUP requests that the next meeting be held during the last two weeks of October and urges that SSC management pin down the dates for the meeting prior to the end of June.*

◆ Response:
- *Next SUP meeting scheduled for Nov 4-5, 2002*