

Response to SOFIA Users Group Report from their 3rd Meeting

Compiled by W.T.Reach, Associate Director for Science

Introduction

The SOFIA Users Group (SUG) met on 2013 Apr 26 in Mountain View, CA. Presentations by the SOFIA staff were made and are posted on the SOFIA website. <http://www.sofia.usra.edu/Science/advisorygroups/sug>
The SUG asked questions during the presentations, and their advice was solicited on several issues. The Chair provided a written report (also posted on the website), and the SOFIA Science Center responses are below. We are grateful for their advice and participation.

Membership

The SUG members for the 2nd meeting were:

- Robert Gehrz (Univ. of Minnesota, Chair)
- Lee Armus (IPAC/Caltech)
- John Bally (Univ. of Colorado)
- Imke de Pater (Univ. of California)
- Jochen Eislöffel (State Observatory Tautenburg)
- Urs Graf (Univ. of Cologne)
- Al Harper (Yerkes Observatory, U. Chicago)
- Luke Keller (Ithaca College)
- Michael Kaufman (SJSU)

Keith Noll has retired from the SUG, and Michael Kaufman was at his first meeting.

Response to SUG Issues

The SUG Chair provided a verbal debriefing to the staff after their executive session on the day of the meeting. A written report was received 2012 Oct 3. Here we respond to each of the issues that were enumerated in that report.

3.1 Director's Discretionary Time Awards

At our last meeting we recommended that the SOFIA Project consider adopting the HST model for the release of DDT time awards to the general community. In the case of HST, DDT observations obtained as part of a DDT Program generally do not have a proprietary period and are generally made available immediately to the astronomical community. In special cases, HST DD proposers may request and justify proprietary periods. Apparently no action has been taken on this item yet, and we would like to hear how DDT time and data release were handled during Cycle 1 at our next meeting.

The instructions for Directors Discretionary Time were included in the Cycle 2 Call for Proposals. We are in an interim phase now when the full observing policies are coming into effect. For the present, here is our statement on DDT:

As part of the SOFIA Science Utilization Policies, 7% of observing time can be awarded by the Director. For 2013, a limited amount of time remains available for exceptionally qualified projects that enable unique observations that could not have been proposed during the Cycle 1 proposal process. By default, the Director's time for 2013 will be utilized for accepted Cycle 1 proposals, due to the very high demand for observing time that resulted from that Call.

We will present the full DDT plan at the next SUG meeting for feedback and will post the procedure for submission of DDT proposals on our website.

3.3 Maintaining Flexibility to Allow GIs to Alter Observational Programs in Flight

We noted at our last meeting that the need to maintain the versatility and flexibility of SOFIA observations is one of the defining advantages of the airborne platform. We recommended that the Director of Science operations draft guidelines for enabling GI's in flight on SOFIA to make changes in observing plans based on unforeseen changes in observation parameters. We pointed out that observations of transient events cannot be repeated at a later date, so that it is particularly important that observations of such objects be optimized to maximize the scientific return.

The Spitzer Space Telescope observing rules:

<http://irsa.ipac.caltech.edu/data/SPITZER/docs/spitzermission/observingprograms/proposalcycles/observingrules/> provide a good example of how such guidelines might be crafted. No action appears to have been made on this recommendation yet, and we would like to hear a progress report at the next SUG Meeting.

We have developed a Guideline for Guest Investigator participation in SOFIA flights. The role and scope of interaction is described. We will obtain feedback on this Guideline at the next SUG meeting.

3.3 Announcing Up-to-date Information about the Timetable for Proposal Selections

We noted during our last SUG meeting that the Cycle 1 proposal selection announcement was delayed by about 4 months and that the delay the proposers were not informed about the delay for a couple of months, leading to some unhappiness among members of the user community. We encourage the Project to communicate promptly unforeseen changes in the announced schedule to the proposers and keep an updated Cycle 1 and Cycle 2 schedule on the SOFIA website. At our next meeting, we would like to hear about the detailed plans for transitioning from Cycle 2 to Cycle 3. The Cycle 2 proposal process occurred on schedule, and we hope to keep Cycle 3 on schedule as well. An update will be provided at the next SUG.

3.4 Information about Accepted GI Proposals

We note that the lists of accepted GI proposals for both the US and German queues now contain information about the amount of time awarded to each program. This information should help future proposers to better understand the scientific priorities of the Project.

3.5 Helping Observers to Get the Most out of their Data

Maximizing the scientific impact of SOFIA requires that Guest Investigators (GIs) who are not SI specialists to be able to get the most out of their data and to be able to publish important new results promptly. We were pleased to hear that there is a concerted effort to get basic calibrated data into the hands of observers promptly. Close communication between guest observers and members of SI teams is to be encouraged. We encourage the Project to begin conducting workshops to train the community how to reduce SOFIA data.

Data processing workshops will be held once we obtain more guest investigator observations. Pipeline data processing began this summer. Feedback on when would be an opportune time for a workshop is welcome.

We are concerned that current policies for funding both guest observations and instrument development do not adequately provide for support of graduate students. This is particularly disturbing since one of the historic strengths of airborne astronomy has been the opportunities it affords for the "hands-on" experiences most beneficial to development of expertise in experimental and observational astrophysics. We realize this is a result of systemic trends and constraints arising beyond the SOFIA program, but we urge the Project to find creative ways to preserve the unique value of airborne astronomy for the training and development of young researchers.

We will continue our efforts to maintain or if possible increase the amount of funding available to guest investigators despite the difficult funding situation at present.

3.6 Shared Risk Observations with New Science Instruments

The SUG was given an update on plans to offer FORCAST grisms, EXES, and FIFI-LS during Cycle 2, with the understanding that observations will be considered to be "shared risk." We believe the Project should be conservative in representing the capabilities of new SIs until their performance has been evaluated fully in flight. At our last meeting, we recommended that the Project draft a statement that clearly defines the meaning of "shared risk" so that GIs proposing for such observations clearly understand the ground rules. This seems to have been done to some extent in the Cycle 2 call, but it is difficult to discern a strong policy statement that covers all SIs.

The Cycle 2 Call for Proposals defines shared risk to the extent that we could pre-define.

3.7 Non-sidereal Tracking Issues

Planetary science is a high priority for NASA. It is important for NASAs major observatories to be fully capable of making observations of solar system objects. We believe, therefore, that it is imperative for the Project to implement non-sidereal guiding in the telescope control software as soon as possible. Furthermore, the SSPOT software needs to be capable of showing the overlays that are associated with planning non-sidereal observations. This item is of a high priority because the bright Comet C/2012 S1 (ISON) will be within range of SOFIA operations during November/December 2013. The SUG would like to hear a status report from the Project on non-sidereal tracking at its next meeting.

A status report on non-sidereal tracking will be included in the next SUG meeting.

3.8 Tracking Flight Efficiency Statistics

In view of the high cost of SOFIA observing time, it is imperative to maximize the in-flight observing efficiency. We recommend that the Project track statistical measures of the time spent in the various phases of observation (e.g. target acquisition, astronomical integration, MCCA overhead, etc.). This would help to identify areas that require special attention and would enable the Project to monitor and quantify progress made in problem areas.

A report on observatory efficiency metrics will be included in the next SUG meeting.

3.9 The SOFIA Water Vapor Meter

The SOFIA water vapor meter obtains data that are crucial for the analysis of data from many of the SOFIA SIs. It did not function properly during recent GREAT flights. Our understanding is that the instrument is under evaluation and repair at the moment.

A report on the SOFIA water vapor monitor will be solicited for the next SUG meeting.

3.10 Mission Control and Communication System (MCC) Issues

The SUG learned that there were numerous MCCA failures during recent flights that seriously degraded time-on-target. We would like a report from the Project at our next meeting that outlines the status of these problems and what steps are being taken to address them.

The MCCA remains in development and is being actively debugged. The SOFIA Program considers MCCA improvement a high priority.