

# Responses to Actions from previous meeting (SUG13)

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SOFIA Users Group #14

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## **SUG13 Recommended:**

1. Strive to meet 15-day turnaround for calibrated data
2. Engage with NASA ADAP program
3. Recommend delay of SOFIA archive program
4. Fund analysis of recent data sets including DDT
5. Improve website for SOFIA data analysis
6. Outreach; SOFIA gallery; consider planetarium products
7. Establish cost/benefit for extending southern deployment
8. Consider removing proposer names from proposals
9. Use a community workshop to discuss future development

## SUG13 Recommended:

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10. Consider following for data processing
  1. Provide change logs for data processing pipelines
  2. Query community about releasing pipeline code
  3. Query the community regarding open source approach
11. Consider longer visits by potential students
12. Note poor progress in addressing water vapor monitor

## 1. Strive to meet 15-day turnaround for calibrated data

*The SUG encourages the Project to strive to meet the NASA requirements of a 15-day turn around, from acquisition to pipeline reduction.*

We always strive to meet this deadline. However, it is not always possible when we need to re-derive calibrations or to assess problems with the data. For the recent FORCAST series, problems with the instrument itself caused issues with the data, which needed to be investigated before any data could be archived. For the recent FIFI-LS series, the DPS team was significantly improving the flat fields and flux calibration, and processing was delayed to take advantage of the improvements; older data will now be reprocessed.

## 1b. Prioritize DDT delivery to IRSA

*The SUG also recommends that the Project prioritize delivering to the IRSA archive during the first ingestion cycle the large impact and Director's Discretionary Time datasets (i.e., OMC-Horsehead Nebula, LMC-30 Doradus) to enable immediate community access.*

The “first ingestion cycle” for the IRSA/SOFIA archive was already complete when this recommendation came. The scope of the first IRSA release (already in operation) is Cycles 4-5 with instruments FORCAST, GREAT, and FIFI-LS.

- The DDT observation of the Horesehead in [CII] was included ☺
- The DDT observation of 30 Dor with HAWC+ was not.

All SOFIA data will be available in the next release (by 2020).

## 2. Engage with NASA ADAP program

*...[E]ngage the relevant NASA ADAP program officers to develop a clear memorandum of understanding, wherein SOFIA archival data products are fully included and eligible within the terms of reference for the 2019 call.*

From NASA HQ: There are no MoUs for the *Hubble* or *Chandra* programs, and none is needed for SOFIA.

Scientists will be able to apply to any of these programs, within their scopes. In the SOFIA Archival Research Program (SARP; part of the Cycle 8 Legacy Call), we intend to offer a pilot program. Proposals to SARP are for only 1 year, must be SOFIA-primarily, and the total program is only \$300k meaning \$30k each if 10 proposals are accepted. These conditions distinguish SARP from ADAP.

### 3. Recommend delay of SOFIA archive program

*The SUG recommends delay of [the SOFIA Archival Research Program] and requests that the Project more fully develop this concept, taking into particular account how SOFIA data products might be utilized within NASA ADAP*

In order to increase the scientific productivity of SOFIA, we are proceeding with a pilot archive program in Cycle 8; we did not accept the SUG recommendation to delay. The SOFIA program will be similar to those of *Hubble* and *Chandra*, which have coexisted for many years with the Astrophysics Data Analysis Program, contrary to SUG claim that an observatory-specific initiative would “shut off future ADAP funding for SOFIA-primary archival research projects.”

## 4. Fund analysis of recent data sets including DDT

*...[C]onsider ways of funding the analysis of specific data sets - particularly those obtained through directors discretionary allocations - in a way that would not exclude SOFIA from being a primary data source for ADAP.*

SMO agrees that supporting scientific exploitation of datasets, including the DDT projects that were undertaken specifically as “data gifts” for the community to illustrate new capabilities, is a priority. The SOFIA archival research program is precisely the mechanism for providing that funding.



## 5. Improve website for SOFIA data analysis

*The SUG recommends archiving and posting workshop materials on webpages associated with the “cookbooks” and exploring production of simple accompanying video tutorials..., exchange forum..., FAQ....*

Response

## 6. Outreach; SOFIA gallery; consider planetarium products

*The SUG also recommends that the Project pursue a display of SOFIA art within the SOFIA Science Center building(s) and explore collaborations with digital planetariums by providing three-dimensional fly-through renderings of select SOFIA data to enhance visibility of the Project.*

We have completed the SOFIA art gallery that was presented at the 13<sup>th</sup> SUG meeting. On your next visit to the SOFIA science center, all are welcome to tour it! We have not pursued further 3-D rendering or planetarium collaborations yet.

## 7. Establish cost/benefit for extending southern deployment

*[C]onsider a quantitative cost-benefit analysis of additional and/or extended southern deployments.*

As part of the SOFIA 5-year Flagship Mission Review, the SMO made its top-priority request an extension of the southern deployment. We quantified the benefits in terms of time above tropopause, and we explained the asymmetry in priority science targets that favors southern declinations. We provided a cost estimate for our proposed increase in southern deployments. Recognizing this recommendation, the Program has already extended of the **Cycle 7** deployment to **8 weeks of southern observations**, including operation of **3 instruments**. Both the duration and number of instruments were increased compared to plan. We will continue to prioritize the southern deployment.

## 8. Consider removing proposer names from proposals

*The Project might consider removing investigator names from the proposal (or at least the front cover) or requiring only initials rather than an individual's full first name to help further minimize bias-related issues.*

We have not taken this action for the Cycle 8 Call for Proposals, because we see no gender disparity in SOFIA proposal selection. This possibility will remain in consideration for Cycle 9.

## 9. Use a community workshop to discuss future development

*The SUG also recommends that the Project consider which axes of SOFIA performance might best be exploited in future instrument calls and use a community workshop (e.g., similar in format to the 2016 Asilomar Conference) to discuss the merits of a directed call for specific capability versus other models.*

As discussed in the SUG meeting, a workshop following on the 2016 Asilomar conference is part of our plan to develop the next SOFIA science instrument; we included this in our Flagship Mission Review proposal.

## 10. Documentation of data processing pipelines

*Provide clear, concise change logs for data processing pipelines*

*Query community about releasing pipeline code*

*Query the community regarding open source approach*

The SMO has received strong community feedback in favor of releasing the data processing pipelines, in keeping with our efforts to recreate them in open source, python code as presented at the 13<sup>th</sup> meeting. This effort was included in our Flagship Mission Review proposal as well, where we provided the budget and timeline. We will continue toward this goal and will advertise the scope and timeline once we receive the budgetary support.

## 11. Consider longer visits by potential students

*[Consider] longer engagements by local undergrad and grad students or summer-length visits by students from outside the area.*

The possibility of a SOFIA student program remains under development. We will consider the SUG's advice about the length of such hypothetical engagements.

## 12. Note poor progress in addressing water vapor monitor

*The SUG also expresses ongoing dismay with regard to poor progress in addressing the aircraft water vapor monitor. The Project expressed confidence in the ability to work effectively without an operating device. The committee was not convinced that the Project has sufficient data to support that conclusion. We assert that the Project's strategy could significantly compromise data quality for some instruments, and the SUG was aghast that there is no identified pathway for eventual success. We also believe that the problems with the water monitor are not primarily technical but instead represent a serious failure of systems management procedures that cannot be addressed by the sorts of studies that have been conducted in the past.*

The SUG feedback is forwarded to the SOFIA Program Office. The SMO has worked around the lack of a water vapor monitor.