

2022 November 23

To: Dr. Margaret Meixner, Director SOFIA Science Mission Operations

Re: SOFIA Science Users Group (SUG) Meeting# 21 – Report

The SOFIA Science Users Group (SUG) held its 21st and final meeting virtually on Friday 2022 November 04. The primary discussion topics between SUG members and the SOFIA Science Mission Operations (SMO), led by Drs. Margaret Meixner, SMO Director, and Naseem Rangwala, NASA Project Scientist for SOFIA are captured in the meeting Agenda. Expanded details and charts presented at the SUG meeting are available at:

<https://www.sofia.usra.edu/science/sofia-overview/advisory-groups/sofia-users-group-sug>

SOFIA operations are now in close-out, with the final science flight occurring on 2022 September 28. The SMO has formulated and is executing a close-out plan to bring the program to conclusion in FY2023. The SUG appreciates efforts by the SMO and NASA to successfully complete various SOFIA flight opportunities to the very end of mission. The community was well served by these efforts, and the commitment of the SMO staff to fulfill all feasible science programs within the constraints of the science operations wind-down was laudatory.

The SUG also appreciates the presentations delivered by the SMO staff, and the frank and honest reflections regarding the SOFIA scientific legacy and community impacts by Drs. Margaret Meixner and Alfred Krabbe.

The SUG's observations and suggestions to the SMO as the close-out activities progress are highlighted below.

[SUG21 – 1] Science Close-Out and Legacy Program Final Status

The SUG applauds the SMO efforts to prioritize and drive as many legacy programs as possible over completion thresholds that enable achievement of their base scientific goals. The SUG encourages, within the limited resources available to effect mission close-out, that these data products be processed and released into the NASA/IPAC Infrared Science Archive (IRSA) SOFIA archive promptly.

The SUG expresses a desire that FPI data (approaching ~ 250TB) not be allowed to languish but realizes that the scope of assimilating these data products in a scientifically beneficial way into the IRSA repository likely is a task outside the bounds of the current scope of the mission close-out.

The SUG deeply appreciates SMO efforts to provide proposers their Cycle 10 reviews, despite the termination of the cycle flight opportunities and the non-selection of any proposal by NASA.

The SUG advises NASA to inform the community that support for future utilization of SOFIA archival data products is appropriate within ROSES Astrophysics Data Analysis Program (ADAP) opportunities.

The SUG supports the SMO's timeline for a mid-project "red-team" review of key close-out documentation in early 2023.

The SUG concurs with the SMO's contention that data in the SOFIA archives advances a significant fraction of the Astronomy and Astrophysics 2020 Decadal Survey science priorities and provides context for envisaged future missions within the Great Observatories Mission and Technology Maturation Program (GOMAP) framework.

The SUG encourages the SMO to seek arrangements to timely process all GREAT data properly for inclusion in the SOFIA IRSA archive consistent with NASA Science Data Policy (SPD) 41 principles.

[SUG21 – 2] Archiving the SOFIA Mission Documentation, Tools, and Web-presence

The SUG encourages the SMO to be diligent in archiving all relevant documentation, tools, pipelines, and web-materials to ensure that future potential users of the SOFIA mission data have the properly curated materials to produce high-level science data products that have the proper contextualization and provenance. If feasible, these materials also should full encompass both GREAT and HAWC+.

The SUG suggests that the SMO reach out to legacy teams for individuals to review and consult with the project as key instrument handbooks and other documentation are finalized for permanent archival curation.

[SUG21 – 3] Outreach to the science community

The SUG endorses the SMO plan to transition science community support. The SUG advises NASA that SOFIA will continue to produce interesting science that should be effectively communicated to the community (e.g., science blogs hosted on NASA.gov) to demonstrate the legacy impact of the mission.

[SUG21 – 4] Celebration of SOFIA Conference

The SUG concurs that a future science focused meeting celebrating the legacy of the SOFIA mission has merit. However, the SMO has no resources to support this activity. Therefore, it will

be incumbent on the SOFIA users' community to self-organize such an event. The SUG pondered whether such an event could be held under the auspices of an American Astronomical Society Meeting Within a Meeting opportunity, and encourages individuals on the SUG, SOFIA legacy teams or other potential interested parties to explore this possibility. The NASA ROSES Topical Workshops, Symposia, and Conferences program (e.g., F.2 in ROSES 2022) was mentioned as potentially providing some resources to support such a meeting.

Respectfully,

A handwritten signature in blue ink, appearing to read 'Chick Woodward', with a large loop at the end.

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