

SOFIA NASA Observatory and Program Assessment Council (SNOPAC) CHARTER

PREAMBLE: The SOFIA NASA Observatory and Program Assessment Council (SNOPAC) is convened by the NASA SOFIA Program Office to provide to this Office independent perspectives and fact-finding results regarding the development and execution of the SOFIA science mission from the viewpoint of the astronomical community. The community input provided by the SNOPAC, a non-consensus group, includes neither intentionally consensus advice nor recommendations on Program priorities to the government. Rather, the primary function of the SNOPAC is to articulate the range of candid perspectives that are reflective of the U.S. science community regarding the SOFIA Observatory's science merit, operation efficiencies, level of overall science impact to astrophysics, and other activities and issues relevant to SOFIA and to the U.S. science community in particular. The SNOPAC does not impose requirements on, make decisions for, or direct the SOFIA program. The SNOPAC is not privy to non-public information regarding the SOFIA program. To insure impartial discussion and objective feedback, the membership is drawn from a broad range of backgrounds and expertise that are not exclusive to infrared astronomy; members are selected outside both the SOFIA program and associated management chain.

OBJECTIVES: The SNOPAC's primary objectives are to:

- 1. evaluate the effectiveness and viability of the Observatory, including its science productivity, operational efficiencies, and level of overall science impact and continuing relevance to astrophysics;*
- 2. represent the range of U.S. community perspectives regarding policy and programmatic matters that impact science productivity, quality, or the user community.*

All SNOPAC findings related to SOFIA policies, procedures, operations plans and scientific productivity that impact the astronomical community are provided to the NASA SOFIA Program Management in non-consensus reports. This information is used for strategic planning by the Program. The findings are non-consensus and reflect the full range of perspectives provided by the individual SNOPAC members.

FUNCTIONS: The SNOPAC is expected to actively solicit and coordinate community input in all of the above topics for which such input would be appropriate. The activities of the SNOPAC fall into two main categories:

- **Program-directed:** The Program may occasionally utilize the SNOPAC to analyze or investigate specific topics.
- **Self-tasked:** As a semi-autonomous group, the SNOPAC is also responsible for tasking itself with the identification and associated follow-up of various focused areas of study/scrutiny that address the SNOPAC's two primary objectives (see above).

The SNOPAC has the latitude to initiate studies of science-related aspects of the Observatory, as well as to engage the community (including calling in additional subject experts as needed) in ways deemed effective in meeting the primary objectives. However, the Program must pre-approve any SNOPAC-led studies that require input, human resources, and/or financial support from the SOFIA program, including time or resources provided by SOFIA staff, before a study begins. Appendix A, *Examples of SNOPAC Studies and Activities*, provides specific examples of studies and activities performed by the SNOPAC.

In addition to meeting its primary objections, the SNOPAC is also tasked with the below routine functions:

- **Annual membership maintenance:** the SNOPAC identifies and replaces members completing their terms and updates the membership roster (see *SNOPAC Membership Selection Process*), and elects its Chair and Vice Chair on alternate years, per a defined process (see *SNOPAC Chair and Vice Chair Selection Process*).
- **Face-to-face meetings:** The Chair shall submit the agenda to the Program for its review at least two weeks

in advance of a face-to-face meeting. Charts (PowerPoint/PDF files) used in the meeting presentations (e.g., status or reports on studies, action items, etc.) are submitted to the Program for appropriate distribution no later than two weeks following a face-to-face meeting. A summary report is to be included in this distribution, describing the results of concluded topics and closed actions. This report does not have to represent a consensus: if a vote was involved on a specific decisional topic, any dissenting opinions should be documented.

- **Telecons:** Teleconferencing can take several forms, depending on the Chair's intent. Some telecons may be designated as internal working meetings for the SNOPAC (to coordinate activities, prepare for a face-to-face meeting, etc.), while others may take the place of face-to-face meetings. If requested, the Program will provide dial-in numbers and WebEx support for all these forms of telecom meetings.
- The SNOPAC shall approve this charter, including the Appendices, or submit a charter change request for Program consideration.
- The SNOPAC shall identify areas for self-tasked studies. If the study requires Program resources, Program concurrence is required before proceeding with the associated activities
- Identify topics of potential interest for inclusion on the SOFIA International Summit agenda.

MEMBERSHIP: The SNOPAC shall consist of five to seven (5-7) core members.¹ Requirements are imposed on the composition of the SNOPAC to ensure good balance of personal backgrounds (see *SNOPAC Membership Selection Process*). The SNOPAC's membership collectively represents a broad range of experience and expertise in ground- and space-based observatory operations, science center operations and management, and instrument development. The membership also includes scientists leading the fields of observational and theoretical astronomy with some, but not exclusive, association with infrared research.

TERM DURATION: The first generation of SNOPAC membership is appointed by the Program, and the terms assigned at that time will be variable in order to establish a staggered membership replacement cadence. For future generations of membership, the SNOPAC itself will replace members through a defined process (see document: *SNOPAC Membership Selection Process*). Members shall complete a standard term of three (3) consecutive years². A term may be extended by one additional consecutive year. Former SNOPAC members are re-eligible for membership if at least two (2) years have passed between the end of the previous term and the beginning of the new one.

MEETINGS: The SNOPAC holds at least one face-to-face meeting (not including the International Summit) during the year, with any number of additional telecons as needed. The face-to-face meetings are generally open attendance, but the SNOPAC is entitled to some closed sessions (e.g., executive or caucus session) in situations for which open attendance would compromise confidentiality or impede frank discussions.

As the SNOPAC is a semi-autonomous committee, at least half of the time scheduled for these meetings would be expected to be used by the SNOPAC in reporting the findings from its studies, the announcements of future studies, and requests to the Program for information or support for the SNOPAC's activities. The Program covers travel-related expenses for all SNOPAC meeting.

SOFIA COUNCILS: Five existing review/consultant groups are affiliated with SOFIA, listed below for reference only (their charters are independent of the SNOPAC and can be changed/adjusted outside of this document).

With the exception of the SRB, which is mandated at the Agency level, the other SOFIA committees are

¹ The SNOPAC may occasionally ask "outside" experts to assist with specific aspects of studies on a short-term basis. The full-term members are considered to be "core members", in contrast to such experts with "temporary" membership status.

² In order to insure staggered terms, the first generation of members have the option of serving a two year term.

established by and for various constituents within the SOFIA program. Excessive redundancy in activities amongst these various groups is undesirable and should be avoided. The GSSWG provides advice to the German Space Agency (DLR) management within the SOFIA Program, the SUG advises the SMO Director, and the SNOPAC provides feedback to the U.S. NASA management within the SOFIA Program. The SIS provides a forum in which these various groups may cross-pollinate ideas and findings, as well as to identify any duplicative efforts which require consolidation of effort.

Group	Chartered by:	Primary responsibility:
Standing Review Board (SRB)	NASA HQ	Required by NPR 7120.5; life-cycle phase review of Program (requirements traceability, integrated cost and schedule, risk management plan, program plan)
SOFIA Program Assessment Group (SNOPAC)	U.S. SOFIA Program (NASA)	Provide independent assessment of SOFIA to NASA SOFIA Program Office, from a U.S. community perspective.
SOFIA Users Group (SUG)	SMO Director (USRA)	Advises the SMO Director on matters related to data quality, observatory performance, and SMO policies.
German SOFIA Science Working Group (GSSWG)	German SOFIA Program (DLR)	Advises DLR management on SOFIA policies and activities from a German community perspective.
SOFIA International Summit (SIS)	NASA, DLR, DSI, USRA	Representatives from the SNOPAC, SUG, and GSSWG to discuss topics of common interest to these groups. ³

QUORUM: A majority (>50%) of core members shall constitute a quorum for the transaction of business.

VOTING: All actions taken by the SNOPAC shall be by majority vote.

CHARTER MODIFICATIONS: The SNOPAC charter should be considered as a living document, subject to change as needed and as the Program evolves. The process for making a change to the Charter is as follows:

If the suggested change is from...	
SNOPAC members, then:	the Program Office, then:
The Chair distributes a written change request to SNOPAC members for consideration.	The change request is submitted by the Program to the Chair for distribution to the SNOPAC.
The SNOPAC discusses the request internally, and votes whether to recommend the change to the Program.	The SNOPAC discusses the change internally; concerns or comments are documented.
If request is supported by majority vote, the recommendation goes to the Program for concurrence.	The Chair submits any noted concerns/comments to the Program for deliberation
<i>If NASA Program Office concurrence on the suggested change is provided, the change is implemented.</i>	

³ A separate charter is under development for this group. Membership includes the SUG, GSSWG, and SNOPAC chairs.

APPENDIX A: *Examples of SNOPAC Studies and Activities*

1. *Evaluate the effectiveness and viability of the Observatory, including its science productivity, operational efficiencies, and level of overall science impact and continuing relevance to astrophysics:*

To support this objective, the SNOPAC may use existing metrics defined by the SOFIA Program, identify (in an independent non-consensus manner) possible new ones for consideration by the Program if a gap is identified, and/or gather information itself to perform a study, such as conducting community polls. Examples of SNOPAC-initiated or Program-directed studies related to the Observatory's effectiveness include:

- SOFIA utilization:
 - Is the amount of overhead involved in science data acquisition at a reasonable level, or do efficiencies need to be improved?
 - Is the science time being utilized for investigations of high merit?
 - Is the Director's Discretionary time being used in a fair and science-enhancing manner?
 - Is the science from the guaranteed time for the science instrument teams of high merit?
- SOFIA science impact:
 - Is an acceptable fraction of SOFIA data being incorporated into scientific journal papers?
 - Is the SOFIA paper citation rate at an acceptable level?
 - Do the selected SOFIA investigations have a healthy balance between what would be considered "bread-and-butter" science and revolutionary science?
 - Is the quality (calibration accuracy, image quality, etc) of the data products meeting the requirements necessary to achieve the science objectives for which the observations were made?
 - Does SOFIA continue to possess unique capabilities of notable importance?
 - How strong is the synergy between SOFIA and other observatories in addressing scientific issues?
 - Does SOFIA continue to have potential for long-term science impact, or for advancing "discovery space" and revealing new astrophysical phenomena?
 - On a case-by-case basis, is each science instrument still providing data in the wavelength range (or in some other named parameter space) that continues to be relevant to compelling science questions?

2. *Represent the range of U.S. community perspectives regarding policy and programmatic matters that impact science productivity, quality, or the user community.*

Examples of SNOPAC-initiated or Program-directed studies related to policy/programmatic matters may include:

- Provide independent (non-consensus) assessment of programmatic considerations such as science trade studies (particularly those related to science quality versus science quantity, time spent on engineering versus observations), descope options, and risk posture.
- In the context of other NASA science centers and ground-based observatories, assess if an appropriate balance exists between Observatory service work and other responsibilities and activities by SOFIA science staff.
- Assess if an appropriate balance exists in the contributions provided between the DLR and NASA agencies, from a U.S. community perspective.
- Assess if an appropriate demographic balances exist in the distribution of SOFIA Guest Investigator awards.
- Assess if the distribution of science flight time between the international partners, science instrument teams, etc, seems appropriate from a U.S. community perspective, and identify any areas that may benefit from improvements to maximize efficiencies or science output.
- Serve as a sounding board for new initiatives or policies considered by the Program that could impact the U.S. science community.
- Are adequate resources being provided to support the analysis of the science data, or in other areas that directly impact science quality, quantity or productivity?

APPROVAL OF THIS DOCUMENT

The SNOPAC Charter is approved when all signatures are affixed.

SNOPAC Chair

Date

NASA SOFIA Project Scientist

Date

DRAFT