



**Stratospheric Observatory for Infrared Astronomy
(SOFIA)**

**SOFIA Legacy Program
and
Archival Research Program**

Call for Proposals

July 20, 2019

Version 1.0

There are two different Calls for Proposals for SOFIA's Cycle 8: 1) the *SOFIA Legacy Program and Archival Research Program* (this document) and 2) SOFIA's regular *Observing Cycle 8*. Documentation and other information pertaining to these Calls may be found at <https://www.sofia.usra.edu/science/proposing-and-observing/proposal-documents>.

Key Dates

Release of Call for Proposals	May 31, 2019
Call for Proposals Update on Website	July 20, 2019
Proposals Due	September 6, 2019 21:00 PDT (September 7, 2019 04:00 UTC)
Anticipated Announcement of Selections	December 2019
Implementation Period	SOFIA Cycles 8 & 9

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Change Log:

June 10, 2019: Modifications to the maximum available solicited observing time for regular and Legacy proposals (Sections 1.2, 2, and 2.4)

July 20, 2019: No updates required.

1. SOFIA Legacy Program and Archival Research Program Description

1.1. New Policies and Capabilities for Cycle 8:

- This call continues the SOFIA Legacy Program (SLP) introduced in Cycle 7 – see Section 2
- SOFIA Science Missions Operations (SMO) introduces with this call a new type of program called the SOFIA Archival Research Program (SARP) – see Section 3.
- Cycle 8 is potentially the last cycle in which FORCAST will be offered, depending on funding and proposal pressure. The availability of this instrument for observations in the second year of this SOFIA Legacy Program Call is yet to be determined.

1.2. Introduction

The Stratospheric Observatory for Infrared Astronomy (SOFIA) is pleased to invite proposals for the second round of SOFIA Legacy Programs (SLP), aimed at generating astronomical data of significant value to the astronomical community by yielding results addressing specific science goals as well as providing a rich archival data set for future analysis. The SOFIA project expects to select up to four SLPs per solicitation to be executed over two observing cycles. The programs are expected to be allocated up to 200 hours of observing time each (with approximately half of these hours of observations per cycle). Even larger, well-justified programs will also be considered, but would still be expected to be executable over a two cycle period (see Section 2).

With this call the SOFIA Science Missions Operations (SMO) furthermore introduces a new type of program called the SOFIA Archival Research Program (SARP). This is a pilot program to fund archival research projects primarily using SOFIA data to encourage the use of available data and to realize the full potential of the SOFIA Data. (see Section 3).

This call provides specific information for the structure and submission requirements for the SLPs and SARPs, which differ from the regular Cycle 8 proposals (e.g. explicit budgets are required for both SLP and SARP proposals). General information regarding the SOFIA project, its instruments and the proposal process can be found in the regular Cycle 8 Call for Proposals (Cy8_CfP; <https://www.sofia.usra.edu/science/proposing-and-observing/proposal-documents>).

The SLP Call is open to all qualified astronomers in the U.S. and outside the U.S. Proposals submitted by cohesive teams are particularly encouraged. The SARP Call is open to all qualified astronomers in the U.S. only.

2. The SOFIA Legacy Program

The purpose of the SOFIA Legacy Program category is to encourage and enable larger science programs with well-defined goals that will lead to significant advances in their fields of study. To enable such programs, an appropriate amount of observing time and resources will be made available. These programs may, in addition to SOFIA observing time, request support for theory or laboratory efforts, the development of software tools, supporting data sets, and similar activities directly supporting the science goal of the SLP. SLP proposals are strongly encouraged to include the generation and distribution of supporting tools and Level 4 data products or associated and/or supporting data. Significant resources (approximately \$2M/year) have been set aside to support these programs. However, only astronomers with a U.S. affiliation will be eligible for funding.

Preparations for the observations associated with SLPs will follow the same process as regular SOFIA programs. The proposal team will be responsible for the definition and preparation of the program and observations, with support of the SMO staff. The SMO will carry out the observations, with optional participation from the proposal teams. The SLP observations will, generally, be interspersed with observations for regular Cycle 8 and 9 programs.

The SOFIA data from the SLPs will be processed through the regular SMO pipeline routines (where applicable; see Cy8_CfP, sec. 3.5). The resulting data will not have any exclusive use period. Higher-level data products generated by the proposal teams will be archived on a schedule negotiated with the SMO.

SLPs submitted to the Cycle 8 solicitation may request any combination of the available SOFIA instruments. Proposers requesting the use of the Principal Investigator Class Science Instruments (PSI) GREAT or EXES, are encouraged to contact the respective Principal Investigators (Dr. Jürgen Stutzki of the Max Planck Institute for Radio Astronomy, and Dr. Matthew Richter of University of California, Davis). For details of the instrumental bands and observing modes offered, please see the general Cycle 8 Call (Cy8_CfP, sec. 3.2).

2.1 General Guidelines and Policies

2.1.1 General Proposal Guidelines

Proposals submitted in response to this call should address a scientific problem of significant and broad importance, in any area of astronomy. Supporting activities, including theoretical work, laboratory efforts, software development and (limited amounts of) supporting observations, and the assembly and possible re-processing of supporting data are also allowed. The generation of software tools and Level 4 data products that can be used for future research are particularly solicited. Synergistic observations with other current or near-future observatories—such as the Infrared Telescope Facility (IRTF), the

James Webb Space Telescope (JWST), and the Atacama Large mm-wave Array (ALMA)—are especially encouraged. However, no explicit connection (or "joint queue" process) is in place.

The proposal should clearly state the scientific problem and its relevance. The different parts of the program should be clearly connected and justified. A clear path to timely publications is critical.

Any supplementary data sets (e.g. from other observatories) proposed or required should be described as to relevance, structure, and status (for instance; open access, pipeline processed archives; existing, but not fully processed; or proposed, but not acquired observations – accepted or pending).

The proposals should describe the specific activities proposed and the relevant expertise of the PI and proposal team. The purpose, structure and implementation of software tools for processing beyond the standard SOFIA pipeline processing should be described in detail. For deliverable items and tasks (such as processing software, Level 4 data products etc.) a work plan is required in the implementation narrative, with an accompanying resource loading (to be included in the budget and discussed in the budget narrative).

Theoretical work including model development and implementation as well as laboratory studies may also be proposed. For such proposals, the methodology and procedures and their relevance to the SOFIA Legacy Program should be clearly described.

In contrast to the regular SOFIA cycle proposals, SLPs proposals must include a budget request. This allows the proposal PI to match the proposed effort and products to the resources needed to accomplish the work and should be described in the budget narrative. A budget template is provided. As with regular proposals, the SMO Director may choose to select parts of an SLP program and offer only partial funding.

2.1.2. Targets for SOFIA Legacy Proposals

Each SOFIA Legacy Proposal must describe the proposed targets for the program. Target lists that contain a larger set than achievable within the requested time are acceptable in Phase I if justified. Such target pools will then be finalized in the acceptance process and Phase II preparation (or, for survey-type programs, in the flight planning). Such target pools should, however, be of limited over-subscription (i.e. a factor 2-3 of the requested time). The SOFIA standard duplication rules apply (Cy8_CfP Sec. 3.1) relative to both regular program targets as well as Guaranteed Time Observation Reserved Observation Catalog (GTO ROC) targets.

2.1.3. Legacy Program Constraints and Feasibility

The scientific merit and reach of the proposed SLP science is of paramount importance in the proposal selection process, and the SOFIA project will consider very highly ranked

SLP programs requiring non-standard/dedicated scheduling and other special considerations. However, the feasibility to execute SLP observations is constrained by factors such as the size of the program, the intent to execute SLP observations in parallel to the regular Cycle 8 (and 9) observations, and the unique characteristics of the SOFIA observatory. We discuss these elements here to allow proposal teams to optimize their programs and to ensure the selectability of their proposals.

Programs that request limited contiguous (<3 hours per flight), and total (<20 hours total) duration observations per target, distributed over the northern sky, do not need to discuss scheduling constraints in detail, unless specific timing requirements apply. However, those requesting large amounts (>20 hours) of observing times over limited areas of the sky (especially for inner Galaxy and southern sources) or time constrained scheduling should consider the impacts of the following scheduling constraints on their programs:

- SOFIA is scheduled in multi-week, single-instrument Science Flight Series. Instrument changes typically require two to three days. Therefore, instrument series are usually at least three weeks in duration.
- Flight crew staffing rules normally limits SOFIA to four nights per week with a maximum “wheels-up-to-wheels-down” duration of 10 hours per flight.

Hence, high time-cadence observations with multiple instruments, or tightly time constrained observations, will require additional downtime and inefficiencies.

- Because of the need to return to the home base – whether in Palmdale or on a deployment site – typical flight legs on target are limited to about 3 hours duration. Longer contiguous flight legs are possible but cause significant inefficiencies.

For large programs, “balancing” observations from the regular target pool may not be available to allow efficient flight plans. Observations requiring special scheduling will be charged the additional overheads incurred.

- The annual Southern Deployment is limited to 7 weeks with two instruments. Suitcase deployments (Cy8_CfP Sec 2.2.3.2) may be possible for additional time on the Southern Sky but have limited flight cadence. Large requests for southern hemisphere observations will therefore require strong scientific justification.
- Observations with the PSIs – EXES and GREAT – require the PI team to be present. While the SMO and the PI teams endeavor to support all requested observations, the availability of either PI team cannot be guaranteed in advance for a specific time period.

2.1.4. Who May Propose

Participation in the SOFIA Legacy Program is open to scientists from all categories of U.S. and non-U.S. organizations, including educational institutions, industry, nonprofit

institutions, NASA Centers, and other Government agencies. Astronomers with German affiliations are also invited to respond to this call for SOFIA Legacy Programs (see Sec. 2.1.5).

Each SOFIA Legacy Program proposal must identify a single Principal Investigator (PI). All members of a proposal team must have clearly identified roles, responsibilities, and tasks, with well-defined time and resource allocations and commitments. Junior members may be identified by positions only (e.g. to-be-identified post-doctoral fellows). If a PI is from a non-U.S. organization, then a lead Co-I from a U.S. organization must be named, if funding for the U.S. members of the team is being requested.

Proposals from multi-institution teams are encouraged when enhancing the science return of the program. Such teams may include government and non-government groups, U.S. and non-U.S., including staff members at the DSI and SMO.

2.1.5. Joint Legacy Programs

Joint proposals by astronomers affiliated with non-German and German institutions¹ are also invited. Such proposals shall identify a non-German and a German co-PI. If funding is requested, the non-German co-PI must be affiliated with a U.S. institution and will be considered the PI of the program. If no funding is requested, the proposal must clarify who will be the formal PI (and primary contact for the SMO). For such proposals, the requested observing time will be proportioned with an 80/20 ratio from the NASA and DLR allocations.

Proposals that include individual German co-Is will not automatically be considered “Joint Proposals” unless the German co-I is identified as co-PI.

2.1.6. Late Proposals

Consistent with USRA and NASA policy, no late proposals will be considered. A proposal will be considered “on time” only if all necessary components have been received by the published deadline. Note that processing delays at the proposer's home institution, shipment delays of the proposal, or Internet delays, do not excuse the late submission of a proposal.

2.2. Data Rights and Distribution

The scientific data from SOFIA Legacy Program observations will be processed via the regular SOFIA pipeline process (at the SMO for Facility Science Instruments (FSIs) and by the instrument teams for Principal Investigator-class Science Instruments (PSIs)) and be distributed to the community via the SOFIA data archive. At present, the primary

¹ I.e. institutions whose proposals would under the Regular call be submitted to the NASA/USRA and DLR/DSI queues, respectively.

SOFIA data archive is the DCS Science Archive. However, SOFIA is beginning to transition to using the Infrared Science Archive (IRSA) hosted by the Infrared Processing & Analysis Center (IPAC) as its primary data archive. The first release of the SOFIA Archive at IRSA includes FIFI-LS, FORCAST, and GREAT data from Cycle 4 and Cycle 5, and is currently accessible online. By the end of 2019, the second archive release will expand the database to include SOFIA data from all instruments and all cycles.

As for regular GO programs, all data will be archived as Level 1 data (raw). Where appropriate, Level 2 (corrected for instrumental and atmospheric effects) and Level 3 (flux calibrated) data will be provided by the SMO or the PSI science teams. In addition, the data generated by any accepted Level 4 processing will be archived in a similar manner.

For the SOFIA Legacy Programs, Level 1-3 data will be accessible to the community immediately upon completion of processing and will not have any exclusive-use periods. Level 4 data from the SLP teams will be archived and publically available as they are delivered, based on agreements with the SMO.

2.3. Proposal Evaluation and Selection Process

The proposals for SLP participation will be evaluated by a review committee, which will advise the SMO Director. This review will be separate from the general Cycle 8 Time Allocation Committee (TAC). The findings and recommendations of the SLP review will be coordinated with the regular Cycle 8 TAC and the SMO Director and (DSI) Deputy Director. As for regular SOFIA observing proposals, the SMO Director is the selection official for the SLP proposals.

The following factors will be used in evaluating proposals for the SOFIA Legacy Program:

- The scientific merit of the proposed activities and enhancement of the SLP.
- The competence and relevant experience of the Principal Investigator and collaborators.
- The utility and value of the proposed analysis and tool development
- The utility and value of proposed supporting data sets
- For Joint Legacy Programs, a substantial participation from non-German team members is required.

The SMO director may select part of the proposed work and offer a concomitantly modified budget. He may also, after consultations with the DSI Director and SMO Deputy Director, decline Joint Legacy Programs that do not meet the programmatic priorities of both NASA and DLR. Proposals providing synergies with major observing facilities will be given particular consideration.

2.4. Funding for U.S.-based Investigators

Funds for awards are expected to be available to investigators at U.S. institutions subject to the annual NASA budget cycle. It is expected that the total budget for the first round of the SOFIA Legacy Programs will be approximately \$2M per year. The nominal grant period for these awards will be up to three years, with funding disbursed on an annual basis. Nominally, one or two programs will be selected per cycle. It is expected that the grant disbursement will be evenly distributed over the period of performance, unless explicitly justified and approved by the SMO.

The budget and disbursement should be fully justified in the budget narrative. Funding can be allocated for salary support, including student or post-doctoral researcher support. Direct costs (such as computer hardware or software licenses, travel support, etc.) are also expected. Proposals in response to this call must include an itemized budget outlining the costs and assignments required to complete the proposed work.

Only researchers with U.S. affiliations are eligible to receive financial support through this Legacy Program. All funding will be disbursed through the proposal PI's institution.

For the Legacy proposals selected, the total allocated funding requested for the first year of observations will be released at the time that both USRA and the recipient institution have agreed on the terms and conditions of the grant. Funding for the second and third year is contingent on satisfactory annual cost and technical progress reports, submitted to the SMO Director via the SOFIA/USRA Contracts Office.

3. SOFIA Archival Research Program Description

SOFIA is pleased to invite proposals for the first round of SOFIA Archival Research Programs (SARP), aimed at encouraging the use of data in the SOFIA Science Archive.

This call provides specific information for the structure and submission requirements for the SARPs, which differ from the regular Cycle 8 proposals (e.g. explicit budgets are required for SARP proposals). Requests for new observations are not allowed under this call. General information regarding the SOFIA project, its instruments, and the proposal process can be found in the regular Cycle 8 Call for Proposals (Cy8_CfP; <https://www.sofia.usra.edu/science/proposing-and-observing/proposal-documents>).

As a funding call, the SARP is open to qualified astronomers with U.S. affiliations, although access to the SOFIA Science Archive is freely available and not limited to those eligible to apply for this funding.

3.1. The SOFIA Archival Research Program

The purpose of the SOFIA Archival Research Program being piloted in Cycle 8 is to encourage the use of SOFIA archival observations for science. Such projects are funded for a duration of one year, with the possibility of a no-cost extension (NCE). This complements the Astrophysics Data Analysis Program (ADAP) under the NASA Research Opportunities in Space and Earth Sciences (ROSES) solicitation. We encourage researchers to take advantage of ADAP when SOFIA data is combined with data from other NASA facilities and use of SOFIA data is not the primary focus of the research.

To enable such programs, an appropriate amount of resources will be made available. In addition to support for the scientific analysis of archival data, these programs may request support for the development of new tools for theory or for laboratory efforts (excluding laboratory equipment) that *directly* support the science goal of the SARP. Only astronomers with a U.S. affiliation will be eligible for funding.

3.2. General Guidelines and Policies

3.2.1 General Proposal Guidelines

The SOFIA Archival Research Program is intended to facilitate the timely publication of data already publically available in the SOFIA Science Archive. This may be either through the analysis and publication of previously unpublished observations, or through the re-analysis and/or consolidation of several data sets. The generation of software tools that can be used for future research are also allowed as part of the publication effort.

The utilization and analysis of supporting data sets may be part of the supported effort, but only as relevant to the analysis and publication of the SOFIA data. Any supplementary data sets proposed or required should be described as to relevance, structure, and status. Limited amounts of directly relevant theoretical work, including model development and implementation, may also be proposed.

Proposals for new observations are not solicited or allowed as part of the SARP call; these should be submitted via the standard Cycle 8 call or as SOFIA Legacy Programs. The data sets to be used should be identified in the proposal body.

The proposal should clearly state the scientific problem that will be addressed and its relevance. The proposals should describe the specific activities proposed and the relevant expertise of the PI and proposal team. A clear path to timely publications is critical.

Any supplementary data sets required should be described as to relevance, structure and status (for instance; open access, pipeline processed archives; existing, but not fully processed; or proposed, but not acquired observations – accepted or pending). The proposal should describe why the supplementary data sets are necessary to interpret the SOFIA archival data and to achieve the science goals of the proposal.

Theoretical work, including model development and implementation, may also be proposed. For such program components, the methodology and procedures and their relevance to the SARP should be clearly described, including why they are necessary to interpret the SOFIA archival data and to achieve the science goals of the proposal.

Where a SARP proposal builds on previously-funded research, the proposal must identify that work and summarize its results. The proposal should make it clear how the proposed work will extend the work previously carried out.

In contrast to the regular SOFIA cycle proposals, SARP proposals must include a budget request. This allows the proposal PI to match the proposed effort and products to the resources needed to accomplish the work and should be described in the budget narrative. A budget template is provided. The SMO Director may choose to select parts of a SARP program and offer only partial funding.

3.2.2. Who May Propose

Participation in the SOFIA Archival Research Program is open to scientists from all categories of U.S. and non-U.S. organizations, including educational institutions, industry, nonprofit institutions, NASA Centers, and other U.S. government agencies. Only U.S.-affiliated proposals are eligible for funding through this call.

The PI of the regular or Legacy program under which the data targeted by the Archival Research Program was acquired may be the PI or team-member of the Archival Research Program, if well justified. However, he/she may not propose for archival funding until the full funding period (including all no-cost extensions) of the observing program has expired and the final report for that program has been submitted and accepted by the SOFIA Contracts Manager.

Each SOFIA Archival Research Program proposal must identify a single Principal Investigator (PI). All members of a proposal team must have clearly identified roles, responsibilities and tasks, with well-defined time and resource allocations and commitments. Junior members may be identified by positions only (e.g. to-be-identified post-doctoral fellows).

3.2.3. Late Proposals

Consistent with USRA and NASA policy, no late proposals will be considered. A proposal will be considered “on time” only if all necessary components have been received by the published deadline. Note that processing delays at the proposer's home institution, shipment delays of the proposal, or Internet delays do not excuse the late submission of a proposal.

3.3. Proposal Evaluation and Selection Process

The proposals for SARP funding will be evaluated by a review committee, which will advise the SMO Director. This review will be separate from the general Cycle 8 Time Allocation Committee (TAC). As for other SOFIA proposals, the SMO Director is the selection official for the SLP proposals.

The following factors will be used in evaluating proposals for the SOFIA Archival Research Program participation.

- The scientific merit of the proposed activities
- The realism of the path-to-publication, and likely impact of the resulting papers
- The feasibility of accomplishing the objectives of the investigation.
- The competence and relevant experience of the Principal Investigator and collaborators.

The SMO director may select part of the proposed work and offer a concomitantly modified budget.

3.4. Funding for U.S.-based Investigators

Funds for awards are expected to be available to investigators at U.S. institutions subject to the annual NASA budget cycle. It is expected that the total budget available for the first round of the SOFIA Archival Research Programs will be approximately \$300k and that up to 10 SARP proposals can be expected. The grant period for these awards will be one year with funding disbursed on completion of all required contract components. Note that, unlike regular SOFIA proposals, there is no Phase II for SARP.

The budget and disbursement should be fully justified in the budget narrative. Funding can be allocated for salary support, including student or post-doctoral researcher support. Direct costs (such as computer hardware, software licenses, travel support, etc.) are also expected. Proposals in response to this call must include an itemized budget outlining the costs and assignments required to complete the proposed work. The funding request must be commensurate with the data sets proposed and should not exceed the approximate funding level allocated to new SOFIA observations (\$10k/h), unless explicitly well justified.

Only researchers with U.S. affiliations are eligible to receive financial support through the SARP. All funding will be disbursed through the proposal PI's institution.

4. Proposal Preparation

Each SOFIA Legacy Program and SOFIA Archival Research Program proposal must be prepared using the Unified SOFIA Proposal and Observation Tool (USPOT). The proposal information is entered directly, while text sections including the scientific justification,

feasibility analysis, budgets and budget narrative, should be uploaded via USPOT² as a single PDF files. SARP proposals should be submitted using USPOT without any Astronomical Observation Requests (AORs). The proposer should select either “Legacy” or “Archival” as appropriate as the proposal type in USPOT.

Proposals must be written in English. The length of each section of the proposal should not exceed the page limits indicated in Section 4.1, using single-spaced 8.5x11 inch or A4 format with 1 inch (2.5 cm) margins. Proposals must be printed to PDF files with a font size no smaller than 11 points (about 6 characters per cm). Reviewers will only be provided the portion of each proposal that complies with the page limits.

The abstract provided using USPOT is limited to 300 words.

4.1 The Unified SOFIA Proposal and Observation Tool (USPOT)

The Unified SOFIA Proposal and Observation Tool (USPOT) provides the user with a form-based interface for preparing a proposal and for electronic submission to the SOFIA SMO. USPOT is based on the IPAC SPOT tool, which has already, in modified form, been used to prepare SOFIA Phase II inputs in earlier cycles. After downloading the appropriate package and following the installation instructions, the user starts a new proposal by launching the USPOT application. The proposer then fills out the necessary form fields including proposer information, abstract, instrument(s), and target lists. The Science and Technical Justification may be prepared using any text editor (e.g. MS Word, LaTeX, etc...) and saved as a PDF file. Using USPOT, the proposer then identifies this PDF file on a local disk for attachment to the proposal summary information. When the proposal is complete, the user submits the complete proposal directly to the SMO using USPOT. Details about USPOT may be found in the Observer’s Handbook and the USPOT Manual. On-line help for USPOT is available as a pop-up function in the application.

4.2 Proposal Text Sections (To be uploaded as a single PDF file)

Proposal Sections – The uploaded PDF file must contain the following sections in the order indicated for each proposed observing program. The page length limits are indicated.

Please note that for for SOFIA Legacy Program proposals longer than 16 pages total, DCS will return a warning about a too long proposal. If all individual section limits have been adhered to, this warning may be ignored.

1. **Scientific Context (up to 1 page)** – Briefly summarize the proposed investigation with the following elements:

Context – What is the context and significance of this proposal to the broader field of astronomy?

Aims – How will the observations address the specific scientific questions

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<https://dcs.arc.nasa.gov/observationPlanning/installUSPOT/uspotDownload.jsp>

in this proposal?

Methods – What are the key measurement techniques utilized in this investigation? How do they pertain to the unique capabilities of SOFIA?

Synergies – How does the proposed work share synergies with observations with other observatories, especially JWST or ALMA, and other laboratory/theory efforts?

Anticipated results – What are the expected data sets that will be produced in this investigation?

- 2. Scientific Justification (up to 5 pages for Legacy proposals, up to 3 pages for Archival proposals)** – The proposals should describe the observations and activities proposed. Any supplementary data sets proposed or required should be described as to relevance, structure and status (for instance; open, pipeline processed archives; existing, but not fully processed; or proposed, but not acquired observations – accepted or pending). The purpose, structure and implementation of software tools for processing beyond the standard SOFIA pipeline processing should be described in detail. For theoretical work, the importance and relevance to the specific SLP/SARP should be clearly described.
- 3. Feasibility and Path to Publication (up to 3 pages for Legacy proposals, up to 1 page for Archival proposals)** – This section forms the basis for assessment of the technical feasibility of the proposed observations. For SLPs, the requested exposure time for each observation must be justified. The section should include the expected target fluxes and the signal-to-noise ratio required for each observation. The source (or method) for the flux estimates and their accuracies should be addressed. Where applicable, the spectral resolution required must be explicitly stated. Any other information about the proposed observations that would help the reviewer relate the technical needs to the scientific goals should be included in this section. Observing overheads and other indirect time estimates should follow the instructions given in the Observer’s Handbook. This section should also contain the justification for special calibration procedures, if they have been requested (Cy8_CfP Sec. 3.5.2). For SARPs, the proposal does not include observations, but this section should still include the other components described below.

The technical feasibility section should include a brief discussion of the anticipated data analysis, new tools, and laboratory/theoretical work needed to accomplish the investigation. Specifically, describing all tasks performed by proposers to enhance the calibrated data from the SOFIA Science Center will assist the reviewers in assessing the scope of the proposed effort.

Describe the plans for and constraints on the generation and timely submittal of research publications based on the proposed observations. If the requested SOFIA data depend on synergies with other observations or theoretical work, describe the status of those efforts.

4. **Budget (budget form(s) + up to 2 pages of Budget Narrative)** – A budget outlining the requested support, in salary and other direct costs, as well as requested overheads is required. For the purpose of the proposal, a budget form is provided at https://www.sofia.usra.edu/Science/SLP-budget_Form (for accepted proposals, the SOFIA/USRA Contracts Manager will work with the proposer’s Sponsored Research Office to generate a mutually acceptable budget format). A budget narrative of up to two pages is also required. For multi-institution programs, the lead institution shall describe the tasking and support for each collaborating organization, but may use separate budget forms. Funding profiles deviating significantly from an evenly distribution over the three-year period should be explicitly justified.
5. **Implementation Narrative (up to 2 pages for Legacy proposals, not included for Archival proposals)** – Justify the allocation and time commitments of the proposal team and their primary proposed focus. The expertise and qualifications of the proposal team, as related to the proposed activities should be provided. For software and/or supporting data, describe the acquisition/generation and time plan for delivery to the SLP and SOFIA. For theoretical work, describe the implementation of that work in supporting the goals of the SLP.
6. **Principal Investigator and Co-Investigator Biographical and Publication Data (one page for the PI with one-half additional page per Co-I).** A short biographical sketch for the PI should be provided and include a list of the most recent refereed publications relevant to the scientific proposal. Short biographical data, including their roles in the proposed project, should be provided for the Co-Is.

4.3. Proposal Submittal

Proposals must be submitted using the USPOT application. Upon successful upload, the system will generate an automatic message acknowledging the submittal, and generating a unique identifier for later reference. A confirmation email will be sent to the email address provided in the proposal.

Proposals can be resubmitted at any time before the proposal due date. Proposals that have been submitted to the SMO can be *resubmitted* using USPOT at any time up to the proposal deadline (note that old versions are not retained).

5. SOFIA Legacy Program, Round 2, Schedule

The nominal schedule for the SOFIA Legacy Program (SLP) observing program is as follows:

31 May 2019

Release of Call for Proposals



20 July 2019

Call for Proposals update

6 September 2019, 21:00 PDT

Proposal Submission deadline

7 September 2019, 04:00 UTC

Proposal Submission deadline

December 2019

Proposal Selections Announced

January 2020

Initial meeting of SMO with proposing team

Cycle 8 & 9

SLP Round 1 observations and analysis

6. Contacts and Further Information

For further information about the Cycle 8 Call for Proposals or help in preparing proposals, please see the “Information for Researchers” (<https://www.sofia.usra.edu/science>) section of the SOFIA website, or contact the SOFIA help desk at sofia_help@sofia.usra.edu.

Questions about either the SOFIA Guest Observer (GO) program, the SOFIA Legacy Program (SLP) or the SOFIA Archival Research Program (SARP) can be directed to the SOFIA User Support lead, Dr. Randolph Klein (rklein@sofia.usra.edu), or the Associate Director for Science Operations, Dr. B-G Andersson (bg@sofia.usra.edu).

For further information about the SOFIA Science project, please contact the above, or the Science Mission Operations Director, Dr. Harold Yorke (hyorke@sofia.usra.edu).