Stratospheric Observatory for Infrared Astronomy (SOFIA)

SOFIA Legacy Program

Call for Proposals

July 24, 2020

Version 1.2

There are two different Calls for Proposals for SOFIA's Cycle 9: 1) the *SOFIA Legacy Program* (this document) and 2) SOFIA's regular *Observing Cycle 9*. 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	June 2, 2020
Call for Proposals Update on Website	July 24, 2020
Proposals Due	September 4, 2020 21:00 PDT (September 5, 2020 04:00 UTC)
Anticipated Announcement of Selections	December 2020
Implementation Period	SOFIA Cycles 9 & 10

Table of Contents

Change Log:

June 2, 2020:	Original release
July 24, 2020:	Include modified details on southern deployment and extension of Cycle 9, and link to futher information on dual anonymous review.

1. SOFIA Legacy Program Description

1.1. New Policies and Capabilities for Cycle 9:

- This call continues the SOFIA Legacy Program (SLP) introduced in Cycle 7 – see Section 2
- In response to COVID-19, observations were temporarily suspended on March 19, 2020. Some accepted SOFIA observing proposals from Cycles 7 and 8 could not be executed as planned. The exact impact on Cycle 9 at the time of the release of the call for proposals remains uncertain. It is possible that the amount of observing time carried over from previous cycles into Cycle 9 will be larger than usual.
- For Cycle 9, SOFIA is implementing dual-anonymous review by removing the names of PIs and co-Is from the proposals prior to presentation to the TAC panels. Proposers should thus avoid referring to PIs and co-Is by name in the proposal body and should ensure that the biography section, implementation plan and budget are uploaded as a separate PDF.
- For Cycle 9, legacy proposals are invited to participate in a two-step process whereby pilot observations will be performed in Cycle 9 prior to the decision on committing to a full legacy program.
- Cycle 9 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.
- For details of new observing modes for GREAT, HAWC+ and FIFI-LS, please see the regular Cycle 9 Call for Proposals.
- For Cycle 9, SOFIA plans to offer three Southern deployments: a long deployment scheduled approximately June through September 2021, a short deployment in March 2022 offering FIFI-LS, and a second long deployment in scheduled approximately July through September 2022. Both long deployments offer GREAT and HAWC+.

1.1.1 July Update:

- Change in Cycle 9 Dates: Cycle 9 will now begin July 1, 2021 and end September 30, 2022. Thus, Cycle 9 will contain two long deployments to New Zealand. All "Priority 1" and "Legacy" programs that were originally scheduled for the Cycle 8 Southern Deployment in 2020 will be carried over into the first Cycle 9 deployment to New Zealand, scheduled approximately June through September 2021.
  The second deployment to New Zealand, scheduled approximately July through September 2022, will include the GREAT and HAWC+ instruments. Proposals requiring HAWC+ for Southern targets available between July and September will be considered. Due to the high demand for southern targets in the Galactic plane with the GREAT instrument, and the guaranteed time already committed to the legacy programs, **Cycle 9 proposals requesting the GREAT instrument for**

targets near the Galactic Center or in the Inner Galaxy are less likely to be awarded observing time. Other targets outside of this region, e.g. targets in the Magellanic Clouds, requiring the GREAT instrument will be considered in Cycle 9. The planned short deployment for FIFI-LS in March 2022 is unaffected.

- Overall Time Offered: Due to the extension of Cycle 9 through September 2022, SOFIA expects to award up to 500 hours in U.S. Guest Observer time and up to 200 hours of time for new "Legacy" proposals in Cycle 9 (400 hours over Cycles 9 and 10 for new projects).
- Dual Anonymous Review. For additional information on the Dual Anonymous Review procedures, please see https://www.sofia.usra.edu/science/proposing-and-observing/proposal-calls/cycle-9/cycle-9-dual-anonymous-review.

1.2. Introduction

The Stratospheric Observatory for Infrared Astronomy (SOFIA) is pleased to invite proposals for the third 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). The total time awarded is expected to be up to 200 hours of time for new "Legacy" proposals in Cycle 9 (400 hours over Cycles 9 and 10 for new projects).

This call provides specific information for the structure and submission requirements for the SLPs, which differ from the regular Cycle 9 proposals (e.g. explicit budgets are required for SLP proposals). General information regarding the SOFIA project, its instruments and the proposal process can be found in the regular Cycle 9 Call for Proposals (Cy9_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.

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 9 and 10 programs.

The SOFIA data from the SLPs will be processed through the regular SMO pipeline routines (where applicable; see Cy9_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 9 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 9 Call (Cy9_CfP, sec. 3.2). The availability of the GREAT and EXES instruments for Cycle 9 is contingent on the completion of Memoranda of Understanding between the SMO and the instrument teams, and between NASA and DLR.

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). Note that this implementation plan and the budget should be included, along with the biographical information, in the Team PDF Attachment rather than in the Science PDF Attachment (see Section 2.5 Implementation of Dual-Anonymous Peer Review for details).

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 (Cy9_CfP Sec. 3.1) relative to both regular program targets as well as Guaranteed Time Observation Collaborative Reserved Observation Catalog (GTO CROC) 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 9 (and 10) 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 8 weeks with one or two instruments. SOFIA also plans for one short deployment (Cy9_CfP Sec 2.2.3.2) for additional time on the Southern Sky but with limited flight cadence. Large requests for southern hemisphere observations will therefore require strong scientific justification. Due to the cancellation of the Cycle 8 Southern Deployment, we plan to carry over the Priority 1 and Legacy program southern observations that were cancelled in Cycle 8 into the Cycle 9 long southern deployment in summer 2021 and to have a second Cycle 9 long southern deployment in summer 2022 with the GREAT and HAWC+ instruments. Most of these guaranteed projects focused on targets toward the Galactic Center and in the Inner Galaxy. Therefore, **Cycle 9 proposals requesting the GREAT instrument for targets near the Galactic Center or in the Inner Galaxy are very unlikely to be awarded observing time.** Other targets outside of this region, e.g., targets in the Magellanic Clouds, will be considered in Cycle 9. Proposals requiring HAWC+ for southern targets available

in July to September will be considered. We also intend to offer a short southern deployment with FIFI-LS in March 2022.

- 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 institutions[1] 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.

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

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. SOFIA's science archive has recently completed its transition to the Infrared Science Archive (IRSA) hosted by the Infrared Processing & Analysis Center (IPAC) as its primary data archive. SOFIA data from Cycle 1 onwards are now searchable through IRSA SOFIA Archive, including both archival data and proprietary data. An IRSA account is required to download proprietary data. Note that the SOFIA Data Cycle System website is still online and active, and is the main portal for tasks related to SOFIA proposals and AORs (Phase I and II).

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 9 Time Allocation Committee (TAC). The findings and recommendations of the SLP review will be coordinated with the regular Cycle 9 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.

2.5. Implementation of Dual-Anonymous Peer Review

SOFIA is implementing dual-anonymous peer review in Cycle 9. Starting in Cycle 9, the names of the PI and co-Is and other identifying information will be removed from the cover sheet prior to the presentation of proposals to the TAC panels and the biographical sketches, implementation plan and budget previously included with the proposals will be uploaded separately. These elements will be assessed by the TAC separately, following their scientific review of the proposals.

Proposals in Cycle 9 must, therefore, include the budget, implementation plan and biographical information as a *separate* "Team PDF Attachment" file, rather than as part of the proposal body ("Science PDF Attachment"), as specified in section 3.2.2 Proposers must also avoid mentioning the roles of the proposers in the main body of the proposal. Non-compliant proposals may be returned without review.

For additional information on the Dual Anonymous Review procedures, please see https://www.sofia.usra.edu/science/proposing-and-observing/proposal-calls/cycle-9/cycle-9-dual-anonymous-review.

2.6 Two-Step Legacy Process

Proposers are encouraged to include a pilot program in their legacy proposal for observations of up to 20 hours. These pilot programs should demonstrate the technical feasibility of the legacy proposal and should also produce publishable results. Details of how the pilot program will achieve these goals should be included in the Feasibility and Path to Publication section of the proposal (see Section 3.2.1). As for regular SOFIA observing proposals, the SMO Director is the selection official for the SLP proposals, including pilot legacy programs, and will make the final determination on which proposals are selected for pilot programs. Funding for accepted pilot legacy programs will be treated the same as Priority 3 Guest Observer programs.

The proposers will be expected to submit a report following the completion of the pilot program; the timing and details of this report will be defined by the SMO based on the observing schedule and requirements of individual programs but it is expected that the report on the pilot program will demonstrate both the technical and scientific feasibility of the full legacy program. After receipt of this report, the SMO Director will organize a review of the transition from a pilot program to a full legacy program. Successful completion of a pilot legacy program does not guarantee selection for a full legacy program.

3. Proposal Preparation

Each SOFIA Legacy 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 USPOT[2] as two PDF files (the Science PDF Attachment and the Team PDF Attachment). The proposer should select "Legacy" as the proposal type in USPOT.

[2] https://dcs.arc.nasa.gov/observationPlanning/installUSPOT/uspotDownload.jsp

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.

3.1 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.

3.2 Proposal Text Sections

3.2.1. Main Body (to be uploaded as a single PDF file)

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

For Cycle 9, the SMO will remove the names of the proposers before presenting proposals to the TAC. Proposers should therefore avoid any mention of members of the team in the proposal text that identifies them as such, including references to 'our earlier work', etc. Information on team members should be confined to the separate Biographical Information and Budget document, which must be uploaded separately (see Section 3.2.2).

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 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)** – 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 should be clearly described.

3. **Feasibility and Path to Publication (up to 3 pages for Legacy 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 (Cy9_CfP Sec. 3.5.2).

   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.

3.2.2 Biographical Information and Budget

This information should be uploaded in USPOT *separately* from the main body of the proposal as the "Team PDF Attachment", as project roles and information such as lead

institution will not be provided to the TAC until after the scientific assessment of the proposal. No reference to project roles, lead institutions, etc. should be included in the main body of the proposal.

Please note that for SOFIA Legacy Program proposals with a 'Team PDF' longer than 7 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. **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 even distribution over the three-year period should be explicitly justified.

2. **Implementation Narrative (up to 2 pages for Legacy 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.

3. **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.

3.3. 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. Please see the USPOT manual (https://www.sofia.usra.edu/science/proposing-and-observing/uspot-manual) for instructions on how to update your proposal rather than submitting a new (duplicate) proposal. **Note that an updated proposal replaces all previously submitted versions - the SMO keeps only the latest proposal submission associated with a given proposal number.**

4. SOFIA Legacy Program, Round 3, Schedule

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

2 June 2020	Release of Call for Proposals
24 July 2020	Call for Proposals update
4 September 2020, 21:00 PDT	Proposal Submission deadline
5 September 2020, 04:00 UTC	Proposal Submission deadline
December 2020	Proposal Selections Announced
January 2021	Initial meeting of SMO with proposing team
Cycle 9 & 10	SLP observations and analysis

5. Contacts and Further Information

For further information about the Cycle 9 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 or the SOFIA Legacy Program (SLP) can be directed to the SOFIA User Support lead, Dr. Arielle Moullet via the SOFIA help desk (sofia_help@sofia.usra.edu).

For further information about the SOFIA Science project, please contact the above, or the Science Mission Operations Director, Dr. Margaret Meixner.