SOFIA proposal process

2018 Community Days Workshops

NASA

USRA

DLR

DSI

Timeline

- June 2018 -- download the proposal call
- Sept. 7, 2018 -- submit your proposal by this date
- Nov., 2018 – time is awarded (or rejected)
- Dec 2018 – Jan 2019 – submit budget
- Dec. 2018 – PI contacted to work on phase 2, submit phase 2
- Feb to Dec 2019 – obs is scheduled, PI contacted
- April 27, 2019 – April 27, 2020 – data taken (you can fly on SOFIA!)
  - Pipeline-processed data available usually within 1 month
  - ***1 year proprietary period from completion of pipeline processing***
- 2019-2020 – time to write and publish your results

Important dates

Cycle 6 start has been delayed to May 9, 2018 due to extended maintenance of the plane. For this reason, the schedule for Cycle 7 is delayed.

- Cycle 7 call for proposal to be released early June 2018
- Cycle 7 due date is planned for Sep 7, 2018
- Beginning of Cycle 7 is planned for April 27, 2019

Cycle 7 Call for Proposals

Cycle 7 will include two different proposal types:

- Regular proposals
  - 1 year proprietary period
  - Budget required in phase II only
  - < 400 hours observed in one year
  - Possibility of enabling a thesis
- Legacy proposals
  - Targets with legacy value with no proprietary period
  - > 100 hours of observations observed in 2 years
  - Team description and budget required at the time of submission
  - Contribution of enhanced products and/or tools from the team

At any time it is possible to submit DDT proposals.

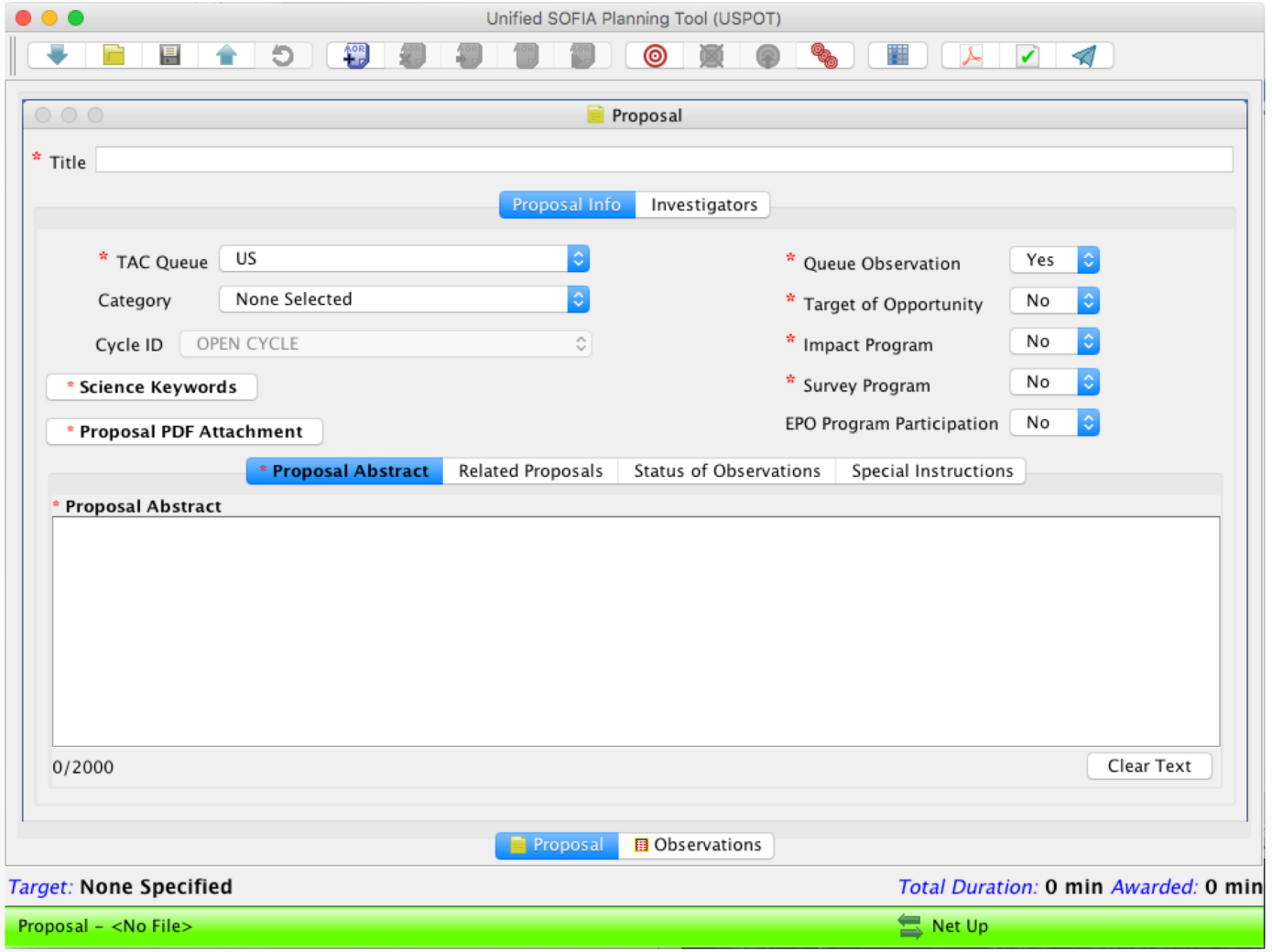
Observing time

- A total of approximately 500 hrs of observing time is offered with the U.S. queue which is open to all institutions over the world.
  - *Except **Germany**, which has a separate queue.*
- A total of ***$5M*** is reserved for grants for U.S.-affiliated observers.
- One Southern deployment is planned with two instruments.
- The instruments will be chosen according to the accepted targets.

USPOT

Submission is done through USPOT:

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



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Proposal content

- Context, aims, expected results
- Scientific justification
- Targets with accurate coordinates and velocities (for spectra)
- Technical justification:
  - Instruments, modes
  - Exposure times
  - Considerations about atmosphere transmission, etc.
- Biographical sketches (for PI and co-Is)
- Time constraints
- Thesis enabling program (optional)

Tools

A variety of tools are available:

- DCS archive (to check for duplications)
  https://dcs.arc.nasa.gov/dataRetrieval/SearchScienceArchiveInfo.jsp
- USPOT (main proposal tool)
- Visibility tool (https://dcs.arc.nasa.gov/observationPlanning/installVT/)
- SITE (SOFIA Instrument Time Estimator)
  https://dcs.arc.nasa.gov/proposalDevelopment/SITE/index.jsp
- ATRAN: Atmosphere transmission model
  https://atran.arc.nasa.gov/cgi-bin/atran/atran.cgi
- Complementary sky positions
  https://www.sofia.usra.edu/science/proposing-and-observing/proposal-calls/cycle-6/complementary-sky-positions

Grants

Proposals are accepted in several categories:

- 1 “must do”
  - To be executed in full. If not observed, automatically carried over into next cycle
- 2 “should do”
  - High probability to be observed. If not done, one has to resubmit the proposal.
- 3 “do if time”
  - To be executed if there is time available. This category will observe mainly targets which are in the less frequent sky direction.

- Grants are approximately $10K/hour.
- For all categories $7K are released immediately to allow phase II preparation.
- Priority I programs are funded independently from the observation. Priority II are funded after the first target is observed. Priority 3 programs are funded according to the number of hours observed.
- Thesis enabling program are funded up to a ceiling of 100K/yr for 2 years.
- For each accepted proposal, a budget justification is required to release the funding.

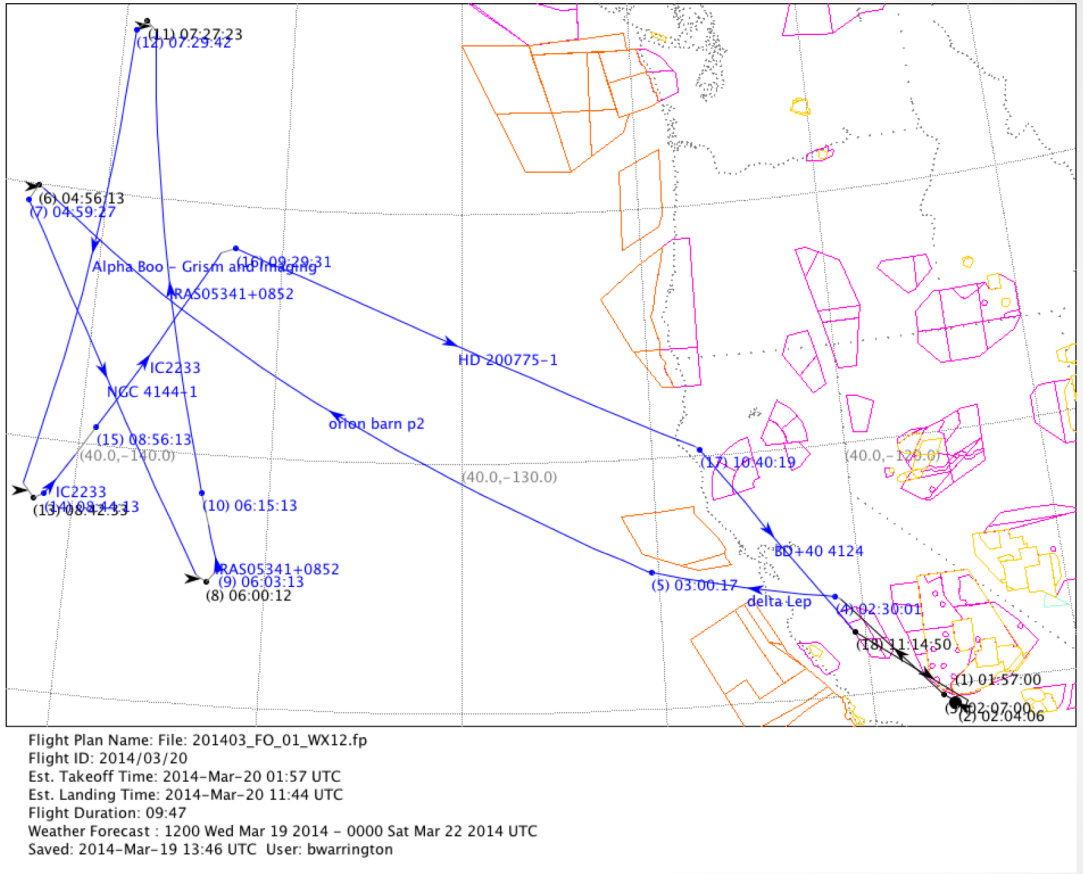
You can also apply for ADAP grants for archival research using SOFIA data!

Phase II preparation

- After the proposal is accepted, PIs are contacted by the instrument scientists of each instrument required to work on the phase II of the proposal.
- At this point, the best strategy to perform the observation is suggested by the instrument scientists and implemented again through USPOT.
- A first implementation is uploaded by the instrument scientist on the DCS system and revised by the PI through USPOT. When the AOR is completed, the proposal enters the pool of possible observations.

Scheduling/flight planning

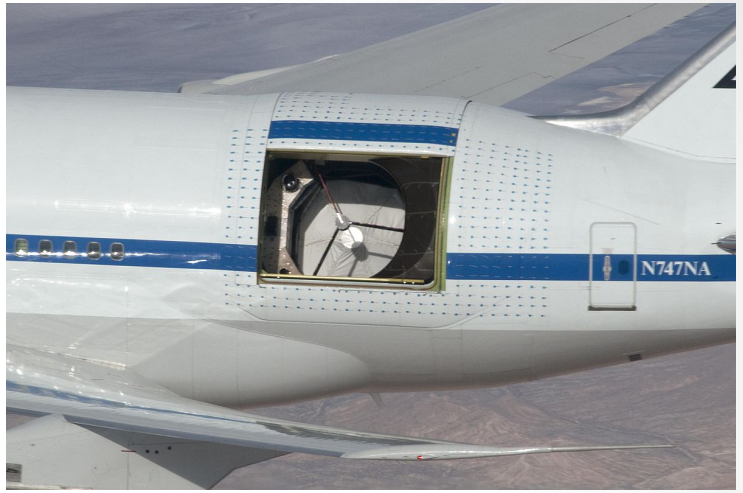
- After Phase II, the proposal is entered in the pool of possible observations.
- Depending on the instrument requests, a certain number of flights are assigned to each instrument.
- Flight planners at the SOFIA Science Center select the observations from the pool which optimize the flight time for each instrument taking into consideration the grade of each proposal and time constraints.
- The instruments scientists prepare the list of observations for each flight and contact the observers to invite them to fly and discuss the last details.



A typical flight plan: a different target is observed on each leg.

Flying on SOFIA

- Observers have the possibility to fly on SOFIA.
- The instrument scientist contacts the observers once the targets are scheduled. The observer can then request to fly on-board SOFIA during the observation.
- ***If selected, the observer will need a badge to enter the NASA facilities in Palmdale (CA) or Christchurch (NZ).***
- For US citizens and permanent residents obtaining the badge is fast. For foreign citizens the process is a bit more complicated and requires more time. Also, some medical forms have to be submitted.



- ***Flying on SOFIA is recommended for complicated observations.***
  - During the observations a quick-look reduction is done to guarantee the quality of the observation and make modifications on the fly.
  - Depending on weather conditions, take off time, and other variables, the time assigned to a target can vary. Also, the observer can decide to dedicate less time to a target is the required SNR is reached during the observation.

Data reduction and archival

- Once a flight series is finished, data are reduced and archived. They are accessible through the SOFIA Data Cycle System (DCS):
  - https://dcs.arc.nasa.gov/dataRetrieval/SearchScienceArchiveInfo.jsp
  - GOs are then notified via email and provided links for data retrieval.
- ***Proprietary period is typically 1 year from completion of processing and archiving.***
- If the instrument is an ***observatory facility*** (such as FORECAST, FIFI-LS, and HAWC+), data are pipeline-processed and archived at the SOFIA Science Center typically within a month.
- In the case of ***PI instruments*** (such as EXES and GREAT), data are reduced by the instrument teams and then passed to the SOFIA Science Center for archival.
  - The time interval for reduction is generally longer, but the observers can benefit from the direct involvement of the instrument team.
  - PI instrument teams could require up to three additional co-authors on submitted papers.
- Additional resources are available at the SOFIA Data Products and Analysis page:
  - https://sofia.usra.edu/science/proposing-and-observing/data-products