

Basic Science Call for Proposals

AAS Special Session
“Proposing for SOFIA Basic Science”
Jan. 5, ‘09
Long Beach

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SOFIA Early Science

- Early Science will be performed with
 - FORCAST - Mid-IR camera (PI: T. Herter, Cornell)
 - GREAT - Heterodyne sub-mm wave spectrometer (PI: R. Güsten, MPIfA)
- Early Science is made up of:
- Short Science:
 - ~3 Flights/instrument
 - Instrument PI lead observations
 - Community participants selected through peer review in '08
 - Executed in Summer '09
- Basic Science:
 - More extensive program (~75h of at-altitude observing)
 - Observations selected through proposals
 - Proposal solicitation/selection during '09
 - Executed in Winter/spring '09/'10

Basic Science Program

- *Basic Science will give the astronomical community a chance to propose & lead SOFIA research and provide an opportunity for more substantial investigations than Short Science.*
- Basic Science will consist of
 - 12 Flights (80%) with science selected through open proposal
 - 3 Flights (20%) allocated to DLR (GREAT)

Basic Science highlights

- Call for Proposal for US led portion:
 - FORCAST AND GREAT available
 - Open to all qualified astronomers
 - Scientific merit primary selection criterion
 - Large programs will be given priority
 - Selection could be one proposal using both instruments, or multiple proposals, whichever offers best science.
- Programs will be selected through peer review
- No pre-proposal collaboration with instrument teams required
- Instrument PI will be assigned co-PI after selection
- Proposal PI invited to fly on observations
- General Investigator grants will be issued through USRA
 - Only for investigators with US affiliation

Basic Science Instrument modes summary

- **FORCAST:**
 - Short Wavelength Camera (SWC) filters:
 - 5.6, 6.3, 6.6, 7.6, 8.6, 11.0, 11.28, 12.3 19.5 μm
 - For the Long Wavelength Camera (LWC) filters:
 - 30.6, 38.0 μm
- **GREAT:**
- Two receiver bands operated simultaneously:
 - Band L #1: 1.25 THz - 1.5 THz
 - Band L #2: 1.82 THz - 1.92 THz
- Backends:
 - Two array-Acousto-Optical Spectrometers (AOS):
 - 4 GHz bandwidth and 1 MHz resolution.
 - Two Chirp-Transform-Spectrometer (CTS) spectrometers:
 - 220 MHz bandwidth and 47 kHz resolution

Basic Science Schedule

30 Jan., '09 Draft Call for Proposal Released

27 March, '09 Final Call for Proposal released

29 May, '09 Proposal Deadline

Aug. '09 Selections announced

Winter '09/'10 Basic Science flights begin

Basic Science Proposing Basics

- Phase 1 focuses on science justification
- Phase 2 will provide observing details and will *for Basic Science* be lead by SOFIA staff, with inputs from the selected PIs
- Proposals shall be generated and submitted using the SOFIA Proposal Tool (SPT)
 - Similar to, and based on, the STScI APT
- Exposure time calculator available on-line for FORCAST
- Exposure time tutorial available for GREAT
- Visibility tool available on-line
- Reserved targets lists for FORCAST and GREAT will be published with final CfP