# Basic Science Call for Proposals

**http://www.sofia.usra.edu/Science/proposals/index.html**

June 7, '09
Pasadena

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# SOFIA Early Science

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

# 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 (one slot available)
- 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 $\mu$m
  - For the Long Wavelength Camera (LWC) filters:
  - 30.6, 38.0 $\mu$m
- **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
  - Two Fast Fourier Transform Spectrometers (FFTS):
    - 1.8 GHz bandwidth and 255 kHz resolution
  - Two Fast Fourier Transform Spectrometers (FFTS):
    - 750 MHz bandwidth and 53 kHz resolution

# Basic Science Schedule

*Interim, subject to ongoing negotiations between the SOFIA Program Office, NASA HQ and DLR*

**15 Dec., '08** Draft Call for Proposals Released

**27 March, '09** Comments on draft CfP received

**Fall/Winter '09** Final Call for Proposal released

*Tied to successful open door flight tests*

**Winter '10** Proposal Deadline (Call +60 days)

**Spring '10** Selections announced

**Fall '10** Basic Science flights begin

# Basic Science Proposing Elements

- Phase 1 focuses on science justification
- Phase 2 generation will *for Basic Science* be led by SOFIA staff
- 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
- Tool to estimate atmospheric transmissions available on-line
- Reserved targets lists for FORCAST and GREAT will be published with final CfP
- More information on the web: http://www.sofia.usra.edu/Science/index.html
- Or contact the SOFIA help-desk
- sofia_help@sofia.usra.edu