SOFIA’S 1st-GENERATION SCIENCE INSTRUMENTS

4 SCIENCE INSTRUMENTS AVAILABLE TO SUPPORT COMMUNITY OBSERVATIONS

FORCAST
Mid-IR Camera

FLITECAM
Near IR Camera

HIPO
Photometer

GREAT
Heterodyne spectrometer

3 SCIENCE INSTRUMENTS CURRENTLY IN DEVELOPMENT

EXES
Mid-IR Spectrometer

HAWC
Bolometer Camera

FIFI LS
Integral-Field Spectrometer
First Generation Instrument Capabilities

- **FLITECAM**
  - **w/ grisms**
- **HIPO**
- **EXES**
- **FORCAST**
  - **w/ grisms**
- **HAWC**
- **FIFI LS**
- **GREAT**

**DEVELOPMENT COMPLETE**

**DEVELOPMENT UNDERWAY**

![Graph showing spectral resolution vs. wavelength for different instruments.](Image)
• The 2nd Generation call was released in 2011 as part of the Stand Alone Missions of Opportunity Announcement

• Classes of Instruments Solicited
  – Facility Science Instruments
  – Science Instrument Upgrades
  – Technology Demonstration Instruments

• Funding Available
  – The funding reserved for developing instruments as a result of this AO does not exceed $1M in FY12, $3M in FY13, and $5M in FY14-FY18.

• Selections were announced in April 2012
Second Generation SOFIA Instrument selection announced by NASA HQ on 17 April 2012

Both investigations are upgrades to HAWC, the Far-Infrared Camera for SOFIA and support the measurement of magnetic fields in the interstellar medium via Far IR polarimetry

- HAWC-POL -- Darren Dowell (JPL)
- HAWC++ -- Johannes Staguhn (JHU)

Additional discussions between NASA HQ and the three instrument teams ongoing to scope out the work and schedule

With these upgrades, HAWC will become the first 2nd Gen Instrument
The Next Opportunity

• The upgrade of HAWC will likely make full use of the SOFIA instrument development budget that was advertised in the AO through 2015

• The funding line beyond 2015 for a new facility instrument remains a part of the SOFIA budget.

• NASA/SMD plans to issue a new AO in approximately 2014
German Instrument Developments

- upGREAT: an enhancement of the GREAT heterodyne instrument is under development by Rolf Güsten and collaborators.

- Compact heterodyne arrays
  - 7 pixels x 2 polarizations @ 1.9 to 2.5 THz
  - 7 pixels @ 4.7 THz [O I]