Cycle 01 Briefing

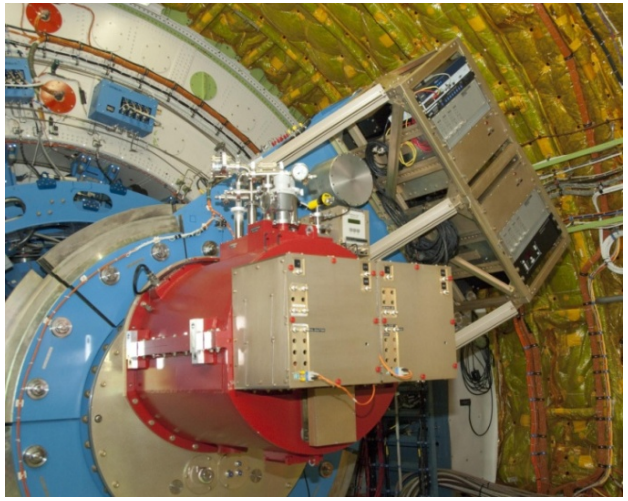
Erick Young

7 September 2012

Cycle 01 Call for Proposals

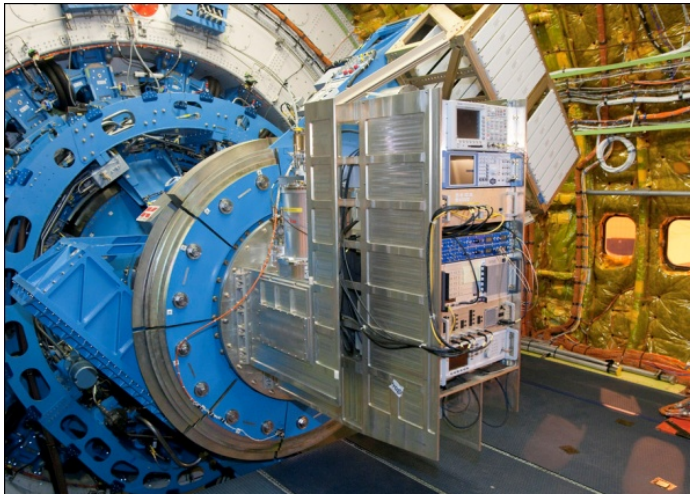
- 1 year (~200 hours) of observing offered with 4 instruments
- CFP released November 2011
- Due date 27 January 2012

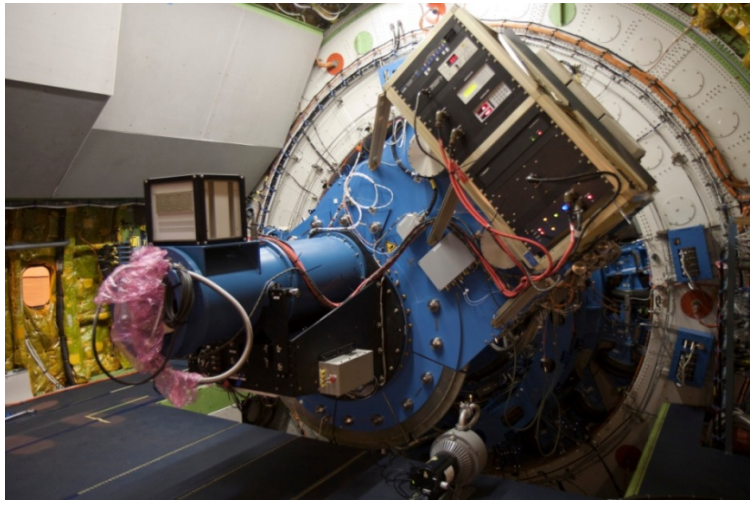
Four 1st Generation Instruments Available for Cycle 01



FORCAST
Mid-IR Camera

GREAT
Heterodyne spectrometer





FLITECAM
Near IR Camera

HIPO
Occultation Photometer

(co-mounted on SOFIA)

Cycle 1 Instrument Capabilities

- FORCAST
  - Facility Class Infrared Camera
  - Imaging modes fully supported in Facility Instrument Mode 5-40 μm
  - GRISM spectroscopy will be offered with resolutions of typically a few hundred (see SOFIA web site.) on a shared risk basis
- GREAT
  - Principal Investigator Class Spectrometer
  - L1a/b and L2 modes offered (Likely L1 and L2)
  - M1 channel tuned to 2.51 THz OH transition offered on a shared risk basis
  - GO and GREAT team collaborate after selection
- FLITECAM
  - Facility Class Instrument
  - Imaging modes will be fully supported after commissioning
  - GRISM spectroscopy (R~2000) offered as shared risk
- HIPO/ FLIPO
  - Special purpose instrument
  - Requires collaboration with instrument PI

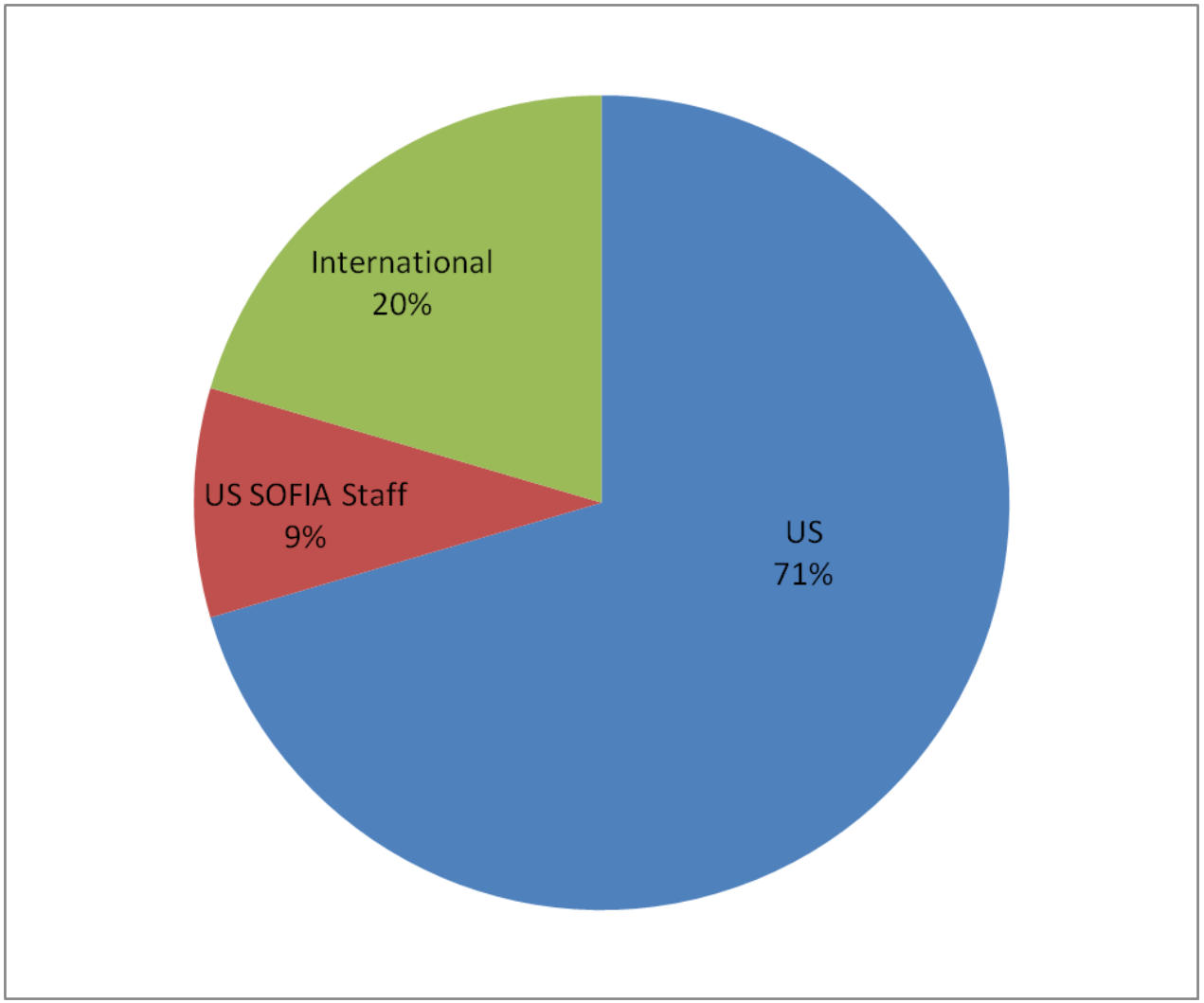
Cycle 1 Response

- 133 US proposals and 39 German proposals received with >5X oversubscription rate
- US Time Allocation Committee meet April 4-6
- German Time Allocation Committee met April 17-18

- More than enough very high quality proposals to fill up the available Cycle 01 observing time

- Guidance from Program was to defer selection announcement until observatory capabilities and schedule were well established

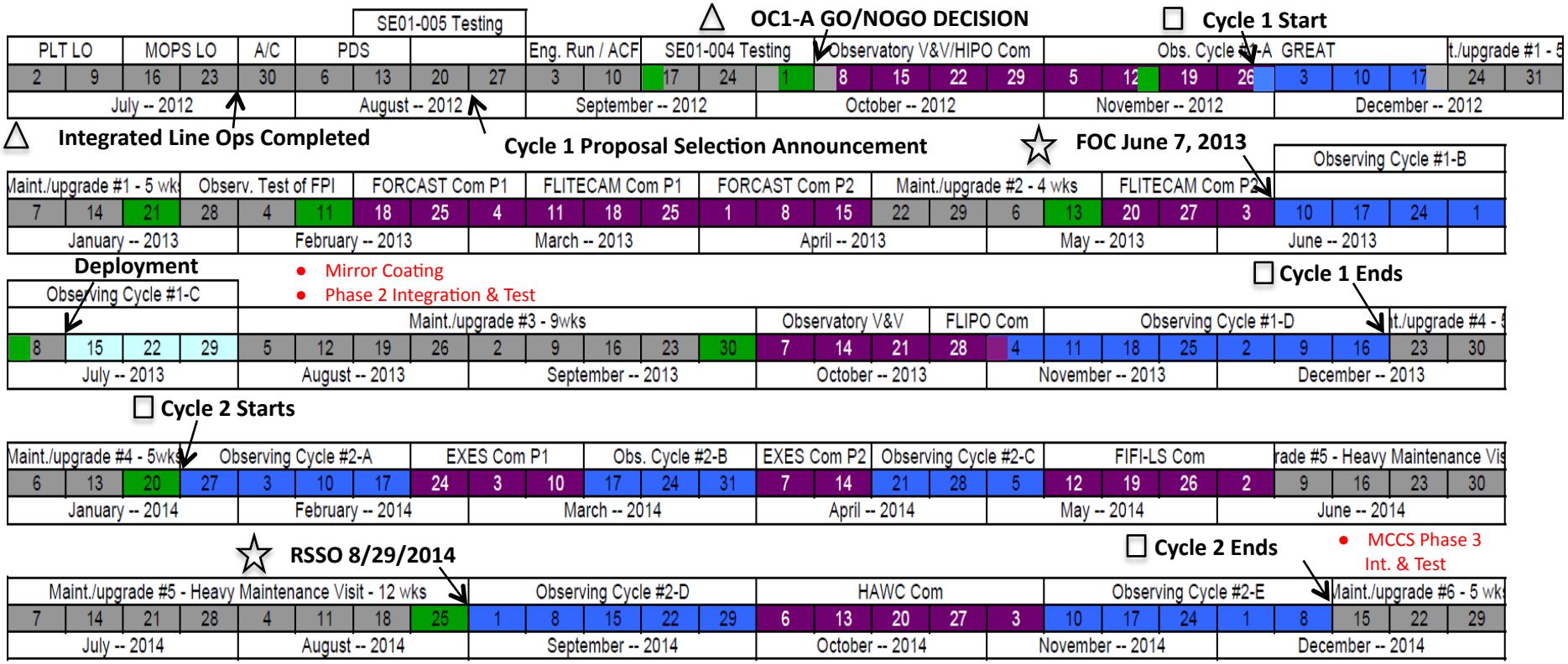
US Queue Distribution of Proposals



Selection Assumptions

- Observing Calendar fixed per IMS Overview of 2012 Aug 17
  - OC 1-A is a GREAT campaign of 1 engineering, 2 commissioning, and 6 science flights
  - OC 1-B occurs June 2013 with 10 flights
  - OC 1-C GREAT Deployment to New Zealand
  - OC 1-D Nov-Dec 2013 with 20 flights
- US and German GI flights are mixed
- GREAT GTO flights are dedicated consortium flights
- Observatory policy is to not reschedule lost flights

IMS Overview



Observing Cycle #1 flts/wk

OC	WK 1	WK 2	WK 3	WK 4	WK 5	WK 6	Tot
1-A	1	2	2	1			6
1-B	2	2	3	3			10
1-C	0	3	4	2			9
1-D	3	3	4	2	4	4	20
FLIPO	1						1

Program
Observatory
Project

Observing Flights
Instrument Commissioning
Platform / Engineering Flights
Aircraft Maintenance / Observatory Upgrade
Deployment

Cycle 1: 18 weeks, 46 flights, 200.9 CfP Hours (8.00 RH per flight, 327.5 RH)

Science hour estimates were calculated based on maximum possible flights at 89% reliability.

FOR INTERNAL USE ONLY

Available Hours

	US	Germany
Baseline Science Hours	262.0	65.5
GTO Hours	35	32.8
Calibration Hours	35.8	4.9
General Investigator Hours	176.7	24.2

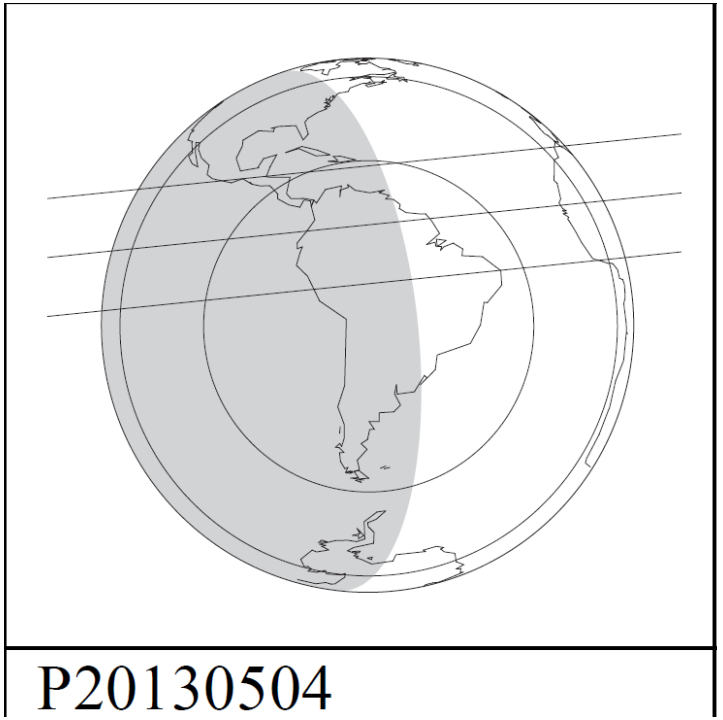
Actual scheduled hours will depend on additional factors such as instrument configurations, sky visibility, and scheduling efficiency.

Exoplanet Transit Proposals

- Several exoplanet transit proposals were reviewed with high scores
  - Observations are very challenging requiring an as-yet undemonstrated level of photometric stability
  - Recommend that the 01-0099 team (Mandell) be invited to participate in the FLITECAM commissioning activities and use the science target to assess the performance of the instrument for this kind of observation.

Pluto Occultation

- Pluto occults a m_v =14, m_k = 12.4 star on 2013 May 04
- Event should be reachable from Palmdale
- Proposal 01-0101 (Person) was a top-rated investigation to observe the event with FLIPO
- Recommend awarding time conditionally pending a study of the schedule impacts
  - The observation would require a shuffling of events associated with FLITECAM commissioning and a maintenance period



Dropped Proposals

- A number of highly ranked proposals were dropped for technical reasons
  - 01-0109: Grism observations of Moon
  - 01-0129, 01-0083, & 01-0001: Southern Hemisphere FORCAST Observations
  - 01-0001: Required deployment to Anchorage
  - 01-0151: Observation overlap with US proposal that had priority

Selected FLITECAM / FLIPO

	01_0101	Examining Pluto's atmosphere with SOFIA through stellar occultations	Person	Michael	MIT	FLIPO	Imaging

	01_0096	FLASH: FLITECAM Limits on the Abundance of Silicate Hydrates	Chiar	Jean	SETI	FLITECAM	Grism
*	01_0099	Characterizing Transiting Exoplanets Using FLITECAM: An Exploratory Program	Mandell	Avi	GSFC	FLITECAM	Grism
*	01_0052	Imaging non-LTE Emission on the Dayside of a hot-Jupiter Exoplanet	Swain	Mark	JPL	FLITECAM	Grism
	01_0075	Characterization of OH and H2O in Asteroids	Rivkin	Andrew	JHU	FLITECAM	Grism

* The investigations are provisionally accepted as a “commissioning” activity.

Selected FORCAST - 1 of 2

01_0056	The Evolution of Preplanetary Matter: FORCAST Grism Spectroscopy of Ices from 5 to 8 microns	Whittet	Douglas	RPI	FORCAST	Grism
01_0042	SOFIA's Opportunity to Solve the Nebular Abundance Problem	Rubin	Robert	ARC	FORCAST	Grism
01_0129	Unusual Dust Orbiting the Terrestrial Planet-Forming Star HD 131488	Melis	Carl	UCSD	FORCAST	Imaging
01_0034	Mid-IR emission from Dust and PAHs in Ultracompact HII regions	Tielens	Alexander	Leiden	FORCAST	Imaging
01_0130	First Mid-IR Observations of a Main-Sequence Stellar Merger Caught in the Act	McCollum	Bruce	Caltech	FORCAST	Grism
01_0084	A new window on the surface of Europa	Brown	Mike	Caltech	FORCAST	Grism
01_0045	Peering to the Heart of Massive Star Birth - II. A Survey of 8 Protostars	Tan	Jonathan	U Florida	FORCAST	Imaging
01_0085	Star Formation in the Dense Environment of Young Clusters: A FORCAST Imaging Survey	Mundy	Lee	U Maryland	FORCAST	Imaging
01_0041	An Infrared Spectral Survey of Galactic Carbon Stars	Sloan	Gregory	Cornell	FORCAST	Grism
01_0032	Uncovering the surface composition of the largest main-belt asteroids with FORCAST	Venazza	Pierre	ESO	FORCAST	Imaging Grism
01_0035	Spectroscopy of Massive Protostars in Cygnus X	Hora	Joseph	SAO	FORCAST	Grism
01_0026	Disk Tomography of Stratified Herbig Ae Protoplanetary Disks with SOFIA FORCAST	Grady	Carol	Eureka	FORCAST	Imaging
01_0102	Imaging of nearby Spitzer-selected candidate debris disks	Trilling	David	NAU	FORCAST	Imaging
01_0054	FORCAST Imaging of the Mini-Starburst in W43	Bally	John	U Colorado	FORCAST	Imaging Grism

Selected FORCAST - 2 of 2

01_0136	Mid-infrared Imaging of X-ray Sources in L1630: Investigating the Onset of Magnetic Activity in Protostars	Principe	David	RIT	FORCAST	Imaging
01_0074	FORCAST Observations of a ToO Bright Comet in CY1	Wooden	Diane	ARC	FORCAST	Imaging Grism
01_0082	Characterising young high-mass stars in Cygnus X using SOFIA.	Hill	Tracy	CEA	FORCAST	Imaging
01_0143	Probing the Nature of Intermediate-Mass Star Formation Regions at 37μm	Lundquist	Michael	Wyoming	FORCAST	Imaging
01_0005	Jupiter's Tropospheric Dynamics from SOFIA Mapping of Temperature, Para-Hydrogen, and Aerosols	de Pater	Imke	UC Berkeley	FORCAST	Imaging Grism
01_0010	The Mass Loss of Red Supergiants	Figer	Don	RIT	FORCAST	Imaging
01_0007	Revealing the Embedded Structures and Sources within Giant HII Regions	De Buizer	James	SOFIA/USRA	FORCAST	imaging
01_0017	SOFIA Target of Opportunity (ToO) Observations of Bright Classical Novae in Outburst	Gerhz	Robert	Minnesota	FORCAST FLITECAM	Grism Grism
01_0086	An Examination of Dust Formation and Destruction in the Classical Nova V1280 Sco	Helton	Andrew	SOFIA/USRA	FORCAST FLITECAM	Grism Imaging
01_0124	Aromatics versus aliphatics: revealing the structure of carbonaceous dust.	Peeters	Els	SETI	FORCAST FLITECAM	Grism Grism

Selected GREAT

01_0030	Revealing the origin of the [CII] 157um line with the multi-phase environment of the N11 HII region	Lebouteiller	Vianney	Saclay	GREAT	L1bL2
01_0039	Search for the mercapto radical (SH) in the interstellar medium	Neufeld	David	JHU	GREAT	L1aL2
01_0072	[CII] in the Magellanic Clouds: sampling low-metallicity ISM physics	Israel	Frank	Leiden	GREAT	L1bL2
01_0138	Probing the 3-Dimensional Structure of the Ring Nebula with GREAT observations of [CII]	Sahai	Raghvendra	JPL	GREAT	L1bL2
01_0040	Probing Molecular Cloud Accretion and Envelopes with Velocity-Resolved CII Lines Observed with SOFIA/GREAT	Goldsmith	Paul	JPL	GREAT	L1aL2
01_0053	Dynamics of the CMZ - Giant Magnetic Loops Connection in the Galactic Center	Langer	William	JPL	GREAT	L1bL2
01_0051	Mapping [CII] emission in the NGC2023 reflection nebula.	Sandell	Goran	SOFIA/USRA	GREAT	L1aL2
01_0059	Diagnostics of Molecular Shocks in Interacting Supernova Remnants	Hewitt	John	GSFC	GREAT	L1aL2
01_0049	Exploring the role of CII in current Spinning Dust Models	Tibbs	Christopher	Caltech	GREAT	L1bL2
01_0125	Hunting for Hidden H2 in IC10 with [CII]	Jameson	Kathrine	U Maryland	GREAT	L1bL2

Selected German Proposals

Proposal	Title	PI_Last_Name	PI_first_name	Institution	Instrument	Config
01-0155	Do Star Spots Inflate the Exoplanet CoRot-2b?	Huber		Hamburg Univ.	FLIPO	
01-0165	Probing Embedded Mulecular Jets from Massive Young Stellar Objects	Caratti o Garatti		MPIfR	FORCAST	
01-0151	Sulphur Chemistry as a Probe of th Physical State of the ISM	Schilke		Univ. Cologne	GREAT	L1aL2
01-0156	High-J CO Observations of the IC433 SNR with GREAT	Guesten		MPIfR	GREAT	L1aL2 L1bL2
01-0160	Excitation Gradients across CND; Constraining the Heating Process	Requena-Torres		MPIfR	GREAT	L1bL2
01-0172	Cooling Processes in the Starburst Template W51 MAIN	Csengeri		MPIfR	GREAT	L1bL2
01-0174	Ammonia as a Probe of Infall in High-Mass Star Forming Clumps - II	Wyrowski		MPIfR	GREAT	L1bL2
01-0182	The OD/OH Ratio; Clues for Water Formation	Parise		MPIfR	GREAT	M1L2
01-0183	[CII] Emission from ISM Clouds in Formation	Glueck		Univ. Cologne	GREAT	L1bL2
01-0185	Interstellar Chemistry of the OH Radical (Survey)	Wisenmeyer		MPIfR	GREAT	M1L2

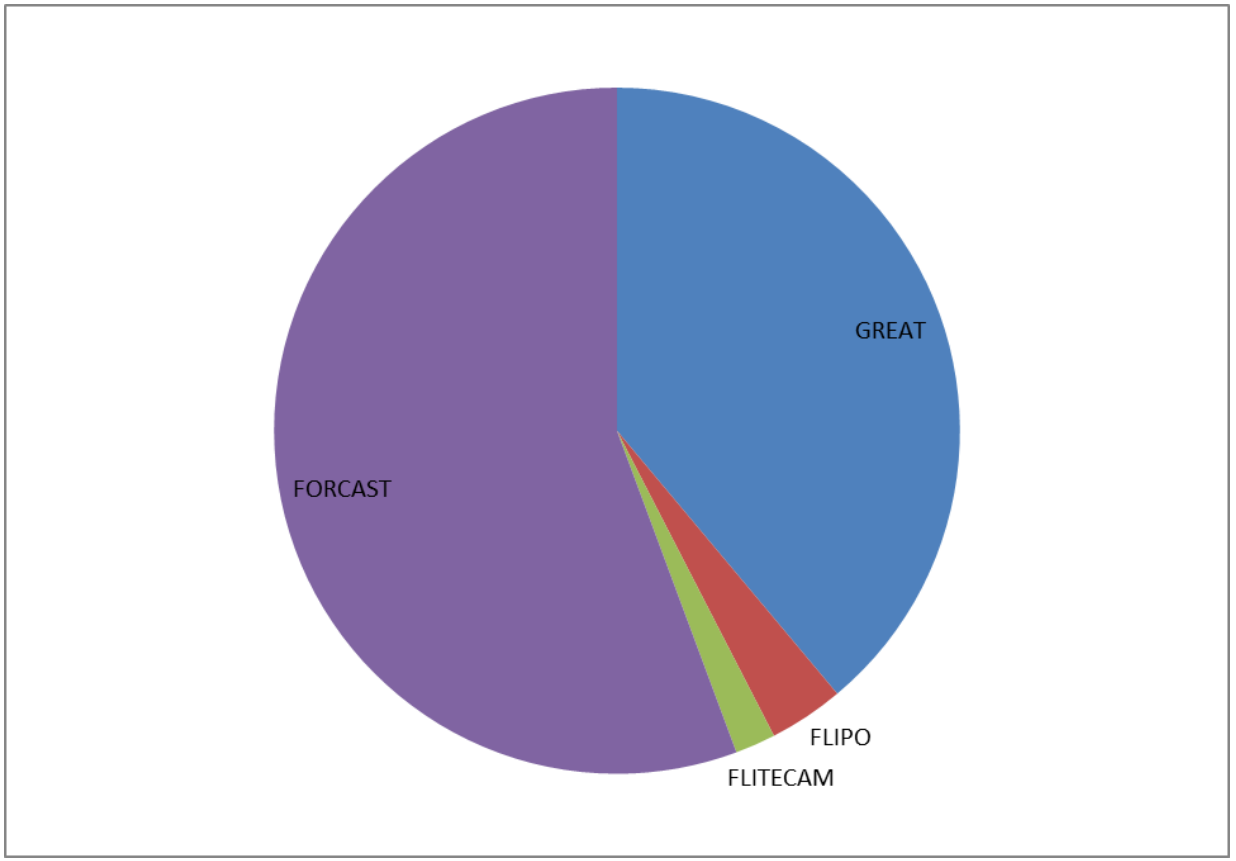
Investigations with Targets for Southern Hemisphere Deployment

Proposal	Title	PI_Last_Name	PI_first_name	Institution	Instrument	Config
01_0030	Revealing the origin of the [CII] 157um line with the multi-phase environment of the N11 HII region	Lebouteiller	Vianney	Saclay	GREAT	L1bL2
01_0039	Search for the mercapto radical (SH) in the interstellar medium	Neufeld	David	JHU	GREAT	L1aL2
01_0072	[CII] in the Magellanic Clouds: sampling low-metallicity ISM physics	Israel	Frank	Leiden	GREAT	L1bL2
01_0053	Dynamics of the CMZ - Giant Magnetic Loops Connection in the Galactic Center	Langer	William	JPL	GREAT	L1bL2
01_0059	Diagnostics of Molecular Shocks in Interacting Supernova Remnants	Hewitt	John	GSFC	GREAT	L1aL2
01_0064	A SOFIA GREAT Search for Collapse in Star Forming Pillars	Koenig	Xavier	GSFC	GREAT	L1aL2
01-0160	Excitation Gradients across CND; Constraining the Heating Process	Requena-Torres		MPIfR	GREAT	L1bL2
01-0174	Ammonia as a Probe of Infall in High-Mass Star Forming Clumps - II	Wyrowski		MPIfR	GREAT	L1bL2
01-0182	The OD/OH Ratio; Clues for Water Formation	Parise		MPIfR	GREAT	M1L2
01-0185	Interstellar Chemistry of the OH Radical (Survey)	Wisenmeyer		MPIfR	GREAT	M1L2

Proposals Subject to “Shared Risk” Observations

- FORCAST Grism Investigations
  - US: 9 Investigations for 42.7 hours
  - Germany: 1 Investigation for 3.5 hours
- FLITECAM Grism Investigations
  - US: 3 Investigations for 2.0 hours
- FORCAST+FLITECAM Grism Investigations
  - US: 3 Investigations for 14.4 hours
- GREAT M1 Channel Investigations
  - Germany: 2 Investigations for 7.0 hours

Instrument Distribution for Combined Program



Acceptance Letter

August 30, 2012

Proposal: 01-00xx

Dr.

Dear Dr. xxxxxxxxxx

On behalf of SOFIA Science Mission Operations, I want to thank you for your interest in observing on SOFIA during the Cycle 1 period. I am happy to inform you that your proposal entitled

Xxxxxxxxxxxxxxxx

has been awarded xxxx hours of observing time on SOFIA.

Following the SOFIA Cycle 1 Call for Proposals, a total of 133 proposals were submitted with approximately a 5 to 1 oversubscription in observing time. All the submitted proposals underwent both a technical feasibility review and a scientific peer review. As a result of this review, your proposal was ranked in approximately the top third of the proposals submitted.

The amount of time awarded was based on a combination of recommendations from the Peer Review Panel, scheduling constraints on the observatory, and programmatic considerations.

In addition to the observing time, you have been allocated a grant in the amount of XXX to support your work on the observations. We will need a simple budget from you and your Sponsored Research Office (equivalent) outlining your proposed use of the grant amount. The grant will be disbursed in two phases after receipt and acceptance of the proposed budget. The initial phase will be to support the generation of the Phase II observing plan. The bulk of the grant will be distributed after the observations are executed. The grant is awarded for a two year period, at the end of which we will require a brief report on the use of the grant and resulting publications. You will be contacted in the next few weeks by the SOFIA/USRA grants office with the particulars and detailed time lines.

[As a Principal Investigator from a non-US institution, SOFIA is unable to provide financial support for these observations. We encourage you to seek the necessary support from your national astronomical granting agencies.]

SOFIA User Support will be contacting you in the next few weeks about the Phase 2 generation. At that time you will be assigned a support scientist from the SOFIA/USRA staff who will be assisting you in the generation of the detailed observation set ups using the SOFIA-SPOT tool. The deadline for generating these inputs is xxxxx. The support scientist will also provide you with information on how to request an opportunity to fly on SOFIA.

As a selected proposal, the SOFIA team will make every attempt to schedule your observations. Because of the many constraints associated with sky visibility, aircraft capabilities, flight path constraints, and instrument availability, however, not all awarded observations may be executed. I also want to remind you that, in keeping with the normal practice of ground based observatories, observations lost due to weather or instrument issues are generally not rescheduled.

Attached are the detailed comments from the scientific review panel. Because of the great interest in the SOFIA Cycle 1 opportunity, only the most meritorious proposals were selected, and you are to be congratulated on your successful proposal.

Sincerely,
Erick Young
Director, SOFIA Science Mission Operations

Subsequent Steps

- Announcement emails were sent Wednesday August 29, 2012
- Updated USRA and DSI SOFIA web sites
- Rerun Cycle Scheduler for updated source lists and current calendar
- Science Ops will contact PI's regarding Phase II planning
- USRA will begin financial process for selected US investigators