



Cycle 1 Status & Plans

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SOFIA Science Mission Operations

26 April 2013



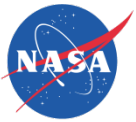


Cycle 1 Call for Proposals

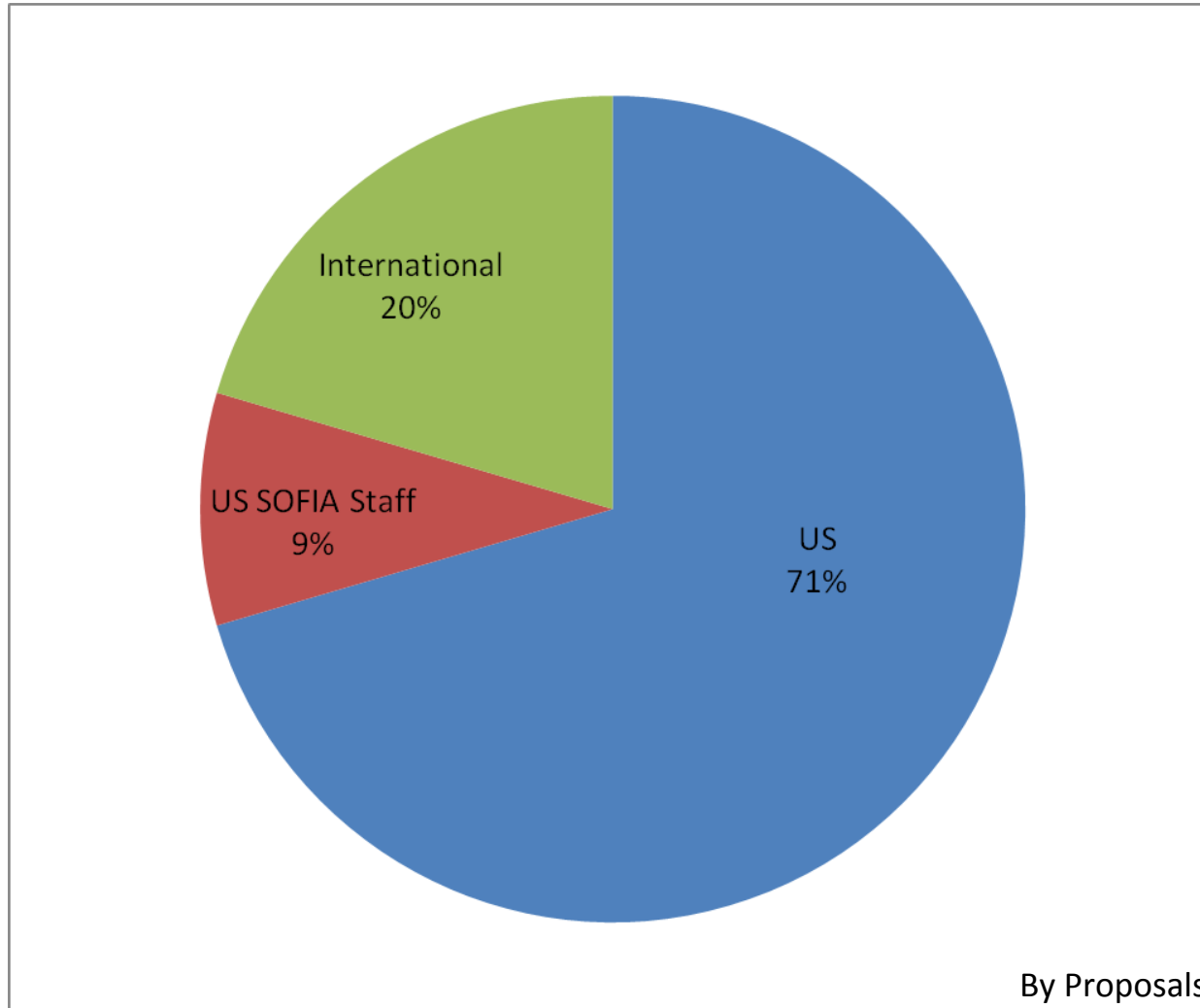


- Coordinated US and German proposal processes
- Original plan was to have Cycle 1 span Aug 2012 to Aug 2013
- Schedule of observations slipped due to readiness of aircraft systems
- TAC results were announced in August 2012
 - The announcement came after first system-level Line Operations
- Additional issues pushed start of Cycle 1 to April 2013
- Accepted proposals were listed at the last SUG and abstracts are available at the SOFIA website

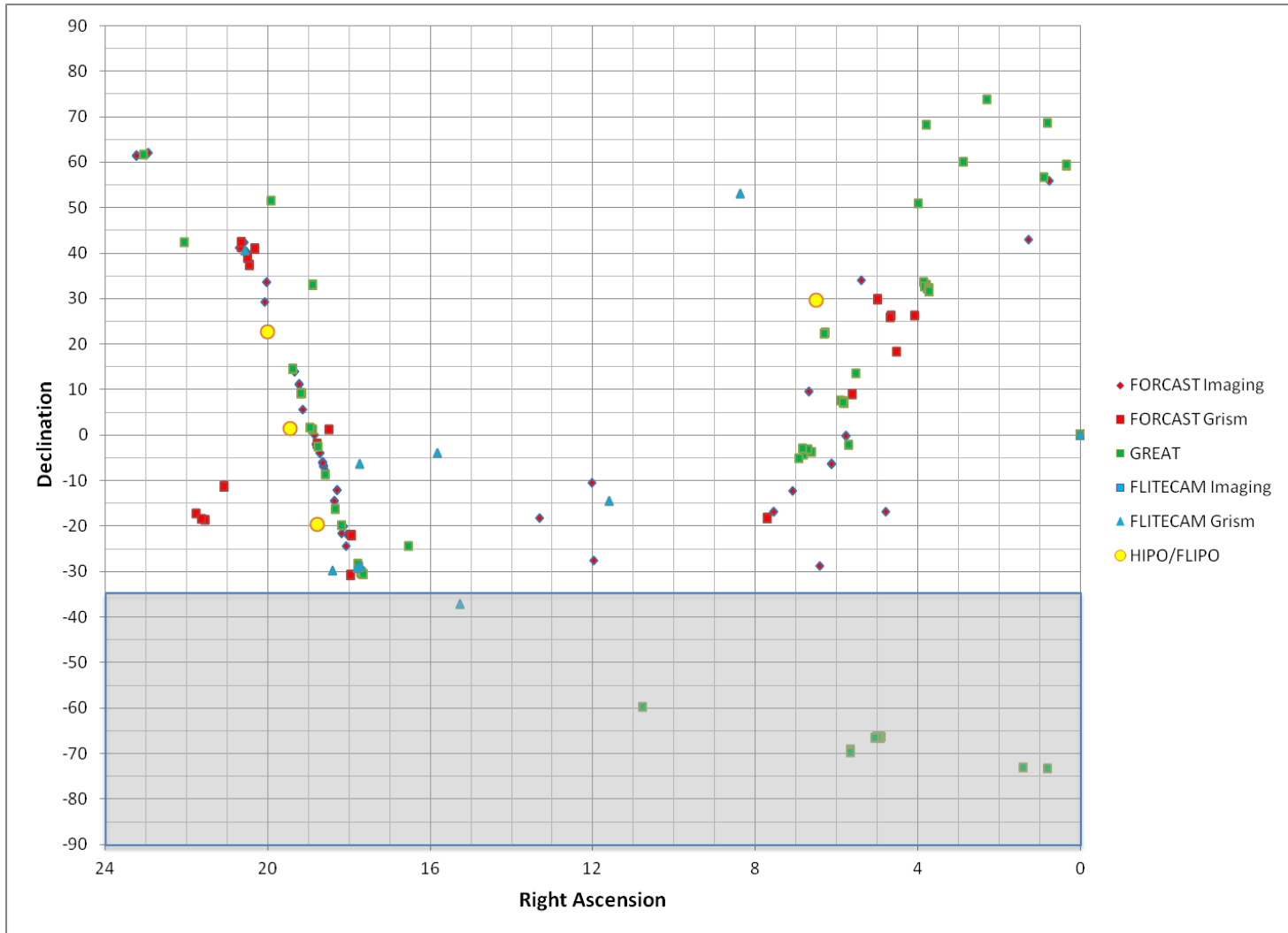


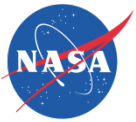


US Queue Distribution of Proposals

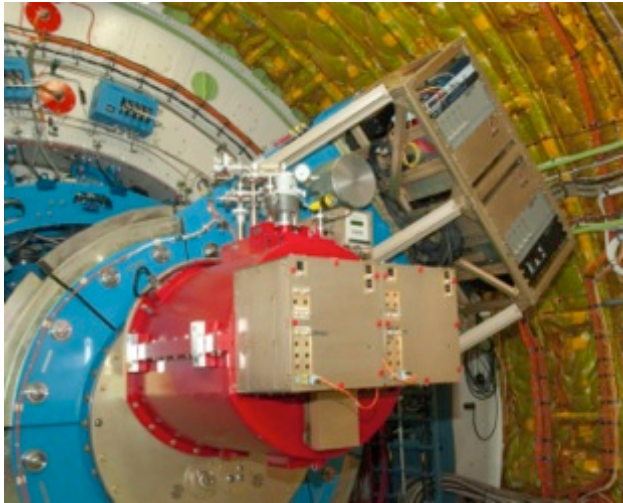


Cycle 1 Selected Targets

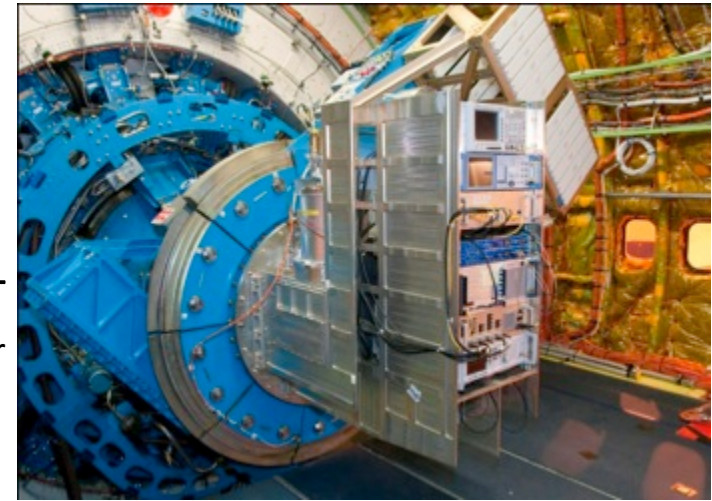




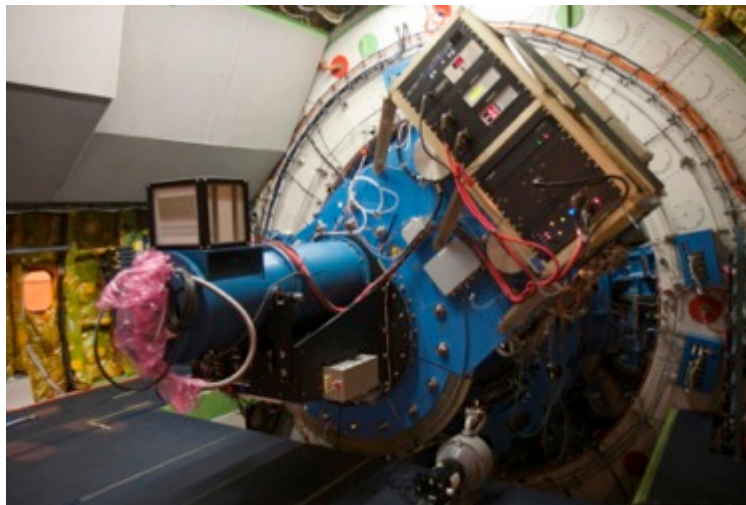
Four 1st Generation Instruments Available for Cycle 01



FORCAST
Mid-IR Camera



GREAT
Heterodyne spectrometer



FLITECAM
Near IR Camera

HIPO
Occultation Photometer

FLIPO
(co-mounted on SOFIA)



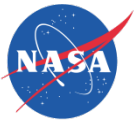


Cycle 1 Plans -1



- To maintain the full year of visibility for the selected investigations, we extended Cycle 1 to December 2013
 - About 200 Hours of US + 40 Hours of German time awarded
 - Full complement of awarded time is being scheduled
- Cycle 1 interleaved with commissioning of GREAT, FORCAST, FLITECAM, & HIPO in 2013
 - GREAT will feature the first availability of 2.5 THz band
 - New capabilities include grism spectroscopy for both FORCAST and FLITECAM
- First observations began in April 2013
- Future observing cycles to adopt the January to December window.





Commissioning Calendar



- Observatory Activities – *January-March 2013*
 - FPI+ Installation and checkout
 - Systems software development
 - Verification & Validation flights
- FORCAST Part 1 Commissioning – *March – April 2013*
- GREAT Commissioning – April 2013
- FLITECAM/HIPO Commissioning – April – May 2013
- FORCAST Part 2 Commissioning – May- June 2013
- FLITECAM Part 2 Commissioning – September - Oct 2013





Cycle 1 Observing Campaigns



- OC1-A (GREAT)
 - December 2012
 - Cancelled and observations moved to later campaigns
- OC1-B (FORCAST)
 - June 2013
 - 6 flights planned
- OC1-C (GREAT) – Deployment to New Zealand
 - July 2013
 - 9 flights planned
- OC1-D (FORCAST)
 - September 2013
 - 7 flights planned
- OC1-E (FLITECAM)
 - October 2013
 - 4 flights planned
- OC1-F (FORCAST)
 - October 2013
 - 8 flights planned
- OC1-G (GREAT)
 - October-November 2013
 - 8 flights planned





Integrated Master Schedule Overview

Cycle 1 Started
4/11/13

Exoplanet Obs

Cycle 2 Cfp

Cycle 2 Proposals Due



Maint./u	ACF	V&V	Observ. Test of FPI	V&V LO	UPS Install	V&V flt	Trouble Shoot	FORCAST C1	GREAT Com.	FLIPO / FLITECAM Com 1	FORCAST Com P2	Observing Cycle #1-D FORCAST					
7	14	21	28	4	1	18	25	1	8	15	22	24					
January -- 2013			February -- 2013			March -- 2013			April -- 2013			May -- 2013			June -- 2013		

Deployment

Observing Cycle #1-C GREAT	Maint./up.#3 - 4wks	OC#1-D FORCAST	FLITECAM C2	OC#1-E	OC#1-F FORCA	OC#1-G GREAT	Maintenance / Phase 2 Integration and Testing				
3	15	22	29	5	12	19	26				
July -- 2013		August -- 2013		September -- 2013		October -- 2013		November -- 2013		December -- 2013	

Cycle 2 Starts

Cycle 2 Proposals selected

FOC 10/4/13

Cycle 1 Ends

V&V	OC#2-A	FIFI-LS Com P1	EXES Com P1	OC#2-B	FIFI-LS Com P2	Observing Cycle #2-C	Aircraft & TA Heavy Maint. - 21 wks				
6	13	20	27	3	10	17	24				
January -- 2014		February -- 2014		March -- 2014		April -- 2014		May -- 2014		June -- 2014	

Cycle 3 Proposals Due

Call for Cycle 3 Proposals

Cycle 2 Ends

Aircraft & TA Heavy Maint. - 21 wks	V&V	EXES Com P2	Observing Cycle #2-D	Maint./up.#6 - 5 w							
7	14	21	28	4							
July -- 2014		August -- 2014		September -- 2014		October -- 2014		November -- 2014		December -- 2014	

• MCCS Phase 3

RSSO

Cycle 3 Proposals selected

Call for Cycle 4 Proposals

Maint./up.#6 - 5 wks	upGREAT	Observing Cycle #3-A	Maint./up.#7 - 4 wks	HAWC+ Com 1	Observing Cycle #3-B	HAWC+ C2					
5	12	19	26	2	9	16					
January -- 2015		February -- 2015		March -- 2015		April -- 2015		May -- 2015		June -- 2015	

Cycle 4 Proposals Due

Cycle 3 Starts

Cycle 4 Proposals selected

Cycle 3 Ends

Observing Cycle #3-D	Maint./up.#8 - 4wks	Observing Cycle #3-D	Maint./up.#9 - 5w								
6	13	20	27								
July -- 2015		August -- 2015		September -- 2015		October -- 2015		November -- 2015		December -- 2015	

Observing Cycles

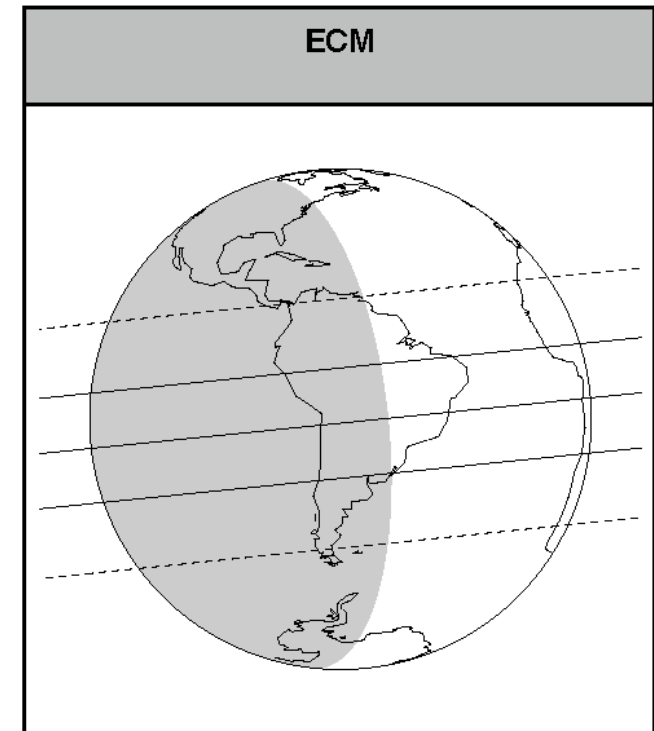
OC	Flights	R. Hrs.	CfP
1	43	306.2	186.0
2	47	334.6	205.8
3	109	776.1	513.0

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

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



- Exoplanet opportunities
 - Out of a number of highly ranked exoplanet transit investigations, two were selected for **demonstration observations** during FLIPO commissioning in May 2013
 - Proposal 01_0099 “Characterizing Transiting Exoplanets Using FLITECAM: An Exploratory Program” ; PI: Avi M Mandell
 - Proposal 01_0155 “Do starspots inflate the exoplanet CoRoT-2b?” ; PI: Klaus Huber
- Pluto Occultation
 - We had been planning an observation of an occultation event on May 4, 2013
 - Analysis of the March 23 appulse of Pluto and the occulted star gave a much better prediction of the shadow track
 - The prediction moved the track far enough south that there was no feasible SOFIA flight plan without an international deployment
 - We have decided to cancel the observation





Target of Opportunity Observations



- Two requests for activation of Target of Opportunity Observations have been submitted
 - Proposal 01_0074 “FORCAST Observations of a ToO Bright Comet in Cycle 1” PI: Diane Wooden
 - Activated for Comet ISON C/2012 S1
 - October 2013 FORCAST window possible
 - Proposal 01_0115 “A GREAT Search for Deuterium in Comets” PI: Mike Mumma
 - Activated for Comet ISON C/2012 S1
 - November 2013 GREAT window possible
 - Final acceptance of both activations will depend on two criteria
 - Comet ISON is brighter than a set V-magnitude threshold in May 2013
 - A usable non-sidereal tracking mode is available on SOFIA





Cycle 1 Summary



- Community science flights will began in April 2013
- SOFIA will deploy to New Zealand in July 2013 with GREAT for 9 flights
 - M-channel observations are included
- Additional FORCAST, FLITECAM, & GREAT flights in November-December 2013
- A total of ~300 hours for science
 - 200 hours has been awarded under US Call for Proposals
 - 40 hours for Germany
 - 60 hours for Instrument Team Guaranteed Time, Calibration Time, and Director's Time

