





# SOFIA Cycle 1 Proposal Solicitation

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SUG meeting March 12







#### **Cycle 1 Assumptions and Background**







#### **Cycle 1 "Boundary Conditions"**

- Cycle 1 will be open to world astronomical community
- Period offered: July 2012- August 2013 in four observing campaigns
- Intermixed with observatory development and instrument commissioning
- Southern hemisphere deployment is being considered
  - Depends on ranking and urgency of targets and available funding
- Approximately 200 hours of time will be offered in the US call and approximately 40 hours will be offered in the German call
  - Why "only" 200 hours?







#### **Notional Medium-Range Plan**

Nominal Cycle 1	duration														
	SS3SC			) 8/24/12			FOC November 23, 2012						Ground		
<b>X</b>	30 R	H	62 RH - 2	2 flts/wk	• TA	Improve	ments	?	<u> 30 RH -</u>	- FOC 11/2	23/12	6	2 RH - 2 f	lts/wk	Cooling
A/C Sys Funct & TA flts	FORCAST Com		Observing Campaign #1		Maint./upgrade #3 - 5 w		rks	FLITECAM		I Com 🔌 Observi		rving Can	ing Campaign # 2		
<b>25</b> 2 9 16	23 30	6 13 2	0 27	3 10	17 2	24 1	8	15	22 29	5 1	2 19	26	3	10 17	24 31
July 20	12	August 2	012	Septemb	er 2012		Octo	ber 2	2012	Nover	mber 20 <sup>-</sup>	12	C	ecember	2012
• TA Improvements?									• • • • •		nto 2				
Maint./upgrade #4	t./upgrade #4 30 RH			209 RH - 3 flts/wk					* 1A III	- TA improvements?			279 RH - 3 flts/wk		
- 5 wks	EXES Corr	า		Observii	ng Campa	ign #3	in #3 Maint./upgrade			grade #5 -	5wks		Observi	ng Campa	aign #4
7 14 21 28	4 11	18 25 4	4   11	18 25	1	8 15	22	29	6 13	20 2	7 3	10	17 3	24 1	8 15
January 2013	February -	2013	March -	2013		April 2	013		May	- 2013		June	- 2013		July 2013
Heading Turner											•WVM Upgrade				
•TA Imp		•TA Improv	rovements?		30	30 RH		140 RH - 3 flts/wk			• IA Improvements?				
Observing Campai	Observing Campaign #4 Maint./up		grade #6 - 5 wks		HAW	HAWC Com			Observing Campaign #5			Maint./upgrade #7 - 5 wks			wks
22 29 5 12	19 26	2 9 1	6 23	30 7		21 28	4	11	18 25	2 9	9   16	23	30	<u>6   13</u>	20 27
July 2013 August 2013 September 2013				October 2013   Novembe			er 2013   December 2013   January 2014				ry 2014				
2 week southern hemisphere deployment • SATCOM installation															
30 RH		209 RH - 3 fits/wk						IA Improvements?							
			ampaign #	6 <b>V</b>			S Com	00	M	aint./upgra	de #8 - He	avy Ma	Intenance	e Visit - 8	WKS
<u>3 10 17 24</u>	3 10	17 24 3	1 /	14 21 Annil 0014	28	5 12 Maxi	19	26	2 9		3 30	(	14	21 28	4 11
February 2014	Marci	n 2014		April 2014		May	- 2014		Jur	ne 2014			July 20	)14	Aug 2014
434 RH - 3.5 filts/WK							380 RH - 3.5 fits/			IS/WK					
Ubserving Campaign #7					47 04				grade #9 -	4WKS	40	Observi	ng Campa	aign #8	
18 25 1 8	15 22	29 6 1	<u>3 20</u>	2/ 3	10	2014	1	8 Deer	15 22 mbox 2011	29 5	o <u>12</u>	19	26	2 9 Fabric	16 23
Aug 2014   September 2014   October 2014			4   N	November 2014 Dece			Decei	mper 2014 January			2015   February 2015				

The above "Lego<sup>™</sup> chart" represent the best available knowledge in late 2011 and has since been superseded









# **Available Observing Campaign Research Hours**

Campaign	Weeks	Flights/Week	Flight Opportunities	Instrument Changes
1	4	2	8	-2
2	4	2	8	-2
3	9	3	27	-5
4	8	3	24	-4
			Net Flights	54
Assumption	ns:		Available Hours	418.5

1)Campaigns with a given instrument last 2 weeks.

2)An instrument change costs 1 flight. We will work to schedule weekend changes, in which case the "lost" flights become contingency. 5
3)There are 7.75 Research Hours per flight.







#### **US Research Hours Calculation**

Element	Hours	Rationale
Available Total Research Hours	418.5	LEGO 9/29/2011 and Scheduling meeting 11/4/2011
DD Time	-29.3	7% of Science Time Specified by JSPP-2
Commissioning Hours	93	3 Instruments x 4 flights x 7.75 hours per flight
Net Research Hours Subject to 80:20 Split	482.2	
US Research Hours	385.8	80% of Net Research Hours







## **Research Hours Adjustments**

Element	Hours	Rationale				
US Research Hours	358.8					
Commissioning Hours	-93.0	4 Flights each, FORCAST, FLIGHTCAM, EXES				
GTO Time for Instruments	-54.0	½ of Total Guaranteed Time in Cycle 1 and ½ in Cycle 2				
General Hours	238.7					
Calibration Hours	-37.0	General Hours / Hours per flight * 1.2 hrs per flight				
Hours Available for Proposal Call	201.8					







# Cycle 1 Proposal Solicitation & Selection Time Line

#### US queue:

Call for Proposals Released Nov. 2011 Final version of CfP released Dec. 13, 2011 Proposal deadline Jan. 27, 2012 Technical Review March, 2012 Peer Review April 4-6 **German queue:** Call for Proposals Released Dec. 2011 Final version of CfP released Feb. 10, 2012 Proposal deadline March 2, 2012 Peer Review April 16-17

Directors' Review Announce Selections Phase 2 Cycle starts (nominally) April 23-27 April 30 May, 2012 July 1, 2012



But...

- The current schedule has Cycle 1 beginning, not in July, but "no sooner than September"
- Exact end of "Down time" still uncertain
- Several months of Cycle 1 therefore "not available"
  - We want to keep the proposal deadline
    - Late January fits in with other NASA projects and the winter AAS
    - · Get the community used to a fixed SOFIA proposal deadline
  - So; stick with July-June cycle
    - Option to carry over accepted July-September targets to Cycle 2
    - The Cycle 2 available time will be somewhat smaller for this RA range







#### **Tools and Issues**







#### Proposal Tools & Documentation – all updated for Cy 1 Exposure estimation tools

- DCS provides exposure time calculators for FORCAST and FLITECAM imaging through SITE
- DSI provides an exposure time calculator for GREAT
- Exposure time calculator for FLITECAM grism mode was developed by Bill Vacca at the SMO
- L Keller provided algorithms and instructions for FORCAST grism exposure estimates

#### Documentation

- Web site, CfP, Observer's Handbook
  - GREAT Observation Planning Guide (GOPG)

## Support

 Active and responsive user support, including Help Desk and FAQs, primarily provided by Ravi Sankrit and Andrew Helton<sup>11</sup>







#### Issues

- Multiple locations and platforms for different tools
  - Situation is due to resource constraints
  - Will be remedied with all calculators included in SITE
- Overhead calculations for GREAT was unclear (US site and DSI tool inconsistent)
  - We will recalculate the required times for ALL GREAT proposals in a consistent way, before passing to the TACs
  - Proposers will not be penalized for following either version
- DCS issues (non-ASCII characters etc. See Shuping pres.)
- Minor errors in Observers' Handbook
  - Early ones corrected in delta releases
  - Help desk explained and clarified minor remaining ones
- Definitions of "nominal", "low" and "very low" water vapor in SPT unclear
  - Resolved by answers via the help desk
- Definition of "Map Area" for FORCAST and FLITECAM imaging
  - Resolved by answers via the help desk
- LOS rotation speed for target not well documented
  - Better plots and descriptions will be developed for Cy 2
  - If feasible a tool will be developed







#### **Cycle 1 Proposal Statistics**







# Proposal Origin (Cy 1 US queue)



- US SOFIA Staff
- US non-SOFIA Staff
- International

Total # of unique, valid, proposals received: 133 (US queue) + 39 (German queue)

Proposals received from: 10 countries on 4 continents (US queue only)



Total requested time (US queue): 1207<sup>h</sup> standard, 86<sup>h</sup> survey (all FORCAST) OSR=6.0 ("standard" mode only) 15







#### **Proposals by Category (US queue)**



These are  $\underline{NOT}$  the TAC panels – B-G's categories only