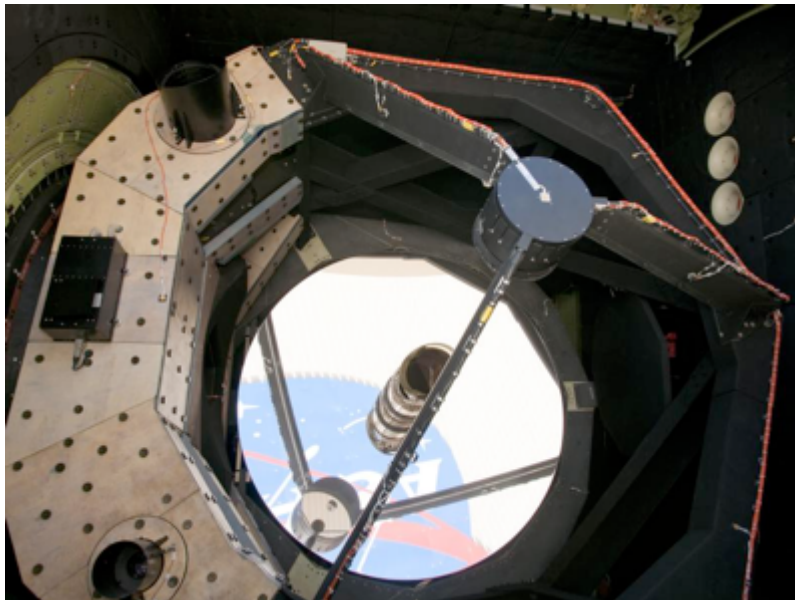




Program Update

April 15, 2015



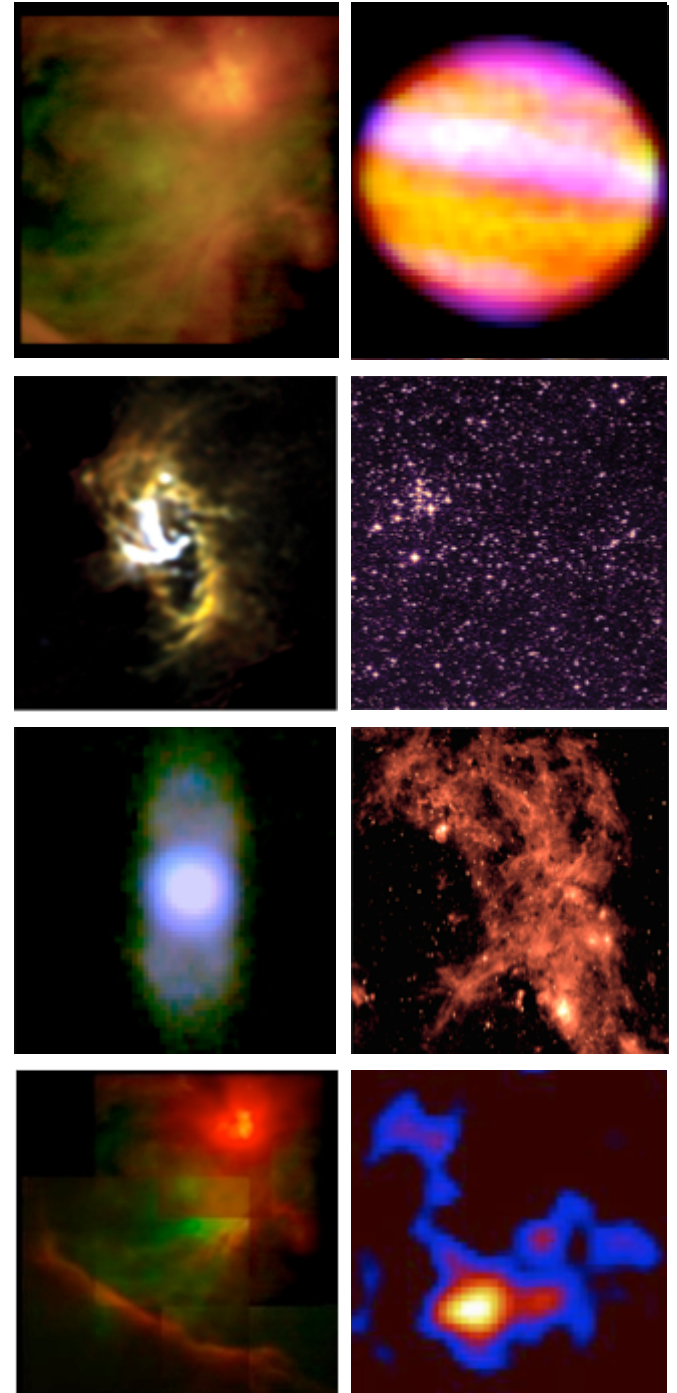
Presented to:

SOFIA Users Group (SUG) Meeting #7

Presented by:

Eddie Zavala, SOFIA Program Manager

George Sarver, SOFIA Deputy Program Manager





FY15 Budget Update



- ✓ October 2014: FY15 Appropriation
 - Passed Continuing Resolution on September 18, 2014 - effective through December 11, 2014 **(GOOD)**
- ✓ Received Program Guidance from SMD APD (technical & budgetary) for the CR Period at annual level of \$84M **(GOOD)**
- ✓ December 14, 2014: Final FY15 Appropriation provided \$70M and verbiage that SOFIA shall not be terminated prior to completing a Senior Review **(GOOD)**
 - Program implemented FY15 budget strategy/plan to maximize near-term scientific productivity and minimize impact to scheduled flights
- ✓ FY16 President's Budget Request (PBR) fully restores SOFIA with the additional requirement of completing a Senior Review in FY16 **(GOOD)**
 - Initiated annual budget planning to provide an integrated, optimized Program Plan that is responsive to feedback from:
 - Standing Review Board (SRB), September 2013
 - SOFIA Science Assessment Review (SSAR), June 2014
 - Office of Inspector General (OIG) report, July 2014



Program Update – Budget Strategy



- Budget / Schedule strategy & financial performance to support priorities within budget
 - Invest all resources (including reserves) to retain key capacity, support key improvements, focus engineering sustainment, and maximize funded SOFIA flights
 - The Program developed an executable plan of operations that holds to the \$70M guideline for FY15
 - The program will continue to work to actively work cost reduction opportunities throughout the fiscal year
 - Implementation requires high level of scrutiny to tightly manage all areas of cost
 - This plan requires the reduction of 9 unfunded flights (Program schedule shows distribution of unfunded and restored flights)
 - The potential to restore unfunded flights provides the greatest flexibility to minimize the impact to science and maximize utilization of cost savings identified throughout the year – principally through low fuel costs

Cycle 3 Daily Overview - 1 of 2



Chart Revision 4/3/15

Cycle 3 Start

OC#3 A EXES							OC#3 B FIFILS							
2 Flights				SI Rem.	SI Install			LO(F)	8 Flights					
S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
28	1	2	3	4	5	6	7	8	9	10	11	12	13	14

March -- 2015

OC#3 B FIFILS													Autoland moved to 4/29													Maintenance / Upgrades #7												
8 Flights (cont.)								SI Rem.	MD Instl					SI Install								SI Rem.																
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S											
15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18				

March -- 2015 April -- 2015

Maintenance / Upgrades #7													upGREAT Commissioning																					
Eng LO				Autoland		MD Rem	SI Install			Ins/Prep			Prep			EMI/LO			Cont LO			4 Flights				SI Rem								
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S							
19	20	21	22	23	24	25	26	27	28	29	30	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23

April -- 2015 May -- 2015

OC#3 C FORCAST													OC#3 D FORCAST													OC#3 E FLIPO								
SI Install					5 Flights								Prep					Ferry to CHC			6 Flights					SI Rem	SI Install							
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S							
24	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27

May -- 2015 June -- 2015

OC#3 E FLIPO			OC#3 F FORCAST								OC#3 G GREAT													Maintenance / Upgrades #8										
Check	Pluto	SI Rem.	SI Install					4 Flights			SI Rem	SI Install / align / tune			6 Flights						Prep & SI Swap (TBD)			Ferry		SI Rem	MD Instl							
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S							
28	29	30	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1

June -- 2015 July -- 2015

Maintenance / Upgrades #8													OC#3 H EXES																					
Cont. LO													SI Install				6 Flights					SI Rem												
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S							
2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5

August -- 2015 September -- 2015

Cycle Summary		Key													
Observatory	3	S 7	W 6	H 4	F 6	F 6	F 6	F 6	F 6	F 6	F 6	S 28			
Planned Flights	77	Weekend day (black text with no fill)	Work day (black text with day box grey fill)	US or German Holiday (day of week box H or GH with red fill)	Deployment Observing Flights (bold white text, light blue fill, bold border)	Return to Base (RTB) Flight (single slash through day and date)	Contingency Ferry/Maint./Non-Sci Fit (day box with green fill)	Short Flight (colored fill on only half)	AFRC Regular Day Off (day and date shown in red)	Line Operations (bold border)	Instr. Commissioning Flight (bold white text, purple fill, bold border)	Canceled Flight (x through day and date)	Maint./Upgrade Possible Check Flight (day and date box filled with light green)	Notional Unfunded Flight (yellow fill with U below day)	Restored Flight (check mark below day)
RHs +	548	AFRC Regular Day Off	Observing Flight (bold white text, blue fill, bold border)	Contingency Instr. Comm. Flight (day box with purple fill)	Ferry/Maint./Non-Sci Flight (bold white text, green fill, bold border)	Ferry/Maint./Non-Sci Flight (two colored fill)									

* These values assume an 89% reliability factor

03 April 2015

Cycle 3 Daily Overview - 2 of 2



OC#3 I FORCAST														OC#3 J FLITECAM										OC#3 K FIF-LS										
Install SI														SI Rem										SI Install										
7 Flights														4 Flights										SI Install										
S	H	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S							
6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	1	2	3	4	5	6	7	8	9	10
				U								U								U														
September -- 2015																								October -- 2015										

OC#3 K FIF-LS														OC#3 L FORCAST																				
9 Flights														11 Flights																				
S	H	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S							
11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	12	13	14
October -- 2015														November -- 2015																				

OC#3 L FORCAST														OC#3 M GREAT																				
11 Flights														8 flights																				
SI Rem.														SI Install																				
no 2nd sht														SI Rem.																				
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S							
15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
November -- 2015														December -- 2015																				

Maintenance / Upgrade #9														HAWC+ Commissioning Part 1																				
MD Instl														Cont. LO																				
MD Rem														SI Install																				
Line Ops														EMI																				
S	M	T	W	T	H	S	S	M	T	W	T	H	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S							
20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
December -- 2015														January -- 2016																				

HAWC+ Comm Pt 1														OC#4 A (TBD)																				
3 Flights														SI Rem																				
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S							
24	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
January -- 2016														February -- 2016																				

PMB Approved → Cycle 4 Start

Cycle Summary		Key											
Observatory	3	S 7	Weekend day (black text with no fill)	H 4	US or German Holiday (day of week box H or GH with red fill)	F 6	Deployment Observing Flights (bold white text, light blue fill, bold border)	F 6	Return to Base (RTB) Flight (single slash through day and date)	F 6	Contingency Ferry/Maint./Non-Sci Flt (day box with green fill)	S 28	Short Flight (colored fill on only half)
Planned Flights	77	F 6	Work day (black text with day box grey fill)	F 6	Line Operations (bold border)	F 6	Instr. Commissioning Flight (bold white text, purple fill, bold border)	F 6	Canceled Flight (x through day and date)	F 6	Maint./Upgrade Possible Check Flight (day and date box filled with light green)	U	Notional Unfunded Flight (yellow fill with U below day)
RHs +	548	F 6	AFRC Regular Day Off (day and date shown in red)	F 6	Observing Flight (bold white text, blue fill, bold border)	F 6	Contingency Instr. Comm. Flight (day box with purple fill)	F 6	Ferry/Maint./Non-Sci Flight (bold white text, green fill, bold border)	S 13	Half Sci. & Half Ferry/Maint./Non-Sci (two colored fill)	✓	Restored Flight (check mark below day)
* These values assume an 89% reliability factor													



Program Update: Optimization & Transition



- Near-term Program Office Budget Planning Priorities
 - Re-optimize Program based on feedback received from SRB, OIG, and SSAR
 - Maintain Progress toward achievement of Program Office Transition Criteria – Demonstrate Science Data Delivery Capacity for SH Deployment
- Program Re-optimization Budget Planning
 - Step 1: Included in FY17 PPBE (Budget submission) this week
 - Increases science community support (including travel for GO flight participation)
 - Includes Gen 3 science instrument development
 - Provides ~800 RH/yr with a 3 flight per week template
 - Streamlines Aircraft maintenance and operations through new maintenance plan (provides opportunity to increase RH/yr above 800 RH/yr)
 - Focused Sustainment Engineering
 - Improvements focused on supporting SI capabilities
 - Step 2: Continue Optimization as part of Senior Review Proposal Development Effort



Program Update: Science Productivity & Priorities



- The combined circumstances of the FY15 and FY16 budget details require that the SOFIA Program priorities focus on the following:
 - Preparation for 2016 Senior Review
 - Focus on scientific productivity: Science Publications – Papers! Papers! Papers!
 - Successful completion of FY15 science flights, including SH deployment with 4 Instruments that will support the observation of the Pluto Occultation
 - Streamlined Observatory engineering support
 - Limited improvements / enhancements
 - Budget / Schedule strategy & financial performance to support priorities within budget
- 2016 Senior Review Preparation
 - Led and organized by Dr. Pamela Marcum, SOFIA Project Scientist
 - Expertise from USRA is essential for the success!
 - Future perspective / compelling proposal for continued SOFIA science & operations
 - Clear Scientific Thematic emphasis
 - Continue Program optimization for scientific return
 - Strategy for Cycle 4 Call for Proposal that provides impactful science
 - Complete planning to initiate acquisition of 3rd generation science instrument (**HQ released NOI on April 6, 2015**)



Program Manager's Questions for SUG



- Has the SUG membership solicited feedback from the SOFIA Guest Observers to assess the following areas?
 - General satisfaction with data products (timeliness of delivery, quality, archive data access, etc.)
 - Identification of specific technical issues / concerns that the SMO can address more directly to ensure publication rates increase
 - Determine the productivity of an instrument within the SI suite
- What criteria should be used to assess the relative productivity of the current Science Instruments?
- What is the SUG's opinion of the appropriate technical risk that a new science instrument development effort should accept; i.e. utilization of heritage technology vs. high TRL vs. low TRL?