

SOFIA Cycle 2 implementation

B-G Andersson

USRA

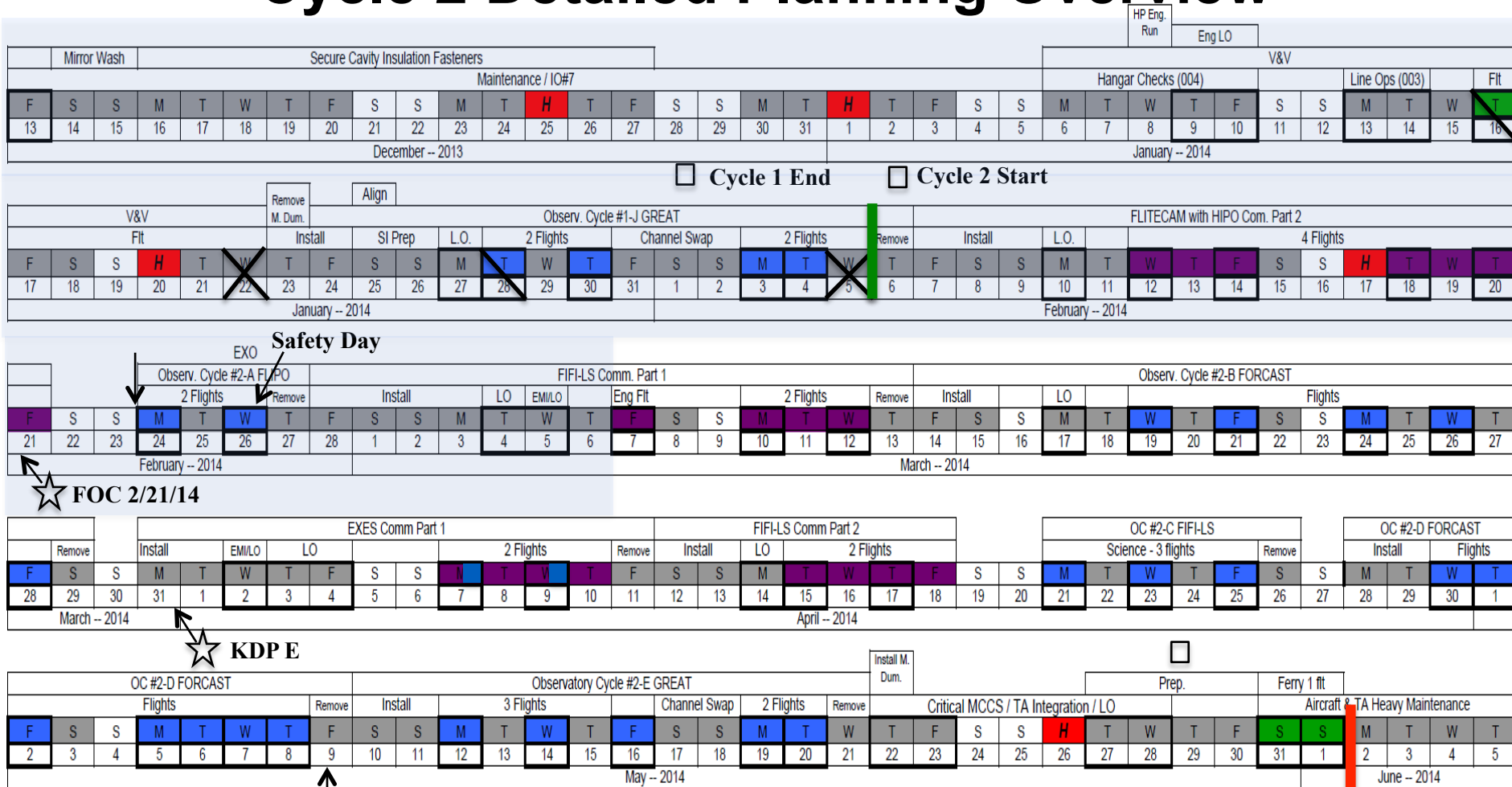
SOFIA Science Operations Manager

SUG meeting April 28, 2014

Cycle 2 Implementation



Cycle 2 Detailed Planning Overview



Observing Cycle 2

OC	Flights	R. Hrs.	CfP
2	38	265.9	151.3

Call for Cycle 3 Proposals

△ Observatory

\ RTB Flight

□ Project

× Canceled Flight

Bold Outline: Actual Flight / Line Ops

Red Outline: Platform Integration Opportunity

H: Holiday SD: Safety Day GH: German Holiday

Approved by PMB

Still Being Developed

- observing flights
- instrument commissioning
- platform flights
- aircraft maintenance/observatory upgrade
- deployed observing flights

Science hour estimates were calculated based on maximum possible flights at 89% reliability.
3/06/2014

Rev. B

Summary of GI observations, so far, for Cy 2

- Since the beginning of 2014, **4 flight series with GI observations have been executed**, including the second FIFI-LS commissioning series
 - About 45h of science – excl. calibration (using leg duration)
- Two commissioning series (FIFI-LS 1 and EXES 1)
- **Two more series have been flight-planned**
 - OC-2D (FORCAST) 6 flights - April 30-May 7 (~38h)
 - OC-2E (GREAT) 2 flights (community science) – May 19-20 (~14h)
 - 3 additional consortium/H-channel commissioning flights planned
- **One additional Flight Series is likely before the H MV**
 - OC-2F (FORCAST) ~4 flights in June
- We on track to exceed 100h of science target observations by the H MV

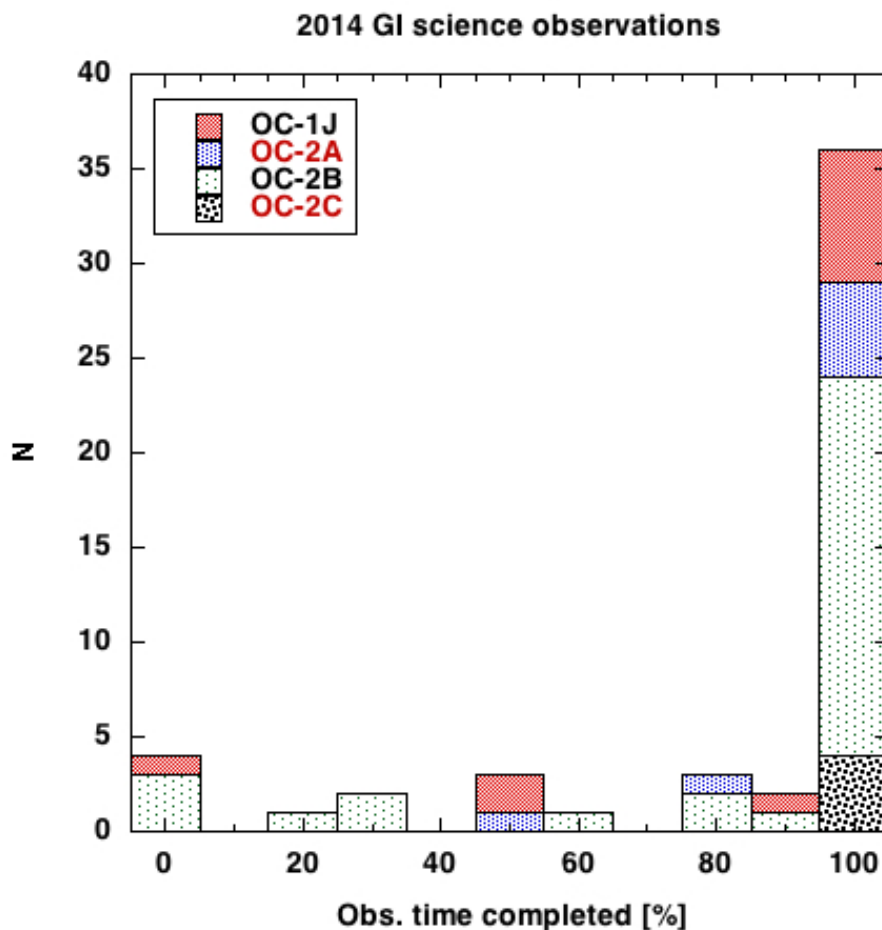
Cy 2 GI Observation Statistics to date

- **Series** **Instr.** **# flights**
- OC-1J GREAT 2 Flights
 - 8 Cy 1 obs >90% compl., 2 Cy 2 obs 100/0%
- OC-2A FLITECAM 2 Flights
 - 6 GI obs., 1 GTO, all fully successful
- OC-2B FORCAST 5 Flights
 - 30 GI observations, 25 “fully” successful
- OC-2C FIFI-LS commissioning II
 - 4 GI observations, all fully successful

Graphic view of GI science in 2014

We've been very successful,
so far this year
50 out of 56 obs. got more
than 1/3 of their planned
observation

One [GREAT consortium]
flight canceled (F1 144)
Two flights cut short by
Return-to-Base (RTB)



Guest Investigator Time

As of 25 April
2014

	Cycle 1			Cycle 2		
	US (hours)	German (hours)	Total (hours)	US (hours)	German (hours)	Total (hours)
FORCAST	25.8	2.0	27.8	26.1	0.0	26.1
GREAT	39.3	35.6	74.9	1.6	1.0	2.6
FLITECAM	0.0	0.0	0.0	4.5	0.0	4.5
FLIPO	2.9	0.0	2.9	1.8	1.8	3.6
FIFI-LS	0.0	0.0	0.0	2.2	4.7	6.8
Total	68.0	37.6	105.6	36.2	7.5	43.7

Note: FIFI-LS includes flight scheduled 4/25/2014

US Guaranteed Time Usage

As of 24 April 2014

Instrument	Original Allocation (hrs)*	Observing Time Used (hrs)	Remaining Guaranteed Time (hrs)
FORCAST	50	12.3	37.7
FLITECAM	25	1.9	23.1
HIPO	15	5.5	9.5
FLITECAM+HIPO	25	0.0	25.0

* Science Utilization Policies, SOF-DF-PLA-1087 v. 2.4 (2008)

Vis-à-vis Plan

- Long range planning tool is not yet fully implemented
- Over-all schedule has been in flux
- Commissioning/pipeline development (grism) not complete
- Absolute estimates of performance vs. plan uncertain
- A rough estimate of completion fraction of programs with targets in the RA=5-16 range yields (excluding surveys) a 70% completion rate so far in Cy 1. If we assume 4x7h for OC-2F the completion rate goes to >90%

Observation highlights in Cy 2, so far

- SN2014J observed by FLITECAM, FORCAST & HIPO
 - Fast response to ToO request (Cy 2 prog. And DDT)
- Several Solar System observations executed or planned:
 - Pallas with FLITECAM and FORCAST
 - Jupiter with EXES (commissioning) and FORCAST (planned)
 - Non-sidereal tracking
 - Relative-time constrained observations
- Many exciting (preliminary analysis) observations of
 - Planetary Nebulae
 - Star forming regions
 - Galaxies
 - Exo-planet transit
- Both imaging and spectroscopy observations

Cycle 2 Plans for the rest of the cycle

The rest of Cycle 2

- Cycle 2 ends in February 2015
 - We can still access “most of the sky” in the remainder of Cy 2
- U.S. FY 2015 budget not decided
- SOFIA budget uncertain
- Heavy Maintenance Visit to Germany
 - Will likely be delayed by 3-4 weeks
- Cy 2 schedule beyond HMTV being re-planned.
 - Instrument cadence unknown – but likely will include:
 - EXES commissioning 2, in Nov.
 - GREAT series in Dec.