The SOFIA Observatory studies astronomical observations at wavelengths between 0.3 and 1000 microns.
Recent Program Status

- Cycle 4 Science Flights are in progress, approximately 1/3 through the Cycle
- Program is making final preparations for deployment science flights in Christchurch, New Zealand
  - 7 ½ week, 3 instrument deployment from June 4 – July 26, 2016
  - Science instruments: upGREAT, FIFI-LS, and FORCAST
  - 25 science flights planned

- 1st Generation Science Instrument Acceptance is Complete
  - FORCAST, January 2016
  - FIFI-LS, April 2016

- 2nd Generation Science Instrument (HAWC+) commissioning flights started
  - Instrument delivered on February 2016
  - 1st Commissioning Flight Series completed
  - Temperature control issue to be addressed prior to next commissioning flight series in Fall 2016

- 3rd Generation Science Instrument solicitation
  - On track for SI Selection in September 2016
## SOFIA Top-Level Schedule

### Annual Performance Indicator
- **API FY15:** EXES Comm. Complete
- **FY16:**
  - 1st Gen SI Comm. Acceptance Complete
  - Ready for GS & 1st Gen Full Sci
- **FY17:**
  - 2nd Gen SI CDR Complete
  - 3rd Gen SI CDR Complete
- **FY18:**
  - L1-126: 2nd Gen Full Science Productivity Achieved
- **FY19:** L1-121: All V&V Complete

### Level 1 Milestones
- **2015:**
  - 2/27: L1-119: Program Office Transition
  - 10/1: 1st Gen SI Comm.
- **2016:**
  - 4/19: 2nd Gen SI Comm. Flights Complete
  - 5/31: L1-117: Ready for RSO
  - 8/23: L1-112: & 1st Gen Full Sci
- **2017:**
  - 5/12: L1-126: 2nd Gen Full Science Productivity Achieved
- **2018:**
  - L1 Milestone
  - L2 Milestone

### Key Improvement Projects
- **1st Generation Instruments**
  - FLITECAM Accept.
  - FORCAST Accept.
- **2nd Generation Instrument (HAWC+)**
  - RDSES Solicitation
  - Phase 1 Step 1 Prop.
  - HAWC+ Pre-Ship
- **3rd Generation Instrument**
  - Phase 2 Step 2 Prop.
  - Phase 2 Study Start
  - 3rd Gen SI Announcement

### Observing Cycles
- **Cycle 1 & 2**
  - Cycle 1: All Data Public
  - Cycle 2: All L3 Cal
  - 6/23: All Data
  - 6/23: L3 Cal
  - 6/23: Public
- **Cycle 3**
  - Cycle 3: All Data Public
  - Cycle 3: L3 Cal
  - 1/29: Selection
  - 1/29: Plan
- **Cycle 4**
  - Cycle 4: All Data Public
  - Cycle 4: L3 Cal
  - 1/14: Selection
  - 1/14: Plan
- **Cycle 5**
  - Cycle 5: All Data Public
  - Cycle 5: L3 Cal
  - 2/2: Selection
  - 2/2: Plan
  - 2/14: Selection
  - 2/14: Plan
- **Cycle 6**
  - Cycle 6: All Data Public
  - Cycle 6: L3 Cal
  - 1/31: Selection
  - 1/31: Plan

### Cycle Specific Details
- **Cycle 3**
  - Call for Proposal
  - Proposals Due
  - TACs Complete
  - Selection Announced
  - Observing Plan
- **Cycle 5**
  - Draft Call for CIP
  - Proposals Due
  - TACs Complete
  - Selection Announced
  - Observing Plan
- **Cycle 7**
  - Call for Proposals
  - TACs Complete
  - Selection Announced
  - Observing Plan

---

**Note:**
- SUG #9
- Page 3
# Cycle 4 Daily Overview - 2 of 2

**HAWC+ Comm PI 2**

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August – 2016

**MCAS**

**OC4# H HAHC**

**MCCS**

**Si Rem**

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September – 2016

**Maintenance / Upgrades #11**

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October – 2016

**OC4# K GREAT**

### Channel Swap

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November – 2016

**OC4# M EXES**

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December – 2016

**PMB Approved**

**Cycle 5 Start**

**OC4# A (TBD)**

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January – 2017

**Key**

- **Weekend day** (black text with no fill)
- **Work day** (black text w/ day box grey fill)
- **AFRC Regular Day Off** (day and date shown in red)
- **POSSIBLE Maint./Up. Check Fit** (day and date box filled with yellow-green)
- **Deployment Observing Flights** (bold white text, light blue fill, bold border)
- **Short Flight** (colored fill only lower half, bold blue)
- **Half Sci. & Half Ferry/Maint./Non-Sci** (two colored fill)
- **Half Sci. / Maint./Non-Sci Flight** (half white text, green fill, bold border)
- **Instr. Commissioning Flight** (bold white text, purple fill, bold border)
- **Observing Flight** (bold white text, blue fill, bold border)
- **Intr. Comm. Flight** (bold white text, purple fill, bold border)
- **Ferry/Maint./Non-Sci Flight** (bold white text, green fill, bold border)
- **Educator on Flight** (white star on day of week)
- **Return to Base (RTB) Flight** (single slash through day and date)
- **Media/VIP on Flight** (yellow star on date)
- **CANCELED Flight** (statement of cancelation)
- **Restored Flight** (check mark below day)
- **Notional Unfunded Flight** (yellow fill with U below day)

**Observing cycle:** 4  
**Planned science flights:** 101  
**RHs:** 808  
*Max available research hours*  
**PMB sequence approval:** March 2016

Distributed: 20 May 2016  
SUG #9  
5
Recent Program Status

- Cycle 5 Science Call for Proposal issued on April 29, 2016
- 63 total peer-reviewed publications as of May 2016
- Data processing commitments are being met with the exception of FIFI-LS
  - FIFI-LS Data pipeline readiness and Water Vapor Monitor (WVM) calibration dependency continuing to be addressed, pipeline readiness anticipated in May 2016
- Program decision to establish IRSA as the SOFIA archive, transition planning in work
- SOFIA’s Budgetary Outlook is good
  - FY16 Budget appropriation restored current year budget to ~85M
  - FY17 President’s Budget Request restores Program budget profile through 2021
  - Program completed annual budget plan / submission in April 2016
Recent Program Status

- Prioritized Improvement Projects to be completed within staffing and funding constraints
  - Water Vapor Monitor upgrade/data calibration procedure development
  - HAWC+ SI
  - Aircraft Communication System Upgrade (CPDLC)
  - TA Power System re-design
  - Gen3 SI
  - Fuel Farm
  - Cryo-cooler upgrade (needed to support approved upGREAT and 4GREAT upgrades through CY17)
  - Others to be phased in as science priorities dictate and within budget/staffing constraints

- SOFIA External Council
  - SOFIA International Summit Charter completed/approved by NASA and DLR on May 24, 2016
  - Membership being sought by DLR and NASA
  - Introductory telecon to be done as soon as possible
  - First meeting anticipated in September 2016
Progress toward Science Productivity Goals

- A productive science investigation initiates with the response to a call for proposals
  - Goal: Achieve an over-subscription rate of 5 for the Cycle 5 Call for Proposals
  - Status: In progress. Awaiting Science Community response to CfP

- Availability of relevant scientific instruments
  - ✓ Goal: Complete acceptance of remaining 1\textsuperscript{st} Generation facility-class science instruments (FORCAST, FIFI-LS) by December 2015
  - ✓ Status: Completed in April 2016
  - ➢ Goal: Complete 2\textsuperscript{nd} Generation Science Instrument (HAWC+) Commissioning in Fall 2015
  - ➢ Status: In Progress. 1\textsuperscript{st} Commission flights complete; temperature control issue to be addressed prior to 2\textsuperscript{nd} Commissioning flight series in Fall 2016
  - ➢ Goal: Complete selection and project start of 3\textsuperscript{rd} Generation Science Instrument in Fall 2016
  - ➢ Status: On track for instrument selection in September 2016
Progress toward Science Productivity Goals

- Efficient and reliable flight opportunities
  - Goal: Sustain 3 flights per week with overall dispatch reliability of 90%; ~800 research hours per year
  - Status: Capacity in place, dispatch rate below goal at ~84%
  - Goal: Provide 80% of planned annual research hours with an average of 8.0 research hours per flight
  - Status: Slightly behind goal, making use of contingency flights as mitigation

- Rapid production of science ready data from reliable and accurate pipeline software
  - Goal: Level 2 data processed and archived within 5 working days
  - Goal: Level 3 data processed and archived within 15 working days
  - Goal: On-time public release of all science data after 1-year proprietary period
  - Overall status: Data delivery commitments being met with the exception of FIFI-LS. Working to establish FIFI-LS data pipeline readiness in May 2016
Progress toward Science Productivity Goals

- Sufficient funding to investigators for the analysis of the results
  - ✓ Goal: Sustain continued funding rate of ~$10K/hour
  - ✓ Status: Complete. Integrated into long-term Program Plan

- The publication and dissemination of unique and impactful science results and increased publication rate
  - ➢ Goal: Establish an average publication rate of 5-7 science papers per month
  - ➢ Status: Below goal. 10 science publications since last SUG meeting.