Plans for Cycle 2 (update)

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General Ideas for Cycle 2

• Disclaimer
  – *The plans for Cycle 2 are for public discussion and input, and the SUG is welcome to comment but will not have a role in formulating the Call for Proposals*

• More flights
  – Operations at 3 flights per week
  – Expect at least 50% more GI observing time

• Commissioning instruments
  – EXES, FIFI-LS expected make first flights

• Fixed proposal schedule
  – Continue coordinate US & German Calls
  – Cycle 2 due date = end of June 2013
  – Cycle 2 observing dates = Calendar Year 2014
<table>
<thead>
<tr>
<th>Instrument</th>
<th>Wavelengths (μm)</th>
<th>Spectral Resolving Power λ/δλ</th>
<th>Commissioning Dates</th>
<th>Offer to GI Proposals</th>
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<tbody>
<tr>
<td>GREAT</td>
<td>60-200</td>
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<td>156-165, 200-240</td>
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<td>Done Dec 2012</td>
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<td>119.3-119.6, 111.9-112.3</td>
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<td>2013?</td>
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<td>4-1200</td>
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<td>FLITECAM</td>
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<td>$2000$-$10^5$</td>
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<td>FIFI-LS</td>
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<td>1300-7500</td>
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<tr>
<td>HAWC+</td>
<td>50-240</td>
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<td>Early 2015</td>
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## SOFIA Integrated Master Master Schedule

<table>
<thead>
<tr>
<th>Cycle 1 Start</th>
<th>Cycle 1 Ends</th>
<th>Cycle 2 Starts</th>
<th>Cycle 2 Ends</th>
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### Deployment
- **Observing Cycle #1-C**: Mirror Coating
- **Observing Cycle #2-A**: EXES Com P1
- **Observing Cycle #2-B**: EXES Com P2
- **Observing Cycle #2-D**: HAWC Com
- **Observing Cycle #2-E**: Maintenance #6 - 5 wks
- **Maintenance #5 - Heavy Maintenance Visit**: 12 wks
- **Maintenance #4 - 5 wks**: Observatory V&V, FLIPO Com
- **Maintenance #3 - 9 wks**: Observatory V&V, FLIPO Com
- **Maintenance #2 - 4 wks**: Observatory V&V, FLIPO Com
- **Maintenance #1 - 5 wks**: Observing Test of PFI, FORCAST Com P1, FLUTE Cam P1, FORCAST Com P2
- **Maintenance #0 - 1 wks**: Observing Cycle #1-B

### Observing Cycle #1-A
- **Observing Cycle #1-A**: GREAT
- **Observing Cycle #1-B**: Pluto Occultation,
- **Observing Cycle #1-C**: Mirror Coating
- **Observing Cycle #1-D**: HAWC Com
- **Observing Cycle #1-E**: Maintenance #6 - 5 wks

### Notations
- **Program**: Observing Flights, Instrument Commissioning
- **Observatory**: Platform / Engineering Flights
- **Project**: Aircraft Maintenance / Observatory Upgrade, Deployment

<table>
<thead>
<tr>
<th>PLT LO</th>
<th>MOPS LO</th>
<th>A/C</th>
<th>PDS</th>
<th>Eng. Run / EM</th>
<th>SE01-004 Testing</th>
<th>Observatory V&amp;V/HIPO Com</th>
<th>Maint. &amp; Upgrade #1 - 5 wks</th>
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**PLT LO**: Platform Location

**MOPS LO**: Mission Operations Support Location

**A/C**: Aircraft

**PDS**: Project Data System

**Eng. Run / EM**: Engineering Run / Evaluation Mission

**SE01-004 Testing**: System Engineering, Phase 1-004 Test

**Observatory V&V/HIPO Com**: Observatory Verification, Validation / Hardware Integration and Performance Optimization Commissioning

**Maint. & Upgrade #1 - 5 wks**: Maintenance and Upgrade #1 - 5 weeks
Guiding Principles

• No Guest Investigator usage of a Facility Science Instrument mode until it is commissioned
  – Rule was “broken” for Basic Science, by design, in order to get early scientific results before the observatory construction, control software, and characterization were complete
  – For Cycle 2, we will have first flights of FIFI-LS but could not begin observing until late in the year, possibly as a PI instrument
    • Therefore, no new facility instruments will be available in Cycle 2

• Offering an instrument in a Call before its commissioning data have been reduced introduces significant shared risk between the observatory and the guest investigator
  – For Cycle 2, EXES and FIFI LS could be offered as a PI instrument in shared risk
- Principal Investigator Instrument
- Mid-frequency channel (2.7 THz)
  - OH line (only) already was offered to guest investigators in Cycle 1
  - HD line to be tried during Cycle 1 by the PI team
    - Consider offering HD during Cycle 2
    - Consider offering the complete mid-frequency channel in cycle 2
- High-frequency channel (4.7 THz)
  - Initial tests may occur during Cycle 1
    - Tests may occur Dec 2013
  - Performance at these frequencies not yet well known
    - Consider offering during Cycle 3? Shared risk Cycle 2
• Principal Investigator instrument
• Getting instrument into communities hands early
  – PI supports early offering
  – Cycle 2, Campaigns D,E (Sep-Dec 2014)
  – Documentation for observers by Apr 2013
• Risk of offering too soon
  – Performance of instrument in-flight unknown
  – Will we know sensitivities well enough to select credible science program?
  – Will community get such negative impression if sensitivities not achieved (or over-conservative sensitivities announced) that we lose future observers?
FIFI-LS

• Principal Investigator instrument to transition to Facility instrument

• Discussion with PI Alfred Krabbe
  – Willing to support FIFI LS guest investigators for the last campaign of Cycle 2 (Nov/Dec 2014)
    • Shared risk
    • Instrument team supports flights and data processing
  – Transition to facility instrument during Cycle 3
    • Documented as PI instrument for the Call
    • Transition occurs “behind scenes” during the Cycle
      – Main effect of transition will be who operates the flights and is responsible for the data processing
Questions for the SUG

• Feedback on Cycle 1 tools?
• Feedback on two-phase submission system?
• New tools for proposers in Cycle 2?
SOFIA-sponsored Science Conference

• Ames
• April 2014
  – After some results from Cycle 1 are ready
  – Before Cycle 3 due date