Instrument Issues and Future Suite of Instruments

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FORCAST 19μm, 37μm; Herschel 70μm; Spitzer 3μm

USRA | NASA | SOFIA | Spitzer | Herschel

NASA/SOFIA/Lim and De Buizer et al. and Sloan Digital Sky Survey
Instrument Status

• All current SOFIA Instruments (EXES, FIFI-LS, FORCAST, FPI+ GREAT & HAWC+) are operational
• Formal decommissioning of FLITECAM is complete
• HIRMES development is under review by NASA
• FY 20 NASA/SMO budgets may require the number of operating instruments be cut
Cycle 8 Proposal Pressure

• GO proposal priority 1 & 2 (pre selection) requested by time
## Science Productivity

### Publications per observing hours by instrument:

<table>
<thead>
<tr>
<th>SI</th>
<th>First offered</th>
<th>#Papers</th>
<th>Flights</th>
<th>GI+GTO hours</th>
<th>tax hours</th>
<th>Hours/Paper</th>
<th>Poisson unc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GREAT</td>
<td>Cy 1</td>
<td>69.75</td>
<td>103.5</td>
<td>881.4</td>
<td></td>
<td>12.6</td>
<td>1.5</td>
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<tr>
<td>FORCAST</td>
<td>Cy 1</td>
<td>54</td>
<td>94.5</td>
<td>719.8</td>
<td></td>
<td>13.3</td>
<td>1.8</td>
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<tr>
<td>EXES</td>
<td>Cy 3</td>
<td>15</td>
<td>26</td>
<td>246.3</td>
<td></td>
<td>16.4</td>
<td>4.2</td>
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<tr>
<td>HIPO</td>
<td>Cy 1</td>
<td>2.3</td>
<td>3</td>
<td>20.9</td>
<td>17.5</td>
<td>16.7</td>
<td>11.0</td>
</tr>
<tr>
<td>HAWC+</td>
<td>Cy 5*</td>
<td>8</td>
<td>24</td>
<td>296.2</td>
<td></td>
<td>37.0</td>
<td>13.1</td>
</tr>
<tr>
<td>FLITECAM</td>
<td>Cy 1</td>
<td>2</td>
<td>14</td>
<td>68.7</td>
<td>17.5</td>
<td>43.1</td>
<td>30.5</td>
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<tr>
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<td>Cy 4</td>
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<td>0</td>
<td>2.1</td>
<td>8</td>
<td>50.7</td>
<td>113.3</td>
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<tr>
<td>FIFI-LS</td>
<td>Cy 3</td>
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<td>416.9</td>
<td></td>
<td>61.8</td>
<td>23.8</td>
</tr>
</tbody>
</table>

* Commissioning finished and some science taken at end of Cy 4

GI+GTO hours = sum of durations of all legs attributed to GO or GTO observations
Papers = number of refereed publications based on SOFIA science data
Tax hours = Approximate additional number of flight hours charged to engineering/ferry (for occultations)
Instruments Offered and Upgrades

• The SMO Director can choose to not offer any given instrument in a Cycle (and/or to not select any programs)

• Formal retirement and decommissioning of instruments is the responsibility of NASA (Director of Astrophysics)
  • Initiated by the SOFIA Instrument Decommissioning Advisory Group (SIDAG)

• The SMO Director can propose to upgrade FSI instruments without a formal call/competition
  • New HAWC+ arrays are under discussion with requests for cost estimates from GSFC

• PSI instrument upgrades are under the control of the instrument PI