Cycle 8 Call for Proposals
Future Challenges

Harold Yorke
Director, SOFIA
Science Mission Operations

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Cycle 8
Cycle 8 Timeline

- Release of Calls for Proposals: 31 May 2019
- Call for Proposals Update on Website: 20 Jul 2019
- Proposals Due: 6 Sep 2019 21:00 PDT, 7 Sep 2019 04:00 UTC
- Announcement of Selections: Dec 2019
- Cycle 8 begin: 25 Apr 2020
- Cycle 8 end: 24 Apr 2021

Calls for Proposals on the SOFIA SMO website:
https://www.sofia.usra.edu/science/proposing-and-observing/proposal-calls

New in Cycle 8: Archival Research Program included in the Legacy Program Call
## Instruments Offered in Cycle 8

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Description</th>
<th>Coverage</th>
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<tbody>
<tr>
<td><strong>EXES</strong> (Echelon-Cross- Echelle Spectrograph)</td>
<td>High Resolution ((R &gt; 10^5)) Echelle Spectrometer</td>
<td>5 – 28 µm</td>
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<tr>
<td><strong>FIFI-LS</strong> (Field Imaging Far-Infrared Line Spectrometer)</td>
<td>Dual Channel Integral Field Grating Spectrometer</td>
<td>51 – 120 µm, 115 – 203 µm</td>
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<tr>
<td><strong>FORCAST</strong> (Faint Object infraRed CAmera for the SOFIA Telescope)</td>
<td>Mid-IR Dual Channel Imaging Grism Spectroscopy</td>
<td>5 – 25 µm, 25 – 40 µm</td>
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<tr>
<td><strong>FPI+</strong> (Focal Plane Imager Plus)</td>
<td>Visible light high speed camera</td>
<td>360 – 1100 nm</td>
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<tr>
<td><strong>GREAT, upGREAT</strong> (German REceiver for Astronomy at Terahertz frequencies)</td>
<td>High resolution ((R&gt;10^6)) heterodyne spectrometer; multi-pixel spectrometer</td>
<td>0.49-0.635 THz, 0.890-1.100 THz, 1.24-1.39, 1.43-1.5 THz, 1.83 – 2.006 THz, 2.49-2.59 THz, 4.74 THz</td>
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<tr>
<td><strong>HAWC+</strong> (High-resolution Airborne Wideband Camera-Plus)</td>
<td>Far-Infrared camera and polarimeter</td>
<td>Five bands at 53, 63*, 89, 154, &amp; 214 µm</td>
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Challenges

• Future SOFIA Instrumentation
• Converting the SOFIA program into separate projects
Future SOFIA Instrumentation

- HIRMES currently behind schedule and over cost
  - Final decision on HIRMES fate will be made by NASA HQ
  - HIRMES not offered in Cycle 8, may be available for DDT
  - HIRMES Science Team is developing a focused Legacy Program
- NGSI no longer on the table
- SMO is currently considering instrument upgrade options
- DSI/DLR are considering telescope and guiding camera upgrades
  - Replace M3 dichroic to allow optical/NIR version of FPI+ camera
  - Upgraded versions of FFI & WFI to allow full frame auto-tracking
  - Active mass damping (ADM) to reduce telescope jitter
  - Shack-Hartmann wavefront sensor addition
Changes in the Structure of the SOFIA Program

Direction given to NASA-Ames and NASA Armstrong to implement SOMER recommendations
SOMER Recommendations affecting Science

- Transition SOFIA aircraft operations away from an integrated astrophysics program into an existing independent aircraft management model – such as SMD’s Airborne Science Program (ASP) – in order to leverage aircraft operations expertise.
- Reduce flight profiles to 8 hour flights, improving safety posture, dispatch rate, scheduling flexibility and increasing the percentage of aircraft time at high-value altitudes.
- Schedule 6 flights per week, which would directly correlate to an increased number of total flights per year.
- Adjust aircrew mission briefing, pre-flight, and post-flight duty periods to shorten the overall crew duty day, improving crew turn-around times and maximizing maintenance touch-time.
- Manage the number of instrument changes to allow for more aggressive aircraft scheduling.