

SOFIA: Planning for Cycle 3

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Outline

Cycle 3 schedule and overview

Instrument configurations and modes

Supporting web pages and documents

Data Cycle System (DCS) tools

Cycle 3 Schedule (Provisional)

Call for Proposals (CfP) release: first half of May 2014.

Sensitivities for newly commissioned modes will be updated early June 2014, if needed.

Phase I submission deadline: July 2014.

Announcement of selected proposals: October 2014.

Cycle 3 observations start mid-late February 2015 and end February 2016.

Cycle 3 Overview

Up to ~450 hours of observing time expected to be offered to the US community.

Instruments available: EXES, FIFI-LS, FLITECAM, FORCAST, GREAT, HIPO & FLIPO.

The top 5% of the proposals may be carried over to future cycles until completed.

Up to two southern hemisphere deployments are being planned.

Open to astronomers world-wide, except those affiliated with German institutions.

DSI/DLR will have a separate call for proposals for astronomers at German institutions.

Instrument Configurations and Modes: EXES

EXES (Echelon-Cross-Echelle Spectrograph) is a mid-IR, high-resolution spectrograph. It is a Principal Investigator class science instrument. The first series of instrument commissioning flights were completed during April 2014, and the second series is planned for late in Cycle 2.

Coverage: 4.5-28.3 μm .

Observing Modes:

- Nod (on-slit or off-slit nod)

- Mapping

Spectroscopic Configurations:

- High-Medium ($R_{\text{max}} \sim 100,000$)

- High-Low ($R_{\text{max}} \sim 100,000$)

- Medium ($R_{\text{max}} \sim 25,000$)

- Low ($R_{\text{max}} \sim 4,000$)

Instrument Configurations and Modes: FIFI-LS

FIFI-LS (Field Imaging Far-Infrared Line Spectrometer) is an integral-field spectrometer. It is currently operated as a Principal Investigator class science instrument, and will be considered so for Cycle 3. The instrument completed its commissioning flights in April 2014.

Coverage: 50-125 μm and 105-210 μm , dual channel configuration.

Observing Modes:

- Beam switch

- Chop-offset-nod

- Mapping

Instrument Configurations and Modes: FLITECAM

FLITECAM (First Light Infrared Test Experiment CAMera) is a near infrared camera, with the capability for grism spectroscopy. It is a Facility class science instrument.

Coverage: 1.1-5.5 μm . Long wavelengths, $\lambda > 3.5 \mu\text{m}$, susceptible to elevated backgrounds, and offered as shared-risk.

Imaging through filters, and long-slit grism spectroscopy with $R \sim 850$ and ~ 1700 .

Observing Modes for imaging:

- Stare (with the option of dithers)

- Nod Off Array

Observing Mode for spectroscopy:

- Nod

Instrument Configurations and Modes: FORCAST

FORCAST (Faint Object InfraRed CAmera for the SOFIA Telescope) is a mid-infrared camera, with the capability for grism spectroscopy. It is a Facility class science instrument.

Coverage: 4.9-37.1 μm .

Imaging through filters, long-slit grism spectroscopy ($R \sim 200$), cross-dispersed grism spectroscopy ($R \sim 800$ and 1200).

Observing Modes for imaging:

- Two position chop and nod (with nod-match-chop or nod-perp-chop)

- Two position large amplitude chop (2-8 arcmin) with large nod offsets

Observing Mode for spectroscopy:

- Two position chop and nod (with nod-match-chop or nod-perp-chop)

- Two position large amplitude chop (2-8 arcmin) with large nod offsets

SLITSCAN

Instrument Configurations and Modes: GREAT

GREAT (German Receiver for Astronomy at Terahertz frequencies) is a high-resolution heterodyne spectrometer. It is a Principal Investigator class science instrument.

Dual channel with instantaneous bandwidth of about 1.2 GHz, and AOS and FFT backends providing frequency resolutions from 1.6 MHz to 76 KHz.

Configurations offered are L1-L2 and L2-M.

Coverage:

Band L#1 1.252-1.52 THz

Band L#2 1.815-1.91 THz

Band M 2.5143 THz (OH line center, +/- 50 km/s relative to LSR)

Observing Modes:

Single pointing with position switching (PSW)

Single pointing with beam switching (BSW), chopping with the secondary

On-the-fly mapping in PSW or BSW mode

Raster mapping in PSW or BSW mode

Instrument Configurations and Modes: HIPO, FLITECAM/HIPO

HIPO (High-speed Imaging Photometer for Occultation) is a high-speed optical photometer. It is a Special Purpose Principal Investigator class science instrument. Guest Investigators are required to partner with the instrument PI prior to submitting a proposal.

Coverage: 0.3-1.1 μm . Single channel imaging in the Red, or dual channel imaging in Red and Blue with either of 575 nm or 675 nm dichroics.

Johnson and Sloan filters, and an 890 nm methane filter are available.

Observing Modes:

- Single frames
- Basic occultations
- Fast occultations

FLITECAM/HIPO is also considered a Special Purpose science instrument. The modes are a combination of the individual instrument modes. However, the long-wavelength filters and grism for FLITECAM are not available.

Supporting Web Pages and Documents

Information for Researchers page

<http://www.sofia.usra.edu/Science/>

Cycle 3 main page

<http://www.sofia.usra.edu/Science/proposals/cycle3/>

Observer's Handbook

<http://www.sofia.usra.edu/Science/ObserverHandbook/>

<http://www.sofia.usra.edu/Science/ObserverHandbook/ObsHandbook-Cy2.pdf>

SOFIA suite of instruments

<http://www.sofia.usra.edu/Science/instruments/>



SOFIA Science Center

Stratospheric Observatory for Infrared Astronomy

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Information for Researchers

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WELCOME TO THE SOFIA SCIENCE WEB PAGE!

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- SOFIA Science Team
- SOFIA Advisory Groups
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- SOFIA Science Archive

The links on the left allow navigation to pages that contain information about the observatory, its scientific capabilities, and other matters of interest.

Electronic News Announcements

Please subscribe to the SOFIA electronic news announcements for the science community by sending an email to sofia_astronews@sofia.usra.edu with "subscribe" in the subject line. Please include your preferred e-mail address in the body of the email. The announcements are archived [here](#).

If you are an author looking for information regarding proper acknowledgements for the use of SOFIA data or appropriate citations, please see the [Information for Authors](#) page.

[Contact the SOFIA Help-Desk](#)

sofia_help@sofia.usra.edu

[ANNOUNCEMENTS](#)
 (Click on the above link for details.)

SOFIA Users Group Meeting on April 28.

SN 2014J: raw data available

2014 SOFIA Observers' Workshop cancelled

Data Cycle System (DCS) Tools

New versions of the DCS are released to support Phase I and Phase II for each SOFIA observing cycle. We have worked towards the nominal Cycle 3 schedule announced at various public forums, such as at the AAS meeting in January, 2014.

DCS v2.5.0 will be released later this week. As part of the release, the SOFIA Proposal Tool (SPT), used for submitting Phase I proposals has been upgraded to handle the new instruments and modes available for Cycle 3.

The release of DCS v2.5.1 is planned for July 2014. It will include many improvements to SSPOT, the tool for planning and submitting Phase II proposals. The release will also include updates to the Science Archive search page to make it more user friendly.

DCS v2.6.0 is the version that will support Cycle 3, Phase II. The plan is to release it in September/October 2014. It will include additional upgrades to SSPOT.

Whenever more accurate sensitivities become available for any instrument modes, they will be incorporated in those Exposure Time Calculators maintained by the SOFIA SMO as quickly as possible, after testing and verification.

SPT, SSPOT, the exposure time calculators, the Visibility Tool (VT), ATRAN, and a number of Search tools are available on the main DCS page

<https://dcs.sofia.usra.edu/>