

SOFIA

Science e-Newsletter



May 2018

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Call for Proposals

The Cycle 7 Call for Proposals (CfP) is planned to be released in June 2018 with a scheduled due date in September 2018. To provide support for researchers interested in proposing with SOFIA for Cycle 7, the next Community Day workshop will be held on Friday, August 3, 2018 at the National Optical Astronomy Observatory (NOAO) in Tucson, Arizona. For those unable to attend, the associated presentations for the workshops will be posted on the website listed below. Other resources on the SOFIA website for submitting proposals are the Observer's Handbook and the Unified SOFIA Proposal and Observation Tool (USPOT) Manual, which are cycle-specific. For further assistance with submitting proposals, contact the Help-Desk.

[Register for the IPAC Community Day.](#)

[Register for the Tucson Community Day.](#)

Community Days presentations will be [posted here.](#)

Observer's Handbook and USPOT Manual will be [posted here.](#)

[Help-Desk](#)

Instrument Proposals Due August 1, 2018



The [formal solicitation for the Next Generation SOFIA Science Instrument](#) is open!

Phase 1 proposals for this multi-million dollar solicitation for the Next Generation SOFIA Science Instrument are due **August 1st, 2018.**

- The **optional** [Notice of Intent \(NOI\) section](#) is open
- Have questions? Please visit our [Frequently Asked Questions page](#)

Are you interested in supporting a team, but not in submitting a proposal? Do you need a capability for your proposal, but do not know where to go to get that capability? Do you have a great idea for new science that needs a team to support proposal development?

- Please send information on your capability, need, or interest, along with your

name and contact information to: arc-sofia-sidev@mail.nasa.gov

- Your interest and/or need will be reviewed and posted to a **public** site to allow all interested parties to connect on needs or interests.

As we embark upon this new era of exploration with SOFIA, we invite you all to review and share this information and Come Explore With Us!

FORCAST Cookbook Recipe Released

The latest addition to SOFIA's expanding collection of Cookbook Recipes is the Faint Object Infrared Camera for the SOFIA Telescope (FORCAST) Photometry recipe. These documents provide simple "recipes" for common data analysis objectives using SOFIA processed data. The FORCAST Photometry recipe describes how to perform aperture photometry using flux calibrated FORCAST images accessed through Flexible Image Transport System (FITS) files.



[View the Cookbook Recipes here.](#)

Welcome Home SOFIA!

SOFIA has returned to its home-base, NASA Armstrong Flight Research Center in Palmdale California, after undergoing maintenance in Hamburg, Germany. Cycle 6 observations will begin with the German Receiver for Astronomy at Terahertz Frequencies (GREAT) spectrometer flights, then onward to New Zealand for SOFIA's annual Southern Hemisphere deployment. Presented below is a highlight from an eagerly anticipated upcoming GREAT science flight in New Zealand:

Superstar: Mapping [CII] Emission from Massive Stars with GREAT



Combined Spitzer and Chandra image of the 30 Dor region (Townsend et al. 2006). Massive stars have created bubbles filled with million-degree gas traced by 0.5-0.7 keV X-ray emission (Blue, Chandra). The 8 μm IRAC filter is dominated by the 7.7 μm PAH emission feature tracing PDRs and outlining the surfaces of these bubbles. Scale size of this image is $\sim 20'$ or a physical size of ~ 300 pc.

Within the 30 Doradus region of the Large Magellanic Cloud lies the super star cluster R136, an environment so extreme and dynamic that it is comparable to that of colliding starburst galaxies, (Ultra) Luminous Infrared Galaxies, and possibly even star-forming regions of the early universe. R136 is the home to the most massive stars known to

exist.

The resulting stellar winds and supernovae create hot (~10⁶ K), plasma-filled bubbles that emit x-rays and expand to form dense, bright shells. In addition to this mechanical feedback, “The massive stars also interact with the surrounding molecular material through their energetic radiation by creating warm, dense neutral gas regions,” describes Alexander Tielens, principal investigator for the GREAT study of R136. “These photodissociation regions are outlined in the mid-IR emission of large polycyclic aromatic hydrocarbons and in the dominant cooling line of the gas (the [CII] fine structure transition at 1.9THz).” The latter line can be studied using the upGREAT Low Frequency Array, which provides a dual polarization, 2x7 pixel array capable of producing velocity-resolved maps of the [CII] 158-micron emission over a region of 25x25 arcmin.

PI: Alexander Tielens

[Proposal ID: 06_0170](#)



Infrared Astronomy: Star Formation and Interstellar Processes Over Many Scales

at the 42nd Committee on Space Research (COSPAR) Scientific Assembly in Pasadena, CA

July 14–22, 2018

Sessions held in Pasadena Convention Center, Room 211 • Poster Session July 18–19 in Exhibit Hall C

A vibrant, multi-colored image of the Orion Nebula, showing various shades of red, purple, blue, and white against a dark background.

Tuesday, July 17, 2018
2:00–3:30pm
Galactic Star Formation
Invited Speakers:
Phillipe André (*CEA Saclay*): Interstellar Filaments and Star Formation
Tom Megeath (*University of Toledo*): SOFIA Observations of Intermediate Luminosity Protostars in Orion and their Outflows
4:00–5:30pm
Star Formation in Galaxies
Invited Speaker:
Richard Klein (*UC Berkeley*): The Formation of Massive Clusters from High Redshift to the Present Day Universe

A colorful image of a galaxy cluster or star-forming region, featuring a mix of blue, green, yellow, and red hues with numerous bright stars.

Wednesday, July 18, 2018
9:30–11:00am
The Interstellar Medium and Extreme Environments
Invited Speaker:
Alexander Tielens (*Leiden Observatory*): The C+ Universe
11:30am–1:00pm
Magnetic Fields and Chemistry in the ISM
Invited Speakers:
Daren Dowell (*JPL*): SOFIA/HAWC+ Far-Infrared Studies of Magnetic Fields and Prospects for Space
Charles Bradford (*JPL*): The Origins Space Telescope (OST)

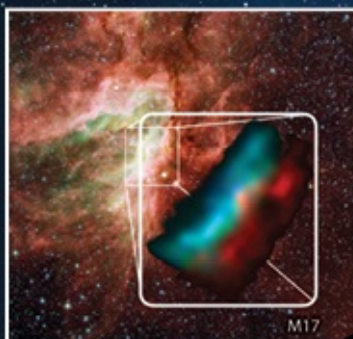
[Download a PDF version of this flyer here.](#)

Infrared Astrophysics in the SOFIA Era

June 4-5, 2018

A Meeting-in-Meeting at the
232nd American Astronomical Society Meeting in Denver, Colorado

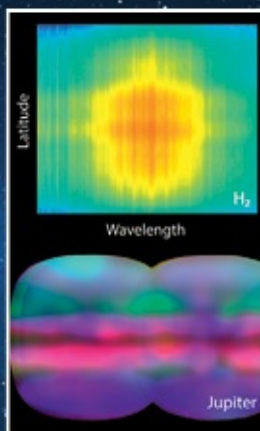
SOFIA is opening a new window into the infrared universe. Join us as we set our course to collaborate with the world's infrared-optimized telescopes to examine the Birth of Planets and Stars, the Path to Life, and Extreme Environments.



Session 1

**The Birth of Planets and Stars:
Finally Charting the Infall**

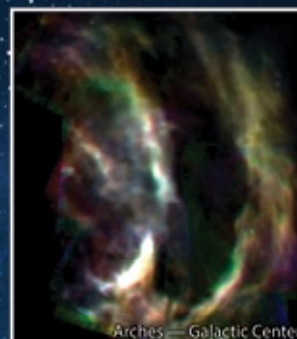
Monday, June 4, 2018
10:40 a.m.



Session 2

**The Path to Life: Water,
Organics, and Dust
through Cosmic Time**

Monday, June 4, 2018
2:50 p.m.



Session 3

**Extreme Environments:
Stepping Stones to
Starbursts and AGNs**

Tuesday, June 5, 2018
10:40 a.m.

Confirmed Speakers and Topics

Harold Yorke (USRA): Scientific Promise of SOFIA
 Friedrich Wyrowski (MPIfR, Germany): The Quest for Infall in Star-forming Regions
 Judith Pipher (U. Rochester): Magnetic Fields and Star Formation
 Kimberly Ennico-Smith (SOFIA Project Scientist): Future of SOFIA and the Path to Life
 David Neufeld (Johns Hopkins University): Light Hydride Astrochemistry
 Alexander Tielens (U. Leiden, The Netherlands): The C+ Universe
 Darren Dowell (JPL/Caltech): First Results of HAWC+
 Elizabeth Mills (Boston U.): A Three Dimensional Picture of Galactic Center Mass Flows From Kiloparsec to Subparsec Scales
 Lindsay Fuller (U. Texas): AGN/Starburst Separation

For more information, visit www.sofia.usra.edu

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Please feel free to direct questions and comments to the SOFIA Science Center help desk: sofia_help@sofia.usra.edu.

