



Community Engagement

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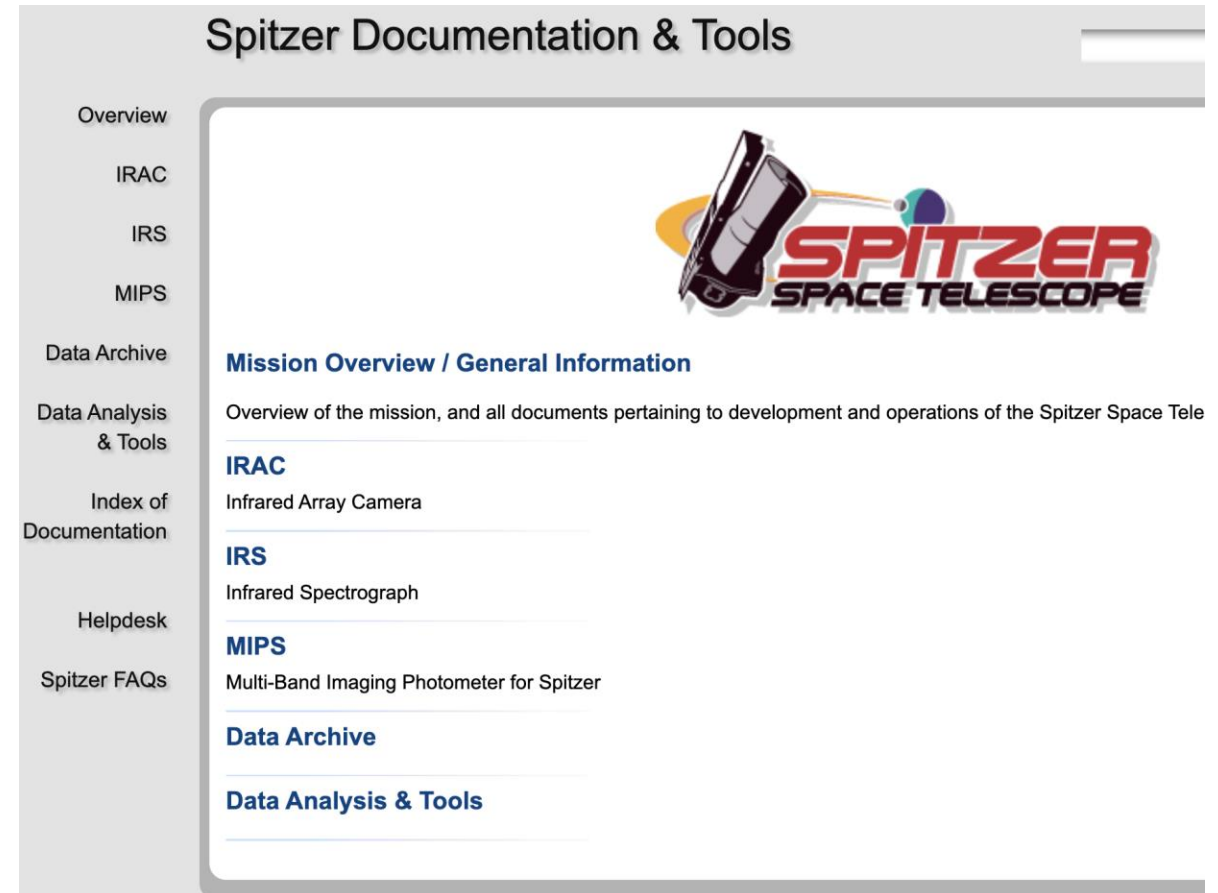
SOFIA Users Group Meeting
November 4, 2022

Three areas of closeout work, general timeline ~ May-June 2023

- **Assets transfer and disposal**
- **Informing the astronomy community**
- **Events**

Assets Transfer and Disposal

- Inventory physical assets, disposal recommendations, dispose
- Put in place information campaign about resources transfer
- Design, test and perform the transfer of information for science users to IRSA website. **95% of information will be transferred.**
- Design, test and perform transfer of web materials for general community to NASA platforms.
- Establish website redirect from sofia.usra.edu to IRSA website ~May 2023



Spitzer Documentation & Tools

Overview

IRAC

IRS

MIPS

Data Archive

Data Analysis & Tools

Index of Documentation

Helpdesk

Spitzer FAQs

SPITZER SPACE TELESCOPE

Mission Overview / General Information

Overview of the mission, and all documents pertaining to development and operations of the Spitzer Space Tele

IRAC
Infrared Array Camera

IRS
Infrared Spectrograph

MIPS
Multi-Band Imaging Photometer for Spitzer

Data Archive

Data Analysis & Tools

Informing the Astronomy Community

Announcements

- E-newsletter: ~ monthly communication of news, opportunities, and general information to 4000+ recipients. Each issue focuses on a legacy program.
- E-announcements to inform the community about closeout
- Bi-monthly Tele-Talks



SOFIA Transition from Operations to an Orderly Closeout

As of October 1, SOFIA ended science flight operations. We thank you for being excellent users of SOFIA and for your support at webinars, workshops, and conferences. Your insightful and brilliant proposals pushed the limits of the SOFIA platform and far-infrared science. We are looking forward to many more years of your support in continuing to use the SOFIA archive to explore and study the infrared universe.

What to expect: There are a number of things that will be changing over the next 6-12 months with the majority of science operations closeout concluding in September 2023:

1. **Helpdesk:** SOFIA's helpdesk is still being supported at the SOFIA science center and will transition to IRSA in the future. If you need any support with your data, please don't hesitate to reach out to us!
2. **Highlighting Scientific Results:** We want to hear about your exciting results (as early as possible!) so please keep our amazing science writer, Anashe Bandari (anashe.bandari@nasa.gov), in the loop. Eventually, the Ames Office of Communications will take over this work. We'll provide updated information for you when that happens. For our most recent stories please check out our blog: blogs.nasa.gov/sofia
3. **Data Archiving and Data Processing:** All the data that has been collected over the last few months will be processed as usual and hosted at IRSA. Please expect emails about your data's availability within the normal window for data processing. By September 2023, we will be archiving all the engineering data as well as reprocessed data from cycles 5-9. Check out SOFIA's page on IRSA: <https://irsa.ipac.caltech.edu/Missions/sofia.html>
4. **Newsletter:** We will still be sending newsletters out monthly highlighting recent scientific results and the activities associated with the observatory and the mission.
5. **Website and Social Media:** We will be transitioning all the information from the sofia.usra.edu website over to IRSA. This includes user tools like the data cookbooks, data processing pipelines, abstracts from selected proposals, and SOFIA User's Group reports. The sofia.usra.edu website and our social media handles will be ramped down sometime next year. We will keep you posted about these changes.

Informing the Astronomy Community

SOFIA Blog

- Great support for press / social media diffusion
- About 1-2 posts per month up until ~May 2023
- Blog area hosted on NASA.gov, will not close

SOFIA Spotlights

- In depth pieces contributed by authors
- 3-4 last spotlights to be edited/written, monthly publication
- Last semi-annual printed newsletter dedicated to legacy programs will be distributed at AAS

Are Magnetic Fields Moving the Clouds in Cygnus-X?

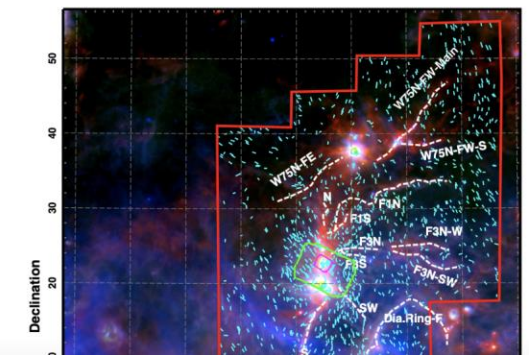
June 13, 2022



by Anashe Bandari

Hidden behind a dark band of dust known as the Great Rift, the Cygnus-X star formation region is more than a bit of a mystery. Astronomers haven't quite figured out what the molecular clouds in Cygnus-X are doing, and why, but observations from the Stratospheric Observatory for Infrared Astronomy (SOFIA) may help.

These mysteries relate to the fact that Cygnus-X is a difficult region to study. Two of its clouds – DR21 and W75N – clearly have separate gas velocities, but which cloud is in front of the other, and whether or not the two clouds are colliding, are open questions. Dan Clemens, an astronomer at Boston University, is the principal investigator on a project using SOFIA to examine Cygnus-X and the effects of magnetic fields on its clouds and cloud filaments. Details of these studies were presented at the June 2022 meeting of the American Astronomical Society.



Informing the Astronomy Community

Social media (Facebook, Twitter, Instagram)

- Used to target Astronomers + general public
- Coordinated campaigns with partners
- Special campaign for last month of ope
- Diffusing blog posts / spotlights / products
- Transition to NASA Universe account ~May 2023

NASA's Airborne Astronomy Ambassadors program is an immersive professional development experience that allows science teachers to fly aboard SOFIA and see astronomy research first-hand.

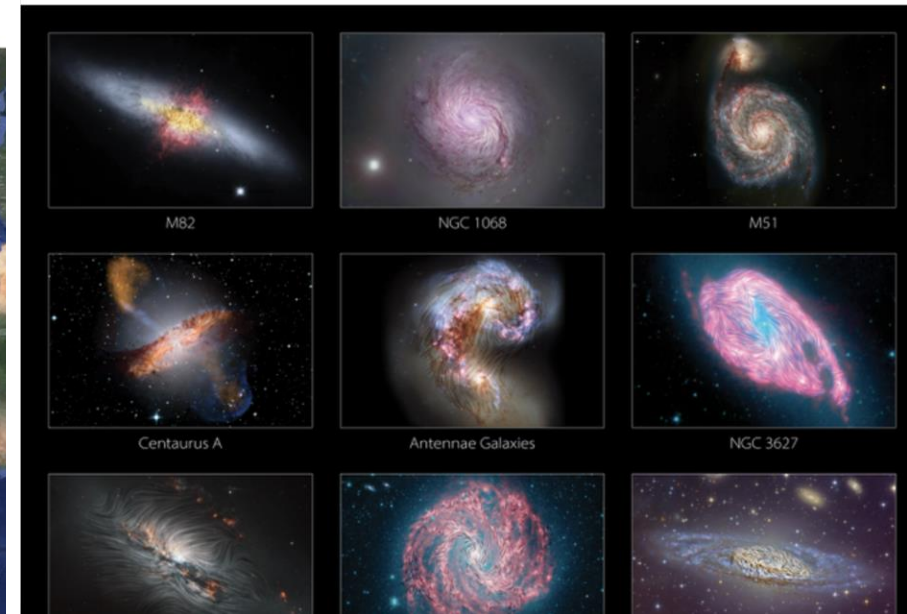
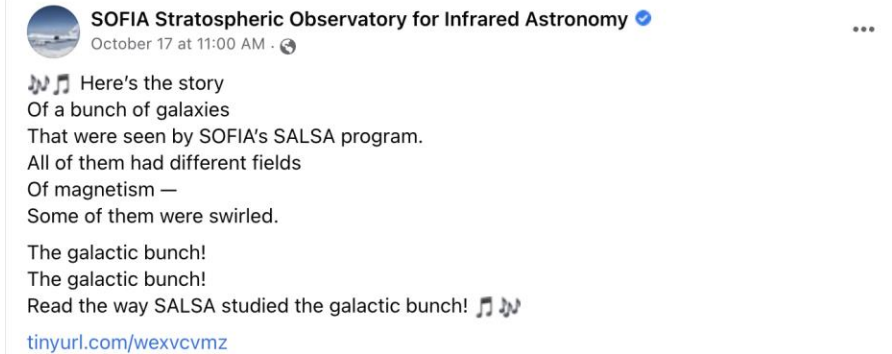
On top of getting cool jackets, the educators also gain insights about STEM careers to share with their classrooms to help encourage their students to pursue their passions.

#SOFIAFinalFlight

NASA



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Informing the Astronomy Community

Help Desk: USRA continues to provide direct support up until transfer to IRSA HelpDesk. Will help train IRSA staff to SOFIA requests (data analysis and reprocessing, funding...)

Maintain website

- Announcements and information about publications, data processing information, reports, events..
- **Recent webpages: multi-instrument programs, AGN datasets, multi-facility pages**

SOFIA Highly-Targeted Sources				
Target	Number of Instruments	Instruments	PID	Type
M82	5	EXES, FIFI-LS, FORCAST, GREAT, HAWC+	02_0100, 07_0150, 07_0217, 08_0012, 08_0225, 09_0149, 70_0004, 70_0408, 70_0409, 70_0509, 70_0608, 70_0609, 70_0908, 75_0001, 75_0002, 75_0003, 75_0017, 75_0055, 87_0005	galaxy
NGC 253	4	EXES, FIFI-LS, GREAT, HAWC+	03_0039, 03_0065, 08_0012, 09_0066, 70_0509, 70_0608, 70_0708, 87_0005	galaxy
NGC 1068	4	EXES, FIFI-LS, FORCAST, HAWC+	03_0065, 07_0209, 08_0012, 70_0400, 70_0409, 70_0509	galaxy
M51	3	FIFI-LS, GREAT, HAWC+	04_0116, 08_0260, 09_0201, 70_0509, 76_0003	galaxy

Informing the Astronomy Community

Build up legacy pages

- Including tools/scripts/documents/publications for each program
- Information will be transferred to IRSA legacy pages
- IRSA legacy pages currently link to SOFIA-processed data products; eventually can also link to custom-processed products, catalogues, ancillary data, in addition to tools and documents

SOFIA Legacy Programs:

Radiative and Mechanical Feedback in Regions of Massive Star Formation	GREAT spectra	Data Access
Constraining Recent Star Formation in the Galactic Center	FORCAST imaging	Data Access
HyGAL: Characterizing the Galactic Interstellar Medium with Hydrides	GREAT spectra	Data Access
FIELDMAPS: Filaments Extremely Long and Dark: A Magnetic Polarization Survey	HAWC+ imaging	Data Access
SOFIA Heralds a New Era of Measuring the Magnetic Fields of Galaxies	HAWC+ imaging	Data Access
SOFIA Joint Legacy Survey of [CII] in the LMC: LMC+	FIFI-LS spectra	Data Access
A Two-Color Polarimetric Survey of the Galactic Center	HAWC+ imaging	Data Access
Study of Interstellar Magnetic Polarization: A Legacy Investigation of Filaments (SIMPLIFI)	HAWC+ imaging	Data Access
Mapping the 6 Micron Molecular Water Line Across the Lunar Surface	FORCAST imaging	Data Access

Informing the Astronomy Community

Cookbooks

- Significant progress in cookbooks series: 16 items covering all instruments
- Mostly python-based, Now including examples using Webb/ radio/ DS9 tools
- May produce 1-3 more cookbooks in the rest of FY

FAQs

- Collection based on HelpDesk analysis
- Recently expanded to all instruments
- Living Repository of staff knowledge

Recipes

Python	Description
FORCAST: Basic Photometry	<i>Aim:</i> Aperture photometry using F <i>Tools:</i> astropy, photutils
FORCAST: Grism Inspection	<i>Aim:</i> Inspection of FORCAST grism <i>Tools:</i> astropy, DS9
FORCAST: Grism Line Analysis	<i>Aim:</i> Basic line fluxes and line fitting <i>Tools:</i> astropy
FORCAST: Grism Custom Extraction	<i>Aim:</i> Extract grism data with a user-defined script <i>Tools:</i> astropy
HAWC+: Data Inspection	<i>Aim:</i> Basic inspection and analysis. <i>Tools:</i> astropy
EXES: Data Inspection	<i>Aim:</i> Basic inspection and plotting <i>Tools:</i> astropy
EXES: Telluric Correction	<i>Aim:</i> Model and remove atmospheric absorption
EXES: Velocity Calculation	<i>Aim:</i> Estimate velocity shift of spectral lines <i>Tools:</i> astropy
GREAT: Data Inspection (Python)	<i>Aim:</i> How to view GREAT spectra. <i>Tools:</i> astropy
GREAT: Reproject Data to GREAT res.	<i>Aim:</i> Reproject other datasets to GREAT resolution <i>Tools:</i> astropy, reproject

Events

Topical scientific workshops:

- 1-2 in FY22, ~4-5 hours each
- Effective way to reach out beyond traditional users, encourage archival research

October 22: AGN Feedback workshop

- 6 talks, lively discussion
- Good attendance: 90 attendees over 4 hours
- Outcome: AGN datasets list, online talks, executive summary

Ad-hoc webinars:

- 2-3 in the FY23, 1-hour long
- Information about closeout, legacy products

Signatures of AGN Feedback: The Post-SOFIA Era

7:30am	Intro/Logistics	S. Eftekharzadeh
7:35am	Which AGN Jets Quench Star Formation in Massive Galaxies?	Kung-Yi Su
8:05am	Galactic Winds in the Infrared	Veilleux
8:30am	Break	
8:40am	Jet-ISM interactions and shocked molecular gas emission in galaxies	Fadda
9:05am	The magnetic fields of AGN tori	E. Lopez-Rodriguez
9:30am	AGN Are More Normal Than You Think	A. Kirkpatrick
9:55am	Break	
10:10am	Remnants of Major and Minor AGN Episodes in the Milky Way	M. Morris
10:35am	Panel discussion: The role of IR Signatures in the Current Observational Landscape	Kirkpatrick Packham Lacy Lanz Armus

Events

Presence at Winter 2023 AAS

- No Booth or Townhall
- Presence at NASA booth
- Printed materials: glossy newsletter, flyer on user support transition
- 2 Theater presentations (TBD): FORCAST Legacy, EXES Legacy
- 1 NASA Hyperwall Talk: SALSA Legacy (extragalactic mag. Fields)
- press conference support
- Social event for SOFIA users (TBD)



Events

SOFIA School (~March 10, 2023, TBC)

- Still early stages or preparation
- Following the successful model of first SOFIA School
- All virtual, 2-3 days
- Focus on scientific cases and IR radiation theory
- Support from STScI

(outside scope of this team): SOFIA Science Conference

TBD, hosted by USRA HQ

