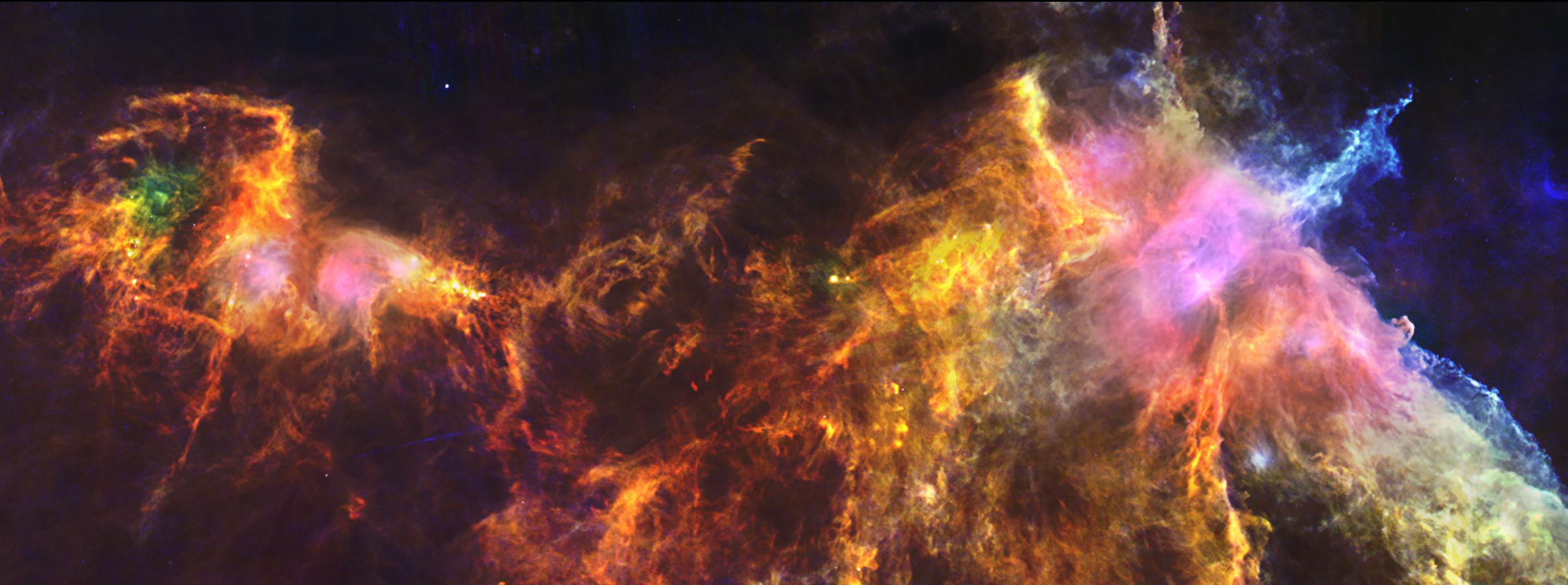


CHARTING THE NEXT TEN YEARS IN INFRARED ASTRONOMY



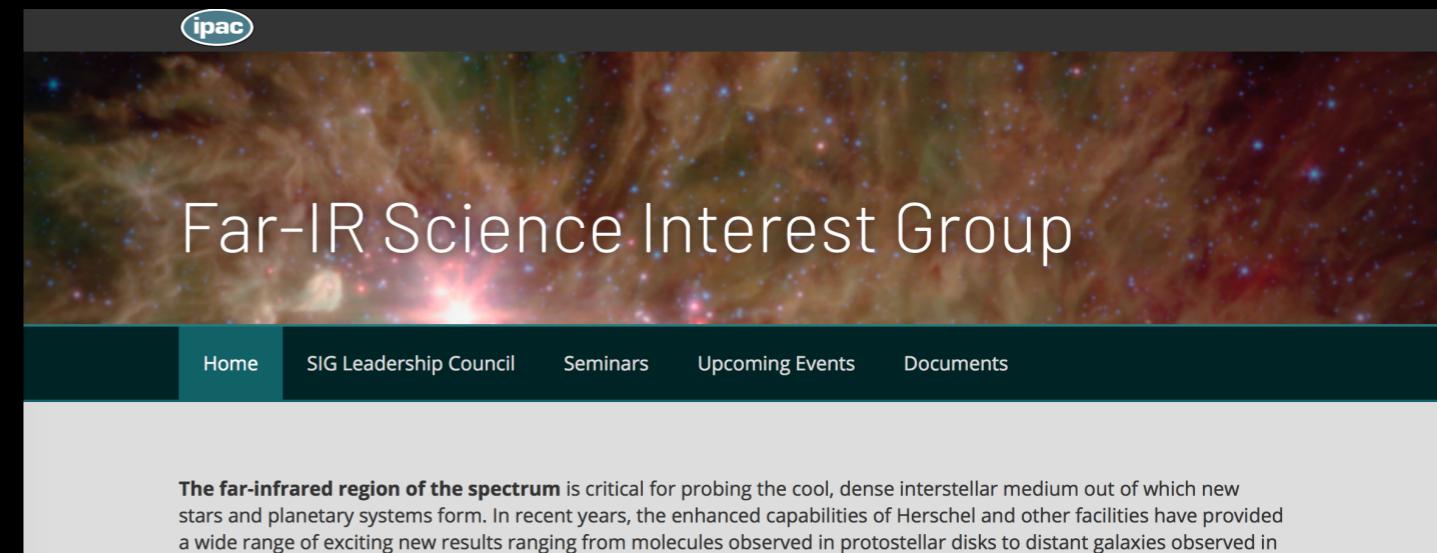
Welcome to the Splinter Session of
Infrared Science Interest Group

THE LEADERSHIP COUNCIL OF THE US IR SIG

Please join our mailing list by emailing us at
IRSIGLC@gmail.com
or
naseem.rangwala@nasa.gov

Naseem Rangwala (Co-Chair) NASA/Ames
Duncan Farrah (Co-Chair) Univ. of Hawaii

Jeyhan Kartaltepe (RIT),
Tiffany Kataria (JPL)
Jens Kauffmann (MIT),
Lisa Locke (Jansky Fellow, NRAO)
Enrique Lopez Rodriguez (SOFIA Science Center)
Meredith MacGregor (NSF Fellow, Carnegie DTM)
Elizabeth Mills (Boston University),
Eric Murphy (NRAO)
Omid Noroozian (NRAO),
Dave Sanders (Univ. of Hawaii)
JD Smith (Univ. of Toledo)
Johannes Staguhn (JHU/NASA GSFC)
Mike Zemcov (RIT)



<https://fir-sig.ipac.caltech.edu/>

IR SIG SPLINTER SESSION - PROGRAM

- 10:00 A.M.-Welcome Remarks - Naseem Rangwala (*NASA/Ames, co-chair IR SIG LC*)
- 10:10 A.M.-Science talk - Irene Shivaei (*Hubble Fellow, U. of Arizona*)
- 10:25 A.M.-Technology review - Erik Shirokoff (*Univ. of Chicago*)
- 10:40 A.M.-Galaxy Evolution Probe - Jason Glenn (*Univ. of Colorado, Boulder*)
- 10:52 A.M.-James Webb Space Telescope - Jane Rigby (*NASA/GSFC*)
- 11:05 A.M.-Origins Space Telescope - Klaus Pontoppidan (*STScI*)

COFFEE BREAK (11:20 A.M. - 11:30 A.M.)

Panel Discussion (11:30 A.M. - 12:30 P.M.)

- (a) infrared science in the next decade
- (b) improving the engagement and coordination of the infrared community.

Panelists: *Sangeeta Malhotra, Dave Leisawitz, Cara Battersby, Kristina Nyland, Kimberly Ennico*

TRANSITIONING FROM FAR-IR SIG → IR SIG

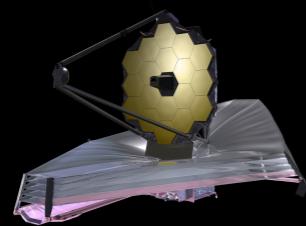
Spitzer



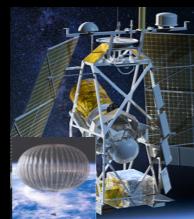
SOFIA



JWST



GUSTO



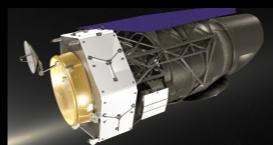
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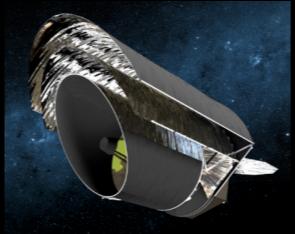
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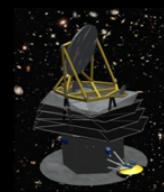
WFIRST



OST



Galaxy
Evolution Probe



Cosmic Dawn

- mission concept
- Formulation
- Implementation
- Primary Ops
- Extended Ops

Please join our mailing list by emailing us at

IRSIG@gmail.com

or

naseem.rangwala@nasa.gov

IR SIG - HIGHLIGHTS FROM 2018

Far-Infrared article for the Journal of Astronomical Telescopes, Instruments, and Systems (JATIS)
Current Status: final, very minor referee comments being addressed

Review: Far-Infrared Instrumentation and Technology Development for the Next Decade

Duncan Farrah^{a,b,*}, Kimberly Ennico Smith^c, David Ardila^d, Charles M. Bradford^{d,e}, Michael Dipirro^f, Carl Ferkinhoff^g, Jason Glenn^h, Paul Goldsmith^d, David Leisawitz^f, Thomas Nikolaⁱ, Naseem Rangwala^{c,j}, Stephen A. Rinehart^f, Johannes Staguhn^{k,f}, Michael Zemcov^{l,d}, Jonas Zmuidzinas^e, James Bartlett^d, Sean Carey^m, William J. Fischerⁿ, Julia Kamenetzky^o, Jeyhan Kartaltepe^l, Mark Lacy^p, Dariusz C. Lis^{q,e}, Lisa Locke^{p,r}, Enrique Lopez-Rodriguez^c, Meredith MacGregor^s, Elisabeth Mills^t, S. Harvey Moseley^f, Eric J. Murphy^o, Alan Rhodes^c, Matt Richter^u, Dimitra Rigopoulou^{v,w}, David Sanders^b, Ravi Sankrit^{n,c}, Giorgio Savini^x, John-David Smith^y, Sabrina Stierwalt^m

Abstract. Far-infrared astronomy has advanced rapidly since its inception in the late 1950's, driven by a rapidly maturing technology base and an expanding community of astronomers. This advancement has shown that observations at far-infrared wavelengths are important in nearly all areas of astrophysics, from the search for habitable planets and the origin of life, to the earliest stages of galaxy assembly in the first few hundred million years of cosmic history. The combination of a still developing portfolio of technologies, particularly in the field of detectors, and a widening ensemble of platforms within which these technologies can be implemented, means that far-infrared astronomy holds great potential for paradigm-shifting advances. In this review, we examine current and potential far-infrared observing platforms, including ground-based, sub-orbital, and space-based facilities, and discuss the technology development pathways that will enable and enhance these platforms to best address the challenges facing far-infrared astronomy in the 21st century.

https://drive.google.com/open?id=1v3Uldufjj_4oGz3d00Ce5QCFn2wyL3kG

IR SIG - HIGHLIGHTS FROM 2018

Published our first newsletter – released Nov 1st, 2018

First issue has sections on contributed science, technology development, mission highlights (SOFIA, Spitzer, OST), and upcoming events. Plan to have a Newsletter semiannually

Far-Infrared Science Interest Group

Newsletter | Number 1 | October 2018

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Letter from the SIG Leadership Council

We are delighted to share with you the inaugural newsletter from the Far-Infrared Science Interest Group (FIR SIG).

This is an exciting time for the far-infrared community. Current facilities such as SOFIA, ALMA, Spitzer, and balloon-based observatories are producing exciting discoveries in all areas of astronomy, from exoplanets to cosmology, and are paving the way for future-generation observatories. There also exists a rich and diverse legacy archive of infrared observations, from facilities such as IRAS, ISO, and Herschel.

With exciting times come new challenges. Key priorities for the FIR community include defining the science themes where infrared observations can make important advances, and developing the key technologies needed to address these themes. These two priorities go hand-in-hand, as new technology developments make possible new observations, pushing infrared astronomy into unexplored regimes. These priorities will be key inputs to the upcoming decadal survey.

With these challenges in mind, the FIR SIG aims to collect community input and help shape the long-term objectives of FIR astrophysics. This newsletter series is part of this effort; it will present recent news, science highlights, and mission and technology updates and developments. We expect to publish a new newsletter each semester. A key part of this newsletter series is articles from the community at-large. Going forward, please send us updates on your recent scientific and technological advances! The more the community participates, the more useful this newsletter will be for the FIR community as a whole.

In addition to this newsletter, the FIR SIG is working to enhance the presence and voice of FIR astronomy in the broader astronomical community. Our activities include organizing:

- A monthly webinar series—see our website for the schedule and recordings of past webinars: <https://fir-sig.ipac.caltech.edu>
- Splinter sessions at winter AAS meetings
- Focused workshops on specific aspects of FIR astronomy
- Review articles and white papers

- Next newsletter release is planned for April, 2019
- We are soliciting content from the community: Science, technology, mission highlights, events
- Especially encourage graduate students to use this platform to highlight their exciting thesis work
- Submit your content: IRSIGLC@gmail.com
- Newsletter editor: Meredith MacGregor

IR SIG - HIGHLIGHTS FROM 2018

Astro 2020 Decadal Survey: Coordinating white Papers Contributions from members of the OST, IR SIG LC and the broader community

Please sign up for white papers!

- https://docs.google.com/document/d/1e-BP_vuETprlCn161nUwMlnKvOCUqtQfTfV7_dZaqZQ/edit?usp=sharing
- <https://sites.google.com/view/astro2020-wps/home>

A Mid- to Far-Infrared White Paper
Wishlist for the 2020 Decadal Review

Coordination of Astro 2020 White Papers

In addition to this Google Document, which is to coordinate IR-focused white papers as described below, an additional website has been created in collaboration with the IR Science Interest Group to encourage coordination across the multi-wavelength community regarding Astro 2020 white paper topics, ideas, and contributions.

<https://sites.google.com/view/astro2020-wps/home>

We ask that white paper authors here consider adding their contribution(s) to the moderated list on this site by completing a brief form. Note, patience is appreciated, as the master list is updated manually to filter out accidental/fake submissions.

For any additional help, questions, or requests, please email: astro2020.wp@gmail.com.

Astro2020-WPs

Astro2020 Science White Paper Coordination

[Form to Submit a Planned DS2020 White Paper](#) -- [Table of Planned DS2020 White Papers](#) -- [Astro2020 Decadal Survey Site, with WP Instructions](#)

This site, while maintained in partnership with NRAO, is intended to encourage coordination across the multi-wavelength community regarding Astro 2020 white paper topics, ideas, and contributions. To add contribution(s) to the moderated list shown below, please complete this brief form (see link or go to bottom of the page). Note, patience is appreciated, as the master list is updated manually to filter out accidental/fake submissions.

For any additional help, questions, or requests, please email: astro2020.wp@gmail.com.

Table of Planned DS2020 White Papers

POC: Eric Murphy (emurphy@nrao.edu)

IR SIG - HIGHLIGHTS FROM 2018

Webinar Series (Ongoing)

Talks from members of the IR community (US and International)

First Tuesday of every month, 1PM Eastern Join us at: ac.arc.nasa.gov/firsig

Sign up to give a Webinar!

- Use this platform to discuss to get feedback from the community
- POC: Naseem Rangwala (naseem.rangwala@nasa.gov)
- <https://fir-sig.ipac.caltech.edu/page/seminars>

January 15, 2019

“Move CSO —> Chile, Community’s interest in the Leighton Chajnantor Telescope Project”

Sunil Golwala, Caltech (golwala@caltech.edu)

February 26th, 2019

“Interferometry from Space: Fulfilling an Astrophysics Roadmap Vision”

Dave Leisawitz (NASA/GSFC) & Harold Yorke (SOFIA Science Center)

Astrophysics

Infrared Science Interest Group

NASA's Astrophysics Division seeks to broaden our understanding of our universe and our place within it.

How does the universe work?

How did we get here?

Are we alone?

The IR SIG collects community input to help shape the long-term objectives of infrared astrophysics.

Infrared observations are a critical element of science investigations as diverse as the earliest formation stages of planets, the origin of water in nascent gas clouds, and the assembly of galaxies in the distant universe.

In recent years, the enhanced capabilities of Herschel, SOFIA, ALMA and Spitzer have provided exciting new results ranging from molecules observed in protostellar disks to distant galaxies observed in dust continuum and fine structure cooling lines. New and anticipated airborne platforms, suborbital flights and space missions will further enhance observational capabilities.

The multiplicity of observing platforms and the development of new instrumentation are important considerations for future infrared astronomy initiatives.

Photo credit: NASA/SOFIA/Lynette Cook

PLEASE JOIN
US, PARTICIPATE
AND LEAD IR
SIG ACTIVITIES

**'Secret Word' for
OST scavenger
hunt is 'space'**

IR Science Interest Group (IR-SIG)



irsiglc@gmail.com @irsig fir-sig.ipac.caltech.edu

National Aeronautics and
Space Administration



IR SIG AAS flyer - by Lisa Locke