

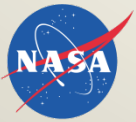


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# SOFIA Science and Mission Overview

Erick Young  
SOFIA Science Center





# Cycle 3 Call for Proposals



- Cycle 3 Call for Proposals Released May 23, 2014
- Submission deadline July 18, 2014
- US Cycle 3 Review Process
  - US TAC met in San Francisco August 27-29
- German Cycle 3 Review Process
  - German TAC met in Stuttgart September 17-19
- Results Announced on October 28, 2014.
- Observations begin March 2015

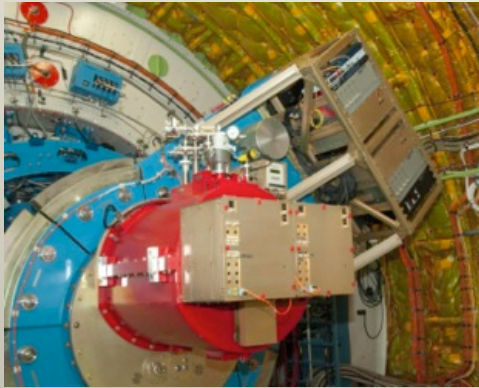
Queue	Num Of Propoals	Total Durations (Hours)
DE	31	104
US	122	1075

Instrument	Num Of Propoals	Total Durations (Hours)
EXES	16	79
FIFI-LS	20	172
FLITECAM	14	128
FLITECAM_HIPO	6	30
FORCAST	59	531
GREAT	47	239
<b>Total</b>		1179

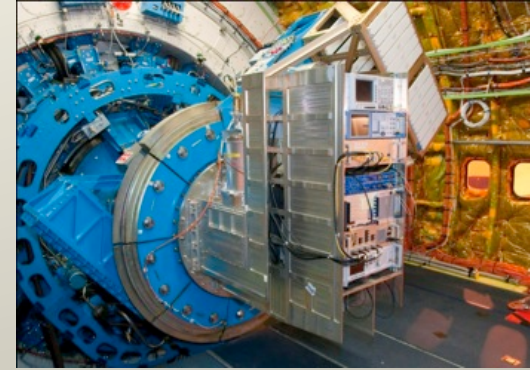




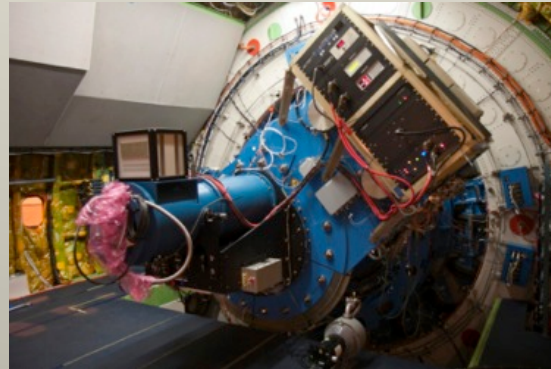
# Instrument Complement



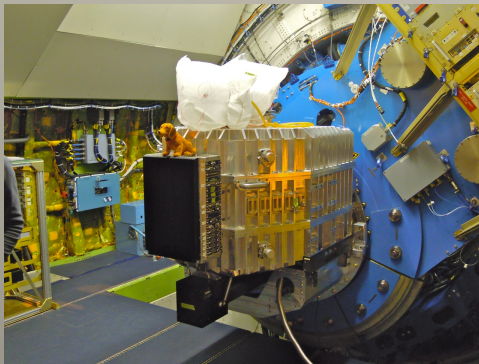
**FORCAST**  
Mid-IR Camera



**GREAT**  
Heterodyne  
spectrometer



**FLITECAM**  
Near IR Camera  
**HIPO**  
Occultation Photometer



**FIFI-LS**  
Integral Field  
Spectrometer

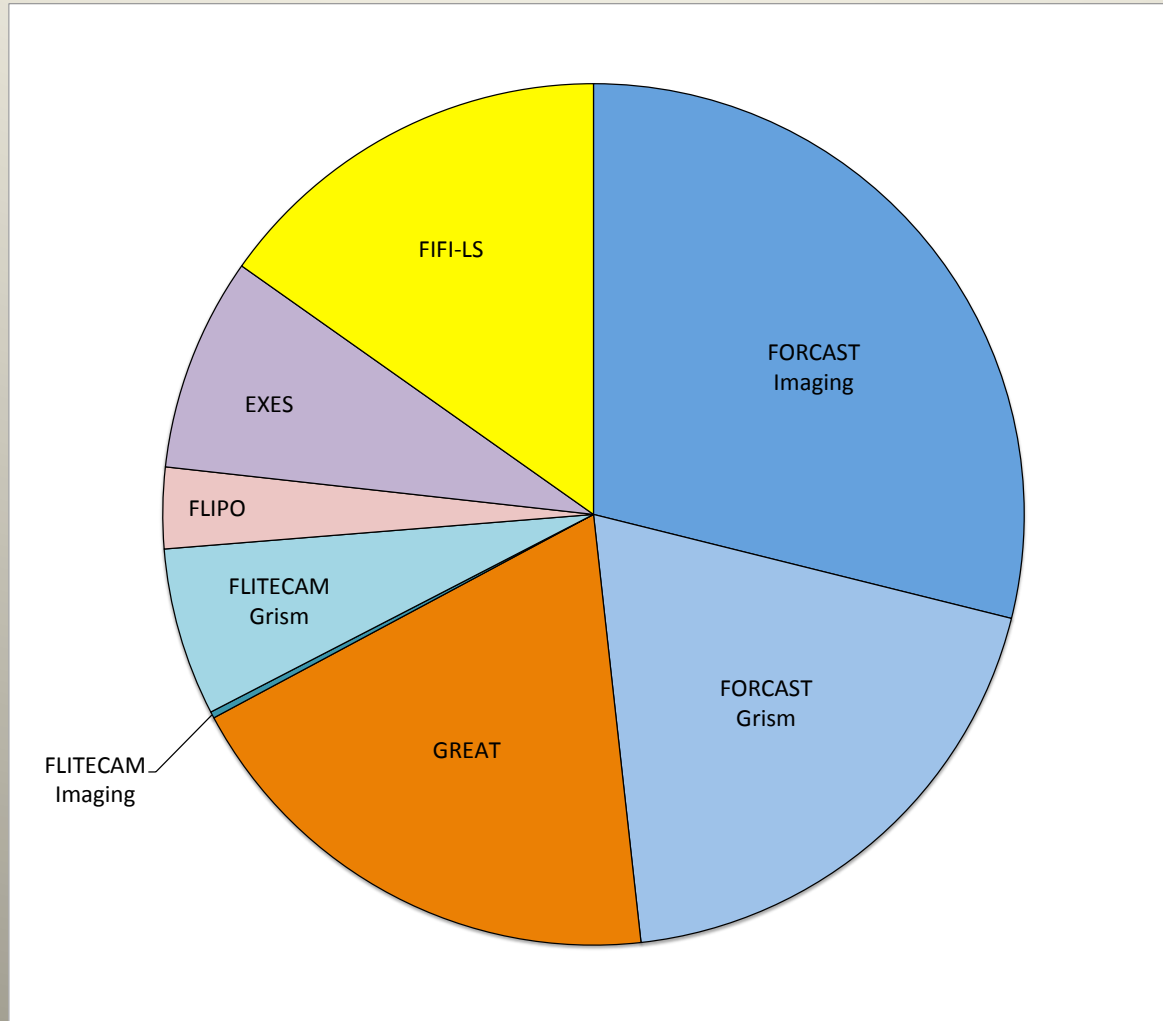


**EXES**  
High Resolution  
IR Spectrometer



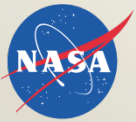


# Cycle 3 Awarded Time Distribution

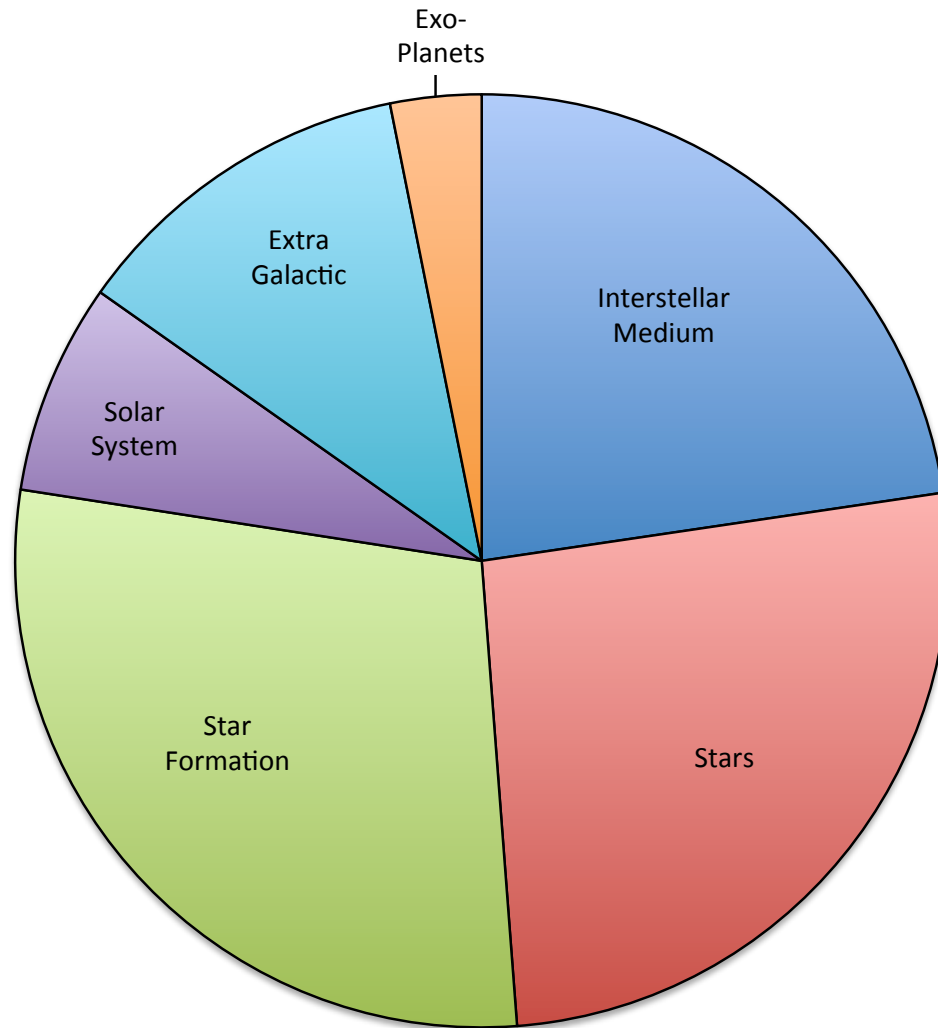


407.8 Hours US + 45.8 Hours DE  
= 453.8 Hours Total





# Cycle 3 – Awarded Science Areas



By Hours





# Major Elements



- Strong proposals in all the key areas of SOFIA science
  - Interstellar medium
  - Star Formation
  - Exoplanets
  - Solar System
- Support for six instruments
- Southern Hemisphere Deployment with **two** instruments
  - FORCAST & GREAT
  - Logistical details are being worked out, but we are optimistic that we will be able to maximize the science opportunities in this way

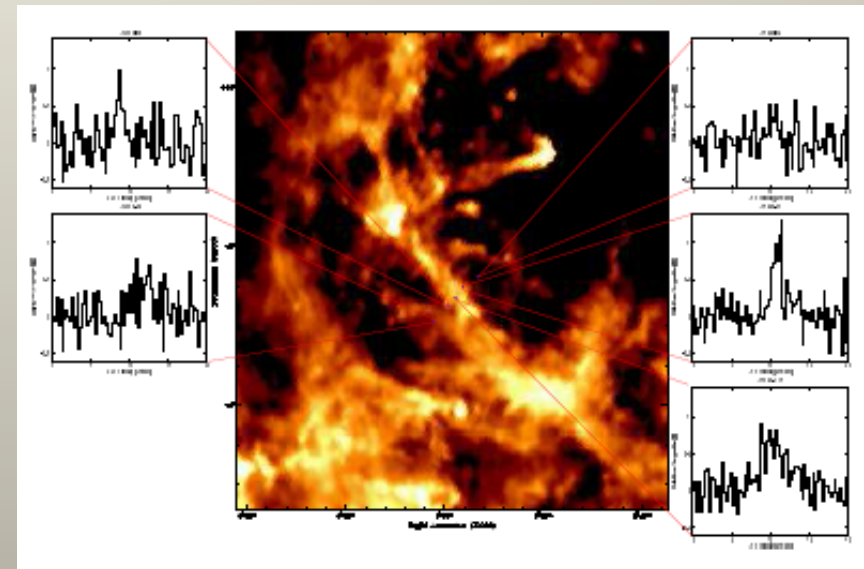
Some examples of upcoming investigations in Cycle 3:



GREAT

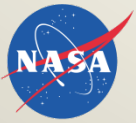
Paul Goldsmith & Jorge Pineda, JPL

- Velocity resolved [C II] observations with GREAT
- Explores the “CO-dark” molecular component of the ISM that is not mapped out by CO
- Studies transition from atomic to molecular clouds
- This program observes well-defined lines of sight to bright extragalactic sources where different components are well characterized. SOFIA provides the CO-dark component.



L1599 Planck image

Spectra from Goldsmith et al. (2015) 127.04



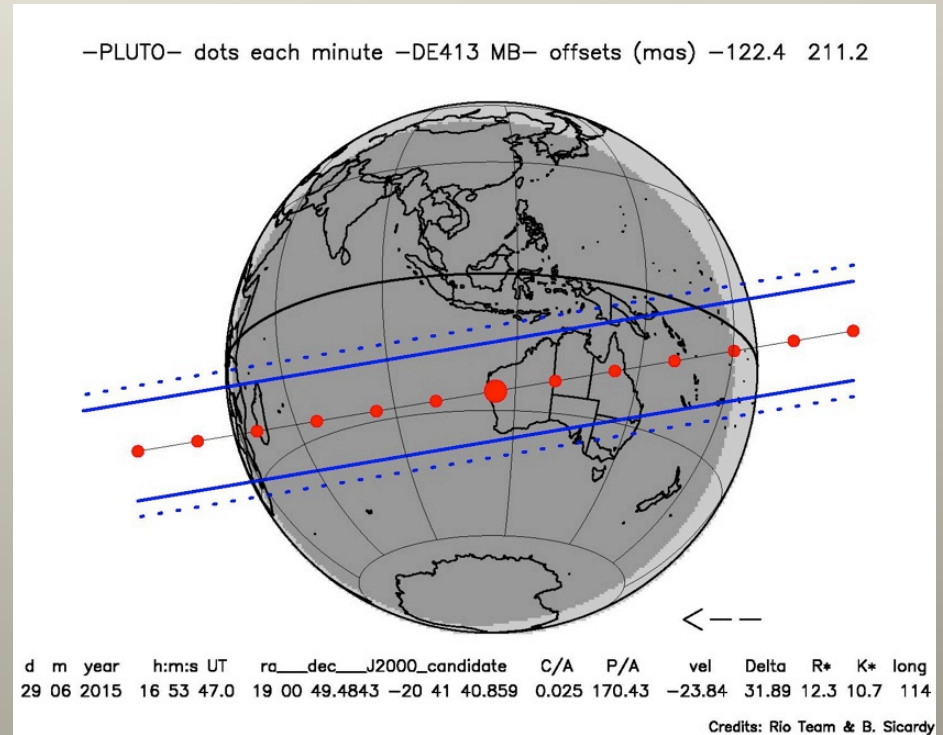
# What is the State of Pluto's Atmosphere During the New Horizons Encounter?



FLITECAM & HIPO

Michael Person, MIT

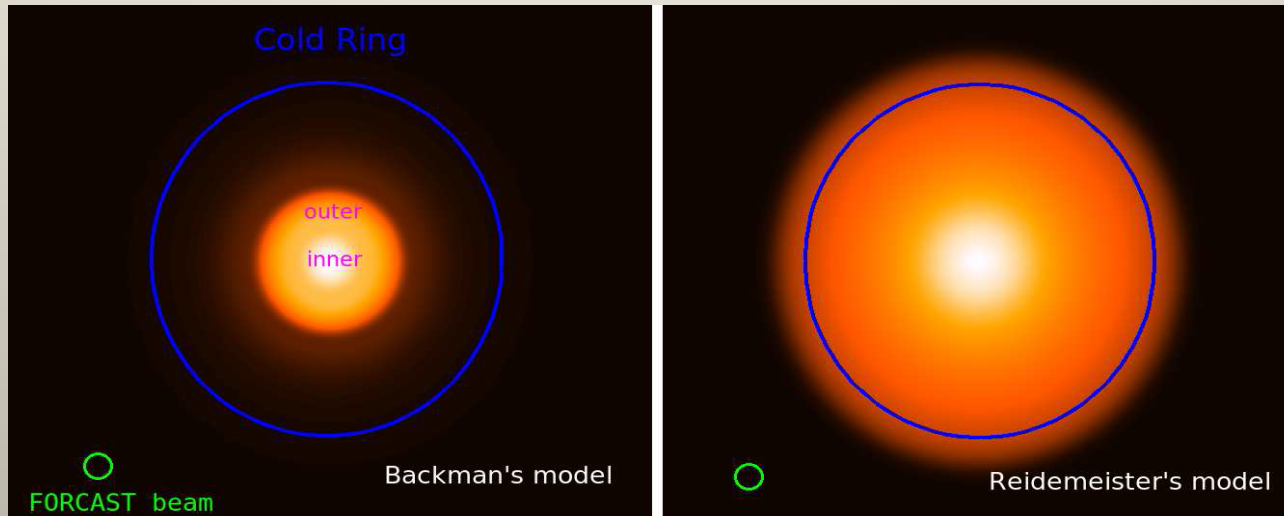
- Rare occultation by Pluto of a 12-mag star
- 2-weeks before New Horizons encounter
  - Combination of remote observations from Earth and in-situ observations with New Horizons spacecraft will allow direct intercomparison of atmospheric profiles
- SOFIA is working the logistical implications of observing this event





FORCAST

Kate Su, University of Arizona



- $\epsilon$  Eri is one of the closest debris disks (3.22 pc)
- Angular resolution provided by FORCAST at 35  $\mu\text{m}$  could reveal sculpting of the warm debris disk by unseen planets



# Ringberg Workshop on Spectroscopy with SOFIA



- 15-18 March 2015 at Schloss Ringberg, Bavaria
- The workshop will be in honor of Eric Becklin, Chief Science Advisor for SOFIA, on the occasion of his 75<sup>th</sup> birthday.
- The goal of the conference is to discuss new results from SOFIA and to look into science opportunities for the coming years, particularly in the area of FIR spectroscopy.



<https://indico.mpifr-bonn.mpg.de/indico/event/93>





# SOFIA Observers' Workshop



- 20-21 May 2015
- Historic Adobe Building, Mountain View near NASA Ames Research Center
- The aim of the workshop is to help astronomers write excellent proposals for SOFIA observing time, and to guide them in analyzing their data.
- We also anticipate discussing possible large community projects with SOFIA





# Cycle 4 Call for Proposals



- Expected to cover February 2016 – January 2017
- 6 commissioned instruments available to the community
- **upGREAT multi-pixel heterodyne spectrometer will be commissioned**
- **HAWC+ far-infrared imager and polarimeter should be available on a shared-risk basis**
- Anticipated release date is the end of April 2015
- Due date for proposals is late June 2015

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

