

# Exoplanet Program Analysis Group

ExoPAG

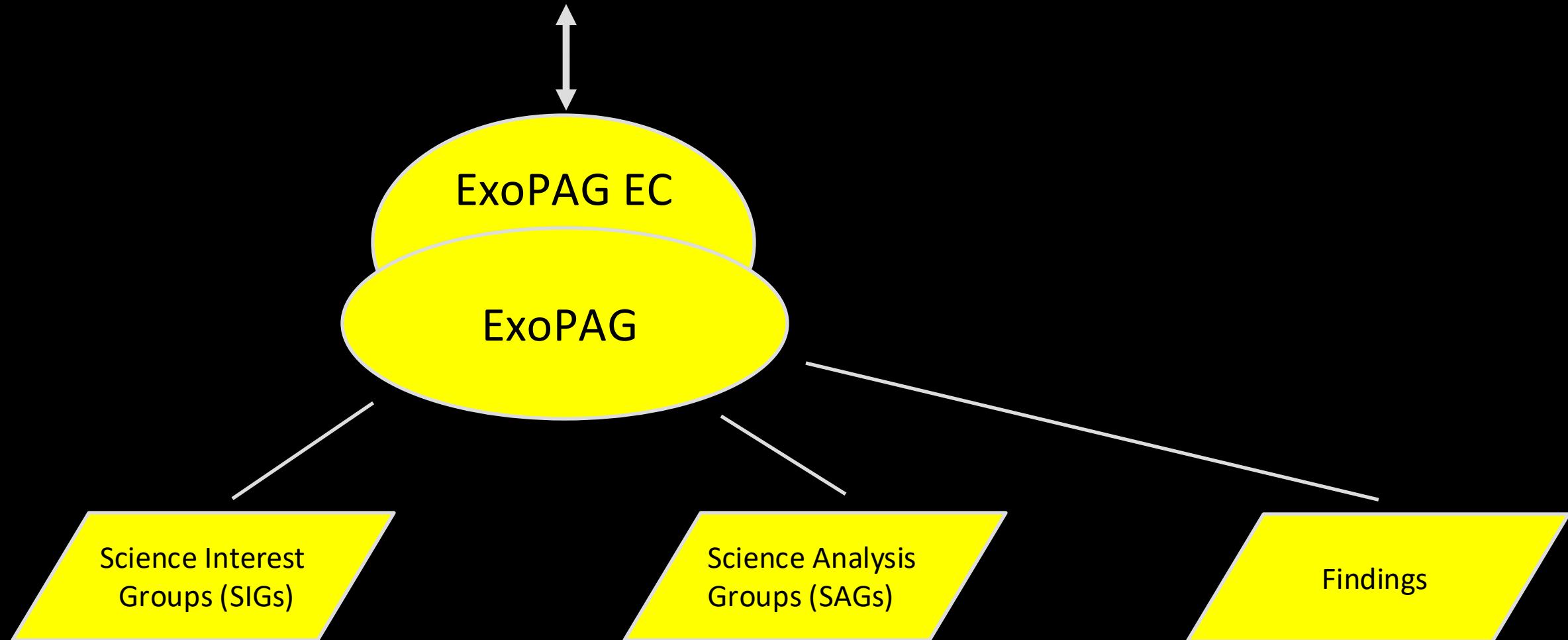
Ian Crossfield (U. Kansas)  
Chair, ExoPAG Executive Committee



# What is the ExoPAG?

The ExoPAG is an interdisciplinary  
community-driven forum which  
provides input to NASA's Exoplanet  
Exploration Program

Exoplanet Exploration  
(ExEP)  
Program office at JPL



# The ExoPAG Executive Committee and its Members

The Executive Committee organizes community input, oversees ExoPAG analyses, and reports ExoPAG findings and inputs to the Astrophysics Division Director



I. Crossfield



T. Beatty



A. Bhattacharya



C. Dong



K. Follette



J. Girard



R. Hu



A. Mandell



S. Peacock



M. Rice



S. Wolff



J. Wang



L. Zhao



# ExoPAG EC Liaisons and ExEP Support

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L. Paganini  
Astrophysics



H. Jang-Condell  
Astrophysics



J. Pepper  
Astrophysics



R. Dawson-Rigas  
Planetary



Toka for G. Fowler  
Heliophysics



D. Gelino



D. Ardila



K. Stapelfeldt



E. Mamajek



A. Tripathi



R. Lemos

# ExoPAG Science Interest Groups

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Community-driven groups that focus on discussing specific exoplanet topics or goals (long-term activities, several years)

## □ Ongoing SIGs:

- SIG2 “Exoplanets Demographics”
- SIG3 “Exoplanets Solar System Synergies”
- Cross-PAG SIG: “Habitable Worlds Observatory”

<https://exoplanets.nasa.gov/exep/exopag/sigs/>



# ExoPAG Study Analysis Groups

Community-driven groups that focus on discussing specific exoplanet topics or goals (short-term activities. Reports completed in 1-2 years and available to the community via e.g. a PASP paper, ArXiv paper, workshop...)

□ 17 SAGs completed and 4 ongoing:

- SAG 23: The Impact of Exo-Zodiacal Dust on Exoplanet Direct Imaging Surveys
- SAG 24: Exploring the Complementary Science Value of Starshade Observations
- SAG25: Technosignatures
- SAG26: Exoplanet Reflectance spectroscopy for HWO



# ExoPAG findings

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- Findings are analysis carried out by the community and **forwarded to the Astrophysics Division leadership as input** [they are not recommendations]
- Ideas for new findings solicited from community (e.g. ExoPAG email and at Business Meetings) and discussed at community forum (e.g. Summer ExoPAG)
- Findings with community support are reviewed by ExoPAG EC and top 1-3 findings put forward to ExoPAG for a vote. Ideas not adopted (or selected for vote) can be kept and re-discussed in future
- Approved findings are listed here:  
<https://exoplanets.nasa.gov/exep/exopag/exopagFoundingDocuments/exopag-findings/>

# Selected ExoPAG EC activities

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- Organize monthly ExoPAG EC + semi-annual ExoPAG meetings, cross-PAG meetings, report to NASA's Astrophysics Director
- Review and provide inputs to the Exoplanet Program Science Gap List
- Contribute to ExoPAG & cross-PAG SIGs and SAGs
- Sponsor the ExoExplorers Program which supports the professional development of early career scientists
- Coordination of community white papers for NASA Decadal Astrobiology Research and Exploration Strategy (NASA-DARES)
- Generated an ExoPAG Operating Procedures document:  
[https://exoplanets.nasa.gov/internal\\_resources/2975/ExoPAG-Operating\\_Procedures.pdf](https://exoplanets.nasa.gov/internal_resources/2975/ExoPAG-Operating_Procedures.pdf)

# ExoPAG impacts on NASA policies & funding lines (1)



- **Suggestions from ExoPAG meetings:**
  - Student presentations & travel funding for ExoPAG meetings
  - ExoExplorers Program & the funding support for it
- **ExoPAG formal findings:**
  - 2020: Added ex-officio ExoPAG representatives from the Heliophysics, Planetary Science, and Earth Science Divisions
- **ExoPAG SIG reports:**
  - 2015: SIG 1 report guided HQ selection of Large Mission Studies for the 2020 Decadal Survey
- **ExoPAG SAG reports:**
  - 2012: SAG 1 report ratifies Keck and LBT nullder approaches to exozodi surveys
  - 2013: SAG 5 report revisited exoplanet science requirements for a large direct imaging mission
  - 2015: SAG 8 provided crucial support for the HQ AO that produced the NEID PRV spectrograph

# ExoPAG impacts on NASA policies & funding lines (2)



- **ExoPAG SAG reports (continued)**

- 2015: SAG 10 identified need for a 1m class transit spectroscopy mission, which eventually became **the U.S. CASE contribution to ESA's ARIEL mission**
- 2014: SAG 11 microlensing recommendations seeded dedicated observing campaigns with Spitzer and K2
- 2017: SAG 13 report compiled occurrence rates from the literature, these were widely used by the community in following years including in the HabEx & LUVOIR studies
- 2018: SAG 16 on biosignatures worked with NExSS to hold a workshop & produce 6 papers in a special issue of *Astrobiology* (960 total citations in first 6 ½ years)
- 2018: SAG 17 made the case for community **TESS followup needs**, contributing to the initiation & continuation of speckle imaging, southern RV, and NASA Keck access programs
- The ***SAG 15, 19, and 22 reports*** have made **findings that will be impactful on HWO** going forward
- 2023: SAG 21 report resulted in a new ExEP Science Gap on stellar contamination of transmission spectra

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- Subscribe to the [exopagannounce@jpl.nasa.gov](mailto:exopagannounce@jpl.nasa.gov)

<https://exoplanets.nasa.gov/exep/exopag/announcementList/>

- Participate to the semi-annual in-person meetings
- Propose to start a Science Interest Group (SIG) or a Study Analysis Group (SAG)
- Propose findings and suggestions

<https://exoplanets.nasa.gov/exep/exopag/exopagFoundingDocuments/exopag-findings/>



Session 1 (Chair: Ian Crossfield)	Speaker	Time (MST)
Registration & Science Networking	N/A	8:30 AM
Welcome	Ian Crossfield (KU)	9:00 AM
NASA Headquarters Exoplanet Exploration Program Update	Joshua Pepper (NASA HQ)	9:15 AM
Exoplanet Exploration Program (ExEP) Office Update	Dawn Gelino (JPL)	9:45 AM
ExEP Science Update	Karl Stapelfeldt (JPL)	10:00 AM
<b>Early Career Talk:</b> Understanding the late stages of planetary system formation	Kadin Worthen (JHU)	10:15 AM
<b>Early Career Talk:</b> Revisiting Disk Masses with CO Isotopologues	Dingshan Deng (UA)	10:30 AM
<b>BREAK (30 min)</b>		10:45 AM
Roman-Rubin exoplanet synergy	Rachel Street (LCO), remote	11:15 AM
Getting Ready for Gaia DR4	Sarah Blunt (UCSC)	11:30 AM
Roman and Transiting Exoplanets	Robby Wilson (UMD/GSFC)	11:45 AM
Roman and microlensing: precursor studies	Sean Terry (UMD/GSFC)	12:00 PM
AI for Exoplanet Modeling/Analysis	Isaac Malsky (JPL)	12:15 PM
<b>LUNCH BREAK (90 min)</b>		12:30 PM
Session 2 (Chair: TBD)	Speaker	Time (MST)
SAG 23 update: Exo-Zodiacal Dust & Direct Imaging	John Debes (STScI), remote	2:00 PM
<b>Early Career Talk:</b> Investigating Core Induction Effect on Atmospheric Escape from Rocky Exoplanets and Implications for Habitability	Laura Chin (BU)	2:15 PM

# ExoPAG 33 agenda



<https://exoplanets.nasa.gov/exep/exopag/exopag33/exopag33agenda.html>

- NASA updates including from the Astrophysics Director
- Early-career talks: exciting science!
- Mission updates: how can you get involved?
- Open Mic Exoplanet Community Forum: vote on a finding and provide suggestions

# ExoPAG 33 Logistics Guide

## Meeting website with agenda and proposed finding

<https://science.nasa.gov/astrophysics/programs/exep/exopag/meetings/exopag33/exopag33-program/>

The detailed meeting agenda, with links to final versions of presentations can be found here.



## Suggestions form <https://bit.ly/exopagsuggestions>

The purpose of this form is for the science community to provide input to the ExoPAG Executive Committee (EC). Community members may propose suggestions for the ExoPAG that will be dispositioned by the EC and can subsequently be discussed by the full ExoPAG.



## Findings form <https://bit.ly/exopagfindings>

The purpose of this form is to propose findings that can be discussed and voted on by the full ExoPAG. Findings that are voted on are provided to NASA Headquarters via a written memo from the ExoPAG EC





Ask questions and provide  
suggestions!

Enjoy the meeting!

