Exoplanet Program Analysis Group (ExoPAG) Report to APAC

Ilaria Pascucci (U. Arizona)
Chair, ExoPAG Executive Committee

October 17, 2022
Exoplanet Program Analysis Group: Terms of Reference

(charted by the Astrophysics Division)

1. Articulate & prioritize science drivers for Exoplanet Exploration Research
2. Evaluate capabilities of potential missions to achieve program goals
3. Evaluate ExEP activities with broad community input
4. Articulate & prioritize new mission technologies
5. Provide findings on all related program activities including:
ground-based observing, theory and modeling programs, laboratory astrophysics, suborbital investigations, data archiving, community engagement
Thank you to those who volunteered!

Identified all of the ongoing (and some of the upcoming) activities as well as EC members who could lead them

**2022 ExoPAG Executive Committee members**

<table>
<thead>
<tr>
<th>Name</th>
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ExoPAG ongoing & recent activities I (since the last APAC meeting)

- Organize monthly ExoPAG EC meetings (8/17, 9/21), **cross-PAG meetings**, rep. to APAC (I. Pascucci)

- Reviewed ExEP Science Gap List (deadline 9/30, **all EC members**)

- Ongoing activities with the Planetary Science Division: Exoplanets in Our Backyard workshop (Nov. 2-4, 2022) & Planetary Science Advisory Committee meeting (rep.: L. Schaefer)

- Organization of the **ExoPAG27 meeting** (all EC members)
ExoPAG ongoing & recent activities II (since the last APAC meeting)

- Great Observatory Maturation Program (GoMaP) workshop II, 11-13 Oct. (rep.: B. Mennesson & M. Bottom)

- Cross-PAG SAG on barriers to participation (rep.: N. Batalha). Cross-AG IDEA working Group (rep.: E. May), first meeting focused on the state of the profession.

- ExoExplorers Program (rep.: K. Colon & N. Batalha)
ExoPAG ongoing & recent activities III (since the last APAC meeting)

- **NASA Open Science Initiative** (Liaison: N. Batalha).
  ExoPAG EC meeting 9/21: the EC discussed the Space Telescope User Committee Report (no endorsement of the Zero Exclusive Access Period and recommendation to solicit broader community feedback). The EC supports the STUC’s decision/recommendation and discussed community concerns regarding no proprietary data for JWST.

- **Science Interest Groups (SIGs) and Study Analysis Groups (SAGs):**
  - SIG2 “Exoplanets Demographics”, finalizing report (Christiansen & Meyer)
  - SIG3 “Exoplanets Solar System Synergies”, on-going (Meadows & Mandt)
  - SAG23 “The Impact of Exo-Zodiacal Dust on Exoplanet Direct Imaging Surveys” (Debes, Rebollido, Hasegawa)
Cross-PAG SIG to support IROUV GOMaP-related activities

Meeting of the PAGs EC Chairs on Sep 9, 2022: agreement on the number/distribution of leads among PAGs. New discussion planned after this APAC meeting to better define the TOR

- The SIG would conduct analyses on scientific and related technical issues that would inform GOMaP
- The SIG would take full advantage of work done previously by STDTs, and other entities such as the NASA Exoplanet System Science (NExSS) research coordination network
- All PAGs will be included in this activity: coordination by a five-person team comprised of members of ExoPAG, COPAG, and PhysPAG
- The SIG would conduct analyses coordinated and prioritized by the leadership team
- Specific analyses would result in technical reports addressed to NASA’s Astrophysics Division in time-limited activities
- We expect that such a cross-PAG SIG would be useful to APD for several years
ExoPAG 27 meeting

- Saturday Jan. 7 & half day Sunday Jan. 8 in Seattle... working on the agenda

- Two major changes (discussed and approved by the EC): 1. More accessible presentations (reduce acronyms, more background); 2. Group presentations by topic (D. Dragomir & O. Cohen)

- Mini-symposium focused on recent JWST results with contributions from early-career scientists (E. May)

https://exoplanets.nasa.gov/exep/events/388/exopag-27/
ExoExplorers Program Update

https://exoplanets.nasa.gov/exep/exopag/exoexplorers/exoexplorerswelcome/

Steering Committee: T. Kataria (chair), N. Batalha, J. Christiansen, K. Colón

- Second cohort of ExoExplorer Science Series (Jan-Jun 2022), 12 early-career scientists
- Scope of the program expanded to include international ExoGuides and ExoExplorers

- ExoExplorer Program Steering and Organizing Committees developed the call for the next round of ExoGuides and for the third cohort of ExoExplorers in Jul-Aug 2022. Applications due Sep 2022
- 48 ExoExplorer applications were submitted along with 4 new ExoGuide nominations
- Reviews are underway to select the next class of ExoExplorers and ExoGuides.

- The first cohort of ExoExplorers have a Special Session at AAS 241 (Jan 2023) “The ExoExplorers: Early-Career Perspectives on the Intersection of Exoplanet Science and DEIA in Astronomy”
SAG23 includes 38 members working on eight major subject areas:

- A Catalog of Dusty Systems around Nearby Stars (lead: Steve Ertel)
- A review of host dust systems (leads: Steve Ertel and William C. Danchi)
- The theory of Exozodi Sources and Dust Evolution (lead: Mark Wyatt)
- Post-Processing and Detection of Extended Sources (leads: Ewan Douglas, Max Millar-Blanchaer)
- Pan-Chromatic Radiative Transfer of Exozodis (lead: Ramya M. Anche)
- Prioritization of Precursor Observational Studies of Debris Disks/Exozodis for future direct imaging missions (leads: Max Millar-Blanchaer, William C. Danchi)
- Prioritization of Precursor Theoretical Studies of Debris Disks/Exozodis for future direct imaging missions (lead: Jess Rigley)
- Update and prioritization of ExEP Gaps relevant to Exozodis (lead: Emily Rickman)
- A Review of the Solar System’s Zodiacal Cloud (leads: Neal Turner, Geoff Bryden)

Several groups had their first organization meeting
Other interested members of the community are welcome to join and contribute!

https://sites.google.com/view/sag23-exozodiacaldust/home