ExoPAG 25: Review of progress on actions/proposal of new suggestions

Eric Mamajek
NASA Exoplanet Exploration Program (ExEP)
Jet Propulsion Laboratory, California Institute of Technology

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ExoPAG Suggestions (Resolved)

- Suggestions – last reviewed at ExoPAG 24 (June 2021)
- **Previous suggestions from ExoPAGs past (retired)**
  - SAG 19 findings on rigorous contrast metrics to be factored in to mission concept studies
  - Define RV strategy to reach precision of 1 cm/sec, per Exoplanet Science Strategy -> EPRV Foundation Science solicition – 6 ROSES awards. EPRV Working Group report finished.
  - Improve ExoPAG website – added archive of emails + featured news
  - Start ExoExplorers speaker and career development cohort - (T. Kataria talk at ExoPAG25) Successful 1st year of ExoExplorers & 2nd cohort 2022!
  - Citizen science talk – (M. Kuchner talk at ExoPAG 25)
  - Opacity webserver for atmosphere modelers – NASA funded effort @ Ames (unsolicited; resolved ind't of ExoPAG or ExEP)

    → N. Batalha update at ExoPAG 26

ExoPAG Suggestions (Nearly Resolved)

- Proposed SAG on exozodiacal dust disks

  → (J. Debes talk) draft Terms of Reference
  https://stsci.box.com/v/ExoPAGSAGToR

- Mission stars target list for the Exoplanet Archive

  → (K. Stapelfeldt talk) Decadal recommended 6m scale IR/vis/UV telescope -> updates to target list. Nearly finished, to be circulated soon for feedback from subject matter experts

ExoPAG Suggestions (Unresolved)

- Discussion of common standards for publishing exoplanet discoveries (D. Savransky).

  → ExoPAG 24: Develop further, but it sounds like it is mainly for community and journals rather than NASA APD/ExEP (but will benefit Exoplanet Archive). Get back to EC. SIG 2 has been working this. What are next steps?

- Analysis of synergies between ground- and space-based technology (wavefront control and diffraction suppression), as well as science algorithm development, in the context of high contrast imaging. This could be particularly relevant in the era of JWST, new developments on the ground (e.g. focal plane wavefront sensing), ELTs, Roman CGI, and future direct imaging missions (to be discussed in future).

  → ExoPAG 24: Discuss further, see what Decadal recommends.

  ExoPAG 25 update?

Suggestions from ExoPAG 24 (Unresolved)

- **Habitability Standard** (Abel Méndez): *"Develop a habitability standard for exoplanet science. This standard would help characterize and compare results from global climate models (e.g., GCMs) and provide context for atmospheric and biosignature observations of exoplanets. The standard would be based on the habitability models used in biology and consistent with methods used in other disciplines. More details on this problem are available in https://arxiv.org/abs/2007.05491 and in a forthcoming paper in Astrobiology."* **→ ExoPAG24: AM develop this further and get back to EC. Update?**

- **Intensity Inteferometry** (Jean Schneider): *"Eqip telescopes (even space telescopes), with very fast (picosecond resolution) detectors to make intensity interferometric very high angular resolution detection. This has been realized for instance by Rivet et al. (MNRAS 494, 218, 2020). I propose to extend it to intercontinental and Earth-space and even Earth-Moon interferometry..."* **→ ExoPAG 24: JS was not present to discuss. Note that NASA Astrophysics had call out in late '21 for community input on tech gap prioritization (so there was opportunity to submit).**

Notes from ExoPAG 25 (January 12, 2022)

- Habitability standard – resolved (no further action, no further tracking)
- Intensity Inferometry – resolved (no further action, no further tracking)
- Common standards (Savransky) – EC discuss further
- Ground-space synergy – EC discuss further
- Opacity webserver – ask N. Batalha to speak at ExoPAG 26
- Exozodi SAG – Debes organizing – report back at ExoPAG 26
- Target List – K. Stapelfeldt & E. Mamajek working on, will update at science update at E26
- Retire the rest of previous suggestions from slide #1
- see two new suggestions on next page (were not reviewed in discussion, but were submitted via Google form)

Notes from ExoPAG 25 (January 12, 2022)

- Decadal technology (Belikov): “A workshop about how to make the LUVOIR/HabEx decadal mission even better (within the context of exoplanet science). In particular, how to improve performance, schedule, and/or cost. Topics could be focused, such as performance improvements and breakthroughs in coronagraph and wavefront control technologies, or be more general, such as improvements/breakthroughs in telescope stability, large mirror technologies, DRM, flagship management strategies, etc. The idea is to provide the mission study teams a comprehensive list of technologies and other methods as inputs into broad and detailed trade studies, and information about how they could improve the mission.”
- Biosignature Assessment Standards (Domagal-Goldman): “ExoPAG should partner with NExSS and NFOLD to get apply the "standards for bioisgnature detection" to both JWST and LUVOIR/HabEx examples. The former will be for us to understand how to interpret JWST data and the latter will be to plan the as-yet-unnamed flagship project.”