Exoplanet Program Analysis Group (ExoPAG) Report

APAC

Michael Meyer (ExoPAG EC Chair)

Credit: NASA
ExoPAG Executive Committee

ExoPAG activities and meetings are organized through an Executive Committee

Michael Meyer (Chair) University of Michigan
Tom Barclay University of Maryland
Natasha Batalha NASA-Ames
Jacob Bean The University of Chicago
Jessie Christiansen NExScI/Caltech
Rebecca Jensen-Clem UC-Santa Cruz
John Debes Space Telescope Science Institute
Tiffany Kataria JPL/Caltech
Josh Pepper Lehigh University
Dmitry Savransky Cornell
Laura Schaefer Stanford University
Vikki Meadows (Past Chair) University of Washington
Doug Hudgins (Astrophysics) NASA HQ
Doris Daou (Planetary) NASA HQ
Richard Eckmann (Earth) NASA HQ

Our newest members!
ExoPAG Recent Activities

- New EC Members appointed with monthly telecons on-going.
- Cross-PAG “Exoplanets in Our Backyard” Meeting findings released.
- Supporting Planetary Decadal Survey.
- COVID-19 Survey initiated by COPAG.

- ExoPAG22 Virtual Meeting June 18-19, 2020 meeting:
  - Updates on PI Launchpad, Planetary Discovery studies, ARIEL/CASE, CHEOPS, Nancy Grace Roman Space Telescope CGI, and JWST.
  - EPRV recommendations released and new opportunity announced.
  - Four presentations by early career scientists.
  - Community concerned about institutional racism.
  - The EC + ExEP met following to ExoPAG22 to discuss priorities.
### Current Status of SAGs and SIGs

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<th>Close Year</th>
<th>SAG or SIG</th>
<th>Title</th>
<th>Lead</th>
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<tr>
<td>2020</td>
<td>SAG 19</td>
<td>Exoplanet imaging signal detection theory and rigorous contrast metrics (active - closeout expected soon)</td>
<td>Mawet &amp; Jensen-Clem</td>
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<td>SIG 2</td>
<td>Exoplanet Demographics (on-going)</td>
<td>Christiansen &amp; Meyer</td>
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<td>SIG 3</td>
<td>Exoplanet Solar System Synergies (approved).</td>
<td>Meadows &amp; Mandt</td>
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<td>SAG 2X</td>
<td>Stellar Contamination on Transit Spectra (proposed)</td>
<td>Rackham &amp; Espinoza (Barclay)</td>
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<td>Exoplanet Host Properties (proposed)</td>
<td>Pepper, Stark, &amp; Hinkel</td>
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SIG 2 - Exoplanet Demographics

Chairs: Jessie Christiansen (NExSci/IPAC) & M. Meyer (UM)

• Successful symposium at ExoPAG 21 in Honolulu.
• Monthly telecons discuss new demographic results from multiple techniques (radial velocity, microlensing, transit, direct imaging).
• Drafting report on value of public database of demographic products.
• Curating a list of open questions/ongoing projects for the community.
• NExSci is hosting a related workshop in the fall. https://nexsci.caltech.edu/conferences/exodem/
SIG 3 ExoSS Goals, Progress, Plans

- **Chairs:** Victoria Meadows (UW/NExSS/ExoPAG), Kathy Mandt (JHU/APL/OPAG)
- **Goal:** To provide a forum for interaction between the Solar System and exoplanet communities on topics of mutual interest, and to work to identify ways in which NASA and the scientific community could enhance these interactions.
- **Status:** The SIG3 is now approved and open to all.

- **Pre-Formation Activities:**
  - Exoplanets In Our Backyard Conference, February 5-7, Houston: Findings to HQ and on website
  - ExoSS Slack Channel – all are welcome! (If you would like to join: meadows@uw.edu)

- **Current and Upcoming Activities**
  - Creation of community document to gather input on ExoSS synergies
  - Recruiting members from diverse scientific communities.
  - Inaugural SIG3 meeting planned for early July
  - Plan to organize ExoSS webinars, develop joint SIG reports/review papers that identify beneficial avenues for future joint research between the exoplanet and Solar System communities, potential collaboration with the upcoming NExSS Hab Worlds 2 conference.
Proposed SAG: The Effect of Stellar Contamination on Space-based Transmission Spectroscopy

What do we know & what can we learn from the star?
- e.g., chromospheric activity, photometric monitoring, polarization

What can we learn from transits?
- e.g., transit spectroscopy

What will the impact be on future studies?
- e.g., unnoculted surface, occulted active regions, flares.

What complementary observations will be useful?

Coordinators: Néstor Espinoza, Ben Rackham, & Tom Barclay
Proposed SAG – Exoplanet Host Properties
Lead by Joshua Pepper, Chris Stark, Natalie Hinkel

• Define a high priority stellar sample to study that is relevant to many of the NASA exoplanet-related missions

• Survey the broad exoplanet community (e.g., including planetary scientists, geologists, biologists) to determine data required for characterizing stellar and planetary systems

• Define what properties are most important to include

• Identify categories of typical end users of this catalog

• Find community consensus regarding methods for archive implementation and maintenance, based on high priority and low priority data products needed for characterization.
ExoPAG 2020 Future Activities

• New areas for possible action: zodiacal dust and HCl.
• Map the Science Gap List to key areas for ExoPAG effort:
  – new process to review in summer 2020.
  – New monthly seminar series to support this.
• Continue to collect community input via fall forum.
  (e.g. to develop findings for discussion at ExoPAG 23).
• Continue monthly ExoPAG EC, SIG2/SIG3/SAG-21/SAG-22 telecons
• Review what ExoPAG can do to help dismantle institutional barriers
to realizing a truly diverse, equitable, and inclusive community.
• Update ExoPAG website.
• Present to Planetary Division Advisory Committee in August.
• Final report on data challenge and closeout SAG-19 this fall.
• ExoPAG23 planned for January 2021 at winter AAS.
Action Requested by ExoPAG EC

• Approve TOR for two new proposed SAGs.