

ExoPAG Report

NAC Astrophysics Subcommittee Meeting
March 27, 2014

Scott Gaudi
(ExoPAG EC Chair)

EC Membership.

- Current EC members.

Scott Gaudi (*Chair*)

Nick Cowan

Aki Roberge

Tom Greene

Lisa Kaltenegger

Amy Lo

Dave Latham

Peter Plavchan

Gene Serabyn

Remi Soummer

Jonathan Fortney

Wes Traub (*Ex officio*)

Doug Hudgins (*Ex officio*)

James Kasting (*Ex officio*)

Ohio State

Northwestern

NASA Goddard

NASA Ames

MPIA

Northrop Grumman

SAO

Caltech/NexSci

JPL

STScI

U.C. Santa Cruz

JPL

NASA Headquarters

Penn State

Activities since November 2013.

- Call for nominations for new EC members.
 - 19 new nominations, 5 re-nominations, up to 11 carry-over nominees.
 - Will choose new EC members in the next few weeks.
- Continued work on current SAGs.
- Developed the case for a new SIG.
- One meeting:
 - ExoPAG 9, January 4+5, Washington, DC
- Organizing ExoPAG 10. 224th AAS?

Current SAGs, Part 1.

- SAG4: Planetary Measurements Needed for Exoplanet Characterization – Lisa Kaltenegger
 - Draft report completed.
- SAG8: Requirements and Limits of Future Precision Radial Velocity Measurements – Dave Latham, Peter Plavchan
 - Presentations at ExoPAG 6, 7, 8, 9.
 - Report started, final report by end of year.
- SAG9: Exoplanet Probe to Medium Scale Direct-Imaging Mission Requirements and Characteristics – Rémi Soummer
 - Reports at ExoPAG 8, 9.
 - Scope revised, regular telecons, final report by end of the year.

Current SAGs, Part 2.

- SAG10: Characterizing the Climate of Transiting Planets with JWST and Beyond (Nick Cowan, Chair)
 - Announced and charter circulated on 12/12/13.
 - Presentations at ExoPAG 8, 9, outline of report started, final report by end of the year
- SAG11: Preparing for the WFIRST microlensing survey (Jennifer Yee, Chair)
 - Announced and charter circulated on 12/11/13.
 - Presentations at ExoPAG 8, 9.
 - Discussion at Microlensing 18, regular telecons, report started, finished by 5/14?

ExoPAG 9.

- January 4+5, Washington, DC
 - Weekend prior to the 223rd AAS Meeting.
- Topics:
 - Update on existing SAGs.
 - Mini-workshop: *Potential for Characterization of Exoplanets with JWST*
 - Presentations on TESS and CHEOPS
 - Discussion of new SIG.
 - Joint COPAG/ExoPAG meeting.
- (Most) talks available online:
 - <http://exep.jpl.nasa.gov/exopag/exopag9/agenda/>

What we've learned.

- Continued investment in extracting science from Kepler is both worthwhile and critical.
- The telescope time needed for precision RVs to support NASA missions (Kepler, TESS, WFIRST-AFTA) will far exceed available resources.
- The frequency of habitable planets is not one number; need to specify distribution functions and/or agree upon a fiducial definition for a habitable planet.
- Need to figure out overlap of RV surveys and ground-based direct imaging surveys with potential future direct imaging (space) missions.
- Need to figure out what is needed to characterize exoplanets; need to figure out whether or not JWST can characterize habitable planets.
- Need to identify the future roles of astrometry and interferometry.

Suggestion for a new SIG.

SIG #1: “Toward a Near-Term Exoplanet Community Plan”

The goal of this Science Interest Group is to begin the process of developing a holistic, broad, unified, and coherent plan for exoplanet exploration, focusing on areas where NASA can contribute. To accomplish this goal, the SIG will work with the ExoPAG to collect community input on the objectives and priorities for the study of exoplanets. Using this input, it will attempt develop a near term (5–10 year) plan for exoplanets, based on the broadest possible community consensus. The results of this effort will serve as input to more formal strategic planning activities that we expect will be initiated near the end of the decade in advance of the next decadal survey.

History.

- Introduced at ExoPAG 8.
 - General support, although low attendance.
- Discussed during APS telecon on 11/19/13.
- Discussed again at ExoPAG 9.
 - Broad support (as demonstrated by a show of hands) to continue with this activity and seek approval for a Science Interest Group.