

# ExoPAG Report

NAC Astrophysics Subcommittee Telecon  
November 19, 2013

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 April 2013.

- Progress with current SAGs.
- Developed case for two new SAGs.
- Started discussion of new “ExoPAG-wide” roadmap activity.
- One meeting:
  - ExoPAG 8, October 5+6, Denver, CO
- Planning for next meeting:
  - ExoPAG 9, January 4+5, Washington, DC

# Current SAGs.

- SAG4: Planetary Measurements Needed for Exoplanet Characterization – Lisa Kaltenegger
  - Draft report completed, final report delivered by ExoPAG 9.
- SAG8: Requirements and Limits of Future Precision Radial Velocity Measurements – Dave Latham, Peter Plavchan
  - Presentations at ExoPAG 6, 7 and 8
  - Report started, final report by ExoPAG 9 (?)
- SAG-9: Exoplanet Probe to Medium Scale Direct-Imaging Mission Requirements and Characteristics – Rémi Soummer
  - Announced and official charter sent on 3/7/2013.
  - First report at ExoPAG 8

# ExoPAG 8.

- October 5+6, Denver, CO
  - Weekend prior to the 45<sup>th</sup> DPS Meeting
- Began with a moment of silence for our missing NASA colleagues.
- Topics:
  - Update on existing SAGs.
  - Mini-workshop: *Update on the progress toward a high-contrast imager in space.*
  - What do we need to do to prepare for WFIRST-AFTA exoplanet surveys?
  - Mini-workshop: *What do we need to do to ensure a robust measurement of  $\eta_{Earth}$ ?*
- Toward a broad, unified, and coherent exoplanet roadmap.
- (Some) talks available online:
  - <http://exep.jpl.nasa.gov/exopag/exopag8/agenda/>

# Suggestions for New SAGs.

- SAG10: Characterizing the Climate of Transiting Planets with JWST and Beyond (Nick Cowan, Chair)
  - Which critical measurements will be too expensive or inaccessible to JWST, and can these be obtained with planned ground- or space-based observatories?
- SAG11: Preparing for the WFIRST microlensing survey (Jennifer Yee, Chair)
  - What scientific programs can be undertaken now to ensure the success of the WFIRST microlensing mission and maximize its scientific return?

# Toward an Exoplanet Roadmap.

# Goal.

To develop a holistic, broad, unified, and coherent exoplanet roadmap for the next 5–10 years, with community consensus, focusing on areas where NASA can contribute.

# Why?

- Thesis: A community consensus going into the mid-decadal review, and particularly the next decadal survey, will improve the chances that our priorities will be executed and/or highly ranked.

**2010-2020**

**2020-2030**

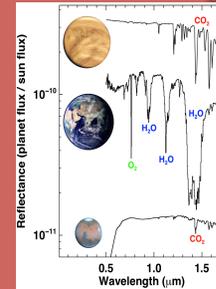
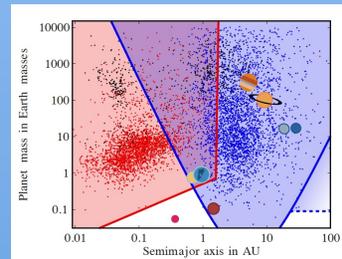
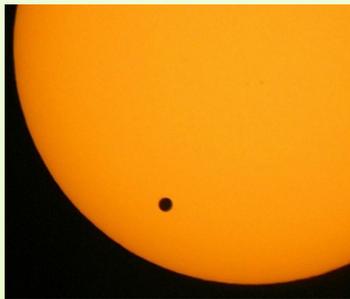
**2030-2040**

Science  
Roadmap

A Complete Exoplanet Census

Characterization of a Diversity of Other Worlds

Our Nearest Neighbors:  
Surveying Nearby Planetary Systems and Searching for Habitable Climates



Mission  
Roadmap

Ground-Based Mission-Supporting Observations

TESS

JWST

HST

Spitzer

Kepler

WFIRST+C

Transit Char.  
Mission?

Astrometry  
Mission?

F-DIM:  
(Flagship Direct  
Imaging Mission)

