

Cosmic Origins Program Analysis  
Group Report  
Astrophysics Advisory Committee  
Meeting – October 23, 2018

Paul Scowen  
(COPAG EC Chair)

# COPAG EC Membership

**Paul Scowen** (Chair, APAC Member)

**Lee Armus** ~

**Misty Bentz**

**Suvi Gezari** ~

**Joseph Lazio** ~

**Janice Lee**

**Paul Lightsey**

**Tom Megeath**

**John O'Meara** #

**Claudia Scarlata**

**Jason Tumlinson**

**Sarah Tuttle**

**Mario Perez** (Executive Secretary, Ex-Officio)

**Eric Tollestrup** (Ex-Officio)

**Susan Neff** (COR Program Office, Ex-Officio)

**Erin Smith** (COR Program Office, Ex-Officio)

Arizona State University

Caltech

Georgia State University

University of Maryland

NASA/JPL

Caltech/IPAC

Ball Aerospace

University of Toledo

St. Michael College

University of Minnesota

STScI

University of Washington

NASA HQ

NASA HQ

NASA/GSFC

NASA/GSFC

~ Members rotating off in Fall 2018

# Member resigned in October 2018

# COPAG Activities Since July

- Many COPAG EC members continued to be active contributors to the STDT exercises
- The COPAG EC has continued to track closely STDT activities through members who are on the respective teams:
  - **OST** - Lee Armus\*
  - **HabEx** - Paul Scowen
  - **LUVOIR** - John O'Meara\*
  - **Lynx** – Two EC members are part of SWGs - Joe Lazio\* and Suvi Gezari\*
- COPAG issued a Dear Colleague letter to solicit nominations for the EC
  - We received a set of 9 nominations
  - We have selected 4 names for approval – 4 because John O'Meara has resigned (since October 11, 2018) to take the position of Chief Scientist at the Keck Observatory
- SAG 10 – Great Observatories, started work by soliciting members and began discussing pertinent issues via email, Google docs, Wiki and telecons.

# COPAG Activities

- COPAG has:
  - 1 open SAG
  - 3 open SIGs
  - 1 TIG
- All 3 SIGs, the SAG and the TIG have started to formulate preparations for the 2020 Decadal Survey and are acting to coordinate efforts without influencing the focus and direction of those efforts
- Updated reports follow.

# Astro 2020 Preparations

- Astro2020 slack team is open to all astronomers interested in discussing white paper inputs to the decadal.
- All areas / wavelengths / missions / facilities / etc - not NASA or space-specific
- Open venue for recruiting coauthors or hosting discussions for existing or new inputs.
- Over 30 scientific topics so far, 400 + members.
- To join, use this link:
  - [https://astroslack2020.slack.com/join/shared\\_invite/enQtNDMwMTMwMDU1NDk1LTA1YTA1NzVjYjc1YWQzODA1MDkwN2JjZml3ZTY0NzdjZWY4ZDNjNDY3ZjljMzk3MDZiYWM0ZjdiZTc1OTAxYTM](https://astroslack2020.slack.com/join/shared_invite/enQtNDMwMTMwMDU1NDk1LTA1YTA1NzVjYjc1YWQzODA1MDkwN2JjZml3ZTY0NzdjZWY4ZDNjNDY3ZjljMzk3MDZiYWM0ZjdiZTc1OTAxYTM)

# FIR SIG – Recent Activities

## Newsletter to be published soon (~Nov 1<sup>st</sup>)

- Final edits are underway.
- First issue has sections on contributed science, new technology development, mission highlights (SOFIA, Spitzer, OST), list of upcoming events and FIR SIG membership
- Plan to have a Newsletter semiannually

## Coordination of white papers for the decadal review between the FIR SIG leadership council and the OST STDT

- Google doc has been updated and now has a clear focus on the Decadal science themes, along with a list of the proposed papers for these themes
- Contributions will come from the OST and FIR SIG members, as well as from the broader community

## FIR review article for JATIS

- Current Status: Editor is reviewing the final referee report

## Ongoing webinar series covering science/mission topics within infrared astronomy

# FIR SIG – Near-term Plans

## SIG Leadership Council membership Changes

- All the new members have been recruited and were introduced during a telecon in July
- Looking for a new co-chair. The current co-chair is due to roll off by the end of this year

## Decision on changing the Far-IR SIG to the Infrared SIG is underway

- Feedback from the leadership council is due soon

## Preparing for the 2019 Winter AAS

- Splinter Session requested for Tuesday January 8<sup>th</sup>

## Organization of decadal white papers is underway

- POC for OST – Lee Armus
- POC for Far-IR SIG – Eric Murphy

# SIG2 - UV Science

aiming for a set of ~6-10 science oriented white papers submitted to decadal.

dedicated channel on Astro2020 Slack Team (#uv\_sig)

> 20 members so far.

in the process of identifying white paper topics and leads.



# SIG3 – Cosmic Dawn

- No activity since April
- May consider closing this SIG down depending on response at the Winter AAS
- What is process or procedure to do this?

# SAG-10 update

- We had our 3<sup>rd</sup> SAG-10 telecon on Monday, 10 Oct.
- There are currently 51 members of the SAG-10 team. Full list has been given to S. Neff for posting on NASA/COR website.
- Based on previous discussion we have formulated five SAG\_10 working groups:
  - **Fundamental Physics** (cosmology, LSS, compact objects, gravity waves) – 10 members
  - **Origin of Life and Planets** (solar system, exoplanets, disks, ISM chemistry) – 11 members
  - **Galactic Processes and Stellar Evolution** (SF, clusters, ISM, SNe, PNe, etc.) – 9 members
  - **Astrophysics of Galaxy Evolution** (starbursts, AGN, feedback, mergers, clusters) – 17 members
  - **Capabilities and Facilities** (launch cadence, mission concurrency, launch vehicles, servicing, mission support/operations) – 10 members

# SAG-10 update

- Working groups will guide SAG-10 study and contribute key sections of the final report
- Groups will also lead science whitepaper submissions for Decadal (WG 1-4) that adhere to the 8 prescribed science themes
- Working groups have begun assembling and describing breakthrough science cases from original Great Observatories that can be used to illustrate the power of multi-wavelength observatories in space
- Working groups will also illustrate examples of future science that will require multi-wavelength capabilities
- Each group will have two co-chairs who will report on progress during bi-weekly “plenary” telecons.
- It is expected that WG’s can/will work independently using available resources that best suit their needs (SAG-10 slack channel, SAG-10 wiki, Google docs, etc.)

# PhysPAG Multi-Messenger Astrophysics (MMA) SAG

John Conklin (chair)

John Tomsick (co-chair from PhysPAG)

Suvi Gezari (co-chair from COPAG)

Source Teams:

- 1) AGN, SMBH binaries, EMRIs
- 2) NS+NS, NS+BH, WD+WD binaries, GRBs
- 3) Stellar-mass BH+BH binaries
- 4) FRBs, SNe Ia, SN remnants

## ***Goals of PhysPAG MMA SAG:***

1. Identify science goals that could be achieved by combining different astrophysical messengers measured by current and future ground- and space-based observatories.
2. Identify measurements that can be made by existing, currently approved, and future planned ground- and space-based observatories that could contribute to multimessenger astronomy in the 2020's and early 2030's.
3. Determine how these enhanced or new science goals align with NASA Astrophysics Division's scientific priorities.
4. Identify the key qualitative technical drivers that are needed to achieve these science goals (e.g. wavelength, sensitivity, sky localization, latency, ...) and determine desirable performance levels for each.

The SAG will document its findings in one or more publically available white papers delivered to the NASA Astrophysics Advisory Committee in mid-2019.

Each of the source teams (see green box above) from the SAG is also writing science whitepapers to be submitted to the Decadal Review.

# TIG activities

- Primarily dormant last quarter
- Some discussions with COR Program Office personnel related to technology gap assessment expectations
  - Technology Assessment now a Bi-annual occurrence
  - Assessment limited to technologies related to strategic goals/missions
- Proposed Future activities for the next quarter
  - Setting up monthly meetings of TIG to determine scope of our tasks
    - Expectations to support COR Program Office bi-annual assessment
    - Consider additional areas to develop beyond COR Program Office expectations that would be valuable to the community for other missions and/or goals
    - Assess the capacity of the TIG to pursue these projects
  - Monthly meetings will be in preparation for an in-person meeting at the January AAS meeting

# Actions Requested of the APAC

- No approval requested of new members (yet)
- Relevant Questions from the COPAG EC:
  - The EC would like to hear what Paul Hertz considers the role of the recently released NAS reports on Exoplanet and Astrobiology strategies?

# COPAG Future Activities

- Bi-weekly EC telecons will continue
- Continued dialogue and support of ongoing STDT activities
- SAG-10 will continue to work towards a target of completion during mid-2019
- Work with SAG, SIGs and TIG to plan and organize white papers to the 2020 Decadal
- Appointment of new COPAG EC members