

National Aeronautics and
Space Administration



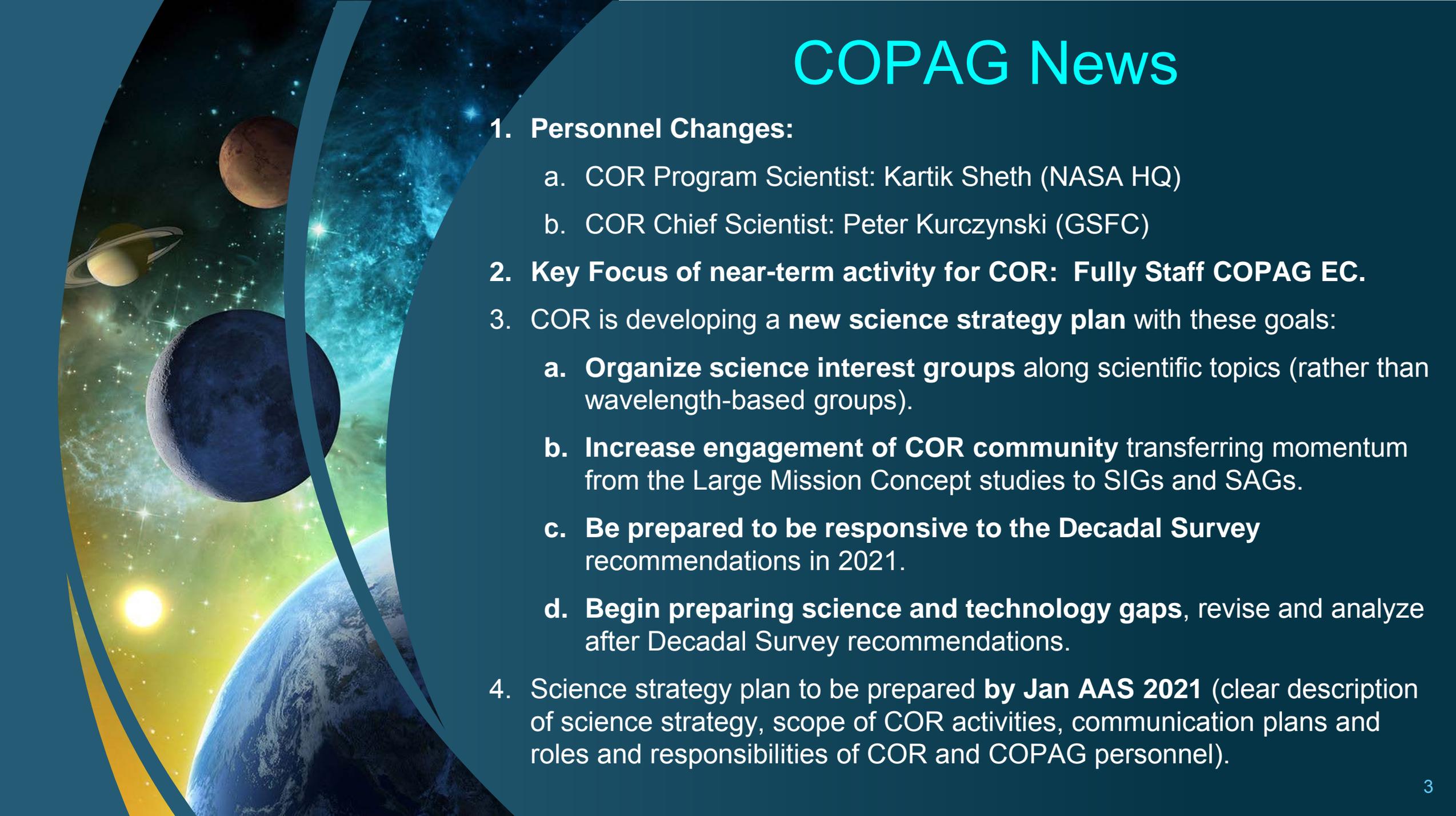
**Cosmic Origins Program Analysis Group (COPAG)
Report to Astrophysics Advisory Committee (APAC)
October 19, 20 & 21, 2020**

**Dr. Margaret Meixner
Chair, Cosmic Origins Program
Executive Committee**

State of Profession



- Opening Remarks by Margaret
- For the Cosmic Origins Community, we commit to an environment of inclusion where all voices are welcomed and heard. As you will see throughout this presentation, at every opportunity COPAG is implementing actions to be more inclusive and engage diverse voices throughout the astrophysics community.
- At our bi-weekly meetings we have two regular agenda items to discuss inclusion, diversity, equity and accessibility:
 - Update from Kartik Sheth, COR PS, on SMD and APD activities.
 - EC members take turns in sharing their reflections and experiences as well as ideas for analysis and actions towards a more inclusive and diverse COR community.
- What are we doing now towards a more inclusive and diverse COPAG:
 - COPAG EC slate
 - SAG and SIG membership
 - Community outreach plan
- We are discussing other possible analysis actions for NASA in the future

The background of the slide is a vibrant space-themed image. It features a large, bright yellow sun in the lower-left quadrant, partially obscured by the blue and white horizon of Earth. Above the sun, the dark blue and grey surface of the Moon is visible. In the upper-left, the orange and red surface of Mars is shown. To the left of Mars, the planet Saturn with its prominent rings is depicted. The background is filled with a dense field of stars and a blue nebula, creating a sense of depth and cosmic wonder. The text is overlaid on a dark blue circular shape on the right side of the slide.

COPAG News

1. Personnel Changes:

- a. COR Program Scientist: Kartik Sheth (NASA HQ)
- b. COR Chief Scientist: Peter Kurczynski (GSFC)

2. Key Focus of near-term activity for COR: Fully Staff COPAG EC.

3. COR is developing a new science strategy plan with these goals:

- a. **Organize science interest groups** along scientific topics (rather than wavelength-based groups).
- b. **Increase engagement of COR community** transferring momentum from the Large Mission Concept studies to SIGs and SAGs.
- c. **Be prepared to be responsive to the Decadal Survey** recommendations in 2021.
- d. **Begin preparing science and technology gaps**, revise and analyze after Decadal Survey recommendations.

4. Science strategy plan to be prepared by Jan AAS 2021 (clear description of science strategy, scope of COR activities, communication plans and roles and responsibilities of COR and COPAG personnel).

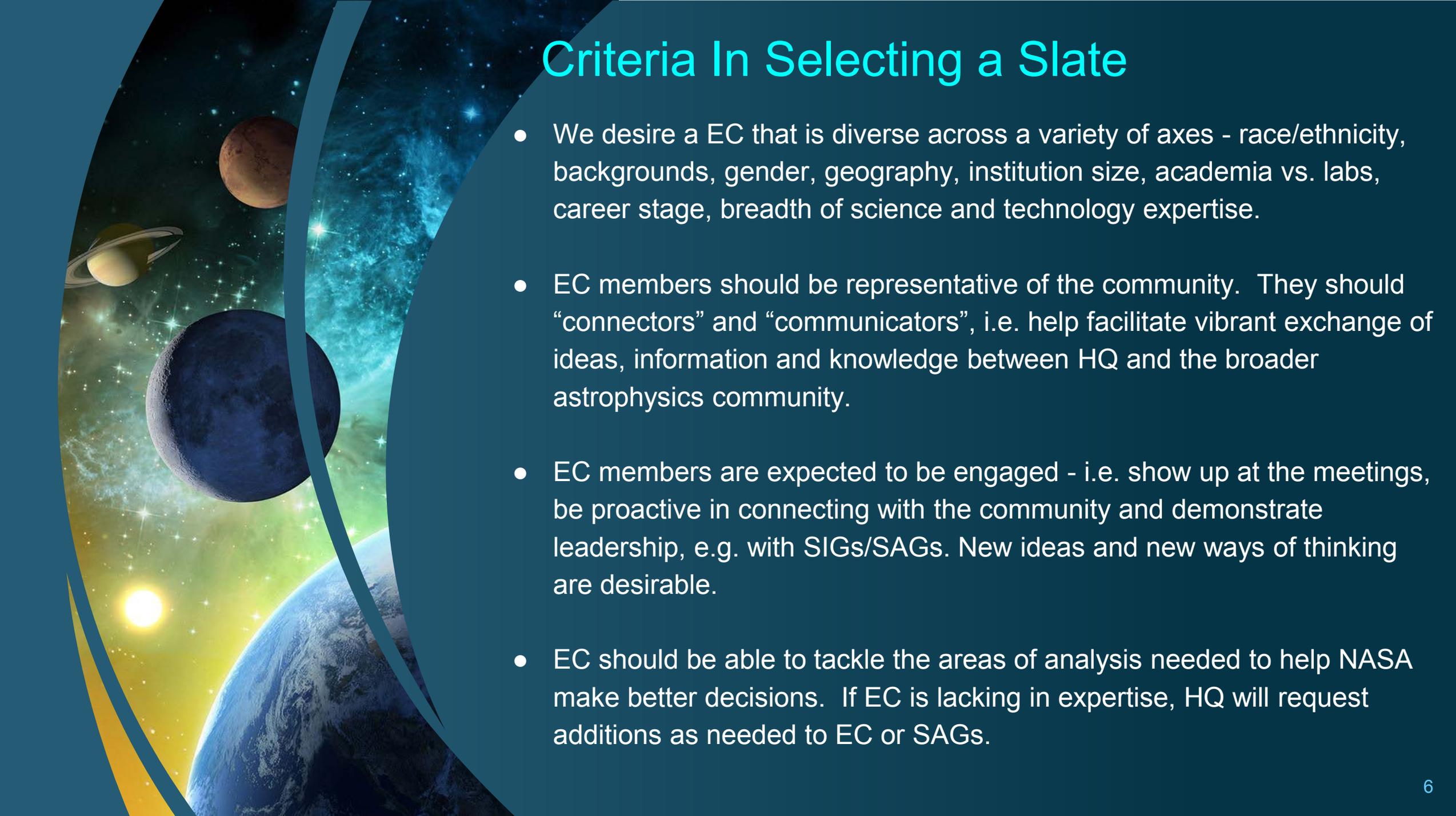
Process for Appointing COPAG EC

- **Members recruited as broadly as possible: Dear Colleague Letter, engagement w/ colleagues at scientific meetings and conferences, word of mouth, COR listserv, AAS newsletter,... every means possible..**
- Community members can express interest in participating in the EC at any time by contacting any HQ program scientist or the COR chief scientist.
- **HQ PS will issue a Dear Colleague letter on a quarterly basis to have a rolling and open mechanism for expressions of interest.**
- The Dear Colleague letter will provide guidance on any specific needs (e.g. scientific or technical expertise) that can be anticipated by NASA.
- Typically expressions of interest will include a CV and a cover letter.
- **In general try to staff EC with 12-16 members given the large scientific area covered by COR.**
- HQ PS anticipate filling EC positions at least once per year, usually in the fall.
- HQ PS will convene a slate of possible appointees for a formal selection by the Division Director.

COPAG EC News

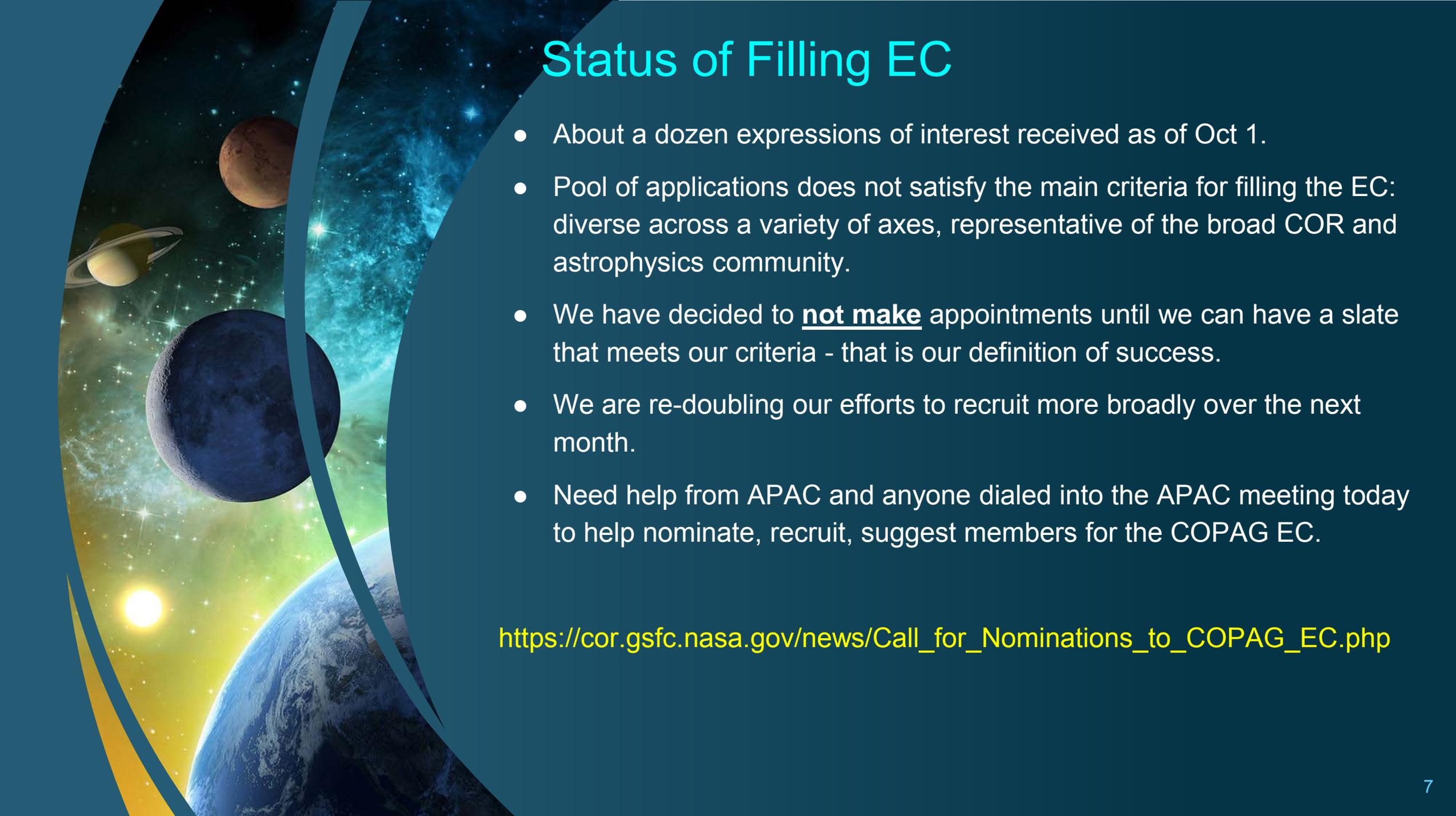
- Large turnover in current executive committee members.
- A new format of “Dear Colleague Letter” sent out Sep 1
 - Scope of Cosmic Origins Program clearly defined
 - A rolling deadline established
 - Applications invited by email or a web-based form
 - Broadly advertised via COPAG newsletter, AAS newsletter, individual reachout by COPAG EC members
 - PhysPAG uses COPAG DCL format to send out similar letter

<i>Margaret Meixner (Chair)</i>	<i>2021</i>	<i>SOFIA Science Mission Operations/USRA</i>
<i>Misty Bentz</i>	<i>2020</i>	<i>Georgia State University</i>
<i>Steve Finkelstein</i>	<i>2021</i>	<i>University of Texas</i>
<i>Alina Kiessling</i>	<i>2023</i>	<i>Jet Propulsion Laboratory, Caltech</i>
<i>Janice Lee</i>	<i>2020</i>	<i>Caltech/IPAC</i>
<i>Stephan McCandliss</i>	<i>2021</i>	<i>Johns Hopkins University</i>
<i>Tom Megeath</i>	<i>2020</i>	<i>University of Toledo</i>
<i>Alexandra Pope</i>	<i>2021</i>	<i>University of Massachusetts</i>
<i>Claudia Scarlata</i>	<i>2020</i>	<i>University of Minnesota</i>
<i>Jason Tumlinson</i>	<i>2020</i>	<i>STScI</i>
<i>Sarah Tuttle</i>	<i>2020</i>	<i>University of Washington</i>

A vibrant space-themed background featuring a large blue and yellow nebula, a bright yellow sun, and several celestial bodies including Saturn, Mars, and the Moon. The scene is set against a dark starry sky. A large, semi-transparent blue circle is overlaid on the right side of the image, containing the text.

Criteria In Selecting a Slate

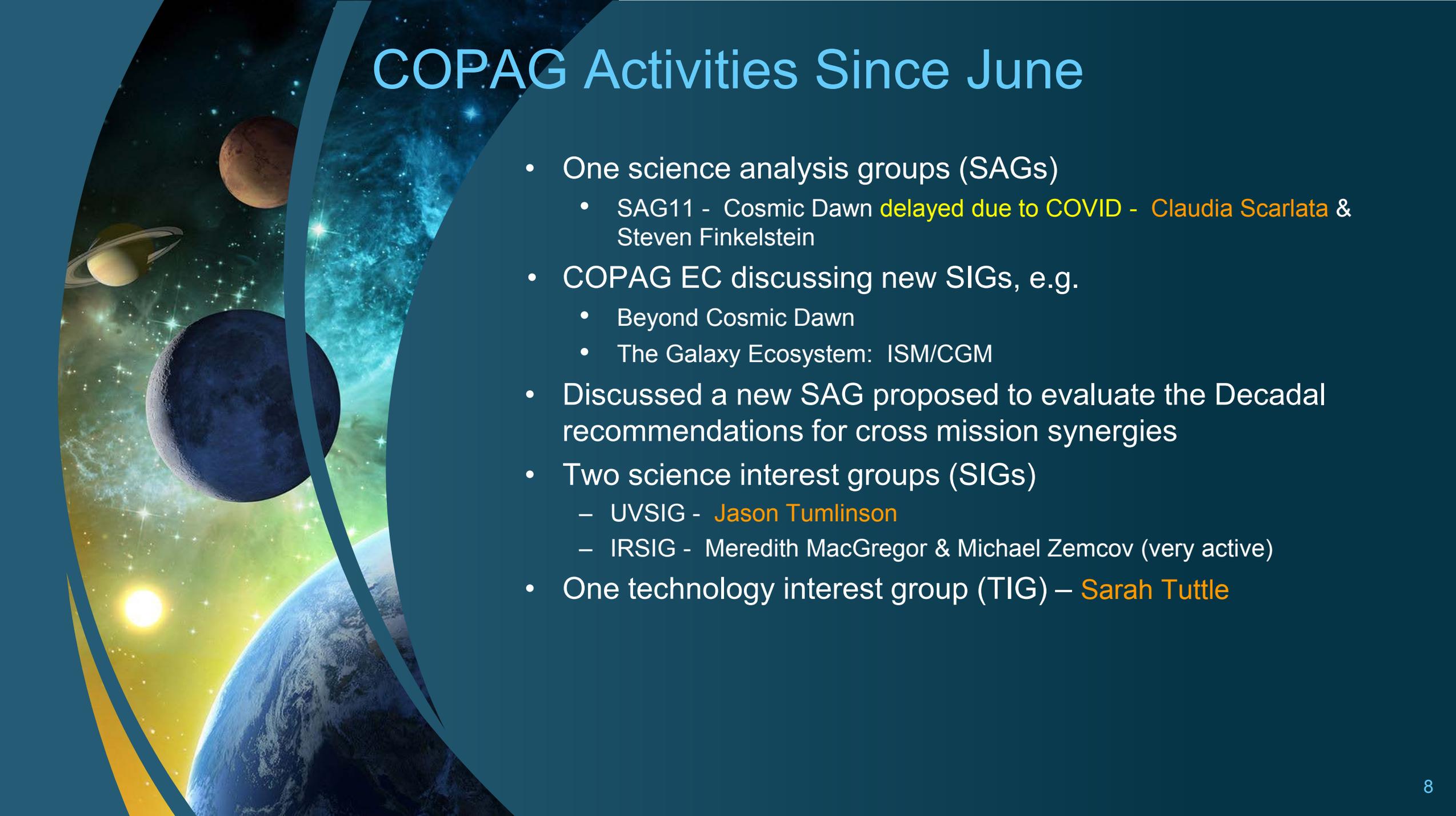
- We desire a EC that is diverse across a variety of axes - race/ethnicity, backgrounds, gender, geography, institution size, academia vs. labs, career stage, breadth of science and technology expertise.
- EC members should be representative of the community. They should “connectors” and “communicators”, i.e. help facilitate vibrant exchange of ideas, information and knowledge between HQ and the broader astrophysics community.
- EC members are expected to be engaged - i.e. show up at the meetings, be proactive in connecting with the community and demonstrate leadership, e.g. with SIGs/SAGs. New ideas and new ways of thinking are desirable.
- EC should be able to tackle the areas of analysis needed to help NASA make better decisions. If EC is lacking in expertise, HQ will request additions as needed to EC or SAGs.

The background of the slide is a vibrant space scene. It features a large, bright yellow sun in the lower-left quadrant. To its right, the blue and white horizon of Earth is visible. In the upper-left, there's a reddish planet (Mars) and a ringed planet (Saturn). A large, dark blue sphere (the Moon) is positioned in the center-left. The background is filled with numerous stars and a blue nebula. A large, semi-transparent blue circle is overlaid on the right side of the slide, containing the text.

Status of Filling EC

- About a dozen expressions of interest received as of Oct 1.
- Pool of applications does not satisfy the main criteria for filling the EC: diverse across a variety of axes, representative of the broad COR and astrophysics community.
- We have decided to **not make** appointments until we can have a slate that meets our criteria - that is our definition of success.
- We are re-doubling our efforts to recruit more broadly over the next month.
- Need help from APAC and anyone dialed into the APAC meeting today to help nominate, recruit, suggest members for the COPAG EC.

https://cor.gsfc.nasa.gov/news/Call_for_Nominations_to_COPAG_EC.php

A vibrant space-themed background featuring a large blue arc on the left side. The background is filled with various celestial bodies: a bright yellow sun in the lower left, a blue and white Earth in the bottom right, a large blue planet in the center, a brown planet in the upper left, and a ringed planet (Saturn) in the middle left. The sky is a mix of blue, green, and yellow, with numerous white stars and a blue nebula in the upper right.

COPAG Activities Since June

- One science analysis groups (SAGs)
 - SAG11 - Cosmic Dawn **delayed due to COVID** - **Claudia Scarlata & Steven Finkelstein**
- COPAG EC discussing new SIGs, e.g.
 - Beyond Cosmic Dawn
 - The Galaxy Ecosystem: ISM/CGM
- Discussed a new SAG proposed to evaluate the Decadal recommendations for cross mission synergies
- Two science interest groups (SIGs)
 - UVSIG - **Jason Tumlinson**
 - IRSIG - Meredith MacGregor & Michael Zemcov (very active)
- One technology interest group (TIG) – **Sarah Tuttle**



Infrared Science Interest Group – Activity highlights

Co-Chairs: Meredith McGregor & Michael Zemcov

Our work has continued during the pandemic.

Recruited 3 new members Stacey Alberts, Peter Barry, and Kevin Stevenson for 3-year terms.

Revised Our E-presence: new website, email listserv, working on new tele-seminar platform.

- Working with new COR Chief Scientist Peter Kurczynski.
- Continuing to reach out to early career IR scientists.
- Expanded our mailing list (currently ~450 recipients) and made it simpler to subscribe.

New IRSIG Newsletter Published (Aug 2020)

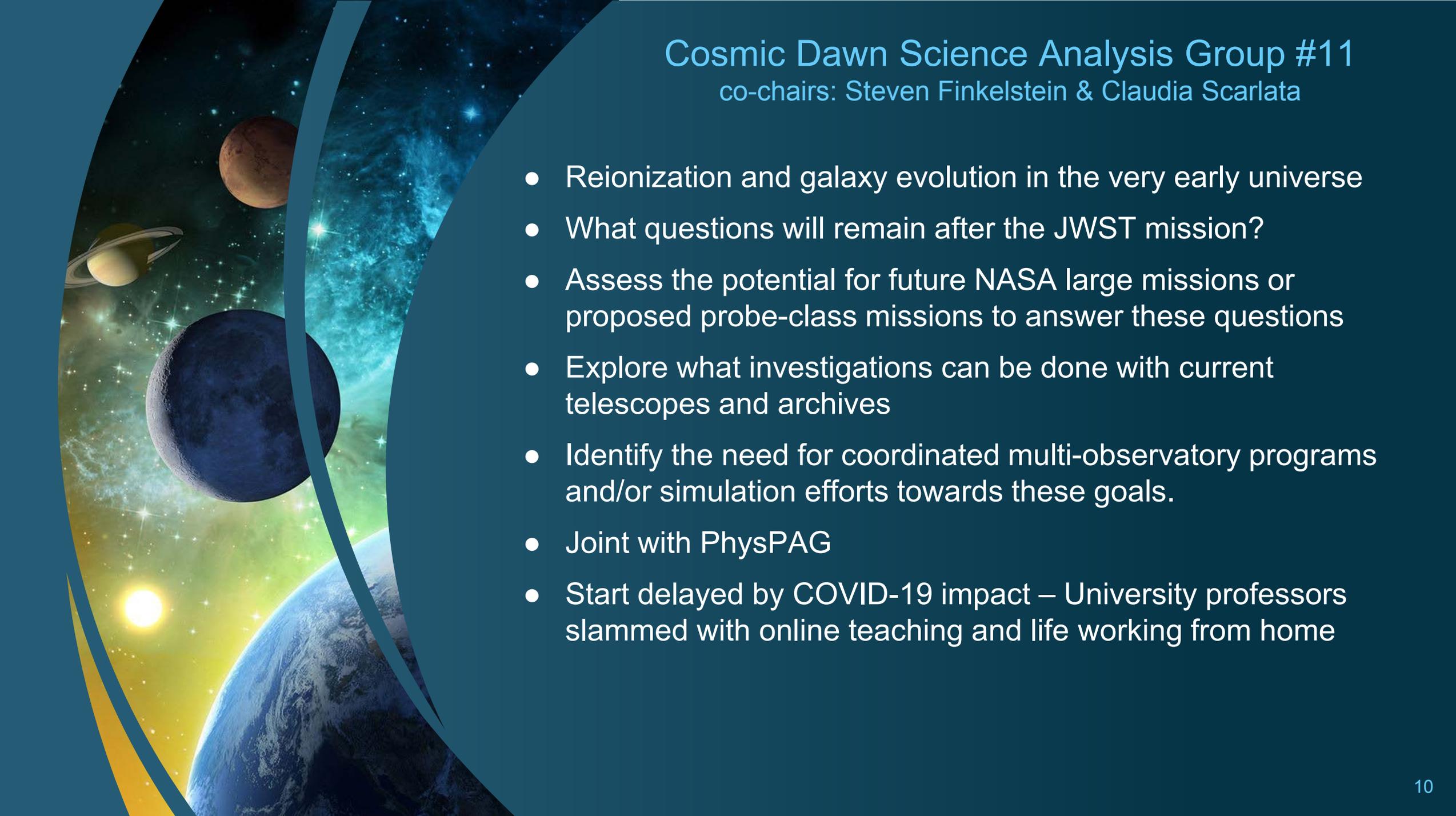
Continuing the Webinar Series

- Cadence of 1 talk/month since March.
- Typical attendance of 30 scientists from around the world.

Organizing Splinter Session at 237th American Astronomical Society Meeting

- We are very concerned about the long-term outlook for IR Astrophysics.
- We will strongly advocate for opportunities for IR science beyond JWST, particularly into the mid- and far-IR/sub-mm.

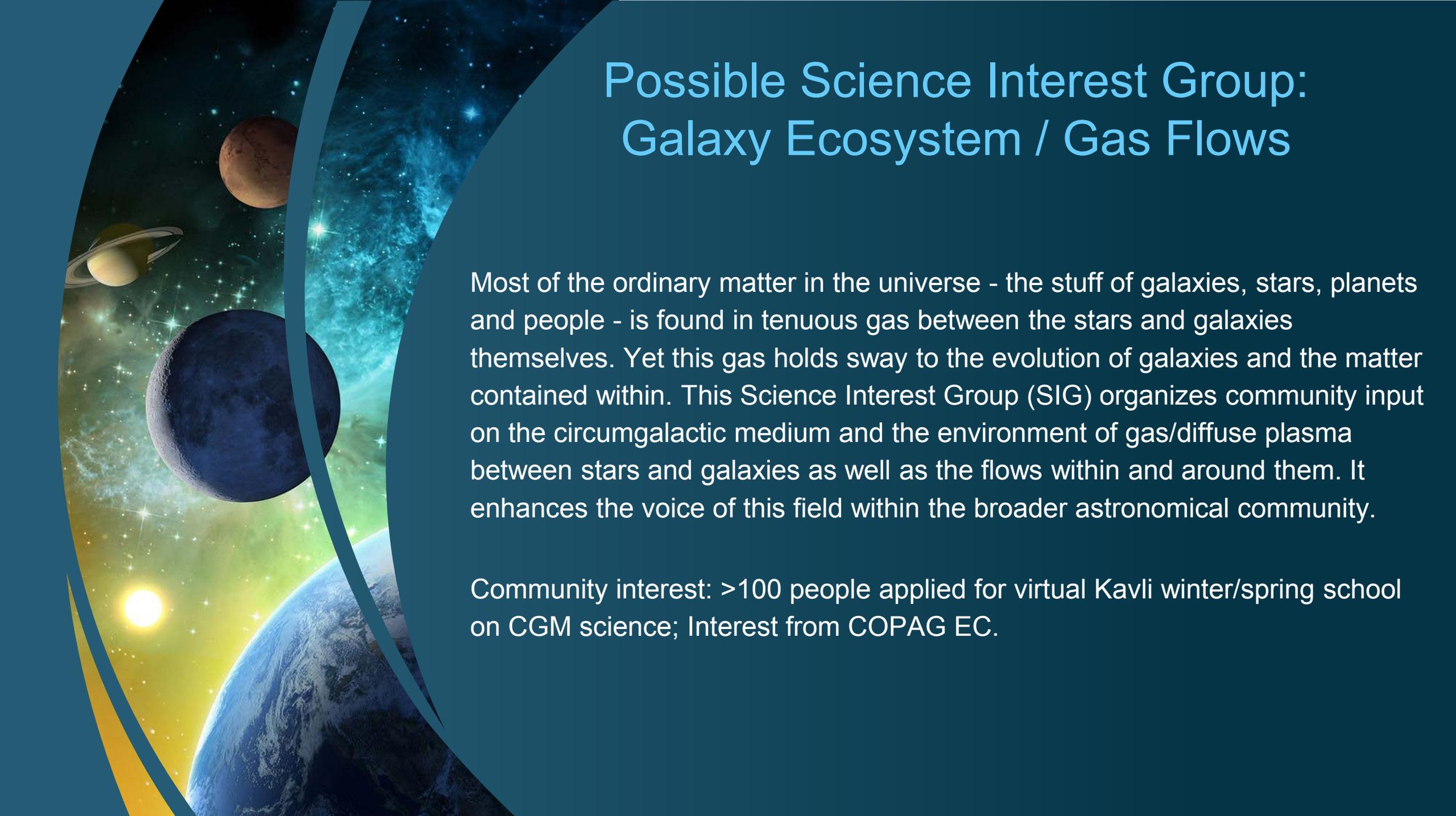
- What crucial science will drive IR missions in the next decade?
- How do we keep IR science at the forefront of the community's mind?
- How do we best engage the community?
- What will technologies under development now enable in the period after JWST?

The slide features a vibrant, multi-colored cosmic background. On the left, a bright yellow sun is partially visible, illuminating a blue and white Earth in the foreground. Above the Earth, a large, dark blue sphere (likely the Moon) is prominent. Further up, a ringed planet (Saturn) and a reddish planet (Mars) are visible against a backdrop of green and blue nebulae and star fields. The right side of the slide is a dark blue semi-circle containing white text and a list of bullet points.

Cosmic Dawn Science Analysis Group #11

co-chairs: Steven Finkelstein & Claudia Scarlata

- Reionization and galaxy evolution in the very early universe
- What questions will remain after the JWST mission?
- Assess the potential for future NASA large missions or proposed probe-class missions to answer these questions
- Explore what investigations can be done with current telescopes and archives
- Identify the need for coordinated multi-observatory programs and/or simulation efforts towards these goals.
- Joint with PhysPAG
- Start delayed by COVID-19 impact – University professors slammed with online teaching and life working from home



Possible Science Interest Group: Galaxy Ecosystem / Gas Flows

Most of the ordinary matter in the universe - the stuff of galaxies, stars, planets and people - is found in tenuous gas between the stars and galaxies themselves. Yet this gas holds sway to the evolution of galaxies and the matter contained within. This Science Interest Group (SIG) organizes community input on the circumgalactic medium and the environment of gas/diffuse plasma between stars and galaxies as well as the flows within and around them. It enhances the voice of this field within the broader astronomical community.

Community interest: >100 people applied for virtual Kavli winter/spring school on CGM science; Interest from COPAG EC.



Possible Science/Technology Interest Group: Beyond Cosmic Dawn

Long wavelength radio astronomy studies the universe at electromagnetic wavelengths roughly comparable to those of an FM radio. This relatively unexplored regime has discovery potential in multiple scientific disciplines: from meteors and the Earth's ionosphere, to heliophysics, to exoplanets, to the formation of stars in the early universe. This Science/Technology Interest Group will organize community input on the long-term objectives of low frequency radio astronomy and enhance the voice of this field within the broader astrophysics, heliophysics and earth science communities.

Community interest: 100 people on an existing email list and informal meeting schedule (Long Wavelength Science Consortium); multiple people have expressed interest for a potential leadership roles

AAS Meetings planned sessions*

Requested Sessions	Date (1/11-1/15)	Start Time (EST)	End Time (EST)	Estimated attendance	Organizer/Requestor	Description
NASA IR/Origins SIG	Tuesday	12	1:30	100	Meredith MacGregor	Status, future plans, highlights, and concerns of the Far-Infrared Science Interest Group; in cooperation with the Origins Space Telescope Community Study.
NASA COPAG	Monday	12	1:30	100	Peter	Recent activities and accomplishments of the Cosmic Origins Program Analysis Group (COPAG), reports on topics of interest to the community.
NASA Joint PAG	Friday (before AAS)	TBD	TBD		Jennifer Gregory, ExEP	Meeting will not be part of AAS official programming.
NASA Great Observatories SAG	Thursday	6:50	8:10	60	Peter	Great Observatories SAG: Status, future plans, concerns, working group reports, and final report planning for the Great Observatories Science Analysis Group.
NASA COPAG TIG	Tuesday	4:10	5:40	40	Sarah Tuttle	Status, future plans, highlights, and concerns of the NASA COPAG Technology Interest Group (TIG).
NASA UV-Vis SIG	Thursday	12	1:30	40	Jason Tumlinson	Status, future plans, highlights, and concerns of the Ultraviolet/Visible Science Interest Group
NASA Cosmic Dawn SAG	Thursday	12	1:30	60	Steve Finkelstein	Status, future plans, highlights, and concerns of the Far-Infrared Science Interest Group; in cooperation with the Origins Space Telescope Community Study.
NASA Cosmic Origins New Science	Friday	12	1:30	50	Peter	Come explore transformative science within the realm of the cosmic origins program.
Low Frequency Radio Astronomy for Cosmic Origins	Wednesday	12	1:30	60	Peter	Discuss space based applications of low frequency radio technology for cosmic origins science.

*Meeting times reserved; other session details are currently in planning

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Summary

- COPAG is committed to creating an inclusive and diverse community, aligned with NASA's core value of inclusion.
- In our EC, SIGs and SAGs, we seek to **create diverse & broad membership that is representative of the diverse community and seek to create a welcoming environment where all voices are heard.**
- COR Science Strategy Plan being developed; current activities to continue (bi-weekly EC meetings, SIG meetings)
- COPAG EC slate being reconstituted
- SAG11 on Cosmic Dawn delayed
- One new SIG, one new SIG/TIG being discussed with other SIGs being planned.
- **Request APAC's help in nominating members of the community for the EC, SIGs and SAGs.**