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Physics of the Cosmos

Science & Missions Brainstorming

AAS 247

PhysPAG Session



PhysCOS has begun preparing for Astro2030.

Most activities have been focused within each community.

- Future Innovations in Gamma Ray SAG (FIG SAG) *ongoing, started in 2024*
- Sessions at HEAD22
 - Future of High-Energy Astrophysics Software
 - Envisioning X-ray Astronomy Missions for the Future
 - Gamma-ray Astrophysics in the 2030s and Beyond
- Future of X-ray Astrophysics seminar (biweekly, recorded) *ongoing, started in 2025*
- Three X-ray SAGs *prep work in late 2025, reports planned for summer 2026*
 - Lynx 2030 SAG
 - High Angular Resolution X-ray Imager (Hi-ReX) SAG
 - Broad-band X-ray Observatory (BBX) SAG
- CMB Probe SAG *just begun, report planned for summer 2026*
- Astrophysics from the Moon and Beyond STIG *to begin in 2026*
- Technology Transfer STAG *to begin in 2026*

*Splinter Session tomorrow at
3:30 p.m. in room 131A*

NASA Astrophysics Division is seeking input.

This is our chance for community input to inform the process from the start.

- Beyond the Mid-Decadal session + panel discussion tomorrow will lay out the timeline
 - Industry-focused workshop in spring
 - Science community-focused workshop in early fall
- **Our brainstorming today will be used when planning those workshops!**
- It could also lead to other SAGs!

Science & Missions Discussion Topics

- What is the best mix of explorers / probes / flagships for PhysCOS science?
- Which outstanding questions can be addressed with explorers? What requires a probe? What requires a flagship?
- What can we do now to close science gaps for future missions?
- Are there science gaps for a future flagship that require an explorer / MOO / balloon flight to address?

Science & Missions Discussion Groups

- Cosmic Structure (Johannes Lange, Rebekah Hounsell, Tim Eifler)
- X-Ray: Rob Petre, Renee Ludlam
- Gamma Ray: Liz Hays, Chris Karwin
- GW: Igor Andreoni, Ann Hornschemeier
- CMB: Tom Essinger-Hileman, Brendan Crill