

NASA's ASTRA Initiative: Update and Community Q&A

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Ian Crossfield (ExoPAG EC Chair)
Dawn Gelino (NASA ExEP)
Jessica Gaskin (NASA ASTRA)



- Overview of NASA's ASTRA initiative
- ExoPAG plans for community engagement
- Community Q&A

Goals:

- identify large (> \$1 bn) *strategic* astrophysics mission concepts
- study those concepts at low fidelity to inform strategic decisions
- advance the concepts ahead of formal pre-Phase A activities

The three PAGs are charged to:

- “jointly report up to six community prioritized mission concepts to the NASA APD Director, for consideration for entrance into the ASTRA Initiative”
- “contribute to a joint presentation to follow the [September] Ad ASTRA Workshop ... [and] comment on all [ASTRA] mission concepts to be considered”

ASTRA Initiative @ NASA:



Candidate large strategic (>\$1B) mission concepts:

APD is encouraging traditional & non-traditional architectures, that may include:

- Single observatories that support generations (e.g., Hubble, Chandra, JWST, HWO)
- Constellations of suites of smaller missions, that span broad wavelength coverage, while collectively providing Flagship-scale science
- Space-based (and lunar) radio mission concepts

Selected mission concepts will be *funded for study* to:

- Concept Maturity Level 3 – defining science and mission architecture trade space, not a point design
- Maturation Readiness Level 3 – defining early industry involvement and feasibility
- Tall-Pole Technology Development – advancing technology to accelerate mission readiness

Strategic Mission Study Schedule

- March 2026 **Community Announcement Release.** The Astrophysics Division will release an announcement to the astronomy and astrophysics community to request feedback on large strategic (>\$1B) mission concepts to study.
- May 2026 **Workshop on Innovation for Astrophysics Missions.** A presentation of findings from this workshop will be provided to the community prior to the Community Science Workshop.
- June 2026 **248th AAS Meeting.** Presentation of details on specific study process will be given in a Special Session (presentation and Q&A).
- September 2026 **NASA Community Science (Ad ASTRA) Workshop.** A presentation summarizing findings will be provided to the community by the end of the year.
- December 2026 **Joint PAG Virtual Presentation.** A public presentation will be given by PAG representatives to provide community input to the NASA Astrophysics Division Director regarding which mission concepts to study*. ***Study process details will be provided at later date.**
- January 2027 **249th AAS Meeting.** Mission concept study selections will be announced by the NASA Astrophysics Division Director during the Town Hall.

- **PAGs & Program Offices** will provide:
 - Online community workshops/seminars (ExoPAG; starting today!)
 - Brainstorming & break-out sessions @ ExoPAG 34 (June 14th at AAS)
 - Online logistical support (whitepaper template, tracking spreadsheet, submission portal, etc....)
- **Community** will provide:
 - Community-formed mission concept working groups
 - Community-led white papers (submitted to ExoPAG, COPAG, PhysPAG)
 - Community concept presentations @ Ad ASTRA workshop (Sep 1-3)

- April: Communicate ASTRA plans to community
- May: Innovations workshop
- **June:**
 - a forum for early concepts to ‘cross-pollinate’ and be presented to other PAGs.
 - White papers for remaining mission concepts due to each (individual) PAG EC
 - Each PAG EC performs initial (open-minded) down-select of mission concepts
 - Summer AAS (ExoPAG in-person meeting on June 14)
 - First attempt at a (non-exhaustive) long list of concepts *across* PAGs

- July: Ongoing refinement of remaining mission concepts
- **August:**
 - Updated white papers due to Joint PAG leadership (chairs & deputy chairs)
 - Presentations to Joint PAG leadership
 - Joint PAG leadership downselects to top ~5-10 mission concepts
- **September:**
 - ASTRA workshop @ Pasadena; top ~5-10 concepts (“long list”) give presentations
 - PAG leadership finalizes top 4-6 mission concepts
- Oct-Nov: Further refinement of top mission concepts
- Dec: Joint PAG presentation of final set of mission concepts

- Template:
 - Science goals & motivation
 - Traceability matrix
 - Instrument(s) description
 - Overall mission plan
- Primary goal of white paper exercise:
 - To identify key strategic mission concepts
- ***But:***
 - Science-focused white papers are also welcome

- **Timeline:** monthly, starting today (next: early May & June)
- **Topics:**
 - **Decadal-focus topics:**
 - Overall NASA & ExoPAG decadal-prep plans
 - Mission-concept brainstorming session
 - Mission concept presentations (from community, to the community)
 - Contact us if you would like to present or participate
 - **Post-ASTRA, other potential topics:**
 - SAG/SIG Updates
 - XRP/ADAP Q&A
 - ExEP Science Gap List
 - HWO updates (from CSIT, SIG, etc; instrument concepts call)
 - Suggestions welcome!

ExoPAG 34:

- Sunday, June 14th in Pasadena (at Summer AAS)
- Planned Components:
 - Fewer programmatic talks
 - More community mission-concept presentations
 - Breakout sessions for community organization
- Goal: plant the seeds for **community white papers**
- News, updates, discussion



- What is our desired successful Decadal Survey outcome?
- What portfolio of mission studies should the Decadal panel consider?
- How can ground-based efforts complement NASA's focus on space?
- What mission(s) do we want contemporaneously with HWO?
- What do we want after HWO? (i.e., what can't HWO do?)

- What do *you* want from the ExoPAG?
- Community survey, open through April 17th
- Feedback welcome!



- Questions?
(for ExoPAG, ExEP, or HQ)

ASTRA Initiative @ NASA:



ExoPAG Community Survey



