Standing Committee for Science Priorities (CSP) update



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Chair of the IVOA Committee for the Science Priorities

Who we are?

The CSP brings science needs from across astronomy to IVOA discussions.

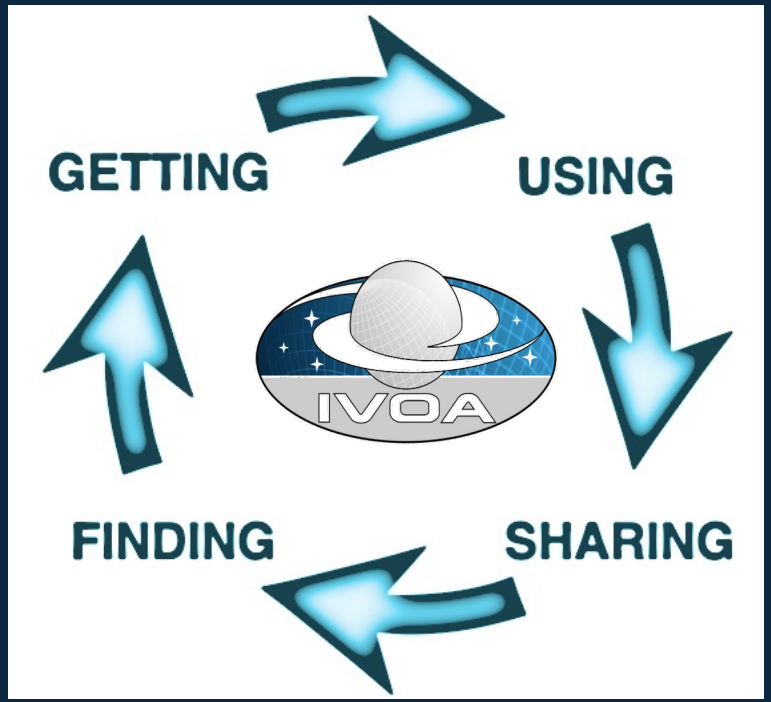


Francesca Civano (chair), Vandana Desai (vice-chair)

Members: M. Allen, R. Bhatawdekar, R. Bolton, C. Cui, R. D'Abrusco, T. Donaldson, G. Dubois-Felsmann, G. Fabbiano, M. Huynh, M. Lacy, M. Molinaro, A. Nebot, K.L. Polsterer, J. Racusin, E. Solano

Why the CSP exists?

- Keep the IVOA useful for science
- Identify emerging science needs
- Connect projects, archives, and researchers
- Help turn science use cases into interoperable capabilities



How the work flows

From science priorities to technical standards:



Ensure community engagement

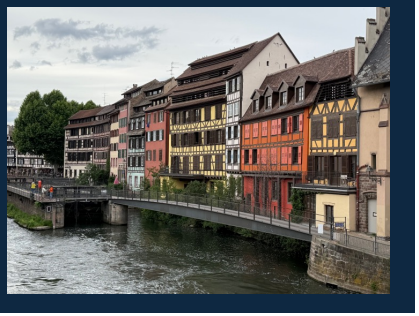
- Encourage engagement, adoption of standards and feedback after implementation by the international community.
- Support VO members via the TCG and the IVOA partners in developing tutorials, technical and scientific workshops and training.

What makes a good priority?

- Identify the current main science cases in the community
- Engage with large and small projects
- Ensure IVOA is building standards, data models and provide coordination and information to those groups building tools and services responding to these science cases
- Ensure right balance for these standards
  - Not too generic, not too specific
  - Implementable standards, while not too simplistic
  - Need for new standards, or updating existing standards
  - Addressing new data types, new areas in astronomy

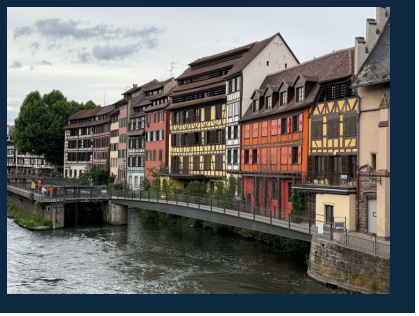
Last Interop: science platforms

- **Speakers**: Fornax, CANFAR, China-VO Science Platform and ESA Datalabs and the Euclid Data Space
- **Where do today's standards fall short?**
  - Access to large datasets and scalable compute
  - Authorization and data transfer between platforms
  - Interoperable platform workflows
- **Open question:** Would a dedicated forum help coordinate science-platform needs?



Last Interop: AI and IVOA

- **AI is changing how researchers find and use data**
- Examples discussed:
  - natural-language discovery and queries;
  - archive-ingestion workflows;
  - radio-imaging methods.
- **Question for CSP:** Which of these create shared interoperability requirements?
- **Outcome:** Continue AI conversations within CSP and a dedicated interest group. Plenary talk at next IVOA?



Last Interop: Spectral Data

- **Focus**
  - Scalable spectral services and formats for large spectral datasets.
  - Perspectives from SPHEREx and DESI, together with potential solutions from HATS.
- **Outcomes**
  - Encouraging initial response to extending the IVOA Spectrum Data Model to support collections of spectra (MultiSpectrum proposal).
  - Follow-up initiated with the IVOA Data Model WG to explore next steps toward a possible standard extension.



Looking ahead to Madrid 2027

- **Lesson from current missions and projects:**
  - Experiences with existing IVOA standards and services.
  - What works, what doesn’t, and what capabilities are missing.
  - Potential contributors: Rubin, Roman, SKA, Euclid (presented in 2025), planetary/solar missions.
- **Future-facing discussion**
  - Emerging data discovery, access, interoperability, and analysis needs.
  - Potential contributors: Ariel, COSI (presented in 2025), ELT, GMT, NEO Surveyor, PLATO, PRIMA, Schmidt Observatories, TMT, ULTRASAT, UVEX.
- **Important:** Pair science plenaries with relevant technical working-group sessions.

What science needs should CSP take on next?



- Where are current tools or standards limiting your work?
- What use case could help define a shared requirement?

Bring a concrete example to the CSP discussion.