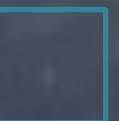




Standing Committee for Science Priorities (CSP) status

Interop meeting 20-24 May 2024

Ada Nebot and Francesca Civano for the CSP





The CSP of the IVOA

Who is the CSP?

- Members of the science community and active astronomy projects.

Members

- Members: Mark Allen, Christophe Arviset, Chenzhou Cui, Raffaele D'Abrusco, Vandana Desai, Gregory Dubois-Felsmann, Janet Evans, Pepi Fabbiano, Mark Lacy, Marco Molinaro, Kai Lars Polsterer, Enrique Solano, Rachana Bhatawdekar and Rosie Bolton
- Chairs: Ada Nebot (chair) & Francesca Civano (vice-chair)

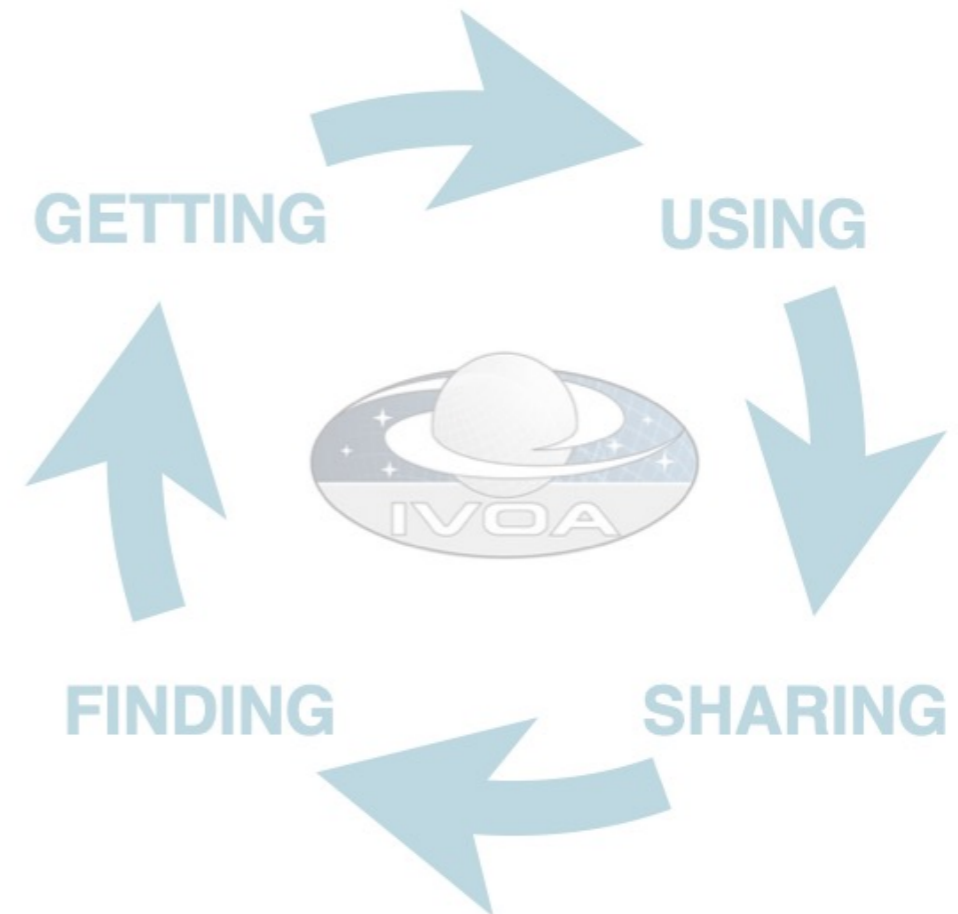
<http://ivoa.net/twiki/bin/view/IVOA/IvoaSciencePriorities>



Goal of the CSP

What is the goal of the CSP?

- Sustain the scientific impact of the VO as an interoperable ecosystem to support science
- Ensure continuous engagement of the international astronomical community



Astronomy community

- The astronomy community comprises missions that are active or under development, operating observatories, astronomical archives, and teams of astronomers performing research and disseminating data products to the community.



Activities of the CSP

Recommend scientific priorities and scientific requirements

- Driven by scientific use cases that are developed in cooperation with the scientific community.
- Will drive the development of new protocols which will be developed by the IVOA and coordinated by the TCG



Ensure community engagement

- Encourage engagement, adoption and feedback of implementations of the international astronomical community
- Support VO members in developing tutorials, technical and scientific workshops and scientific training materials.



□ CSP important considerations

- Identify the current main science cases in the community
- Engage with large and small projects
- Ensure IVOA is building standards, 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





Science Priority Areas

Pathways to Habitable Worlds

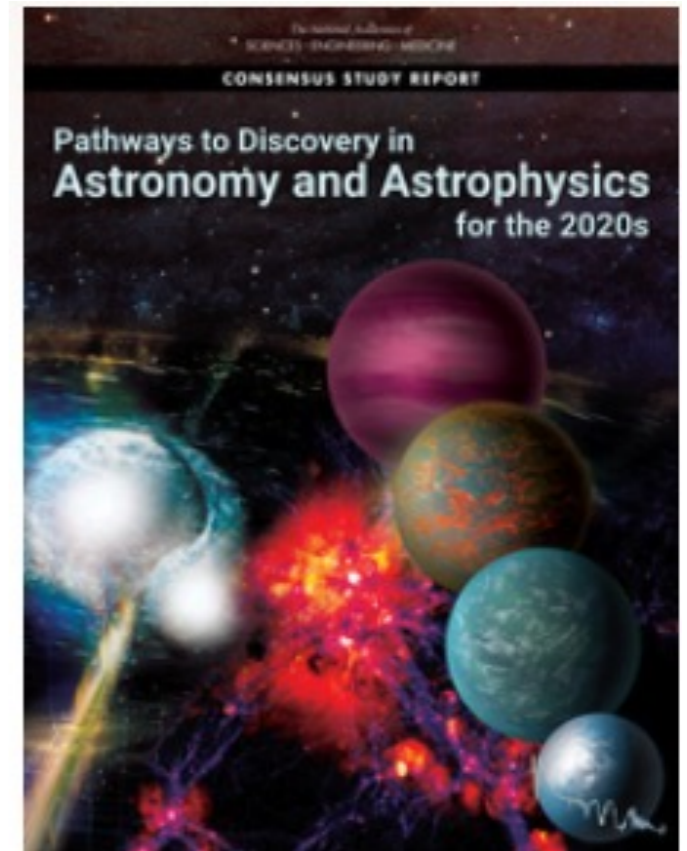
- JWST, DKIST
- Ground-based ELTs equipped with high-resolution spectroscopy, high-performance AO, high-contrast imaging
- Future: Habitable World Observatory

New Windows on the Dynamic Universe

- Rubin, Euclid and Roman ... ELT
- next gen radio observatories
- updates to current ground based GW facilities and LISA
- high energy neutrino observatories

Unveiling the drivers of galaxy growth

- JWST, Rubin, Roman, Euclid
- progress in numerical simulations
- ELT





Recent Accomplishments

- Driven by radio data
 - JIVE data distribution using the Obscore Radio extension
- Driven by Time Domain
 - VOEvent 2.0 moved to RFC phase
- Data Curation & Preservation:
 - Best practices note on DOIs in the making
 - 2 Notes on Data Origin and BibVO
- Engagement with the community
 - Continuous work on PyVO:
 - Eg. improve the discoverability of astronomical data through the Registry in an end user client such as PyVO
 - Support coordination activities to implement the MIVOT feature into astropy and PyVO Python packages
 - IAU in South Africa: One dedicated session and one “Hands-on session”





Looking forward

- Driven by radio data
 - Other Obscore Radio implementations?
- Driven by Time Domain
 - Ongoing discussion on transient alert distribution in the era of large surveys. Next steps?
 - Do we need an Obscore time series extension?
- Driven by High and Very Energy data (X-ray to gamma-rays)
 - Can Obscore expose this type of data well?
- Driven by spectral data
 - LineTAP – Looking forward to implementations!
- Driven by large data
 - Bulk download using TAP & Datalink?
 - Science Platforms connectivity & Execution Broker?
- Engagement with the community
 - Documentation hackathon on Wednesday





The Big Data Problem

- Transport
- Process
- Store
- Distribute



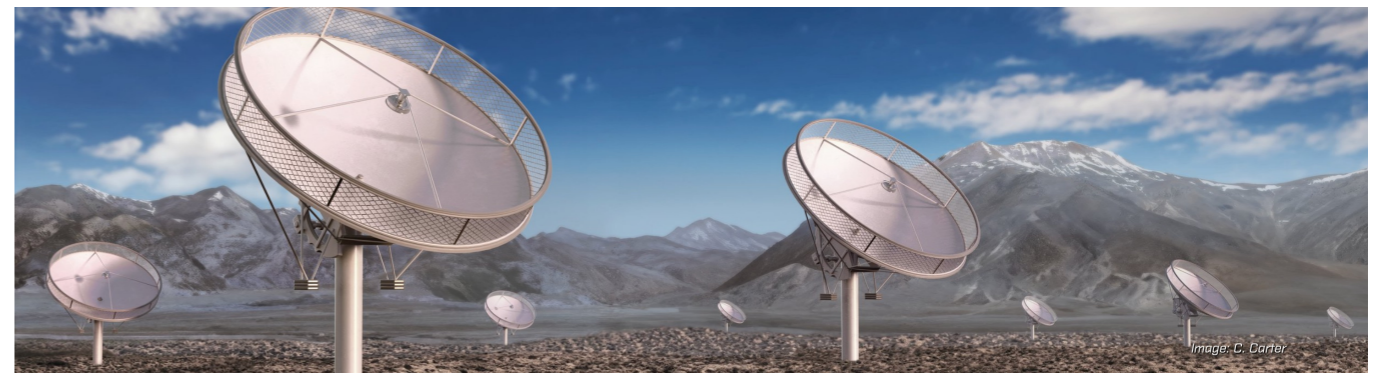
□ “Handling a deluge of big data”

Plenary session: Next Generation of radio Astronomy

Tuesday 21 May, 9:00-10:30

The DSA-2000

Gregory Dubois-Felsmann for IPAC



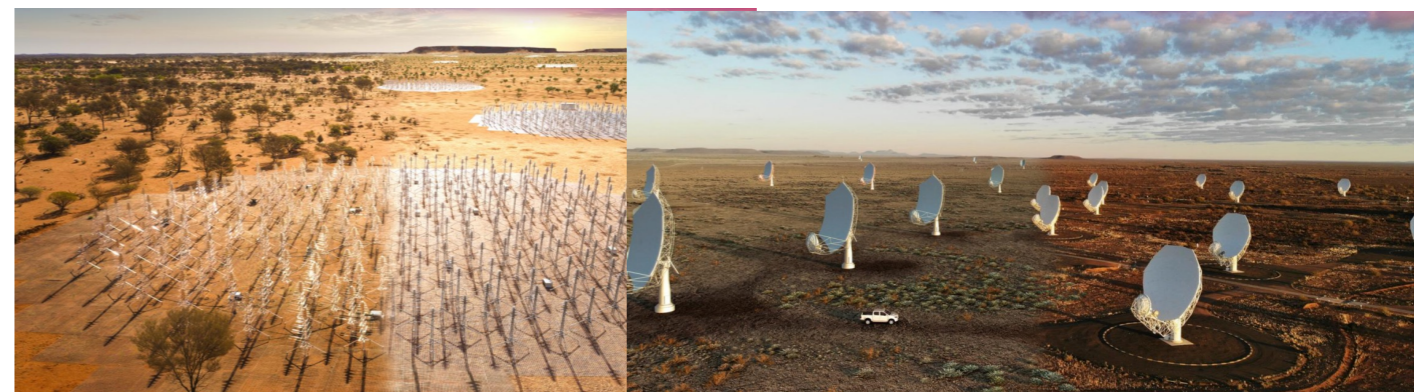
ASKAP

Minh Huynh for CSIRO



SKA - SrcNet

Jesus Salgado for SKAO



☐ “Handling a deluge of big data”

Plenary session: Next Generation of radio Astronomy

Tuesday 21 May, 9:00-10:30

Handling large amounts of data: transport, process, store and distribute to users

Panel discussion:

We have given the following 3 topics to the panelists

1. Bulk data access protocols
2. Science Platform standards: e.g. **execution broker**
3. Data Models: eg Provenance
4. Your questions here!

Technical discussion can be followed-up during the meeting
radio IG session (May 21st 16:00-17:30) and related sessions (see Apps and GWS
sessions)





Can only be achieved with community engagement

We need you!

Looking forward to a productive meeting!

