Standing Committee for Science Priorities (CSP) closing remarks

Interop meeting 08-12 May 2023

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CENTRE DE DONNÉES ASTRONOMIQUES DE STRASBOURG

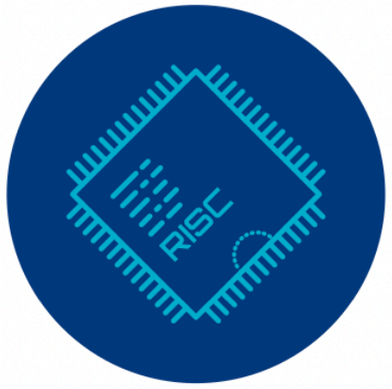
Observatoire astronomique de Strasbourg | ObAS

Outline

- Motivation
- Challenges
- Priorities
- News

Motivation

Astronet Roadmap



Computing; big data, HPC and data infrastructure

Origin and evolution of the Universe

Formation and evolution of galaxies

Formation and evolution of stars

Formation and evolution of planetary systems

The solar system and the conditions for life

Extreme Astrophysics

Astronomy and society

https://www.astronet-eu.org/wp-content/uploads/2023/05/Astronet_RoadMap2022-2035_Interactive.pdf

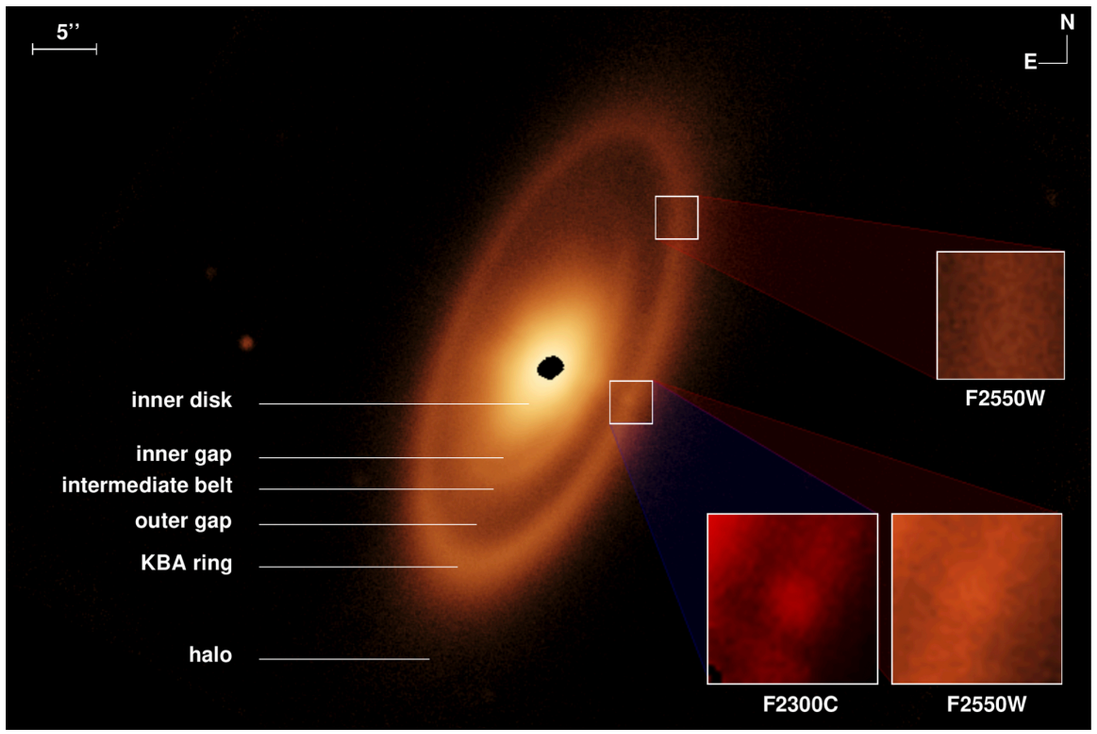
Motivation

Decadal Survey

"All priority science areas require multiwavelength observations with highly capable facilities"

- High contrast imaging
- High spatial resolution
- High spectral resolution
- High temporal resolution
- High cadence
- High performance computing
- High scalability

Debris Disk seen by JWST



https://arxiv.org/pdf/2305.03789.pdf

HST, Spitzer, Herschel, ALMA —> asteroid-analog structure

It is through the combination of data that we get a full picture of the physics in the Universe

Motivation

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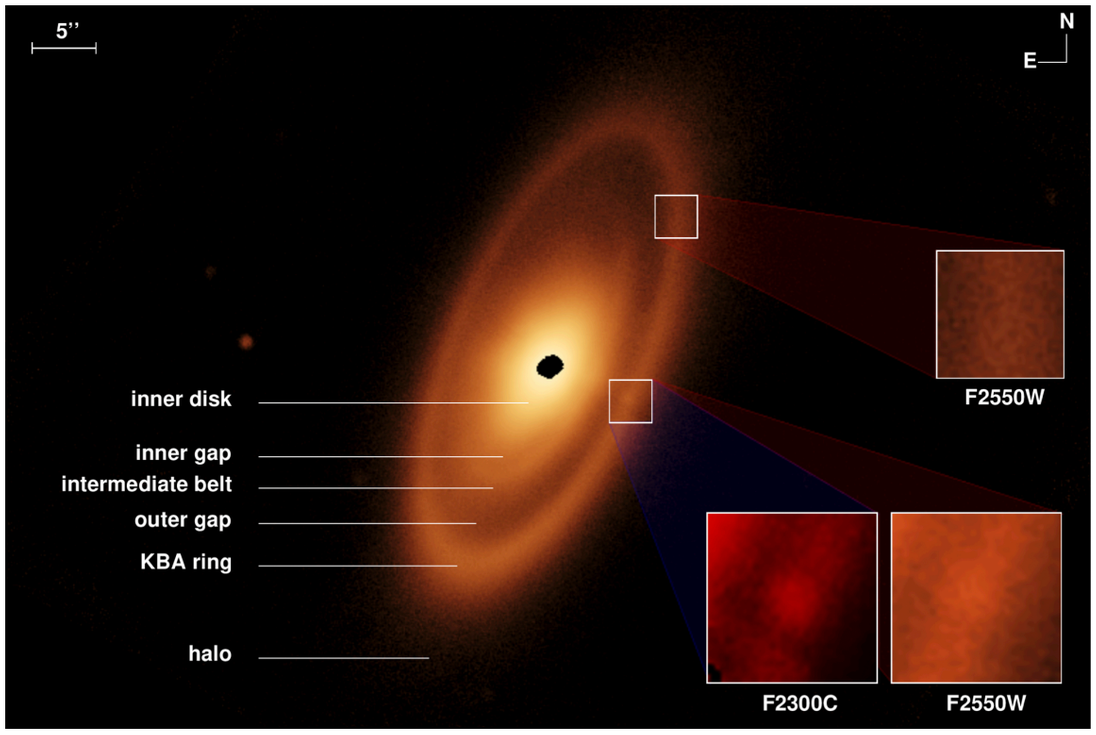
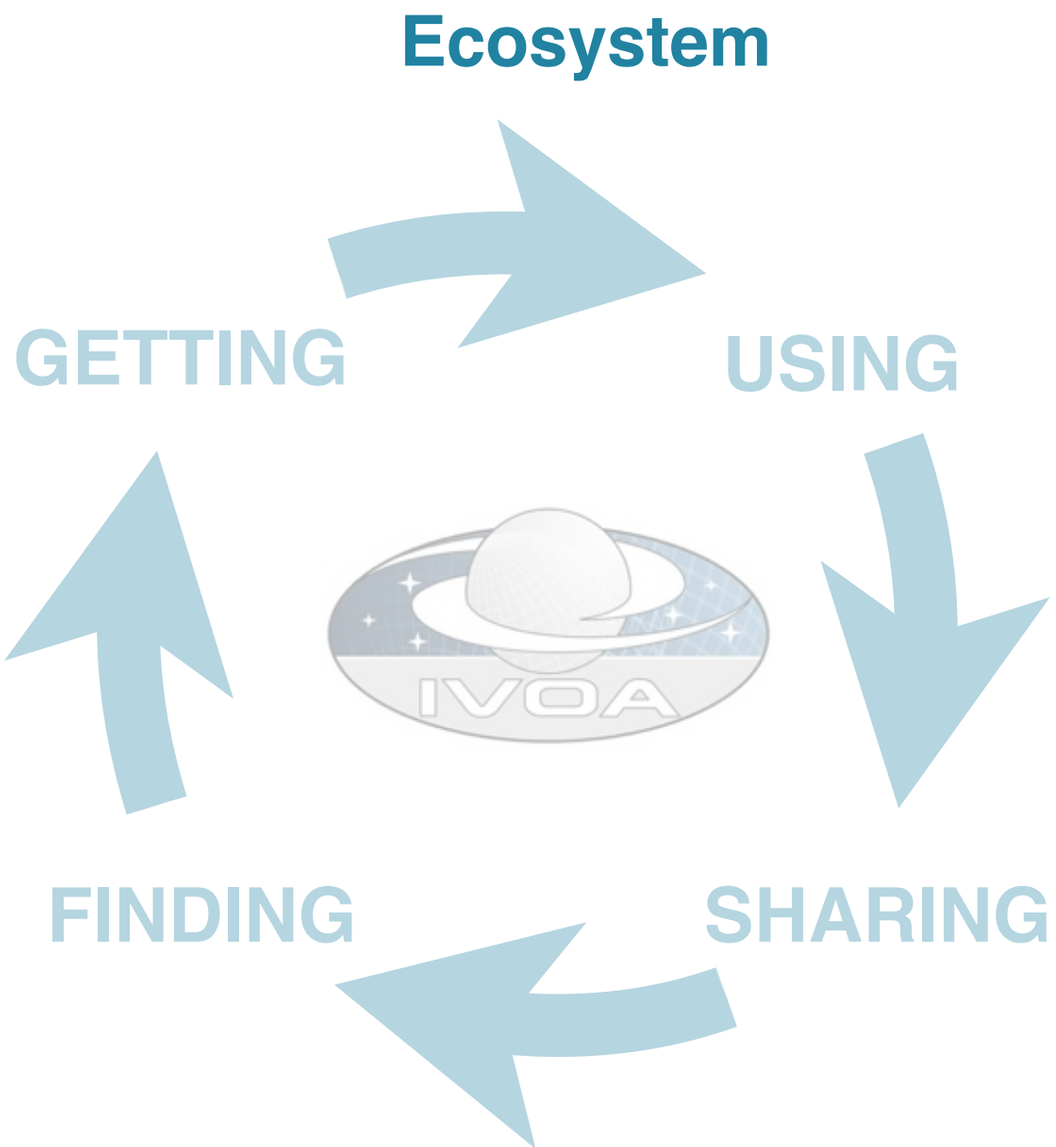


HST, Spitzer, Herschel, ALMA —> asteroid-analog structure

JWST / MIRI —> broad extending outward into the outer system + there is an intermediate belt, probably shepherded by an unseen planet

It is through the combination of data that we get a full picture of the physics in the Universe

Motivation



Building the technology and the standards

Challenges

- Engage with large and small projects
- Ensure IVOA is building standards, tools and services responding to the large variety of 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

Some identified priorities

- Science platforms
  - Interoperability - Can I use my code here as well? Metadata requirements to support discovery and execution
  - Scalability to users needs
  - Security - provide access to the right users
  - Cloud - technical implications of using commercial solutions

- Increasing community distributing mocked data (spectra, images, cubes, tables) and simulations.
  - Follow-up on this topic is much needed.

- It is not easy to register the services
  - Can we improve the situation towards the next interop?

- Community engagement
  - More contributors are always needed

- Evolve the newcomers sessions from technical to informative
  - Where do I look for information? Is there a summary somewhere?
  - Where are the mailing lists and how do I register?
  - Ok, what are the groups that I should be looking into?
  - We should keep it in mind as well for the new website

The CSP

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

- New member of the CSP !
- Welcome to Rachana Bhatawdekar :)

- https://wiki.ivoa.net/twiki/bin/view/IVOA/IvoaSciencePriorities
- Want to take part? csp@ivoa.net

The VO & the IVOA

"*Big data - Big code - Big community*" - Science Platforms session I

"*Implement things that make life easier*" - Science Platforms session II

THANKS !!

Keep up the good work!

See you in Tucson!