



State of the IVOA

May 2023 interoperability meeting, Bologna, Italy

Christophe Arviset, IVOA Chair

New IVOA chair and IVOA vice-chair

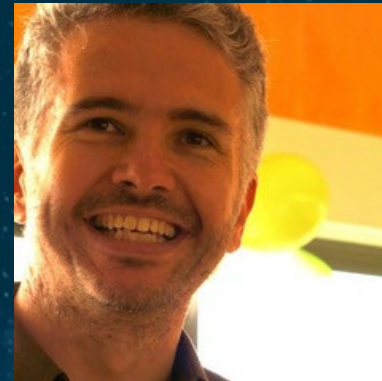


Term are usually 18 months, ending Oct 2022

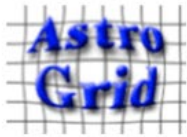
- Bruce Berriman outgoing IVOA Chair
- JJ Kavelaars outgoing IVOA vice-chair



IVOA Chair
Oct 2022 – Oct 2023



IVOA Vice-Chair
Oct 2022 – Oct 2023



IVOA created in 2002
22 member VO Projects

Recent new members (KazVO and SKAO)

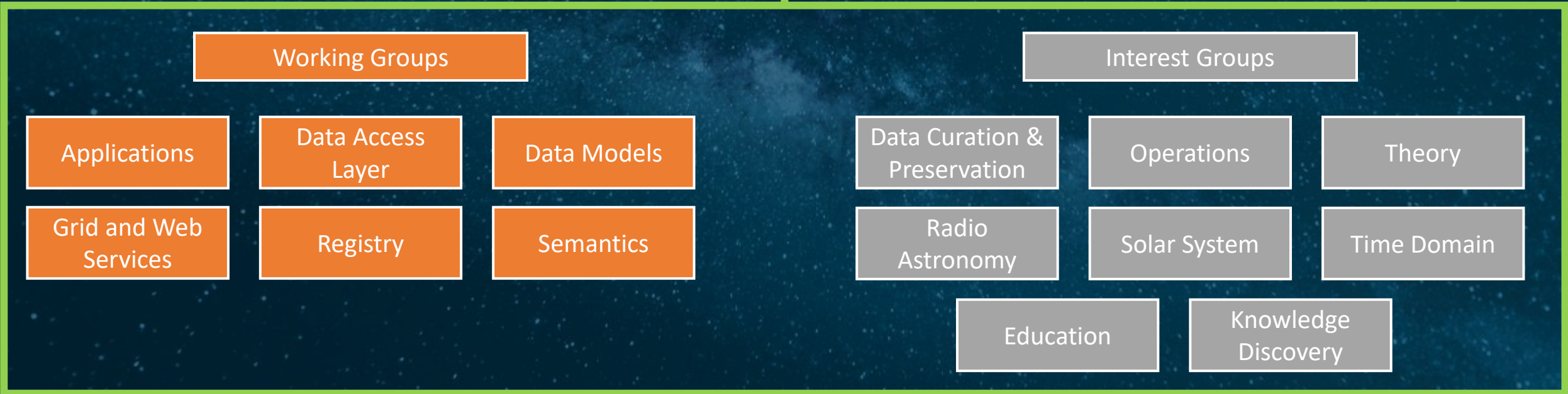
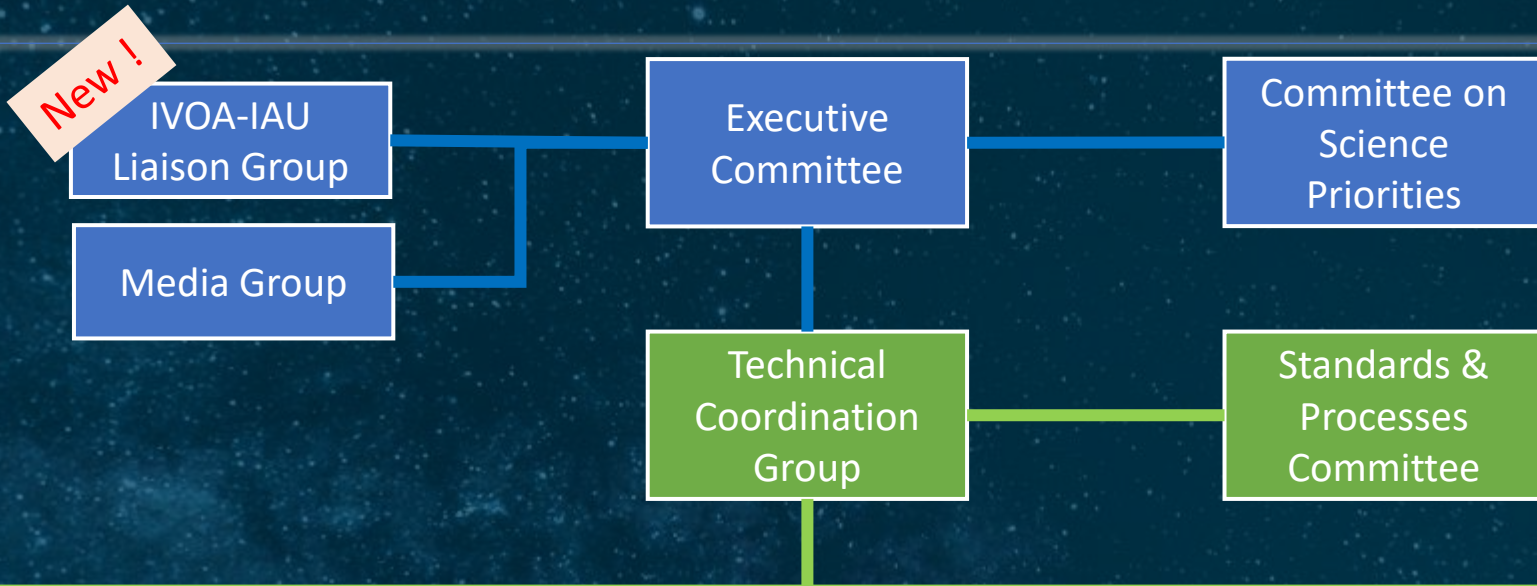
Remove Hungarian VO which has not been active for many year and not responsive

Various updated logos

2 interoperability meetings per year

- ~May, ~Oct/Nov after ADASS

IVOA Organization



Working Groups / Interest Groups – Terms renewal



	Chair	Vice-Chair
TCG	Janet Evans	Marco Molinaro
Working Groups		
Applications	Pierre Le Sidaner	Adrian Damian
Data Access Layer	James Dempsey	Gregory Mantelet
Data Model	Laurent Michel	Jesus Salgado
Grid and Web Services	Giuliano Taffoni	Dave Morris
Registry	Renaud Savalle	Tess Jaffe
Semantics	Markus Demleitner	Carlo Maria Zwoelf
Interest Groups		
Data Curation & Preservation	Gilles Landais	Gus Muench
Education	Hendrik Heintz	Shanshan Li
Knowledge Discovery	Raffaele D'Abrusco	Yihan Tao
Operations	Mark Taylor	Steve Groom
Radio Astronomy	Mark Lacy	Francois Bonnarel
Solar System	Anne Raugh	Baptiste Ceconi
Theory	Simon O'Toole	OPEN
Time Domain	Brent Miszalski	Mark Cresitello-Dittmar
IVOA Committees		
Exec	Christophe Arviset	Simon O'Toole
Standard and Processes	Patrick Dowler	
Science Priorities	Ada Nebot	Francesca Civano

WGs/IGs chair and vice-chair terms are 3 years, plus possibility of 1 year extension

Various terms come to an end

- Call for candidates over the last months
- Extendable
- No extension
- Cannot continue

If you're interested please contact Simon or me, or any Exec member representative

Decision to be taken by Exec this Wednesday and announced on Friday

IVOA Media Group – call for volunteers!



Resuming IVOA Newsletter

- Great way to communicate IVOA and Projects VO activities in general
- Great way for VO project to advertise their tools, services, workshops, activities.
- Last one from March 2022

Help with (new) IVOA website

- More regular content update

IVOA Social media presence, i.e. Twitter

- @IVOAastro
- This meeting #IVOA2023Bologna

The screenshot shows the IVOA website with a navigation bar (Home, Astronomers, Deployers, Members, About) and a main content area. The main content area features the IVOA logo, the title 'IVOA Newsletter', a description of the newsletter, the latest issue (025, March 2022), and a list of archives from 2008 to 2022. At the bottom, there are three columns of links for Astronomers, Deployers/Developers, and Members.

INTERNATIONAL VIRTUAL OBSERVATORY ALLIANCE


IVOA Newsletter


This biannual newsletter for astronomers is intended to highlight new capabilities of VO tools and technologies for doing astronomy research. It also lists recent papers, and upcoming events. Comments are of course welcome, and you may contact the editors directly via ivoa-news-editors@ivoa.net.


Latest Issue: 025, March 2022
Northern Fall Interoperability Meeting Overview,
Schools And Workshops,
VO Applications And Implementation Highlights,
Recent Papers About VO-Enabled Science
...and more

Archives:

- Issue 025, March 2022
- Issue 024, July 2021
- Issue 023, February 2021
- Issue 022, July 2020
- Issue 021, September 2019
- Issue 020, January 2019
- Issue 019, August 2018
- Issue 018, December 2017
- Issue 017, June 2017
- Issue 016, December 2016
- Issue 015, October 2015
- Issue 014, June 2015
- Issue 013, October 2014
- Issue 012, May 2014
- Issue 011, September 2013
- Issue 010, May 2013
- Issue 009, October 2012
- Issue 008, May 2012
- Issue 007, October 2011
- Issue 006, May 2011
- Issue 005, November 2010
- Issue 004, May 2010
- Issue 003, November 2009
- Issue 002, May 2009
- Issue 001, December 2008

For Astronomers
 Getting Started / Using the VO
VO Glossary / VO Applications
IVOA newsletter / VO for Students
& Public





For Deployers/Developers
 Intro to VO Concepts /
IVOA Standards / Guide to
Publishing in the VO / Technical
Glossary

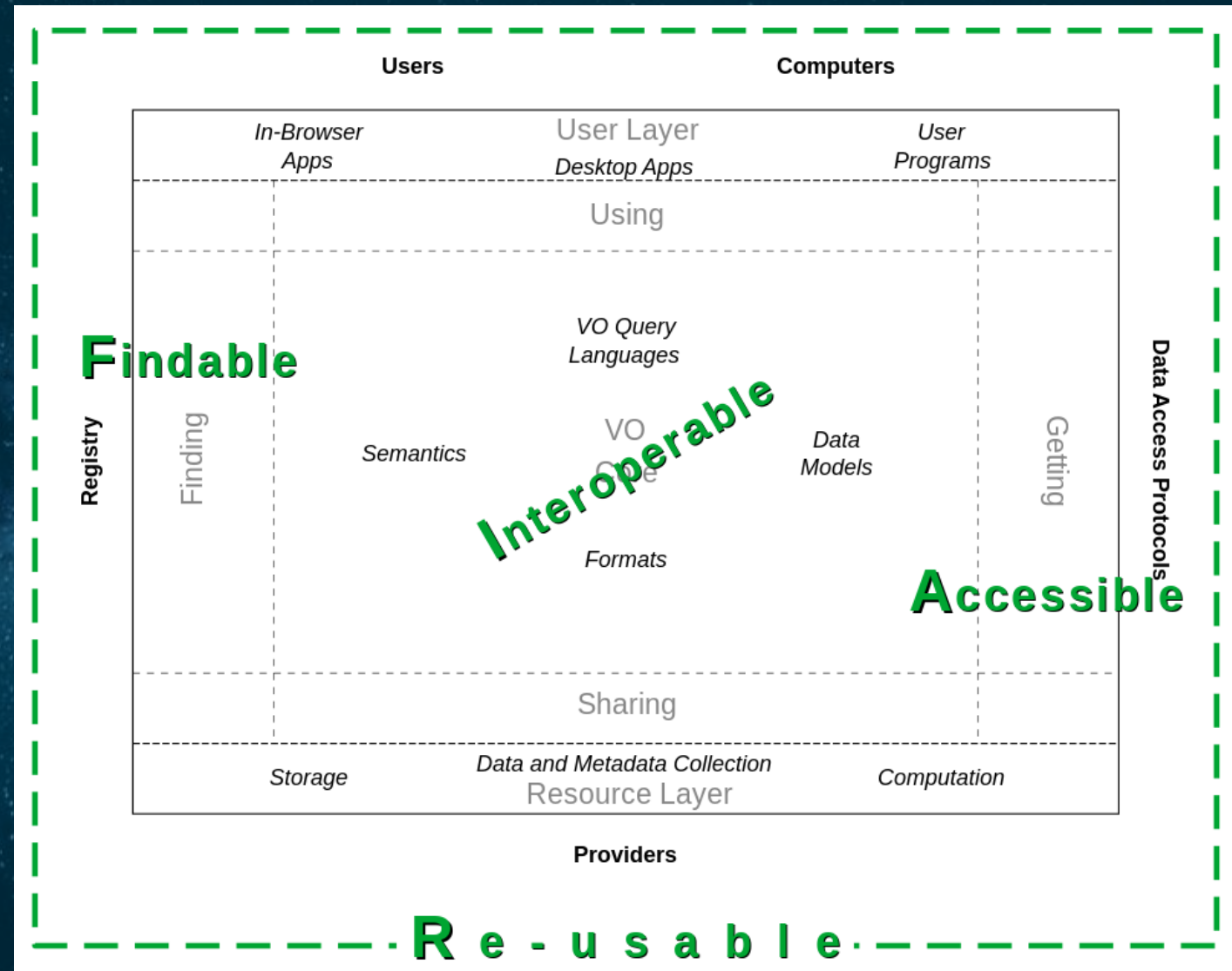
For Members
 IVOA Calendar / Working Groups/
Twiki / Documents in Progress /
Mailing Lists / IVOA Roadmap

IVOA Architecture – FAIR data management



VO has been FAIR from the beginning!

F indable	A ccessible	I nteroperable	R eusable
			



Recently approved IVOA Recommendations



[Semantics WG]

Vocabularies in the VO, v2.1

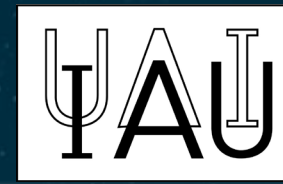
February 2023

[Data Models WG]

MIVOT - Model Instances in VOTables, v1.0

May 2023





Goal is to reinforce relationship between IVOA and IAU through establishing

- An Organizing Committee for the existing IAU Functional Working Group under Division B (Facilities, Technologies and Data Science) to give more visibility to the VO.
- An IVOA- IAU Liaison Committee to coordinate activities and promote cooperation with the IAU. Bruce Berriman has been appointed chair.

Submitted proposal for a Focus Session at the IAU General Assembly, Cape Town, Summer 2024: “Community Engagement and Open Science in the Virtual Observatory.” B. Berriman and P. Whitelock, SOC Co-Chairs.

- Decision will be made late May/June 2023.

IVOA web site new look and feel – in progress



Give a more modern look to the IVOA web site
No significant content change
Make information clearer and easier to access

The screenshot shows the current IVOA website. At the top is a navigation bar with links for Home, Astronomers, Deployers, Members, and About. Below this is the IVOA logo and a brief description of the Virtual Observatory (VO) vision. The main content area is divided into sections for Astronomers, Deployers/Developers, and Members, each with a list of links and a 'read more' button. A blue arrow points from this page towards the new design on the right.

INTERNATIONAL VIRTUAL OBSERVATORY ALLIANCE

Home Astronomers Deployers Members About

The Virtual Observatory (VO) is the vision that astronomical datasets and other resources should work as a seamless whole. Many projects and data centres worldwide are working towards this goal. The International Virtual Observatory Alliance (IVOA) is an organisation that debates and agrees the technical standards that are needed to make the VO possible. It also acts as a focus for VO aspirations, a framework for discussing and sharing VO ideas and technology, and body for promoting and publicising the VO.

To learn more about the IVOA as an organisation, read the "About" section.

To learn more about the VO from a user's point of view, including how to find VO tools and services, read the "Astronomers" section. There is also a page about the VO for students and the public.

To learn how to publish VO services, or write VO-compatible software, start by reading the "Deployers/Developers" section.

Internal IVOA discussions are publicly viewable in the "Members" section.

For Astronomers
Getting Started / Using the VO
VO Glossary / VO Applications
IVOA newsletter / VO for Students & Public

For Deployers/Developers
Intro to VO Concepts / IVOA Standards / Guide to Publishing in the VO / Technical Glossary

For Members
IVOA Calendar / Working Groups / Twiki / Documents in Progress / Mailing Lists / IVOA Roadmap

IVOA NEWS
March 2022 Issue of the IVOA Newsletter

UPCOMING MEETINGS
IVOA Northern Spring Interop, 7-12 May 2023 Bologna (Italy)

© IVOA.net. Contact the IVOA Webmaster

The screenshot shows the proposed new IVOA website. It features a dark header with the IVOA logo and a navigation menu. A large banner image of a nebula is at the top, with a white box containing a draft link: https://sdc-dev.astron.nl/ivoa_web. Below the banner is a grid of content blocks for IVOA News, Upcoming Meetings, and sections for Astronomers, Deployers/Developers, Members, and About IVOA, each with a list of links and a 'read more' button.

INTERNATIONAL VIRTUAL OBSERVATORY ALLIANCE

Draft link: https://sdc-dev.astron.nl/ivoa_web

IVOA NEWS
March 2022 Issue of the IVOA Newsletter

UPCOMING MEETINGS
IVOA Northern Fall Interop, 18-20 October 2022 (Virtual)

For Astronomers
Getting Started
Using the VO
VO Glossary
VO Applications
IVOA newsletter
VO for Students & Public

For Deployers/Developers
Intro to VO Concepts
IVOA Standards
Guide to Publishing in the VO
Technical Glossary

For Members
IVOA Calendar
Working Groups
Twiki
Documents in Progress
Mailing Lists
IVOA Roadmap

About IVOA
What is the VO?
What is the IVOA?
Who is involved?
Accomplishments, and future plans
How do I contact the IVOA?
How can I participate?

© IVOA.net

Welcome to the IVOA newcomer session!



[View on GitHub](#)

Welcome to the IVOA newcomer session!

We are happy that you join in to our introduction to the IVOA. In the following part of the newcomer's session we want to give you an overview about the VO standards, how they are connected, and how they are connected to the Working Groups. We hope this will make it easier for you to slip into IVOA jargon and to get into the work flow of the Interop meetings.

Part 1 of the tutorial

will introduce to some of the VO standards following a multimessenger use case from the user's perspective.

Part 2 of the tutorial

will show selected steps of the 1st part tutorial from the perspective of the dataprovider. The question here is: what does it need from the perspective of a dataprovider to enable the user experience of part 1 ?

The full material of the sessions is available in the github repository linked to this page here. You can access it by following the above link under the main header of this page. The main steps will be covered by this PDF

Again, we welcome you to the IVOA!

Monday 8/5

16:00-17:30

Room 216

Prepared by the
Education IG

VO Projects Updates



All-Sky Virtual Observatory News

ASVO is looking at ways to engage with different astronomy data groups in Australia, including gravitational waves and theory/simulations

Data Central/SkyMapper

- Redesigned data ingestion system to be deployed shortly
- Developing framework to make simulation data more accessible

Theoretical Astrophysical Observatory

- New funding has been secured by TAO PI Darren Croton, so new work will begin in the second half of the year



All-Sky Virtual Observatory News

MWA

- A lot of back-end system work has been done (e.g. a major storage system migration), with the hope that more user-facing systems will be prototyped later this year

CASDA

- Similar to MWA, a lot of back-end work has been done, with more user-facing system work planned for the later in the year.

Brazilian Virtual Observatory



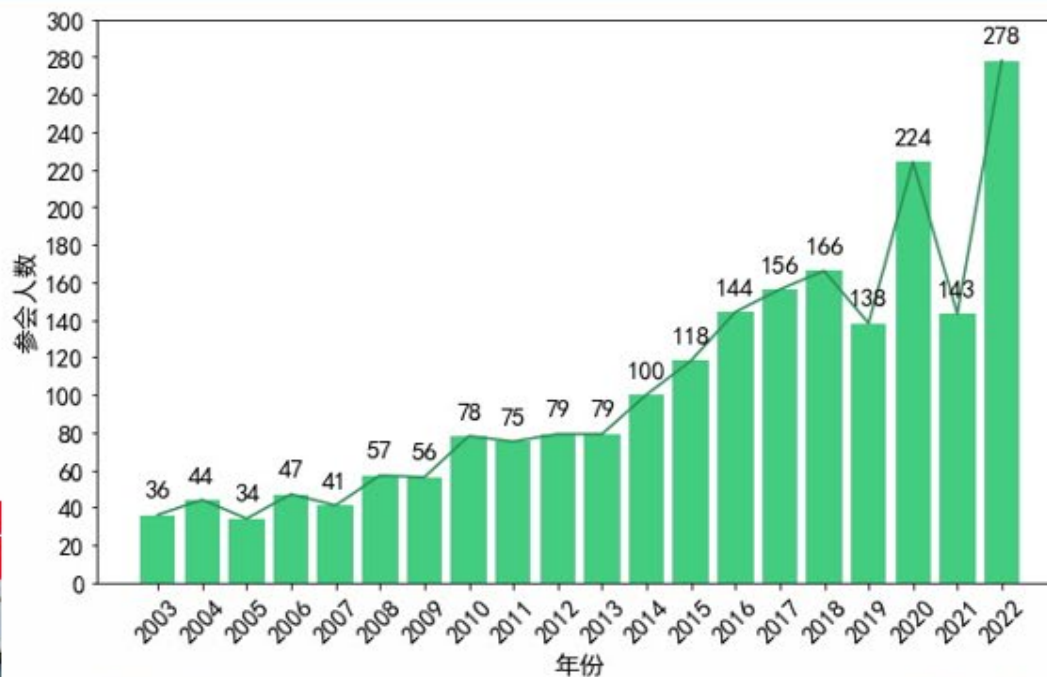
- Low-profile collaboration maintained by colleagues from the Brazilian National Institute for Space Research (INPE), State University of São Paulo (USP), with lots of help from friends from the University of California, Irvine (USA), Spanish VO and others.
- Looking for opportunities for data publishing, AI applications to VO Data.
- No funding at the moment.

Canadian Virtual Observatory Project - 2023

- IVOA standards development: DALI, DataLink, TAP, SSO
- implementation work
 - prototype drafts
 - science platform
 - SSO and GMS client
 - vault: move CANFAR VOSpace to use storage-inventory
 - youcat: TAP extensions for user-managed content
 - OpenCADDC: open-source code - was mainly libraries for devs
 - now: publish docker images that are ready to use!
- collaborations:
 - SKA SRCNet prototypes: storage-inventory, CAOM, SSO
 - LSST/Rubin: TAP
 - DRAO: improve CAOM for radio data

China-VO 2022 was held successfully

- The China-VO 2022 annual meeting was held from April 19 to April 22, 2023. The event, marking the 20th anniversary of the China-VO national meeting, was attended by more than 250 people.

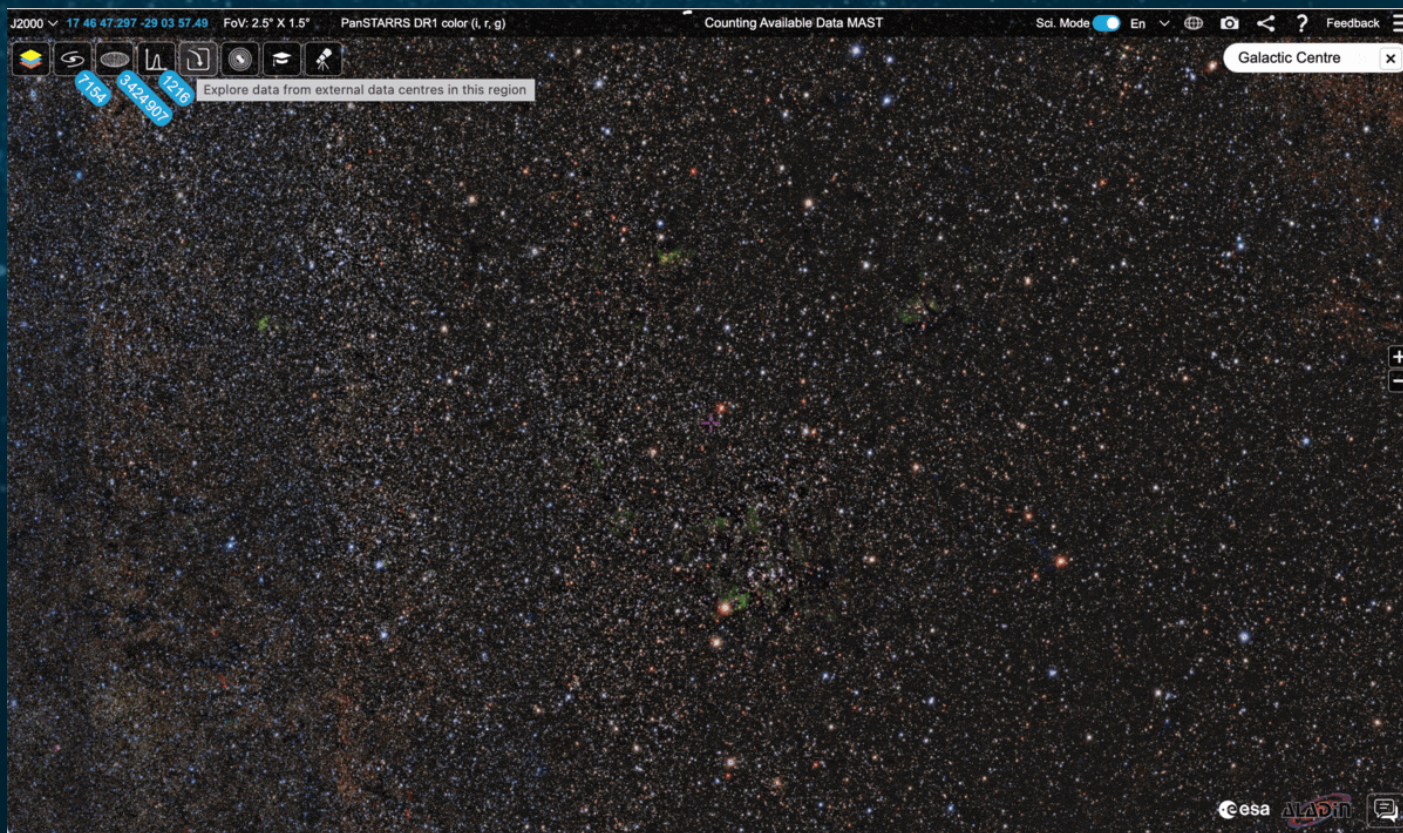


天文信息学与虚拟天文台2022年学术年会

中国广



ESASky v. 5.0 released on the 2nd of March 2023 featuring direct access to CDS's VizieR Catalogue Service (a long-standing request from users) and to all other TAP resources in the VO Registry.



- ESDC currently develops and maintains a TAP+ Common library used across all ESDC services
 - Compliant with TAP v1.1 and ADQL v2.1 (20210528) with continuous improvements: UDFs Catalogue v1.0 (20210310) and Data types
- Continuous evolution and improvement of ESDC TAP+ services and their compliance
- Increased the amount of metadata and data served through ESDC services
- Future: Gaia DR#4 , JUICE , Euclid (2024)

Euro-VO Registry 3.1 with many improvements

- Improved existing Euro-VO Registry validators
 - See impact on the charts
- REST API for Service Validations
- Add CDS's MOC validator
- Users A&A through standard ESA science archives and web services user accounts
- Improved documentation and tutorials
- RegTAP 1.1
- HTTPS
- Significant code refactoring to improve reliability and maintainability



EUROPEAN SPACE AGENCY ABOUT ESA

Euro-VO Registry

Astronomers | Data Publishers | VO Developers

OVERVIEW

To get your data into the VO ecosystem, you need to do two things:

1. Create a VO Resource for your data and
2. Make your data findable by registering your resource in a Registry like Euro-VO

Doing this will make your data accessible through your VO Resource and an extensive array of VO client applications.

To create a VO Resource, refer to the [VOA instructions](#), which details several ways of creating a VO Resource around your data. Once you have created the VO Resource, come back here to complete the VO integration of your data by validating that your VO Resource is behaving correctly before registering the Resource in the Euro-VO Registry.

VALIDATION OF VO RESOURCES

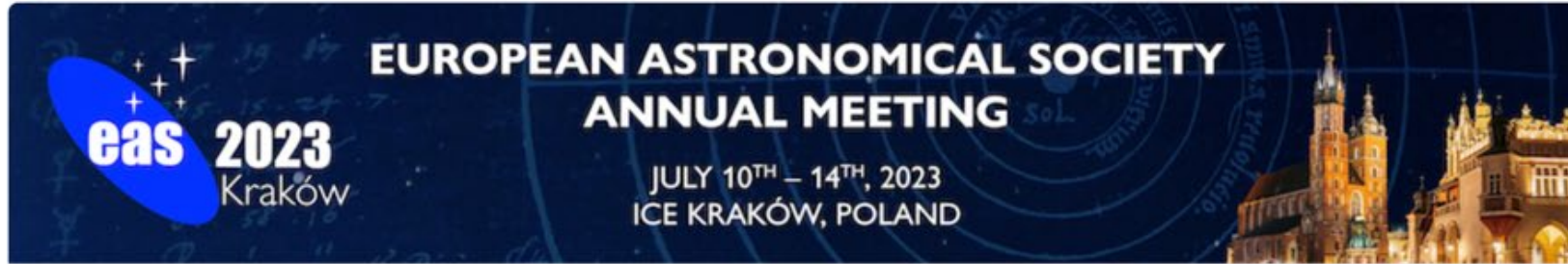
Once you have a VO Resource, it is good practice to make sure that it is behaving properly before registering it in the Euro-VO Registry. The Euro-VO Standalone Validation view and REST API exist to help you do just that.

STANDALONE VALIDATION OF A REGISTERED RESOURCE

In the standalone validation view, you first use the dropdown menu to select the appropriate service type of the resource you want to validate. Then write the URL of the resource and press "Add Job" and then "Run" and "OK". When the validation has finished, you can see which compliance score your resource has received and why. Clicking any of the rows in the bottom table will provide more

- EC funded **ESCAPE** Project – **concluded after 4 years** on 31 Jan 2023
 - Project Website: <https://projectescape.eu>
 - **VO-related Work Package: CEVO "Connecting ESFRI to the EOSC via VO"**.
 - Involved Euro-VO partners with large Astronomy, Astroparticle and Solar physics partners.
- **Results** of the project are available:
 - **CEVO wiki pages ([link](#))**:
 - VO-related Deliverable reports: e.g. On the use of IVOA standards, and connection of VO to EOSC.
 - Materials from events: **Technology forums, Data Provider forums, VO-schools.**
 - **ESCAPE media materials** – webinars, Videos, position paper and more...
 - **Python notebook tutorials** - <https://zenodo.org/record/7547627#.ZEIPRi9Bzz8>
 - Findable on ESCAPE Open Source Software Repository, and on EOSC.
 - **Software**: e.g. Aladin Lite v3.
- **ESCAPE continues** with an open collaboration agreement.
- **Proposals** have been made in the Horizon Europe calls in March, results expected ~July.
- **Euro-VO activities to be highlighted in the EAS conference, including discussion for the future.**





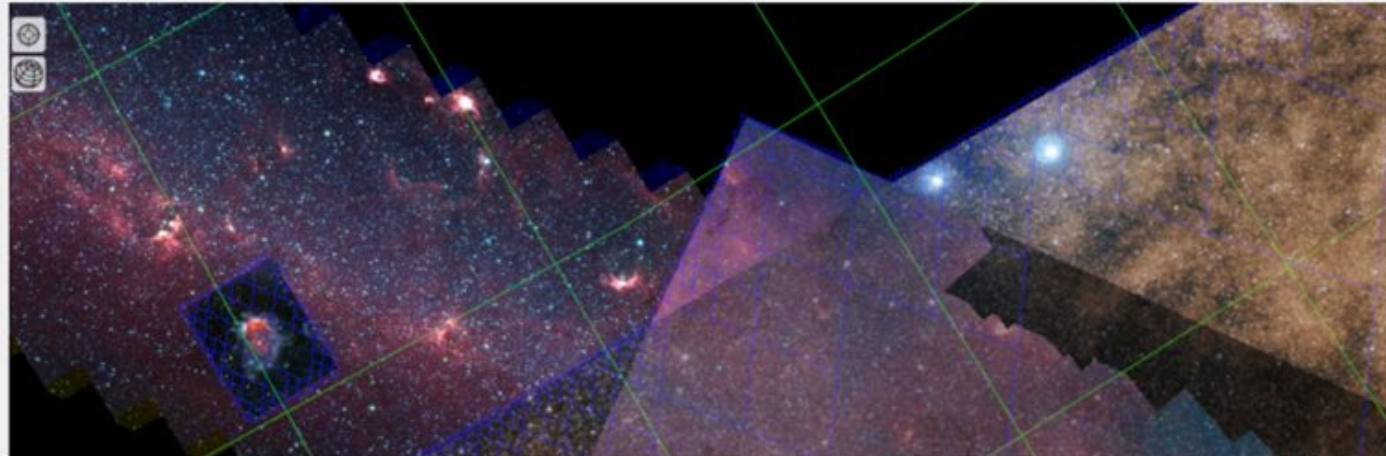
Scientific organisers

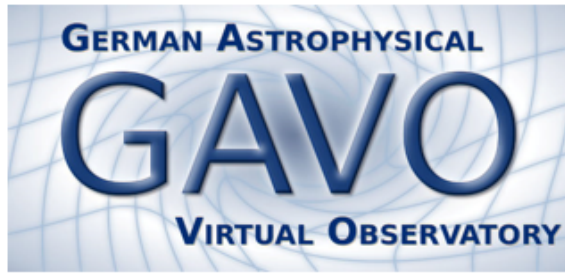
- Enrique Solano (chair) - CAB/INTA-CSIC
- Mark Allen (co-chair) - CDS
- Patricia Cruz (co-chair) - CAB/INTA-CSIC
- Ricardo Rizzo (co-chair) - ISDEFE
- Alba Aller - CAB/INTA-CSIC
- Stefania Amodeo - CDS
- Sébastien Derrière - CDS
- Maricruz Gálvez - CSIC
- Franck Le Petit - OBSPM
- Belen López Martí - CEU
- Pedro Mas Buitrago - CAB/INTA-CSIC
- Raquel Murillo Ojeda - CAB/INTA-CSIC
- Fabio Pasian - INAF
- Joachim Wambsganss - UNIHE

Special Session SS4

12 July 2023

Science with the Virtual Observatory: status, success cases, the future





Lots of cross-disciplinary activity on the national level ("NFDI", "Dig-UM"),

- e.g., on Instrument PIDs

Updated a lot of our tutorials, and preparing DocRegExt, which standardises current practices enabling




- <https://dc.g-vo.org/VOTT>

Data publishers: use our harvest trigger service (<https://dc.zah.uni-heidelberg.de/HT>) to speed up registry updates

Publishing suite DaCHS: now helps publishing HiPS-es, full ADQL 2.1 support

VOTT: Virtual Observatory Text Treasures

VOTT is a formatted list of educational/outreach texts on using the VO: use cases, tutorials, courses, and such. VOTT contains material for all settings, from pre-school to graduate. It is generated from the documents known to the VO Registry.

-  Material for school and outreach use ("general public").
-  More advanced material suitable for, say, advanced high school students or amateur astronomers.
-  material targeted at university students and researchers wanting to learn about the VO.

Sort by: Author Min. Content Level Date Checked



Baines, D.
Classifying the SEDs of Herbig Ae/Be stars

The overall goal of this tutorial is to become familiar with VOSpec. For that, we are going to build the Spectral Energy Distribution (SED) of two Herbig Ae/Be stars, compare them and categorise them as group 1 or group 2 Herbig Ae/Be stars.

[en]

Bot, C.
The HI shells of the Small Magellanic Cloud

This tutorial employs the Aladin VO client to explore neutral hydrogen shells around the SMC; it demonstrates using image servers, catalog servers, and advanced overplotting within Aladin.

[en]



GERMAN ASTROPHYSICAL
GAVO
VIRTUAL OBSERVATORY

- Help
- Service info
- Metadata
- Identifier
ivo://org.gavo.dc/m/q?
- Cite this
[Advice on citing this](#)
- Description
- Operators of publishing
- Keywords
[Virtual observatories](#)
- Creator
GAVO Data Center
- Created

Harvest Trigger Service


Operators of publishing registries can use this service to request a re-harvest of their registry by pasting in their registry's IVOID below. If you paste in the magic value `ivo://ivoa.net/rofr`, we will also fetch new registries from the RoFR.

You usually want to use this when you want to see the effect of some change in your registry on, say, TOPCAT. Note that you cannot start a full re-harvest of a registry from this interface. Contact the operators if you think you need that.

Registry's ivoId

The IVOA identifier of the registry that should be re-harvested. If you do not know yours, see <http://rofr.ivoa.net> and look for yourself.

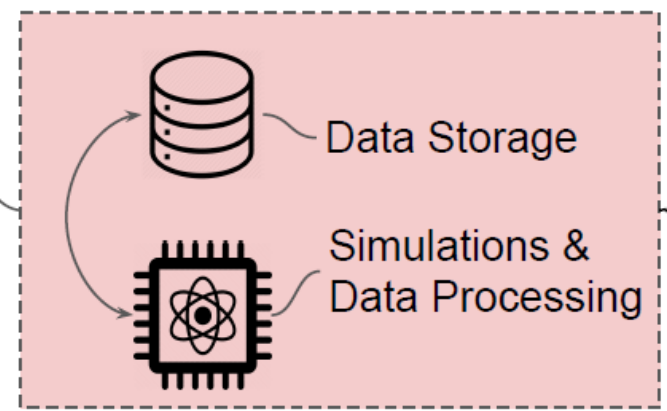
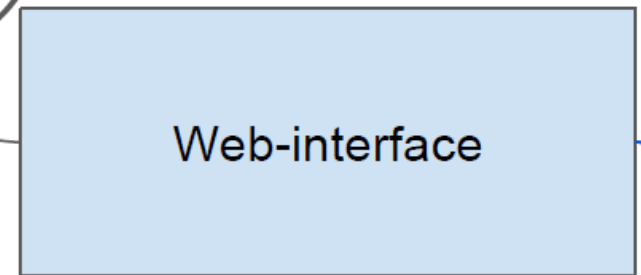
Output format

[Result link] 

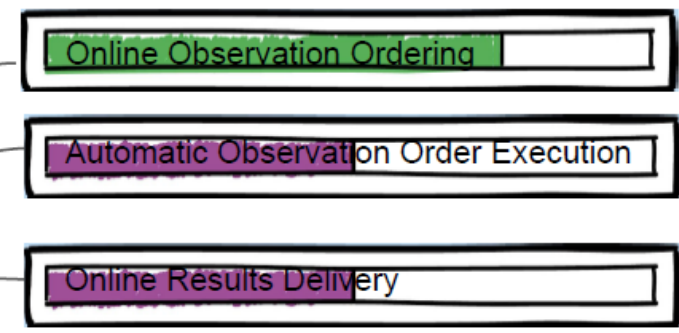
Please report errors and problems to the [site operators](#). Thanks.



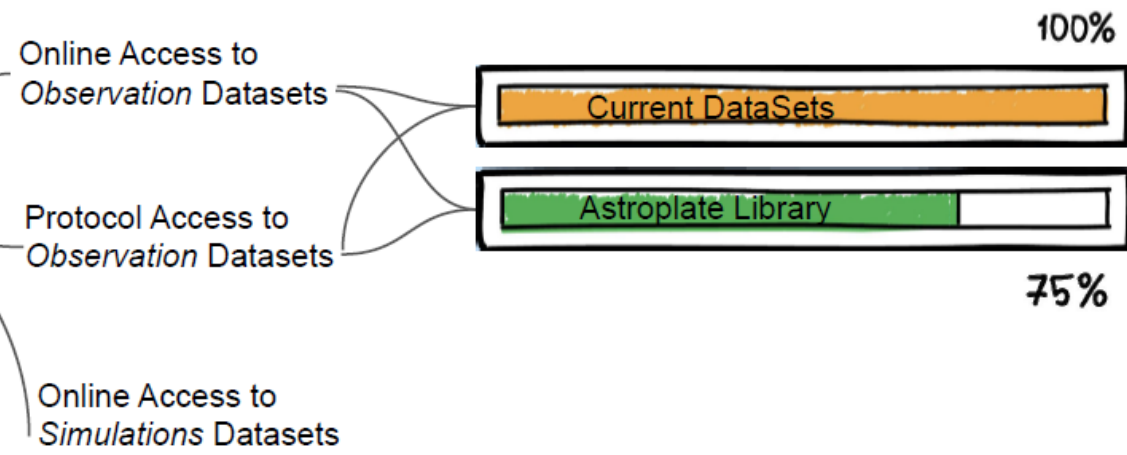
Current status of Kazakhstani Virtual Observatory: building the infrastructure and its services



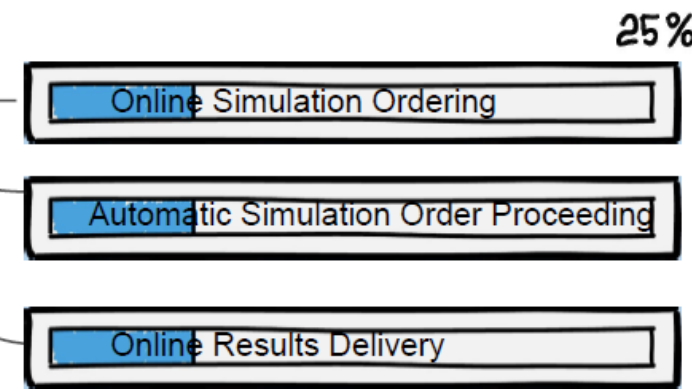
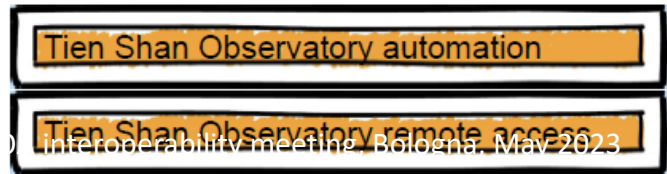
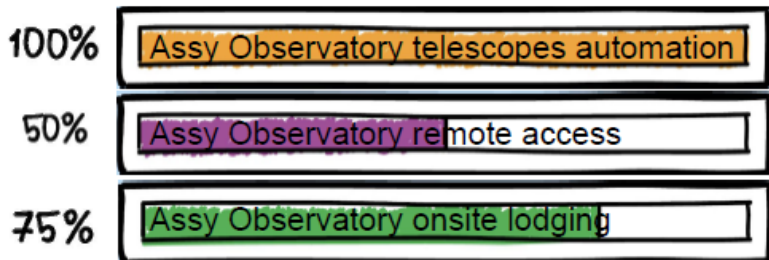
Observation Service



Data Service



Computational Service



interoperability meeting, Bologna, May 2023

French VO annual meeting & semi-hackathon meeting

- ~40 - 50 participants
- Nice discussions

PADC

Many advances concerning Planetology

- link between IVOA standards & OGC (Earth Science)
Implementation of conversion tools between HiPS and WMS (by CNES)
→ fill the gap between IVOA / Astro & Earth Science

Validator

Upgrade of the validator for VO services (support TAP via Taplint, EPN-TAP)

Data

- Collaboration with NASA PDS/PPI to publish data collections in the VO

Semantics:

- Observation facility vocabulary : First prototype



CDS

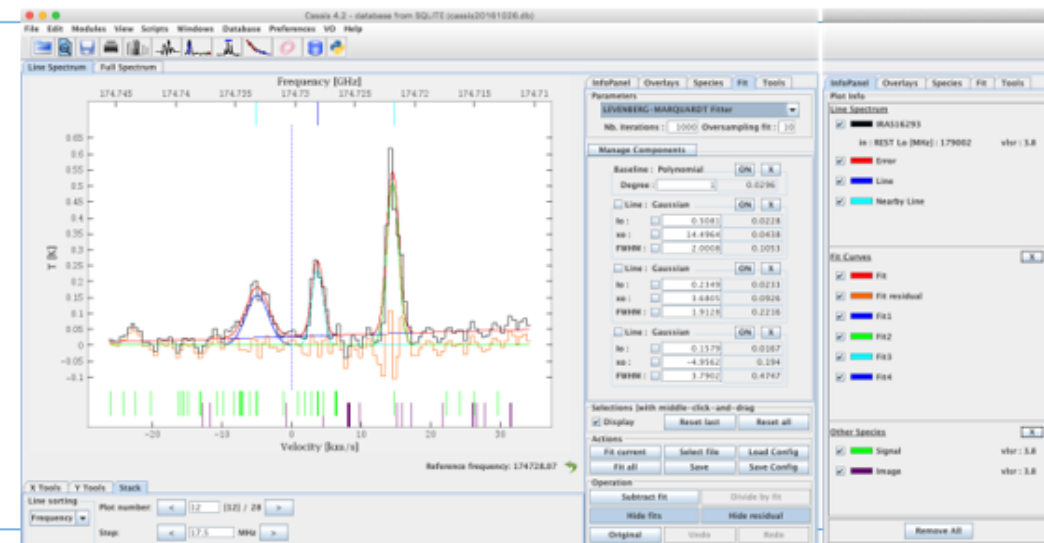
- CDS has a new status as a "Thematic Reference Centre" in the French Open Science initiative called Recherche Data Gouv
- [HiPS](#) data sets generated by CDS are now individually registered in the IVOA registry
- [Aladin Lite v3](#) available.
Migration from v2 recommended !



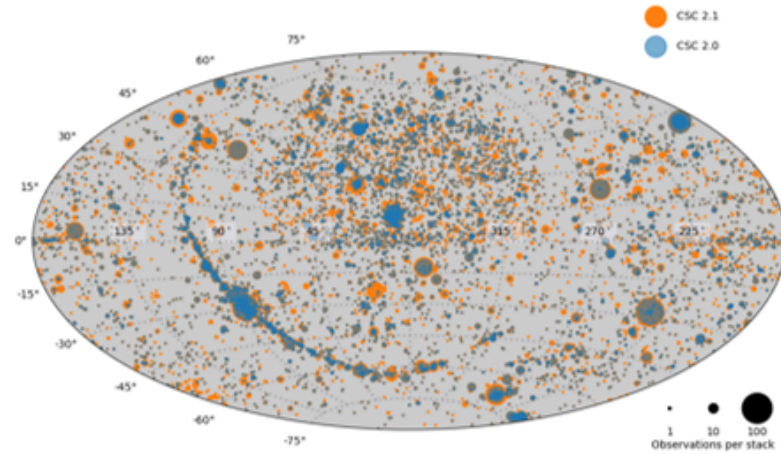
CASSIS

Version 6.4 of CASSIS available

- Better integration of EPN-TAP
- Tests of [LineTAP](#)



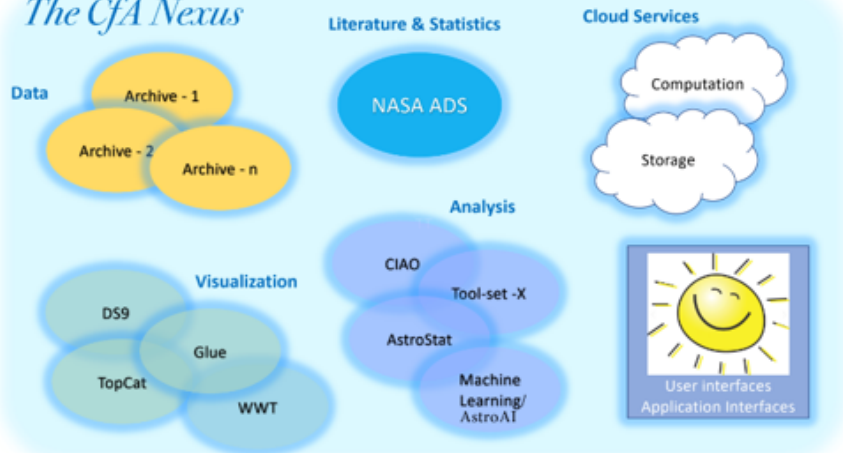
News from the Center for Astrophysics | Harvard & Smithsonian - USVAO



The Chandra Source Catalog Release 2.1

- Includes HRC and ACIS imaging/spectroscopy data up to 2021
- Includes DOIs for data products
- Processing of ~87 % of stacked observations available to users
- Full release summer 2023

The CfA Nexus



The CfA Nexus

- The Harvard-Smithsonian CfA is conducting a preliminary investigation of the Rubin Science Platform as a way to expose and interconnect the multi-wavelength CfA archives and provide science services to the internal and external community
- The CfA is also investigating the effort needed to make some institution-wide data sets IVOA compliant

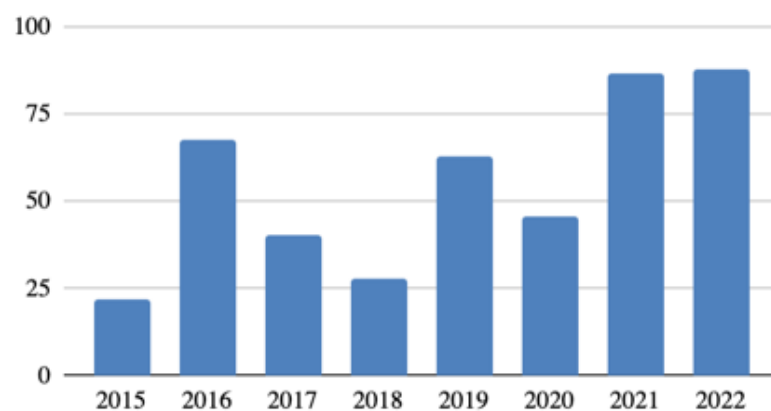


NASA's Astronomical Virtual Observatories

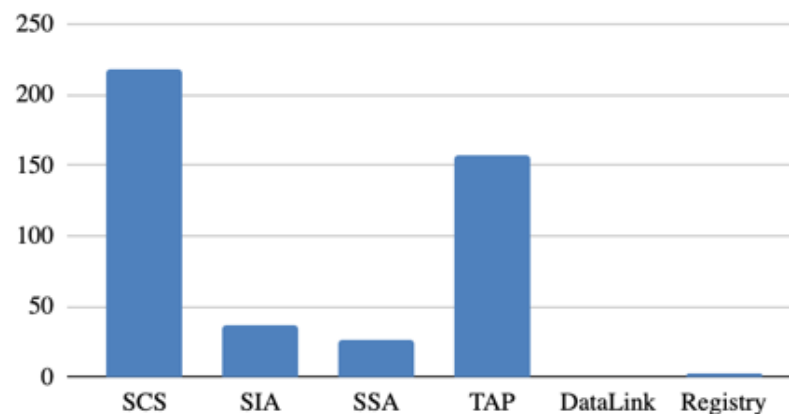
NAVO highlights for IVOA Interop May 2023

- IRSA SIAv2 and SSA now based on CAOM/ObsCore backend with 31 million data products in 114 unique data collections;
- MAST transitioning to Linux+Python+UWS stack for cone, SIA, and TAP;
- IRSA and HEASARC expect to publish ObsTAP services this year;
- NAVO Registry (MAST) now with ADQL 2.1;
- IRSA is modernizing the way it serves enhanced contributed data with a stack based on ObsCore, service descriptors, HiPS, and MOCs, to be released in May;
- NED working on new TAP service for photometry and redshifts;
- AAS Winter 2023 workshop on PyVO, 35 attendees

NAVO totals by calendar year (M)



NAVO totals by service (M)





abs:"Virtual Observatory" year:2022

▼ AUTHORS

- > Solano, E 6
- > Rodrigo, C 4
- > Demleitner, M 3
- > Zhang, Y 3
- > Du, X 2

I Escuela Latinoamericana de Observatorio Virtual

156 registered participants

14 countries:

Argentina, Bolivia, Brazil, Colombia, Costa Rica, Chile, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Perú, Uruguay, Venezuela.

The largest VO school ever

A&A 666, A147 (2022)
<https://doi.org/10.1051/0004-6361/202243895>
© P. Mas-Buitrago et al. 2022



J-PLUS: Discovery and characterisation of ultracool dwarfs using Virtual Observatory tools

II. Second data release and machine learning methodology

P. Mas-Buitrago^{1,2}, E. Solano^{1,2}, A. González-Marcos³, C. Rodrigo^{1,2}, E. L. Martín^{4,5,6}, J. A. Caballero¹, F. Jiménez-Esteban^{1,2}, P. Cruz^{1,2}, A. Ederoclite⁷, J. Ordieres-Meré⁸, A. Bello-García⁹, R. A. Dupke^{10,11,12},





VObs.it



Recognised by INAF as a multi-institution "programme" (long-term project), to support Italian participation in IVOA and Euro-VO, included in INAF Medium-Term (3 yrs) Plan. INAF funding for development of standards and provision of services has been fairly constant over time (~ 3 FTE/year, 1/2 development + 1/2 service). Data centres have their own separate budget.

- Vice-Chair of TCG
- Chair of GWS WG (expiring)
- IVOA documents coordination
- Activity in IVOA within WGs and IGs
- Support to the IVOA Newsletter
- Support to remote Interops + this Interop

VObs.it supports (on INAF-provided servers and resources) the following IVOA services:

- web pages (www.ivoa.net)
- wiki (wiki.ivoa.net)
- mail and lists (mail.ivoa.net)
- documents repository (www.ivoa.net/documents)
- vocabulary maintenance (www.ivoa.net/rdf)

It also manages the

- registration of IVOA domains (ivoa.net , ivoa.info)
- the related DNS service
- resolving the other IVOA provided services:
 - rofr.ivoa.net (currently hosted at CADC)
 - mail.ivoa.net/search (provided by CNRS/CDS)

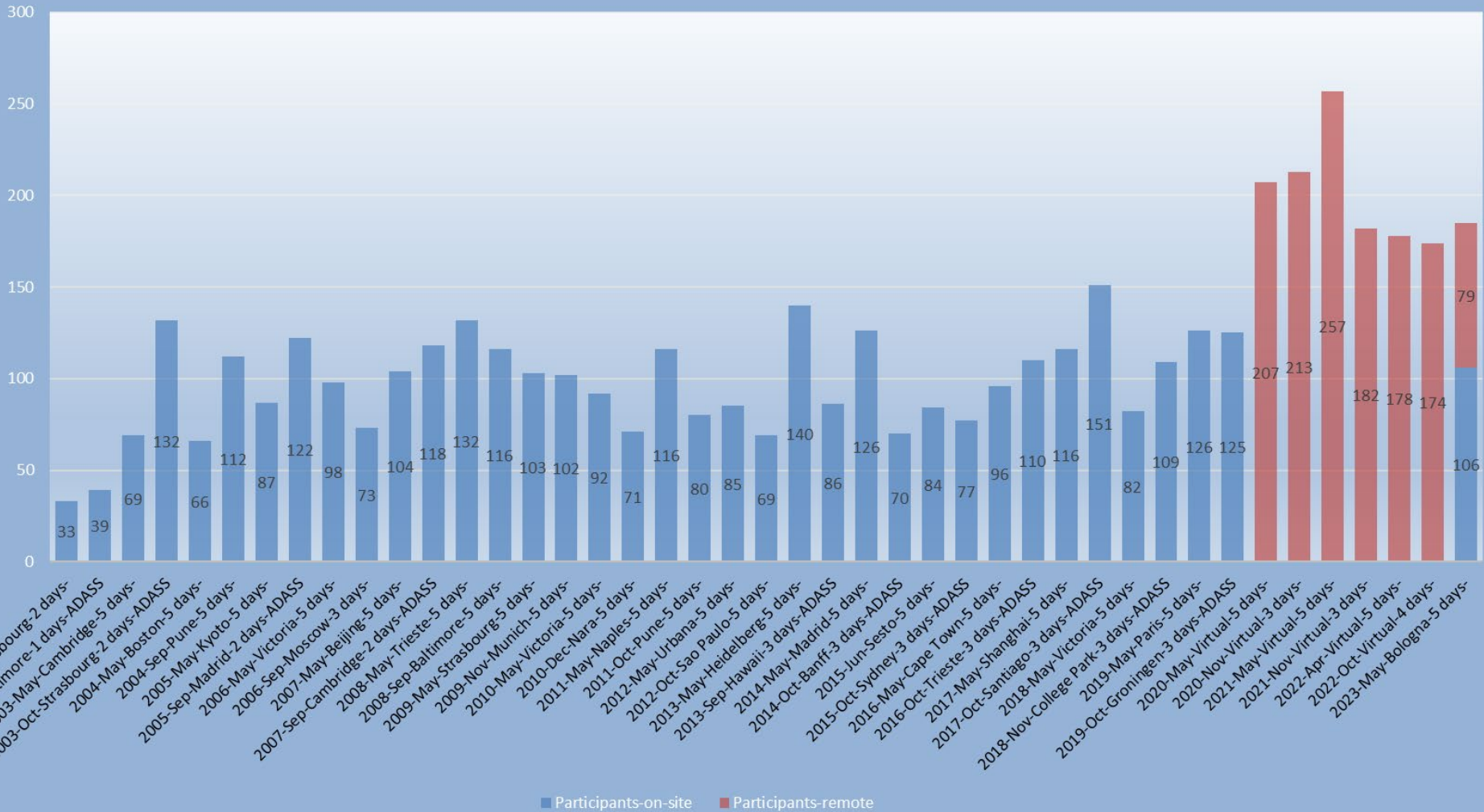


More during the Local Host Plenary (Monday 14:00)

Good to be back together !!



NUMBER OF PARTICIPANTS PER IVOA INTEROPERABILITY MEETING



Hybrid meeting
185 participants !

- 106 on-site
- 79 remote

IVOA community
still very much
alive!



IVOA Code of Conduct

(Approved by the IVOA Exec on Feb. 18, 2020)

It is the policy of the IVOA that its members and all participants in IVOA activities should experience an environment that is free from harassment. We want to promote a diverse and inclusive environment with respectful and courteous behaviour and therefore we expect all participants to adhere to the following guidelines:

- Behave professionally. Refrain from harassment in any form, including: sustained disruption of talks or other events; inappropriate physical contact or intimidation; potentially offensive comments related to for example: age, gender, sexual orientation, disability, physical appearance, race, nationality, politics or religion.
- Ensure that all communications are appropriate for a professional audience that may include people with different backgrounds. Sexual or sexist language and imagery are never appropriate.
- Be considerate and respectful to others.
- Critique ideas, not people.

This code of conduct applies to all IVOA community interactions online and offline, including mailing lists, forums, social media, conferences, meetings, associated social events, and one-to-one interactions.

Because of the wide international nature of the IVOA, it is important to realize that behaviour and language that are welcome/acceptable in one particular cultural environment may be unwelcome/offensive in another. Consequently, individuals must use discretion to ensure that their words and actions communicate respect for others

Anyone who witnesses a deviation from these guidelines is asked to communicate confidentially to the Chair or Vice Chair or any member of the IVOA Executive Committee. The IVOA Executive will take the necessary corrective measures.

We thank you for helping us to make the IVOA a welcoming, diverse and respectful environment for all.

IVOA upcoming big challenges to tackle



Science
Platforms

ML , AI for
astronomy

Big data in the
VO

Cloud and the
VO

VO reliable
services

Engagement of
big projects

Link
w/neighbourhood
communities

IVOA and the
IAU

...



...

Let's now go with it !

Thanks to Marco and VObs.it for organizing this interop

Thanks to Janet and Marco and all WG/IG chairs for putting up the programme

Looking forward for a fruitful, constructive and interactive meeting!

Remember it's an hybrid meeting, keep including remote participants

May 2023 IVOA Interop Meeting Schedule

(Sunday 7) Monday 8 - Friday 12, May 2023

Congress Center, CNR Research Area, Bologna, Italy ([venue details](#))

Meeting web page (registration and logistic information)	https://indico.ict.inaf.it/e/ivoa/interop-may-2023
Registration (direct page)	https://indico.ict.inaf.it/event/2285/registrations/1003/

Remote participation available through zoom videoconf room(s)

- Details will be sent to registered participants as well as posted in the schedule here below (prior to each session start)
 - refresh this web page if you feel a zoom link should be there but it's not
 - actual links will be there on time, otherwise you'll see green/blue placeholders only
- (best effort) Zoom sessions will be recorded and uploaded to the [CANFAR](#) VOSpace service as soon as possible after the session:
 - CANFAR VOSpace link: <https://www.canfar.net/storage/vault/list/IVOA/bologna2023a>
 - for the brave: vos://cadc.nrc.ca~vault/IVOA/bologna2023a
- LOC contact: ivoa2023bologna@vobs.it

Note: Listed times are in CEST, which is UTC+2

Session	Time (CEST)	Room	Session	Notes	zoom
Sunday May 07 2023					
	09:30–10:00	Lobby (upstairs)	Welcome coffee		
	10:00–12:00	Room 216	TCG Meeting	WG/IG Chairs/Vice-chairs	
	12:00–13:00	Lunch			
	13:00–15:30	Room 216	TCG Meeting Cont.	WG/IG Chairs/Vice-chairs	
	15:30–16:00	Coffee Break			
	16:00–18:00	Room 216	IVOA Exec Meeting	Exec + WG/IG Chairs/Vice-chairs	
Monday May 08 2023					
1	09:00–09:15	Plenary Room	Welcome and Logistics	/Local Host/	plenary zoom link
	09:15–09:45		State of the IVOA	Christophe Arviset	
	09:45–10:00		CSP Status Report	Ada Nebot	
	11:00–11:15		State of the TCG	Janet Evans	
	10:30–11:00	Break			
2	11:00–12:30	Plenary Room	Charge to the WG/IGs	WG/IG Chairs	plenary zoom link
	12:30–14:00	Lunch			
3	14:00–15:30	Plenary Room	Local Host Plenary	Fabio PAsian	plenary zoom link
	15:30–16:00	Break			
4	16:00–17:30	Plenary Room	Ops I		plenary zoom link
		Room 216	Newcomers Session	Education IG	216 zoom link