



Réunion annuelle ASOV 2023

OSUG : **Laurent Bourgès, Guillaume Mella,**

OCA : David Salabert, Guillaume Verbiese

& les scientifiques OBSPM, OCA, OSUG, OSUL

Isabelle Tallon-Bosc, Jean-Philippe Berger

(le pot de retraite de Gilles Duvert arrosé début 2023)



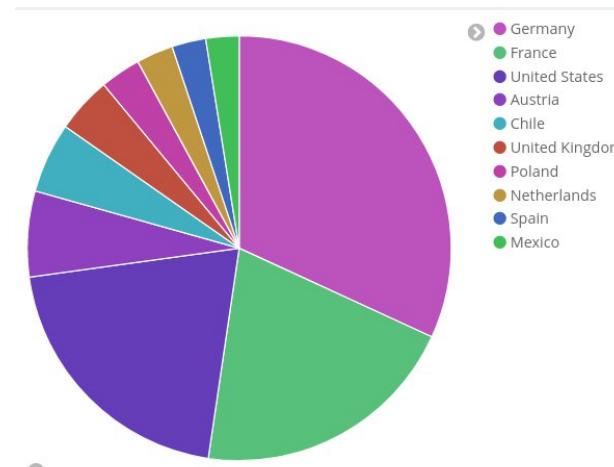
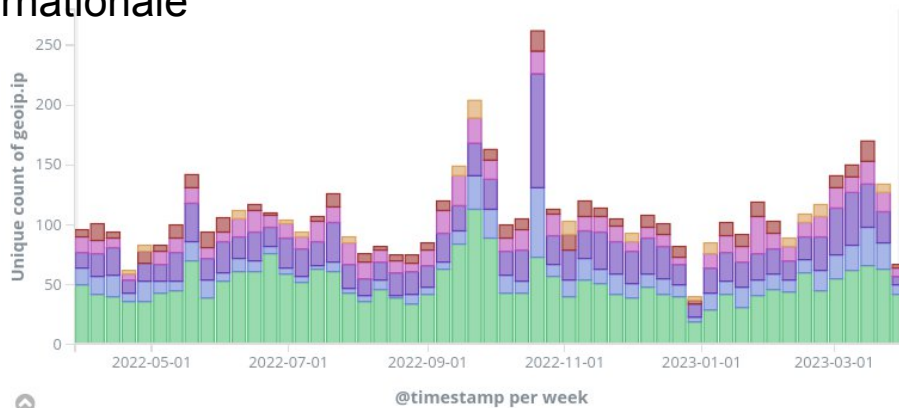
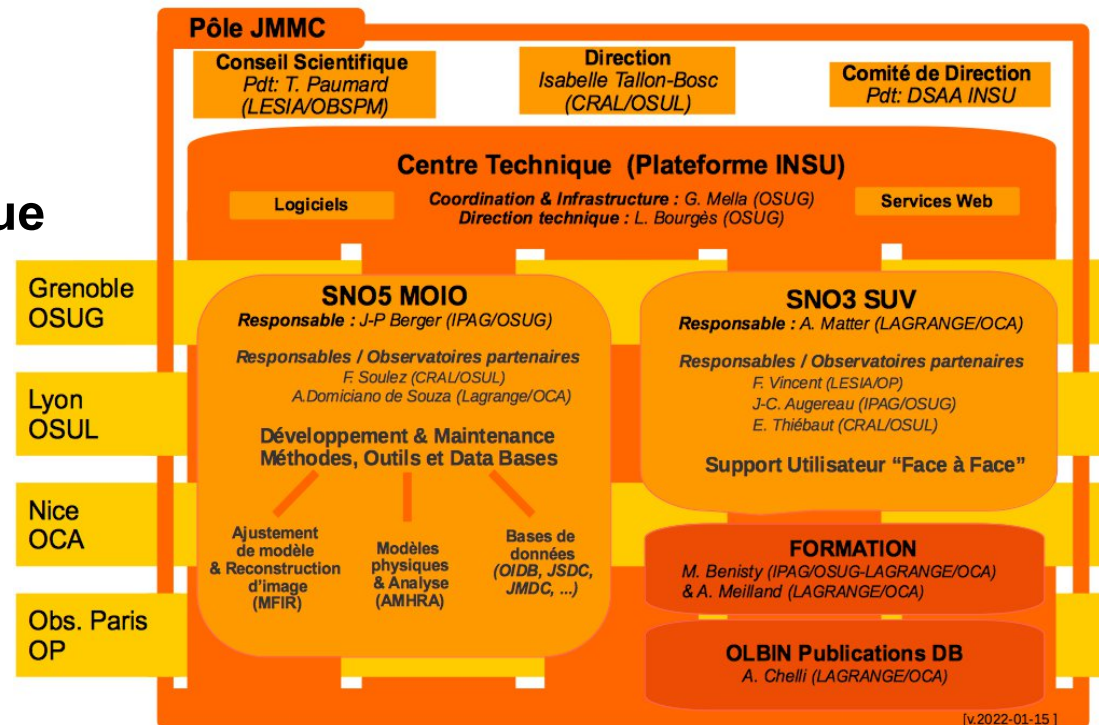
Tour d'horizon ! Nouvelles du JMMC ...

- Le JMMC
- Ses missions, ses outils
- Nos développements récents et à venir

... sous l'angle technique / VO

Le JMMC : aujourd'hui

- Le Centre Jean-Marie Mariotti est le **Pôle Thématique National des données en interférométrie visible et infrarouge** qui coordonne 2 ANO
 - ANO5 Méthodes et Outils pour l'Interférométrie Optique
 - ANO3 Service aux Utilisateurs du VLTI
- Sa raison d'être est l'exploitation optimale des interféromètres optiques accessibles à la communauté française
- Ouvert à tous : l'ensemble de ses services est reconnu par la communauté internationale



Le JMMC : ses missions

- Fournir les outils logiciels et assurer le support aux utilisateurs pour l'exploitation des grands interféromètres optiques et infrarouges
- Aider à la formation, en particulier des non-spécialistes
- Participer à la prospective des nouveaux instruments

Le JMMC : ses services



- + Expertise Center
- User Support
- + Training
- + OLBIN publications

Reduce data

- amdlib
- pndrs

View Data

OIFits Explorer

Fit Models

LITPro

Prepare Observations

VO SAMP

Search Data

Reconstruct Images

OImaging

AMHRA

SearchCal

a2p2

Aspro2

SearchFTT

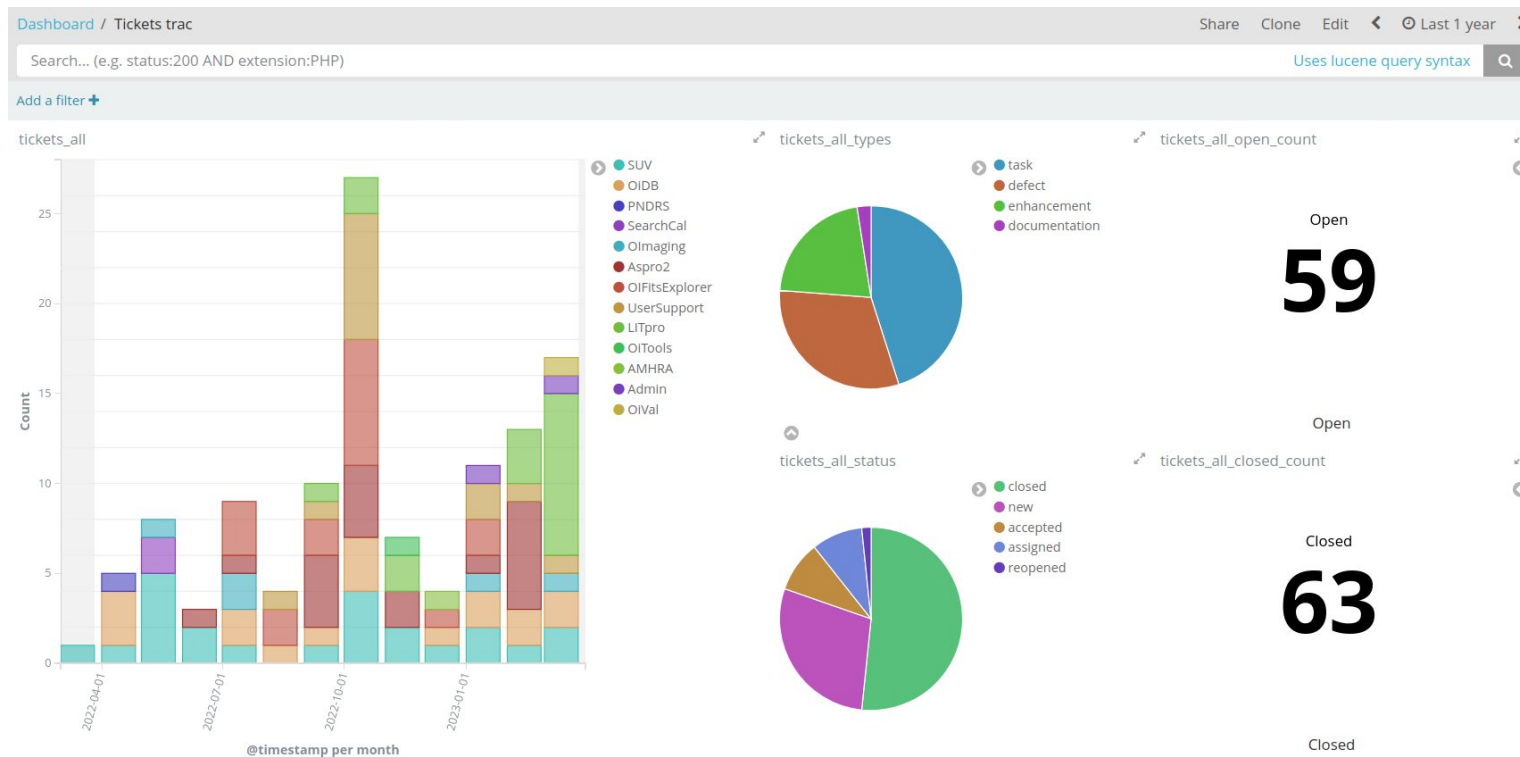
CDS Catalogs

JSDC JMDC

OiDB

Support Utilisateurs

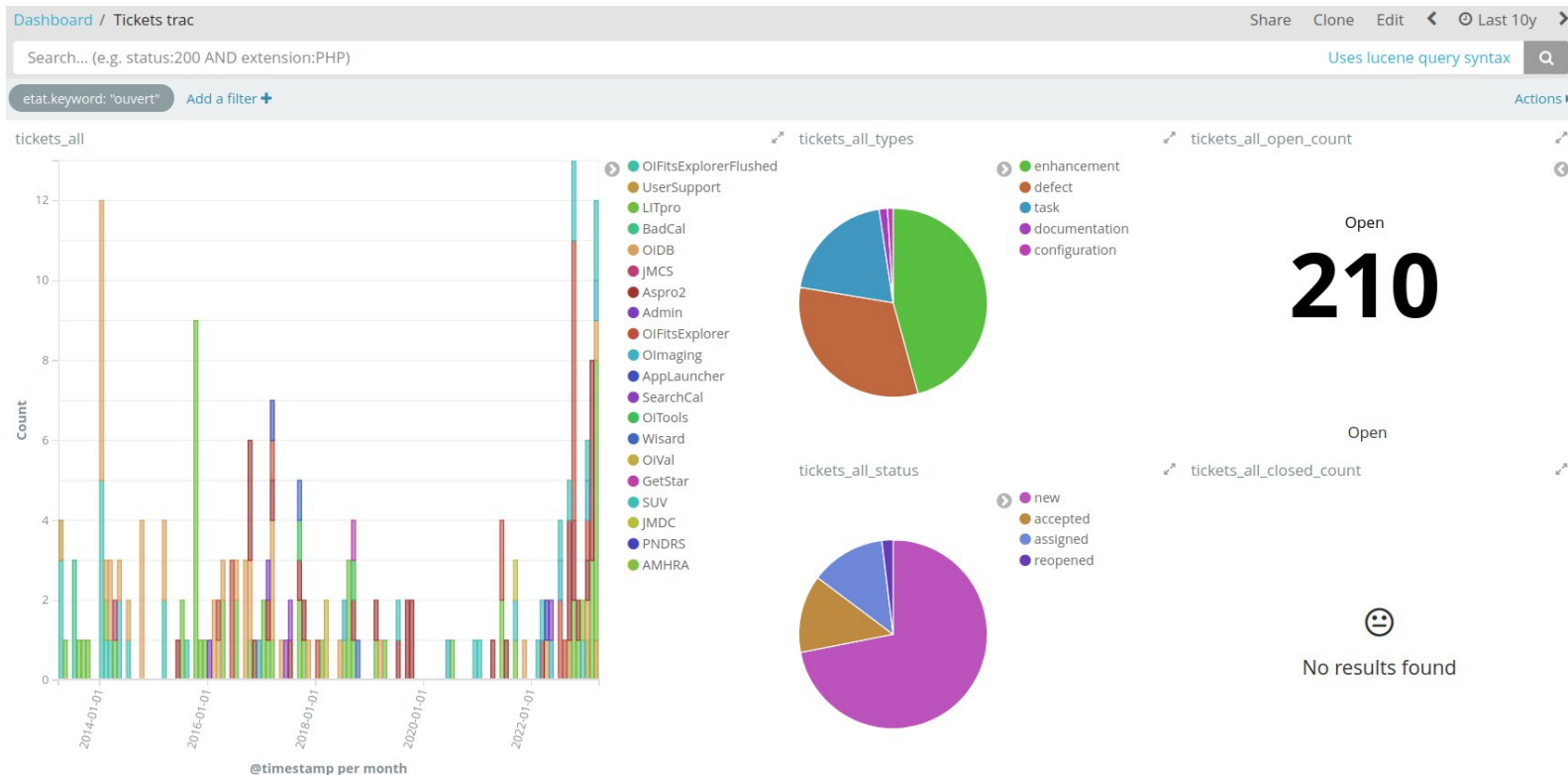
- Un gestionnaire de ticket avec principalement :
 - Demandes d'assistance pour la préparation, réduction, analyse
 - Bug reports
 - Demande de nouvelles fonctionnalités
 - (en parallèle de boards et issues GitHub)



Support Utilisateurs

- Accumulation d'anciens tickets pour la plupart toujours d'actualité

- => **Comment faites-vous vos arbitrages / priorisations ?**

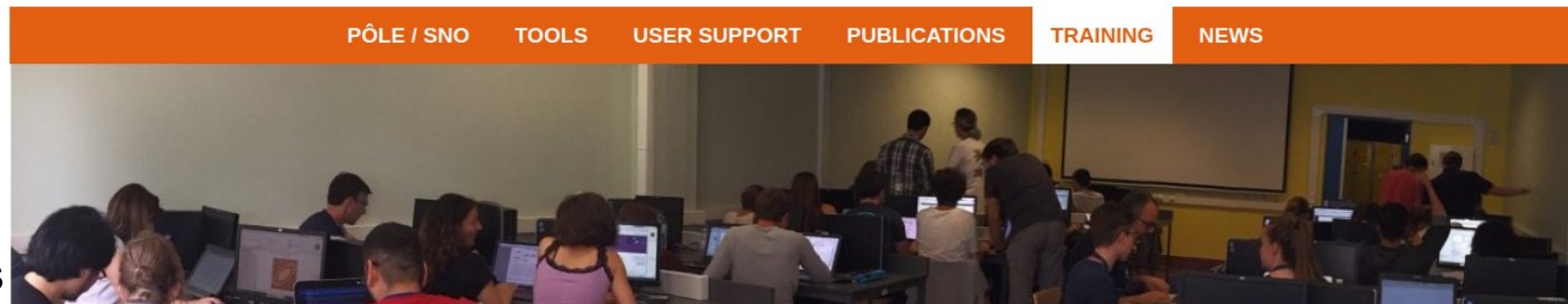


TRAINING :

Ecoles européennes tout les 2 ans
Participations à des workshops

Cours
Présentations des outils
Travaux pratiques

Nouveaux tutoriels vidéo depuis début 2023



TRAINING

- Schools
- Tools Tutorials
- Reference documents

[Home](#) > [Training](#) > [Schools](#)

Schools

Training for Interferometry

- [European School in Budapest](#), Hungary, 12-17 June **2023**, "Advanced data analysis for optical interferometry, from spectro-interferometry to imaging with the VLTI"
- [Imaging and Modeling Workshop](#) organized by CHARA team, Atlanta, USA, March 16-17, **2023**
- [VLTI-How: The VLTI High angular resolution Observations Workshop](#), October 10 - 21, **2022**, in Santiago, Chile, for young researchers and scientists from Latin America.
- European School in Sophia-Antipolis (France) on September, **2020**: [MATISSE and interferometry for planetology](#), postponed to 2021, June 7-18.
- European School in Lisboa (Portugal) on July, **2018**: [2nd generation instruments at VLTI](#)
- EES17 French School in Roscoff (France) on September, **2017**: [Imagerie à Haute Résolution Angulaire des Surfaces Stellaires et de leur Environnement Proche](#)
- European School in Cologne (Germany) on September, **2015**: [optical interferometry from theory to observations](#)
- European School in Barcelonnette (France) on September, **2013**: [High spatial resolution for stellar astrophysics](#)

TRAINING

- Schools
- Tools Tutorials**
- Reference documents

[Home](#) > [Training](#) > [Tools Tutorials](#)

Tools Tutorials

This section gathers the filmed descriptions of the JMMC tools. These visual tutorials are in progress and will be put here progressively, following the implementation of new functionalities in the tools.

These tutorials are complementary to the written description of the User Manuals. As with the latter, please feel free to use the [User Support](#) for any comment or question.

- [Aspro2- Overview](#)
Movie length: 3:12'

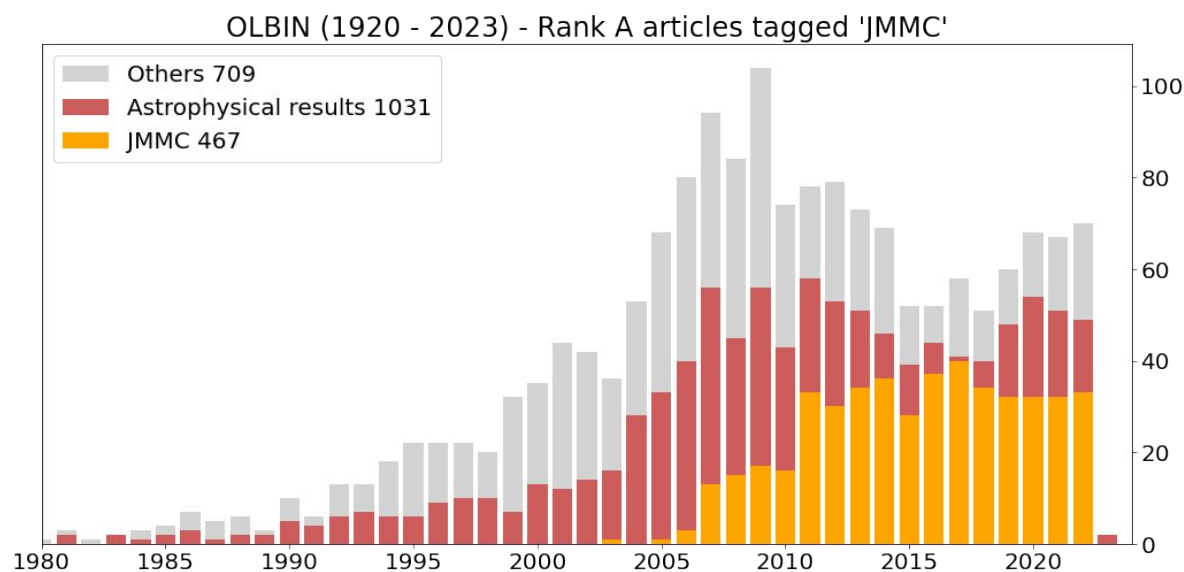
Let us guide you through the different panels of the main page and the features that allow you to easily set the parameters of your observation and see the resulting interferometric data along the observability time.

- [Aspro2- The Target Editor](#)
Movie length: 3:48'

Where is shown how to enter your science target(s), how to enter and link their calibrators, how to see target and calibrators on the sky, how to add physical and geometrical parameters. All these features thanks to interoperability with other JMMC tools or other VO tools using SAMP protocol.

Suivi des publications

- Le JMMC gère <https://publications.olbin.org> depuis 2010
- Pré-identification basée sur l'API ADS (Thx!)
 - Contrôle manuel / validation des tags
- Mise en ligne en 2022 d'un nouveau site web
 - Plus de plots, liens vers portail ADS
- ConeSearch bibliographique :
 - V0 début 2023 => déjà supporté par ADS !
 - docs(library/DcN09IGIScOZsaNfnim_OQ) object:("HD123" "HD 166")



Database of Publications in Stellar Optical Interferometry

Quick index for papers: [Pre-2013](#) | [2014](#) | [2015](#) | [2016](#) | [2017](#) | [2018](#) | [2019](#) | [2020](#) | [2021](#) | [2022](#) | [2023](#)

You can search papers by keywords (years, titles, author names , part of bibcodes), or/and by using tags from the list:

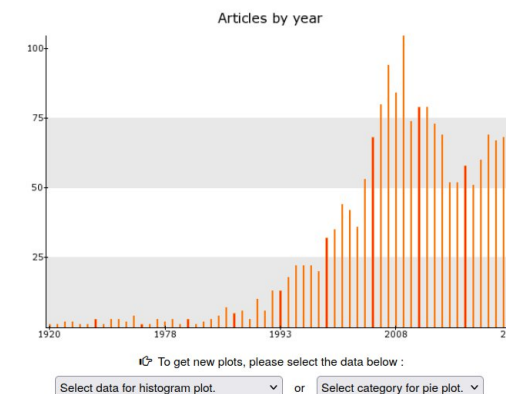
The OLBIN interactive interferometry publication database includes all refereed papers related to optical long baseline interferometry referenced in ADS and aims at being as complete as possible. If you notice that a paper is missing please [send the ADS bibcode to the webmaster](#) and any other useful information.

Basic information from ADS (title, list of authors, year of publication) is enriched by tags such as the category of the publication (Astrophysical results, Catalogs, Instrumentation, Review papers, Theory and predictions, Related papers), the name of the interferometer facility, the name of the instrument, the type of object observed, etc. Just click on the "Tag List" button for the complete list of tags. OLBIN refereed papers get its own ADS library. If you get an ADS account you can subscribe to some lists and be notified on future updates, by an email notification ([visit OLBIN library](#)). All the database contents can be downloaded as one [spreadsheet file](#), in CSV format for your own use (e.g. for plotting graphics).

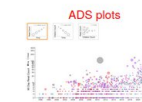
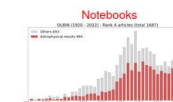
Get publications for a given target on ADS

Histograms and other Graphics

Series of automatic displays that illustrate the current content of the database.



Other graphics are provided by external tools for visualizing the distribution of the publications over different criteria:



Le JMMC : ses services en permanente évolution...



- + Expertise Center
- User Support
- + Training
- + OLBIN publications

VO SAMP

AMHRA

SearchCal

a2p2

Aspro2

SearchFTT

OIFits Explorer

Fit Models

LITPro

Reconstruct Images

OImaging

JSDC JMDC

Search Data

CDS Catalogs

Prepare Observations

Reduce data

- amdlb
- pndrs

SPICA-DB Project @ JMMC

SPICA: instrument "Stellar Parameters and Images with a Cophased Array" visible (6T) installé sur CHARA

Créée en 2021 SPICA-DB est la base de données pour gérer

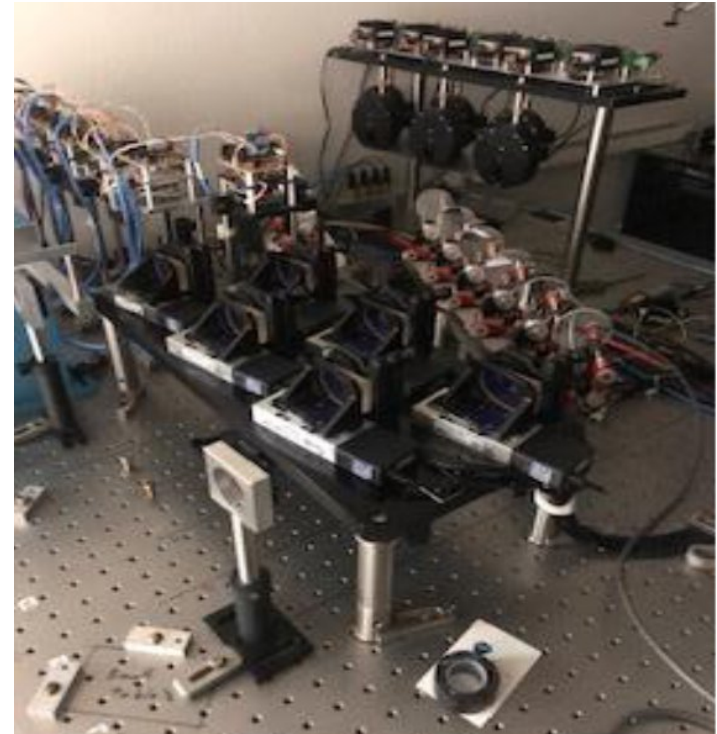
- large programs (survey) + proposals -> lien avec Aspro2
- observation logs + quality flags -> Aspro2 / obs portal
- index raw / OIFITS files -> OiDB

Besoin d'une interface (+ API) pour gérer les programmes d'observation, leur suivi et les résultats (L0 -> L3) intégrés avec SPICA night scheduling / DRS ...

...en plus des messages SAMP !

SPICA ...

... première lumière attendue en 2022...



SPICA ...

... première lumière encore retardée en 2023



Premières observations de la saison 2023 annulées



Premier instrument interférométrique ayant un **programme de relevé systématique de plusieurs milliers de sources à traiter de manière homogène**

SPICA-DB@JMMC en 2022-2023

- Interfaces validées avec les données de commissioning oct. 2022
- Attente de prochaines données pour passage en exploitation
- Préparation du pilotage des observations depuis Aspro2 initié

SPICA-DB en action aujourd'hui

Quoi, pour qui, quand, comment ?

Obs passées
<http://obs.jmmc.fr>

TAP

SPICA-NSS TOOL

Date (YYYY-MM-DD) 2022-04-06 2022-04-06

Workpackages

Modes

Priority_final 1 2 3

Declination DEC_MIN -30 DEC_MAX 90.0

Magnitude VMAG_MIN -3.0 VMAG_MAX 8.0

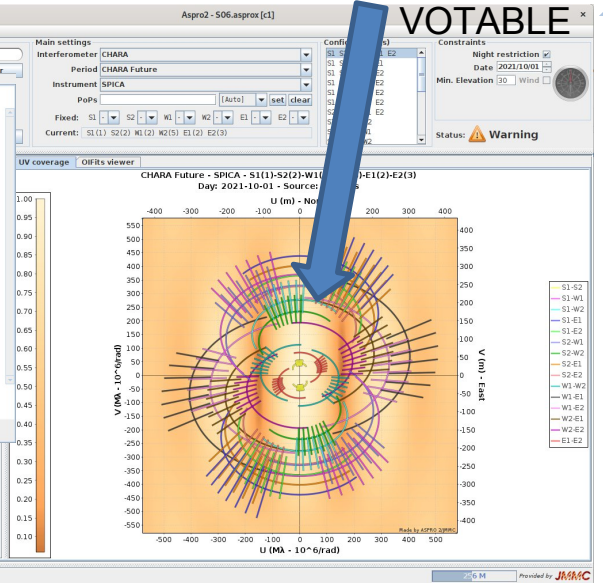
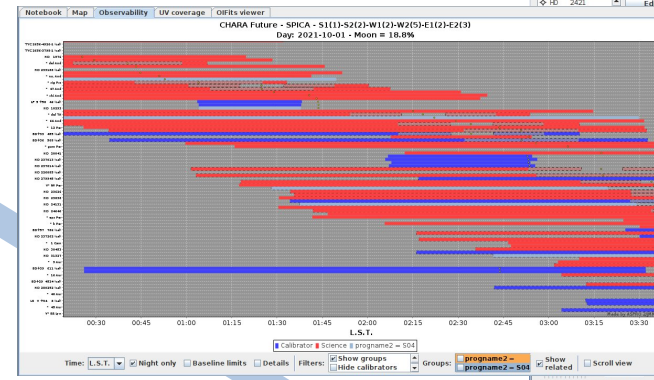
Primary calibrators: RA range (min) 60 DEC range (deg) 5 Vmag range 2 GO

Secondary calibrators: RA range (min) 60 DEC range (deg) 2 Vmag range 0 GO

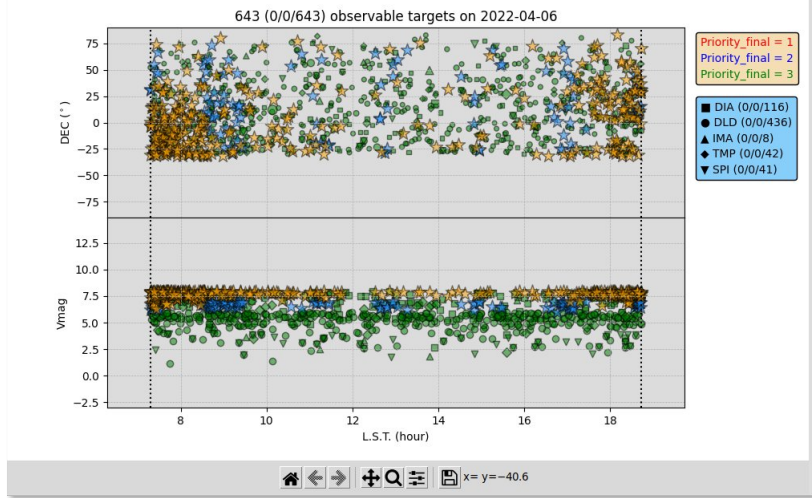
Max. LDD Chi2 2 Max. rel. error (%) 10 Min. vis2 0.9 GO

Log

SAMP



SAMP

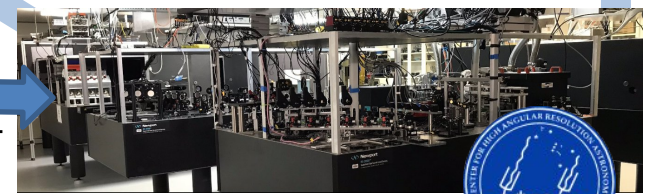


```

A2P2 v0.6.6 [c8]
LOG HELP RELEASE NOTES CHARA
Connection succeeded on OBS2 server: {'datetime': '2023-03-25T16:32:02.327894', 'hostname': 'pcgm', 'service': 'OBS2 - OB2broker', 'version': '0.11'}
OB sent to remote server queue: <Response [200]>
09:33/11:59
Object:
HD XXX (A0, no PARALLAX): L=6.652, M=6.627, N=6.707, L_JY=0.624, M_JY=0.406, N_JY=0.076, B=7.074, V=6.99, R=6.881, I=6.892, J=6.71, H=6.707, K=6.656
Extra Infos:
diam=0.159801, field_units=observationConfiguration(diam='mas')
OB sent to remote server queue: <Response [200]>
16:31/18:50
Object:
HD XXX (A4/SIV/V, 10.1): V=6.598, H=6.12, K=6.06
Extra Infos:
spicadb_id=1661, piname=FFF, program=S01, chara=['S1S2E1E2W1W2', 'S1S2W1W2E2', 'S1S2W2E1E2'], spica_mode=DIA, priority_pi=0, completion_rate=0.0, priority_final=2, qcs_flag=1, ob_refs=0, gaia_id=Gaia DR3 61168, hd=HD, av=0.062, e_av=0.1, e_ag=0.1, logg=3.85, e_logg=0.0, sbrcr_b=0.2, ld_sbrcr_vks_rms=0.1, e_ld_sbrcr_vks_rms=0.1, e_ld_sbrcr_vks_coeffs=0.0, e_ld_sbrcr_vks_photo=0.0, ld_sbrcr_gks_rms=0.0, e_ld_sbrcr_gks_rms=0.0, e_ld_sbrcr_gks_coeffs=0.0, e_ld_sbrcr_gks_photo=0.0, diam=0.22, field_units=observationConfiguration(diam='mas')
OB sent to remote server queue: <Response [200]>
SAMP connected [c8]

```

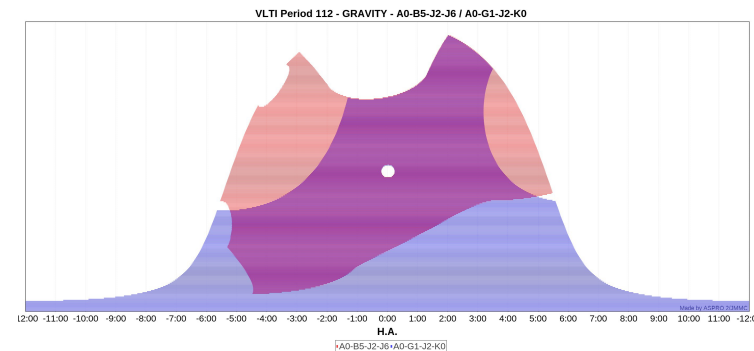
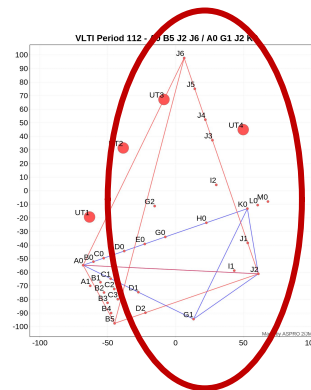
REST



Aspro2 : news

Objectif: fournir un outil de simulation le plus fidèle et une assistance indiquant les meilleures configurations d'observation

- Définir des configurations à jour avec les nouveaux instruments
- Modèles de bruits
- Extension des courses de lignes à retards VLTI 100=>200m
- Permettre un réglage plus fin et efficace
 - Table générale des cibles
 - Configurations utilisateur
 - Amélioration des algorithmes de sélections des meilleurs configurations



Aspro2 - nss_dataproduct_category.aspro[c1]

Main settings: Interferometer CHARA, Period CHARA Future, Instrument SPICA.

Id	Type	Target	RA (HMS)	DEC (DMS)	Equi...	RA	DEC	Parallaxe...	Ids	ObjType	SpType	B	V
V_V1143...	SCIENCE	V_V1143	19.644773	54.973791		294.672	54.974	24.709	0.029	EB*	F Va	5.76	
V_WW_A...	SCIENCE	V_WW_A...	6.540885	32.454898		98.113	32.455	11.143	0.069	EB*		5.80	
V_RR_Lyn	SCIENCE	V_RR_Lyn	6.44051	56.285096		96.608	56.285	12.416	0.092	EB*	kA3H7V	2.8...	5.4
_jot_Lyr	SCIENCE	_jot_Lyr	19.121703	36.100159		286.826	36.1	3.393	0.226	Be*	B V	2.9...	
_19_Lyr	SCIENCE	_19_Lyr	19.196113	31.283456		287.942	31.283	3.421	0.042	RotVall2CvN	B8IIPSt	3.0...	5.96
54_Cam	SCIENCE	54_Cam	8.043273	57.273626		120.649	57.274	10.041	0.03	RSCVn	F8V	3.1...	6.318
HD_208727	SCIENCE	HD_208727	48.668568	329.259	48.669	329.259	48.669	2.497	0.215	PulsV*	B8V	3.1...	6.52
HD_21203	SCIENCE	HD_21203	5.47322	60.255675		52.098	60.256	5.59	0.66	B9V	F8IIV	6.493	6.463
HD_47703	SCIENCE	HD_47703	69.9322	35.93192		100.407	35.932	15.434	0.278	**	F8IIV	6.489	6.33
HD_197226	SCIENCE	HD_197226	2.683434	39.082323		310.252	39.082	3.24	0.31	SB*	B6IIV	6.489	6.478
HD_1601	SCIENCE	HD_1601	341925	48.968833		5.129	48.969	3.075	0.023	Star	GO	6.482	6.317
HD_101177	SCIENCE	HD_101177	1.645806	45.108418		174.687	45.108	43.01	0.73	**	GOV+K2V	6.477	
HR_8064	SCIENCE	HR_8064	2.046839	45.848891		315.703	45.849	2.49	0.07	**	B3Vn	6.477	6.462
HD_194668	SCIENCE	HD_194668	20.408991	53.551928		306.135	53.552	2.349	0.029	Star	B9V	6.476	6.457
HD_162132	SCIENCE	HD_162132	1.785655	47.612248		266.783	47.612	7.534	0.142	SB*	A2Vs	6.467	6.453
HD_192538	SCIENCE	HD_192538	2.234689	36.604883		303.52	36.605	3.611	0.039	Star	AOV	6.462	6.439
HD_17484	SCIENCE	HD_17484	8.824142	37.326411		42.362	37.326	6.592	0.241	SB*	F8IIV	6.457	6.333
HD_17581	SCIENCE	HD_17581	8.82744	58.314294		42.941	58.314	11.487	0.036	SB*	A1m	6.447	6.424
HD_159026	SCIENCE	HD_159026	7.511169	38.82204		262.668	38.822	3.211	0.055	Star	F5.5III-Vmp	6.44	6.298
HD_77692	SCIENCE	HD_77692	9.111983	59.344525		136.68	59.345	5.04	0.045	Star	A2V	6.434	6.403
HD_217811	SCIENCE	HD_217811	3.045874	44.058749		345.688	44.059	2.185	0.028	V*	B2V	6.411	6.375
HD_203454	SCIENCE	HD_203454	21.550393	40.344974		320.256	40.345	37.468	0.07	SB*	F8V	6.397	6.226
HD_138525	SCIENCE	HD_138525	15.522863	36.615999		232.843	36.617	15.233	0.315	SB*	F8IV	6.395	6.25
HD_28271	SCIENCE	HD_28271	4.48111	30.36155		67.217	30.362	14.201	0.254	SB*	FTV	6.392	
HD_177109	SCIENCE	HD_177109	19.030103	33.621266		285.452	33.621	2.097	0.093	Star	B5V	6.373	6.35
HD_195066	SCIENCE	HD_195066	20.439854	56.638694		306.598	56.639	4.514	0.042	Star	B9V	6.369	6.358
V_V492...	SCIENCE	V_V492...	4.532485	36.742889		67.987	36.743	8.176	0.041	RSCVn	GS	6.349	6.087
HD_10293	SCIENCE	HD_10293	1.704917	58.627737		25.574	58.628	2.28	0.044	Star	B7IIV	6.345	6.315

Main settings

Interferometer: CHARA

Period: CHARA 2023B

Instrument: CLIMB

PoPs: [Auto] Sel - select clear

Fixed: S1(5) S2(5) E1(1) E2(3) All w2(5)

Current: S1(5) S2(5) E1(1) E2(-) Sel w2(-)

Configuration Manager

User Configurations

[CHARA_7T] /home/bourges/dev/aspro-conf/...

Buttons: Load, Reload, Remove

File: /home/bourges/dev/aspro-conf/src/main/resources/

Name: CHARA_7T

State: * enabled - disabled

OK

AMHRA : news

AMHRA develops and provides online astrophysical models and data analysis tools dedicated to the scientific exploitation of high angular and high spectral facilities such as ESO-VLTI

- Nouveau modèle sYSOm <https://amhra.oca.eu>
- En cours : génération de grilles à la volée

- IA

Submit your request

To submit your parameters, you can either:

- Manually fill the fields below
- Pre-fill the fields with default values:
- Upload a parameters file [\[sample file\]](#):

Circumstellar dust-disc parameters Grid parameters

(in development please do not use grid settings at this time)

Inner radius :

Min : Max :

Number of points :

Sampling type :

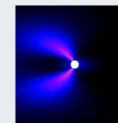
Flag for log :

Dust-disc outer radius: AU

Dust opacity model:

Temperature at disc basis (inner radius): K

Real time astrophysical models



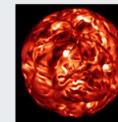
Kinematic Be disk

Model of the geometry (size and shape) and kinematics (rotation and expansion) of circumstellar, flat, rotating disks, relevant to Be stars. It is suited to interpret spectro-interferometric data obtained on emission lines formed in the disk.



Disk and stellar continuum – DISCO

Model of the continuum emission from a star surrounded by a gaseous circumstellar disk (free-free and bound-free), with partially ionized and geometrically thin disk with a physical structure given by the viscous Keplerian decretion disk model. DISCO is well suited to model Be stars.



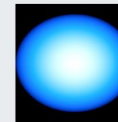
Evolved stars (RSG, AGB)

Stellar surface maps of evolved stars (RSG and AGB) computed from a 3d hydrodynamical simulation with COSBOLD-OPTIM3D. The available model corresponds to a star similar to the famous RSG Betelgeuse.



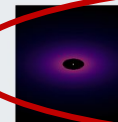
Binary spiral model

Phenomenological model mimicking the shock caused by the collision between the winds from massive stars (e.g. WR and OB stars) and that results in dusty spirals.



Analytical Limb-darkening Elliptical or Spherical – ALDES

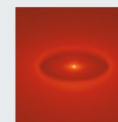
ALDES provides intensity maps (images) or 1d intensity profiles for spherical or elliptical stars showing the limb darkening (LD) effect. Different LD laws are offered: uniform disk, linear, power law, quadratic, square root, logarithmic and four-parameter.



Simple YSO model – sYSOm

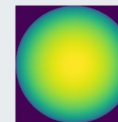
Model of the continuum emission from a young stellar object (YSO) composed by a central star, modeled as a blackbody, and a dusty circumstellar disk. The disk is assumed to be geometrically flat with radial-dependent temperature and surface density prescribed by power laws.

Precalculated grids of astrophysical models



Supergiant B[e] with HDUST

Grid of models for B[e] supergiant stars computed with the 3d Monte Carlo radiative transfer code HDUST. The non-spherical circumstellar envelope (CSE), composed of gas (hydrogen) and dust (silicate), is modelled considering a bimodal outflow description (two-component wind).



Limb-darkening with SATlas

Grid of models providing intensity maps for spherically symmetric stars, showing the limb darkening effect. The models were computed with the SATlas model stellar atmospheres for several spectral bands. Data is provided for FGK dwarfs and red giants.

OIFitsExplorer : Visualisation de données

GUI et interface ligne de commande OITools

- Validation
- Filtrage
- Merge
- Export

En 2023:

- Amélioration de la manipulation de données
- Traitements (binning, alignements de données temporelles, ...)



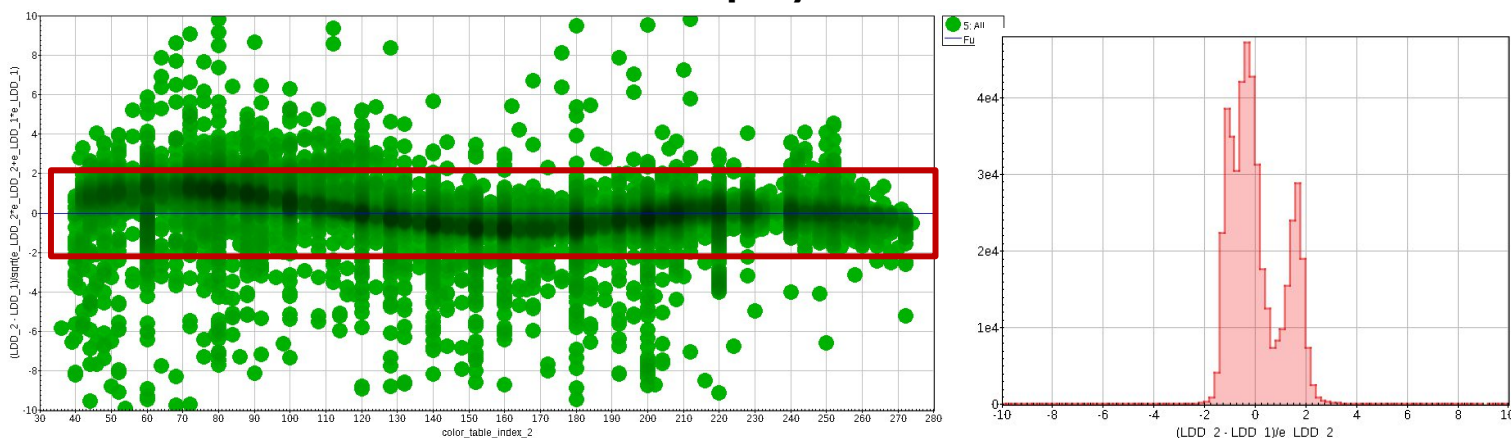
JMMC Measured Diameters Catalog & JMMC Stellar Diameters Catalog

JSDC 2 released in 2017, JSDC 3 EA (2020) to include GAIA DR2 information

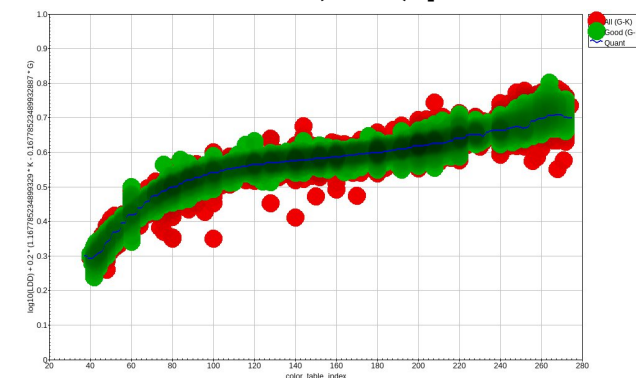
Goal for 2023: update JSDC 3 with GAIA DR3 data (ID, RA/DEC, pm) + updated diameter estimations

- JMMC updated: 2045 measurements (VizieR update required)
 - Study new polynomial solution on (V-JHK) photometries + updated spectral types (Simbad)
- [WIP]**
- Compare new results with GAIA stellar parameters (450m diameters) + new (G K) estimation ?

New VJHK polynoms solution $\sim \pm 2$ stddev



LDD vs (G-K) plot:



OiDB : Portail d'accès au données

Des logs d'observation (L0) aux données calibrées publiées (L3)

- La pagination : devrait être systématiquement supportée ?
 - Heureusement supportée par la branche adql1.2 de VOLLT
 - Pas si simple sur des gigacatalogues...
- Toutes nos métadonnées sont publiques
 - mais pouvoir appliquer des embargo irait de paire avec la diffusion de données
 - mécanisme de délégation mise en place : un PI peut déléguer ses accès
 - au téléchargement à une collection / un programme
 - en écriture sur un catalogue / un programme
- Besoins exprimés : gestion de versions, doublons, identification pérenne, mode de dépôt progressif (draft...published)

Mais aussi depuis l'an dernier

- Migrations de 16 dépôts SVN

<https://github.com/JMMC-OpenDev/>

- Une page releases globale

<https://releases.jmmc.fr>

- Accès directs aux jars, jnlp, urls
- Pleins de petites corrections
- De nouvelles données

nb	created_at	repo_name
28	2022-03-15	searchftt
29	2022-06-13	aspro-conf-contrib
30	2022-09-12	releases
31	2022-09-14	a2p2w
32	2022-09-14	bibdb
33	2022-09-14	bibdb-data
34	2022-09-14	catalogs
35	2022-09-14	docmgr
36	2022-09-14	jmmc-realm
37	2022-09-14	jmmc-resources
38	2022-09-14	oidb
39	2022-09-14	oidb-data
40	2022-09-14	oidb-tools
41	2022-09-14	oival
42	2022-09-14	voar
43	2022-09-14	training-docs
44	2022-11-30	datamodels

JMMC's applications and services releases

Please find below public and beta application links to run our Web, Python or Java applications (JAR or JavaWebStart), get release notes, credits, details...

	Application	Release page	Version	Release date
Java applications				
	AppLauncher	public beta	1.1.9 1.1.10 beta 1	JNLP JAR 2023-01-03T15:08 2023-01-02T15:39
	Aspro2	public beta	23.03 23.03 beta 2	JNLP JAR 2023-03-06T20:37 2023-03-06T20:22
	LITpro	public beta	1.2.0 1.2.0 beta 3	JNLP JAR 2023-03-16T08:49 2023-03-13T15:57
	OIFitsExplorer	public beta	0.5.3 0.5.3 beta 1	JNLP JAR 2023-03-06T16:00 2023-03-03T15:43
	OImaging	public beta	1.0.2 1.0.2 beta 1	JNLP JAR 2023-01-03T14:10 2023-01-02T15:47
	SearchCal	public beta	5.1.4 5.1.6 beta 1	JNLP JAR 2023-01-03T14:50 2023-03-03T09:51
	oitools	public	OITools release 2023.03	2023-03-03T15:27
Python applications				
	a2p2	public	0.6.7	2023-03-27T09:16
Web applications				
	A2P2W	public beta	0.7 alpha 0.7 alpha	2023-03-15T09:28 2023-03-08T16:52
	AMHRA	public		
	BadCal	public		
	CatalogAPI	public beta	0.7 alpha 0.8 alpha	2022-03-21T08:18 2022-09-30T08:47
	GetStar	public beta		
	ObsPortal	public beta		
	OidB	public beta	2.2.3 stable 2.2.4 beta	2022-06-20T08:25 2022-09-30T08:50
	Oival	public beta	2.13.0 stable 2.13.0 stable	2023-03-15T09:28 2023-03-08T16:52
	Releases	public beta	1.1.3 alpha 1.1.3 alpha	2023-03-15T09:28 2023-03-08T16:52
	SearchFTT	public beta	1.4.2 stable 1.4.2 stable	2023-03-15T09:28 2023-03-08T16:52
	VOAR	public beta	0.7 alpha 0.7 alpha	2023-03-15T09:28 2023-03-08T16:52

Current date: 2023-03-28T07:01 Generated on: 2023-03-28T07:01

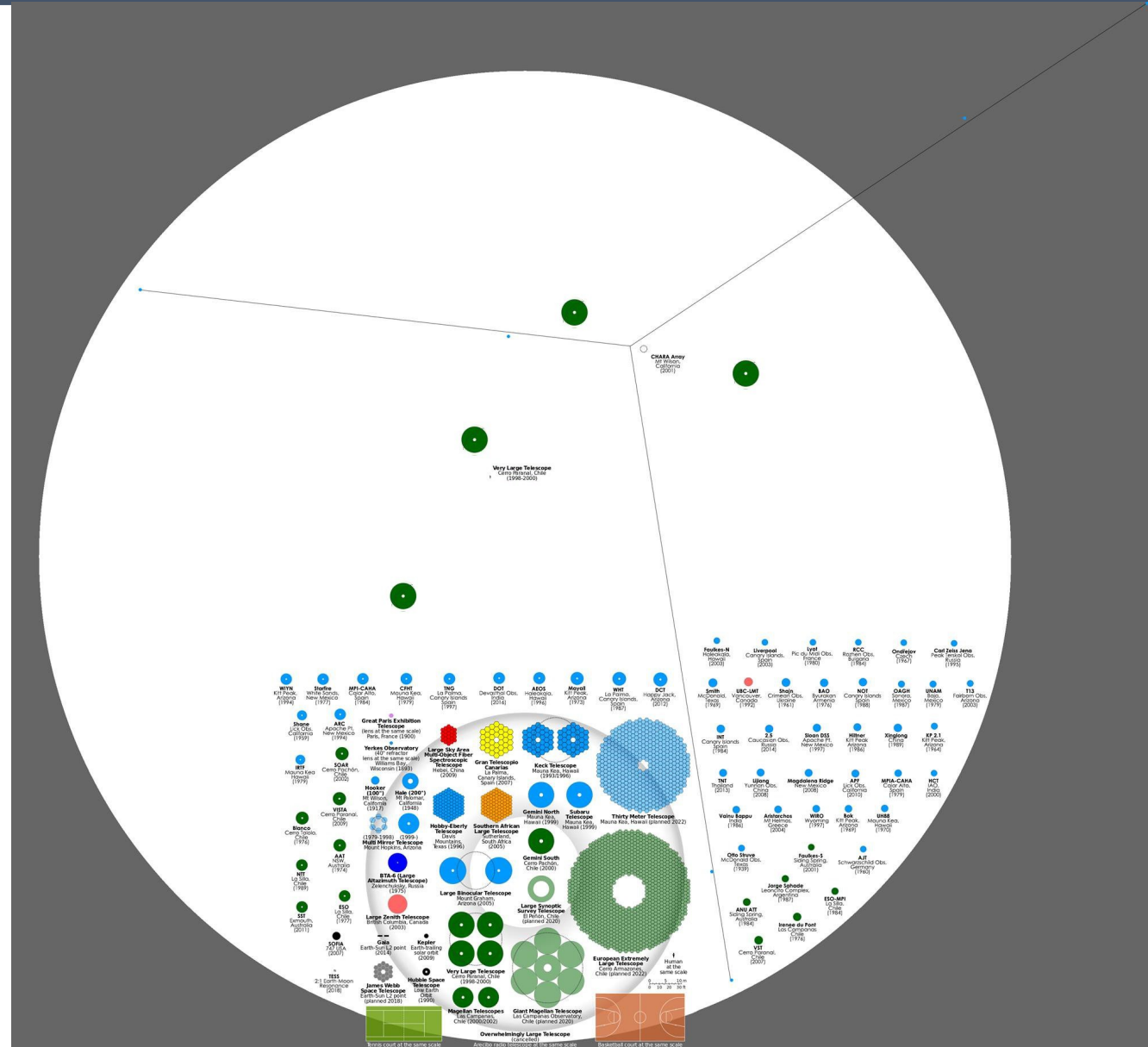
Et pour la fois prochaine ?

Notre feuille de route est en cours de finalisation, mais :

- Quelques dépôts github encore ? (3 services + 3 DRS)
- Un visualisateur de données amélioré
- Un serveur de catalogues unifiés:
 - JSDC V3, badcal, JMDC...

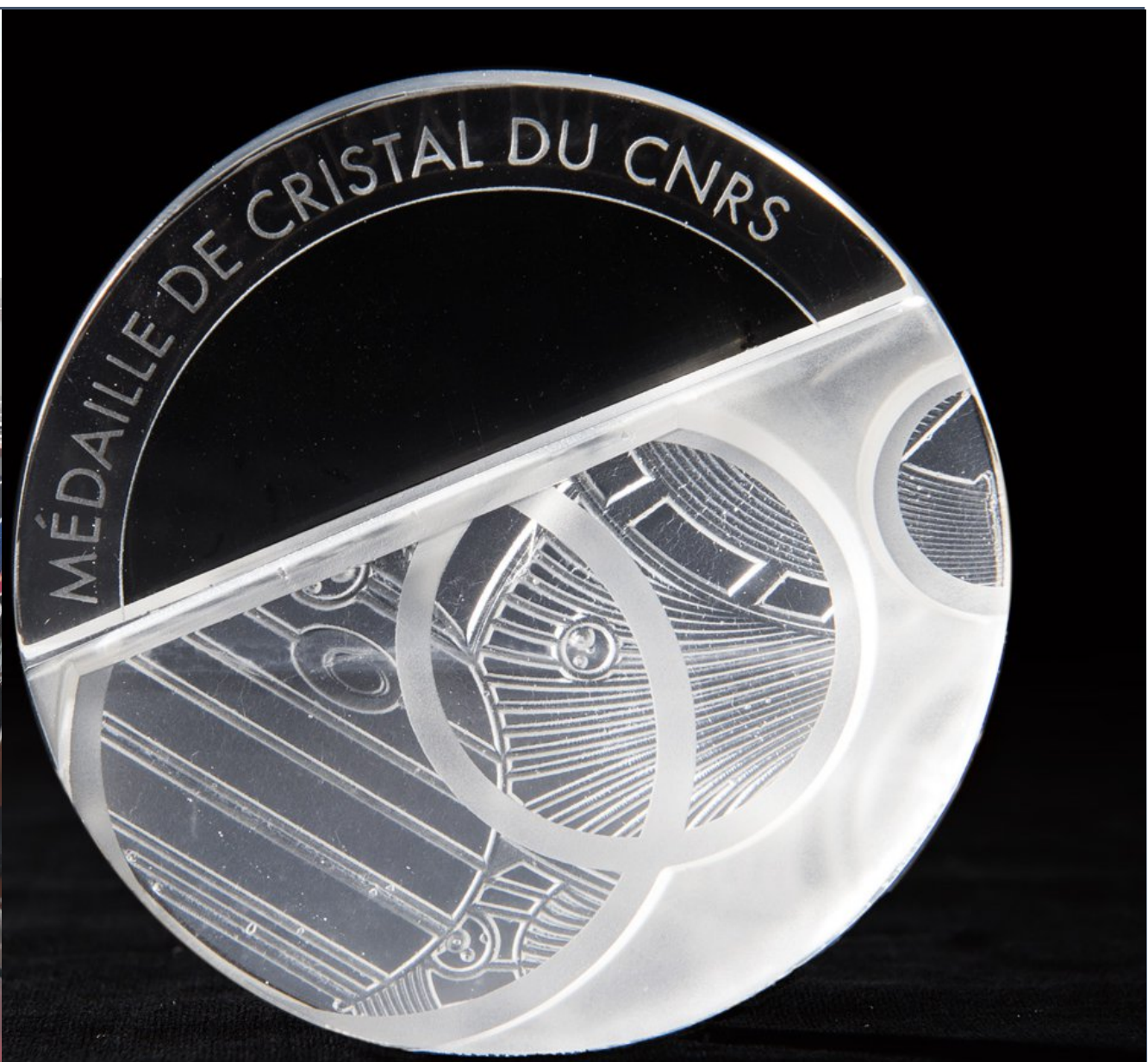
intérêt fort d'avoir plusieurs catalogues dans le même serveur TAP
- (La fin de simcli au JMMC ?)
- **??? mais toujours dans l'objectif d'offrir un écosystème complet et interopérable**

Merci !





Heureux
en 2022 !
BraVO
Lolo !



<https://youtu.be/ZEK8ldThCV8?list=PLHG32YxdW8ikSzEs6WPZGeQ7T5pTTJ73U>