JMMC

Updates in 2021

Laurent Bourgès & Guillaume Mella, JMMC / OSUG
Gilles Duvert, IPAG
Isabelle Tallon-Bosc, CRAL

JMMC organization

Seen from the inside (French CNRS/INSU) **JMMC** is composed of two parts, people working on the tools and databases in a 'service' called **MOIO**, and people working on the user support, outreach, schools, surveys etc, in a 'service' called **SUV**.

JMMC *per se* is the organization of these two parts, comprising a director, a scientific council / users committee and board of directors.

(All this is probably irrelevant when seen from abroad)

Effective June 2021,

JMMC will be headed by **Isabelle Tallon-Bosc**

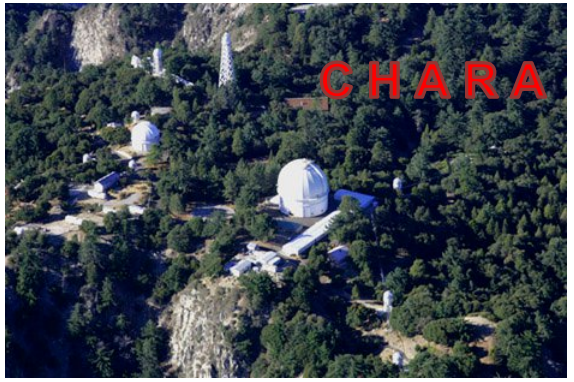
and **MOIO** by **Jean-Philippe Berger**.

SUV continues to be headed by **Alexis Matter**.



Service overview





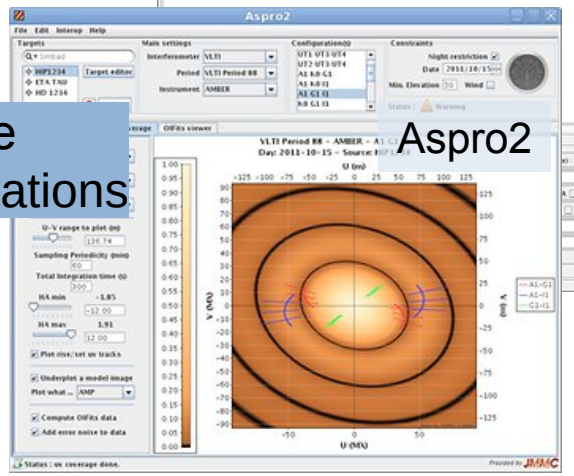
+ Training

+ User Support

SearchCal

Reduce data

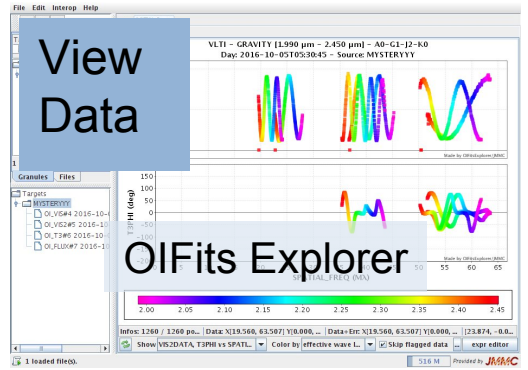
amdlib
pndrs



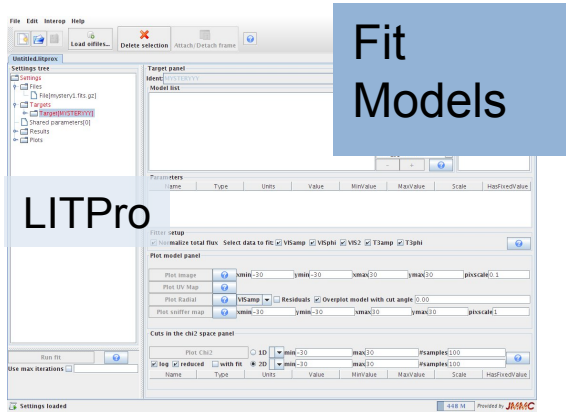
Prepare Observations

Aspro2

View Data

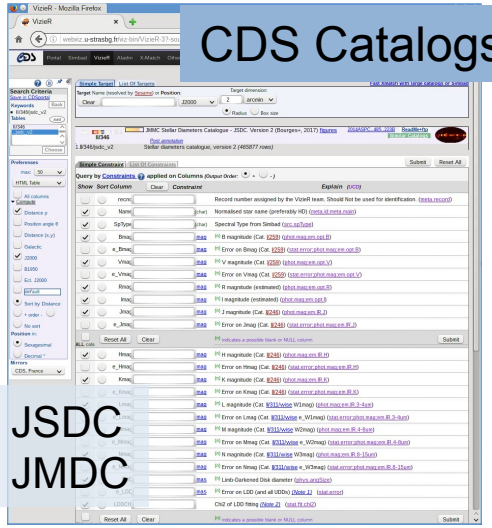


OIFits Explorer



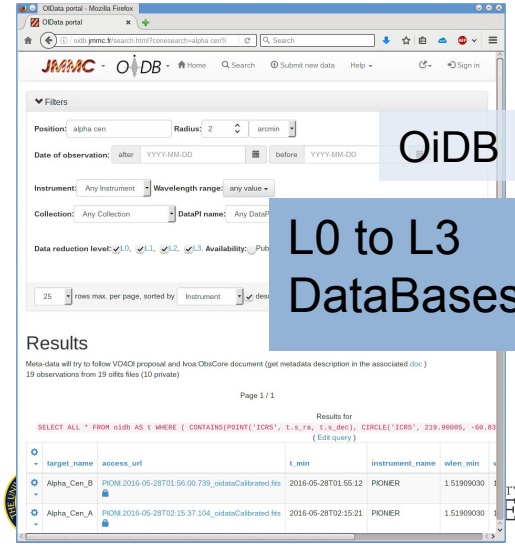
Fit Models

LITPro



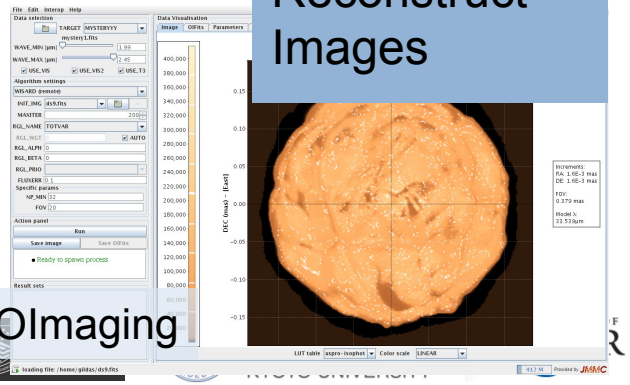
CDS Catalogs

JSDC
JMDC



OiDB

L0 to L3 DataBases



Reconstruct Images

OImaging

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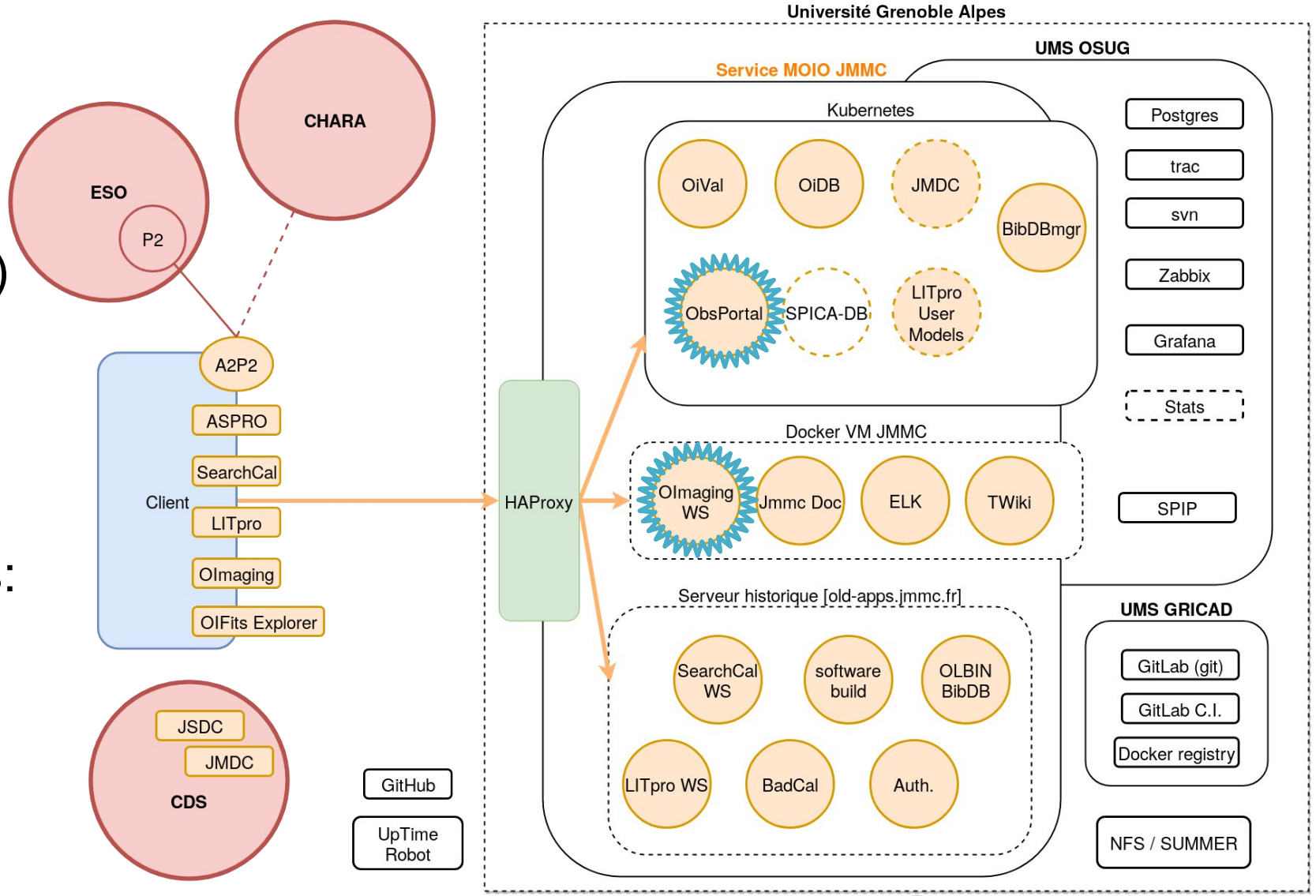
Main facts

2018 - 2020

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Behind the scene, JMMC servers updated but *Staying alive !*

- Infrastructure moving to containers (docker, k8s)
- Plenty of software / services to maintain
- New software / services:
  - OImaging (2018)
  - Obs Portal (2020)





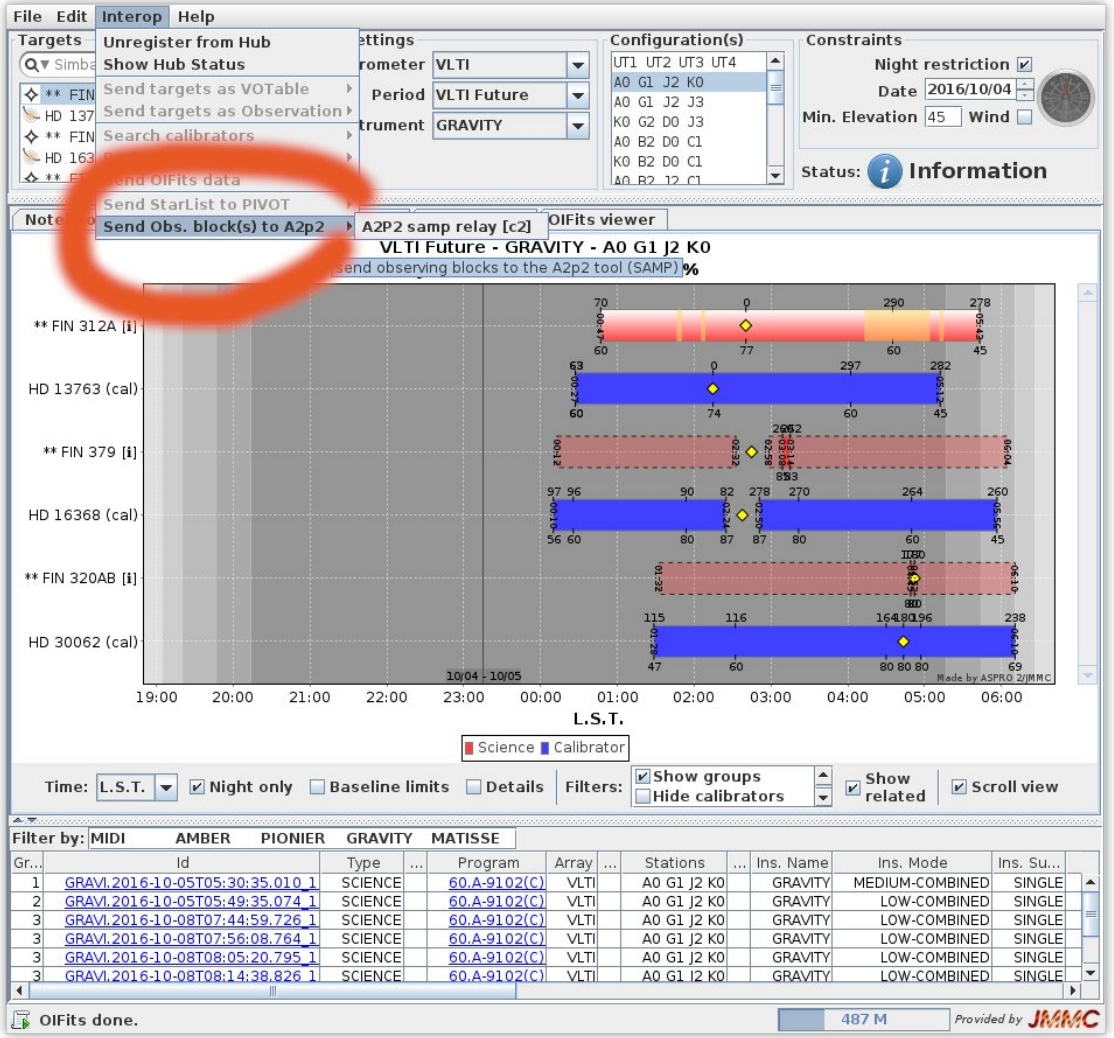
ASPRO 2
& Obs Portal

Integrate (VLTI) observation logs in ASPRO2

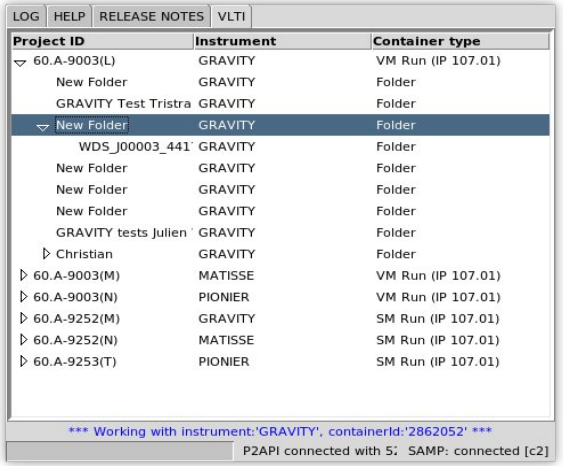
http://www.jmmc.fr/twiki/bin/view/Jmmc/Software/JmmcAspro2#Get_Information_about_past_obser

ASPRO2 21.03 released !

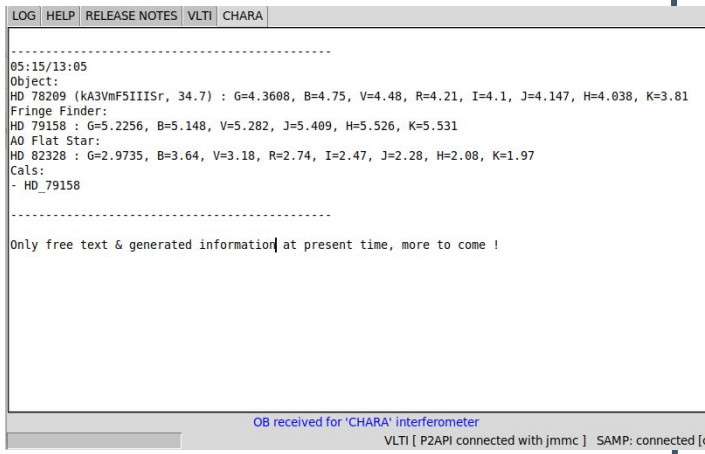
A2P2, the ASPRO2 companion tool in Python **: send observing blocks to ...**



can dialog with ASPRO and the interferometer software to send « observing blocks » to, e.g., a scheduler.



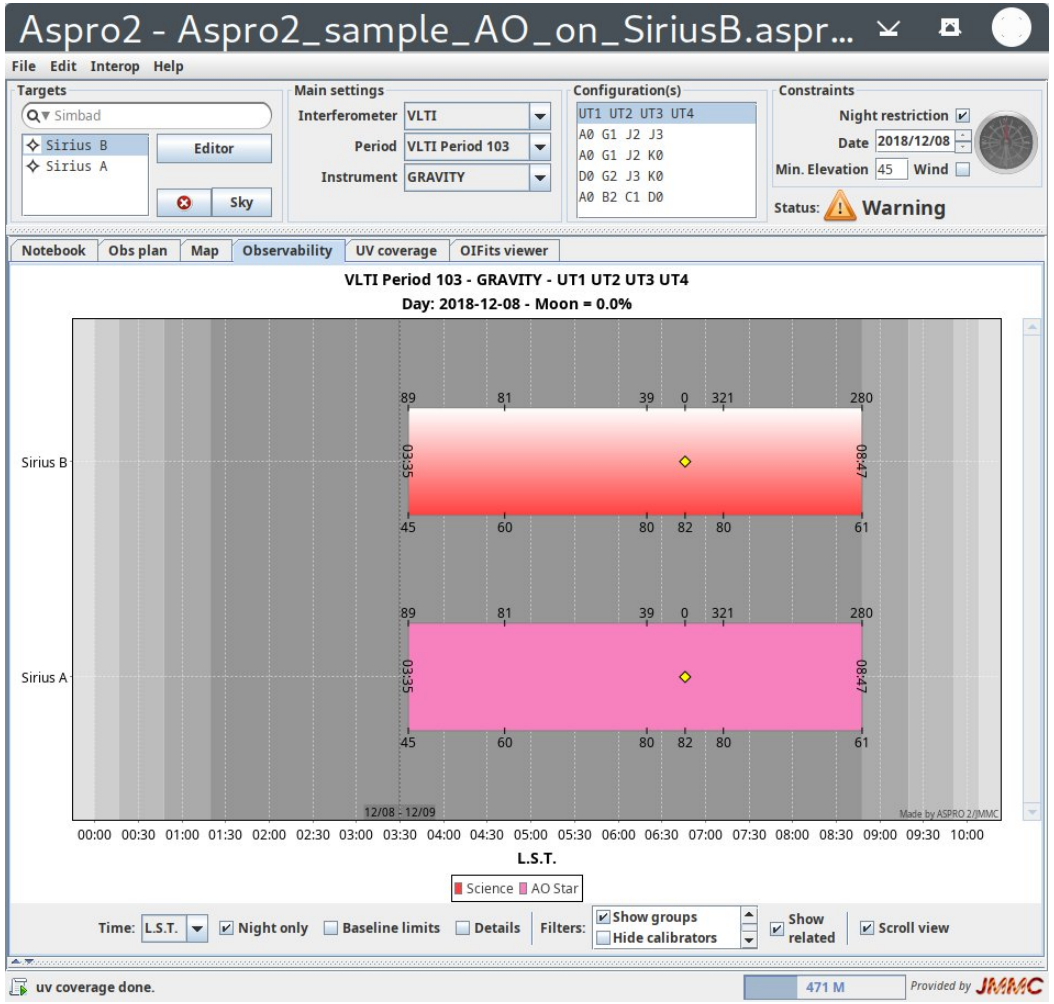
Implemented for VLTI: ASPRO2 to ESO p2

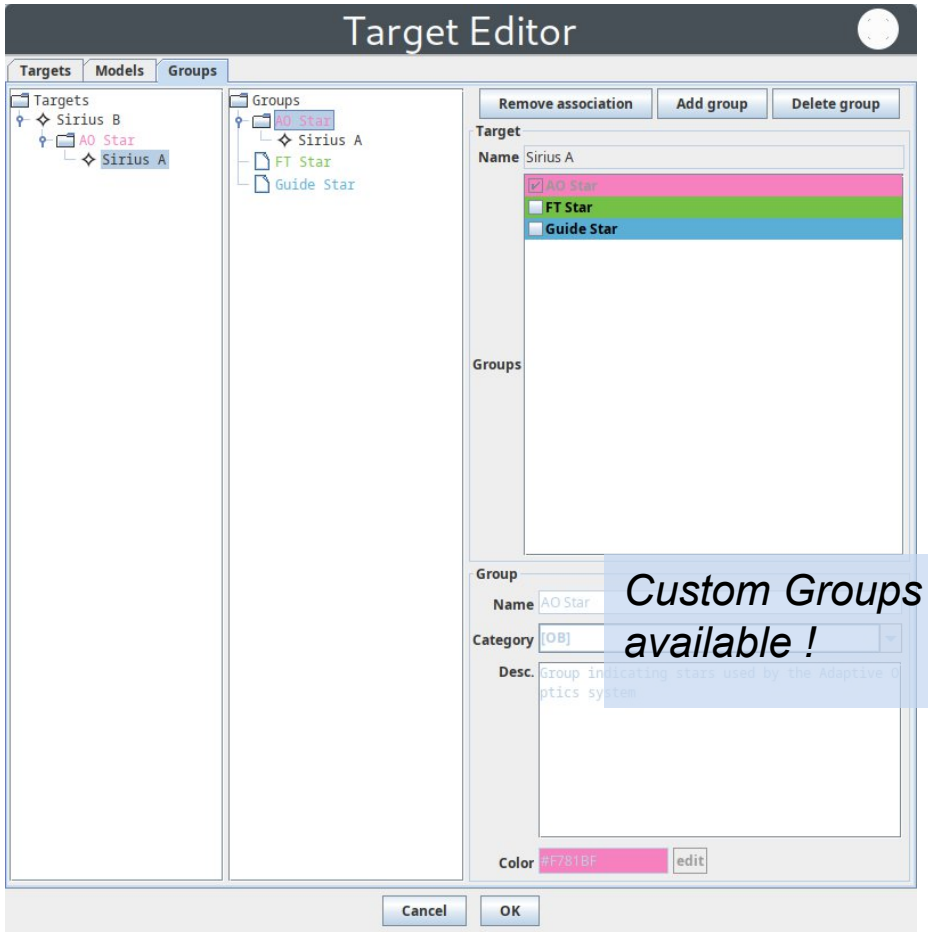


Basic CHARA support
(to be improved) => log

Python code on GitHub : easy to tweak, to maintain by instrument scientist. Try **`pip install a2p2`**

Target Groups : AO / FT stars, custom



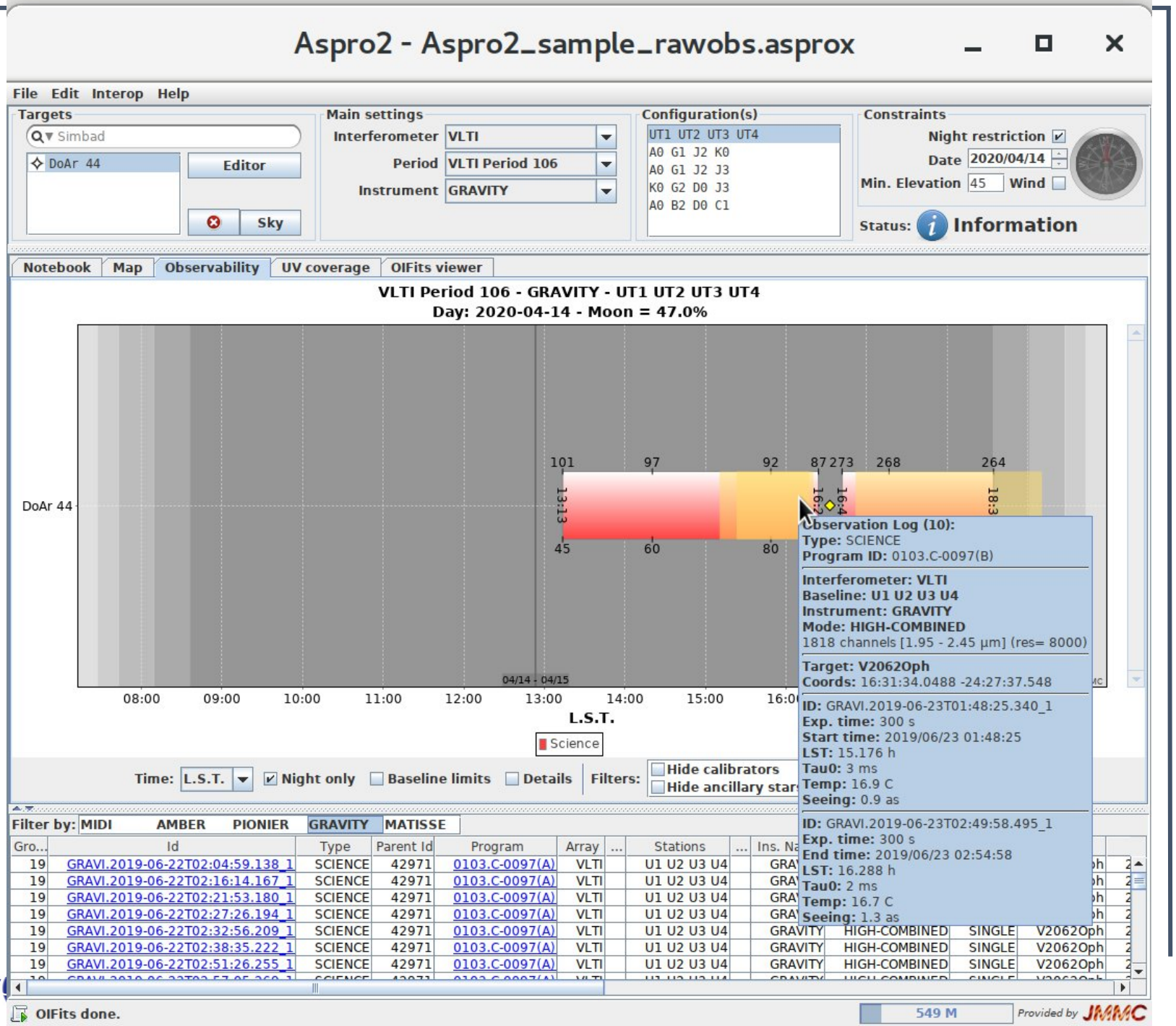


Custom Groups are available !

Obs logs

- Get latest obs logs from obs portal
  - Show table + details in tooltips
  - Filter obs logs by instrument (more filters to come)

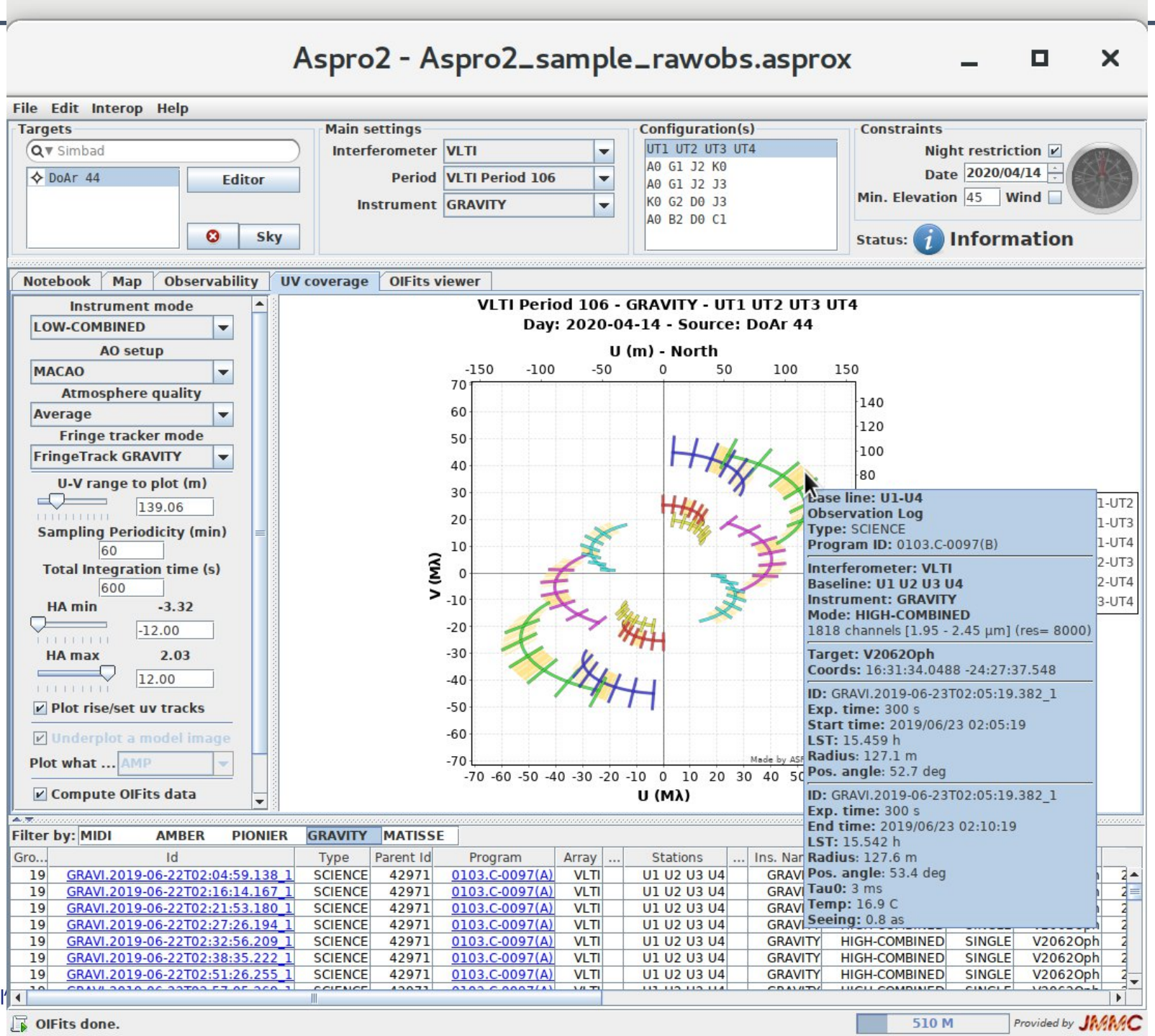
Looking forward having CHARA logs in ASPRO2 !



Obs logs

Show UV tracks of (filtered) obs logs

Note: each ESO OB gives projected baseline (radius + pa) + mjd times



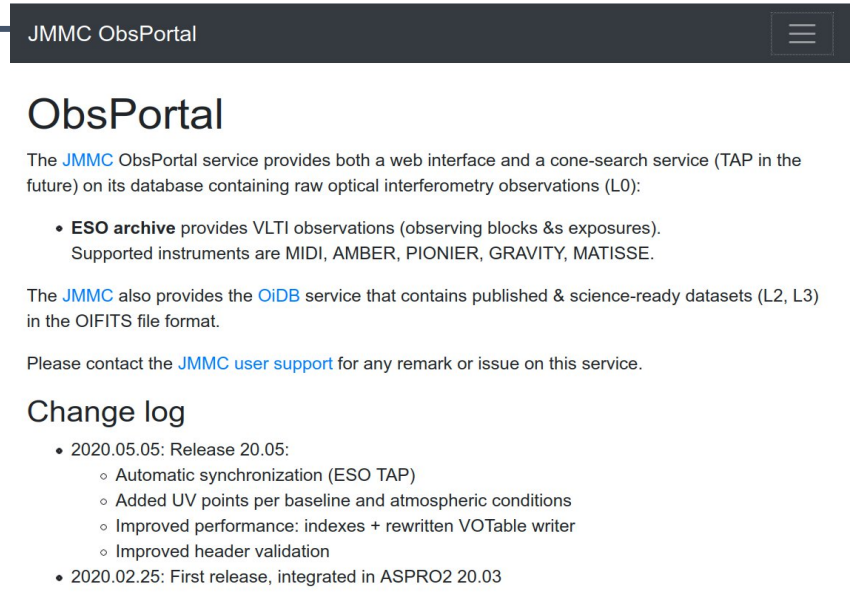
JMMC Obs Portal

http://obs.jmmc.fr/

(Python / postgresql web app)

- Observation Logs VLTI
  - all instruments
  - ESO sync twice a day (TAP)
- OiDB sync => L0 ESO

- Future:
  - Better Log filtering in ASPRO2
  - VO TAP interface
  - Improved cross identification
  - **Ingest CHARA & SPICA logs**



Database statistics	
Header count	1014509
Target count	34719
Observation count	46406
Exposure count	332563
Valid exposure count	326476 (98.17%)
Exposure Date min	2003-06-14 07:13:36.000
Exposure Date max	2021-01-18 08:42:29.592



JSDC 3 / SearchCal 6

Important JSDC upgrade to get latest data from
SIMBAD / GAIA DR2 / MDFC

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JSDC3: 475 000 stars ... to 2.5m stars !

Changes:

- Crossmatch +++ : best in 3as neighbourhood + XM flags = No duplicates.
  "CalFlag bit 3 set if the star has neighbours within 0.5 as (GAIA) or 1.0 as (2MASS)"
- Data: SIMBAD, GAIA DR2 (better ra/dec, pm, teff, dist), MDFC (flag, flux)
- *JSDC3 BRIGHT EA* : http://jmmc.fr/~bourgesl/sclsvr_JSDC/JSDC_2020/LAST/
- *JSDC3 FAINT EA* : http://jmmc.fr/~bourgesl/sclsvr_JSDC/JSDC_FAINT_2020/LAST/

Services: SearchCal 6 EA: 2021 ? GetStar EA

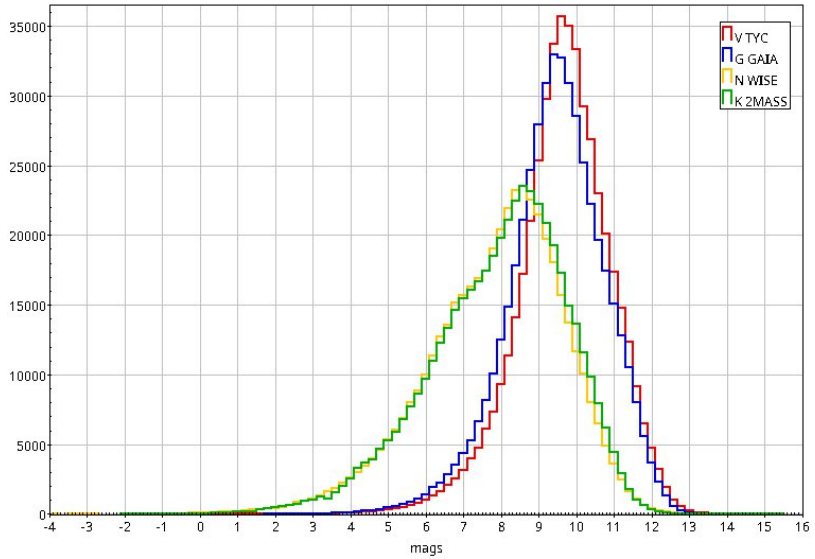
Perspectives:

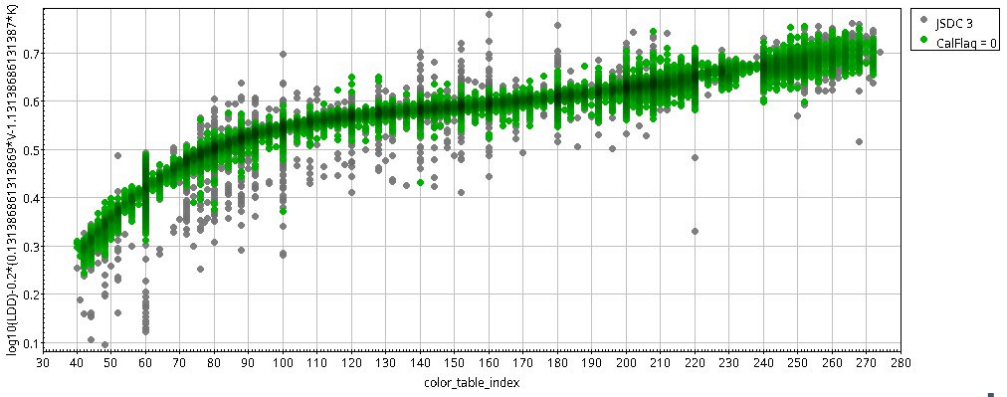
- Publish both Bright / Faint catalogs in 2021: 2.5m star (TYCHO2) in JMMC TAP interface + CDS
- Future: use updated JMDC and new color GAIA (G, Bp, Rp) + All Wise (L, M, N)

JSDC 3 BRIGHT EA:

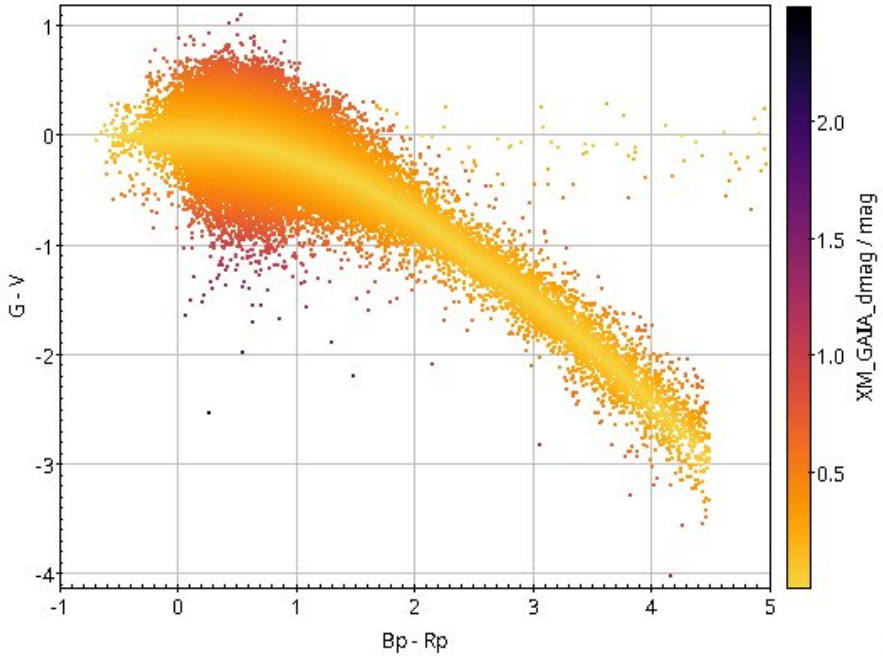
Total Rows: 474963

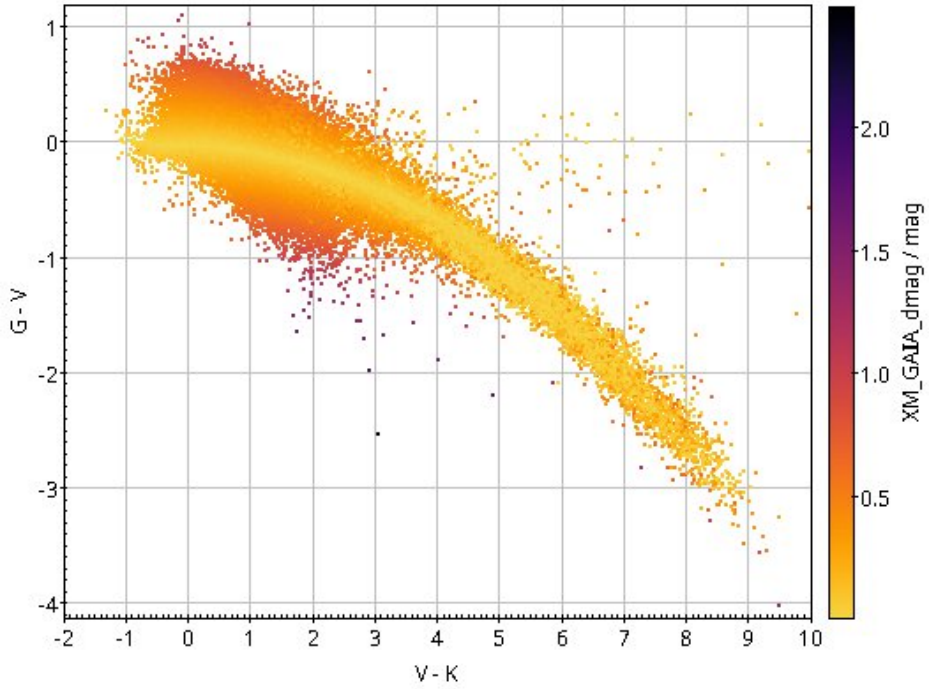
column	good
SIMBAD	474963
GAIA	471475
TYC1	473651
TYC2	473651
TYC3	474963
2MASS	474963
WISE	470294
AKARI	153541
HD	245091
HIP	105272
DM	348198
SBC9	2454
WDS	39400





GAIA G color relations used by crossmatch :



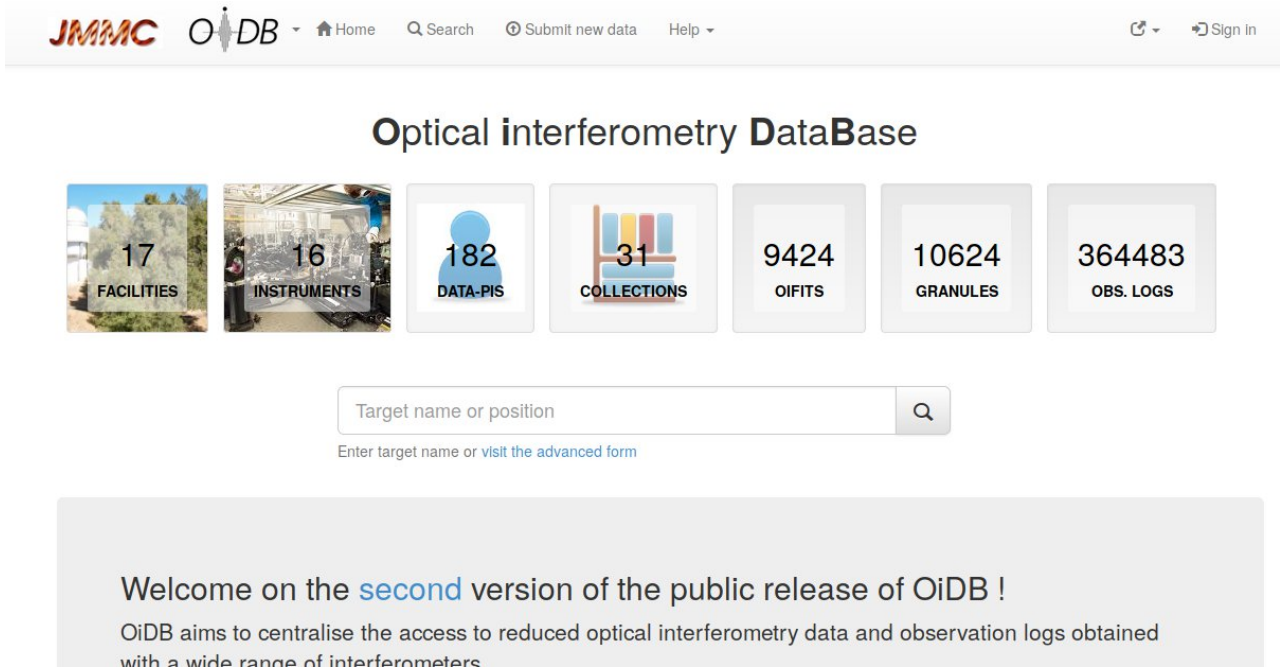




O DB

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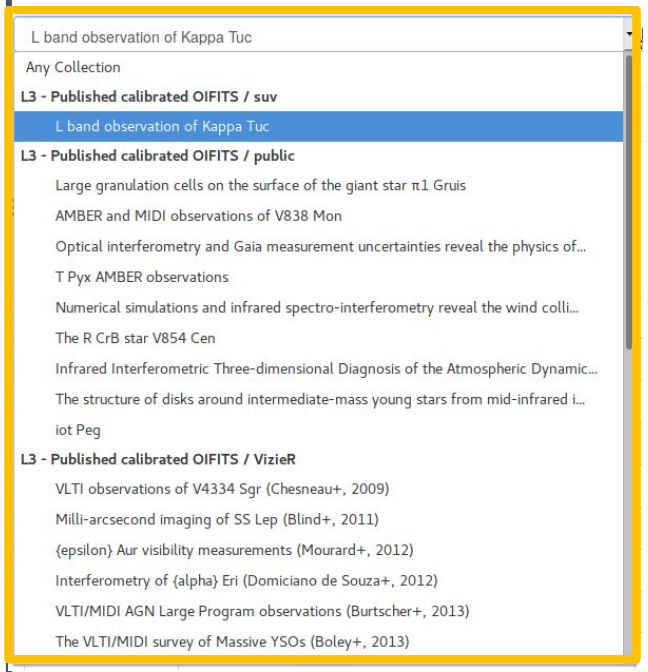
OiDB 2.0 online

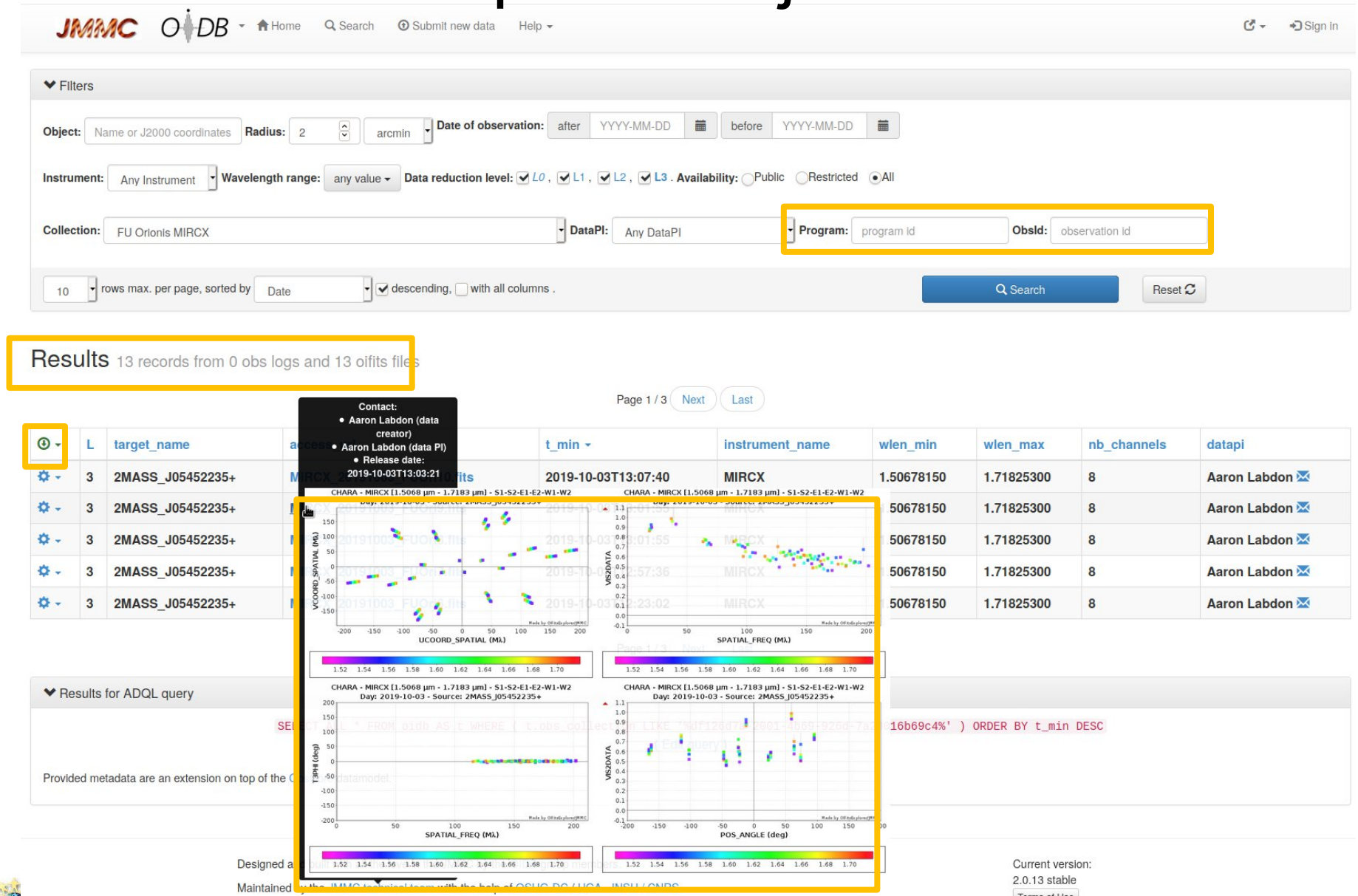


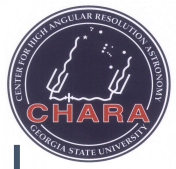
- UI enhancements:
  - search form, result table
  - quick plots, data quality plots / TF...
  - show ancillary links accross various calibration levels L(0-3)<->L(0-3)
- New categories for data collections: simulations, private (SUV)
- Improved obs log ingestion (L0) : synchronized with Obs Portal

CHARA obs log were uploaded into OiDB => take advantage of the coming CHARA Online Database (metadata++)

OiDB screenshots of https://oidb.jmmc.fr







JMMC OiDB Home Search Submit new data Dashboard Help Logged In.

Add calibrated OIFITS files

Step 1 : Upload OIFITS files

Target	Instrument	Instrument mode	Time interval	Quality

+ Add files

Step 2 : Choose collection

Create a collection

Append to ...

HD 163296 - Jozsef Varga

Step 3 : Save

JMMC OiDB Home Search Submit new data Dashboard Help Logged In.

Add calibrated OIFITS files

Step 1 : Upload OIFITS files

Target	Instrument	Instrument mode	Time interval	Quality

+ Add files

Step 2 : Choose collection

Collection details

Collection type: public / simulation / SUV

Name: collection name

Title: collection title

Description: ...

Keywords:

Data PI: Guillaume Mella

Step 3 : Save

Save

Cancel

Contact

Data PI / OBS creator

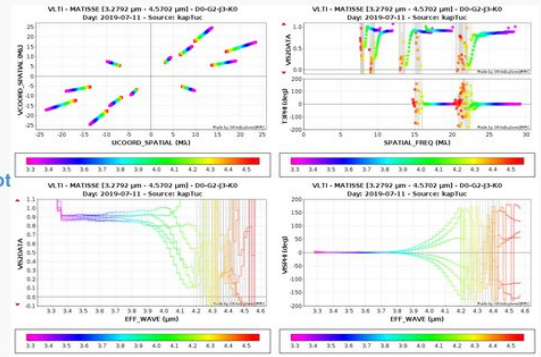
Florian Kirchschlager

Comments

+ Add the first comment

Quicklook plots

Quick plot



Contact

Data PI

Not present in metadata

OBS creator

jmmc-tech-group - Bour

Ancillary data

calib_level	id	obs_collection	datapi
0	1293809	ESO VLTI Import	

Commer

+ Add the first comme

External resources

Details progid *0103.C-0725(A)* on ESO archive

Details progid *0103.C-0725(A)* on JMMC ObsPortal

Check or display content in OIFitsValidator

Ancillary

calib_level			
3	1355457	Kappa Tuc	Florian Kirchschlager
3	1355464	Kappa Tuc	Florian Kirchschlager

External resources

Details progid *0103.C-0725(A)* on ESO archive

Details progid *0103.C-0725(A)* on JMMC ObsPortal

Details exposure *MATIS.2019-07-11T09:03:31.168_1* on JMMC ObsPortal







Current projects, next operations ...

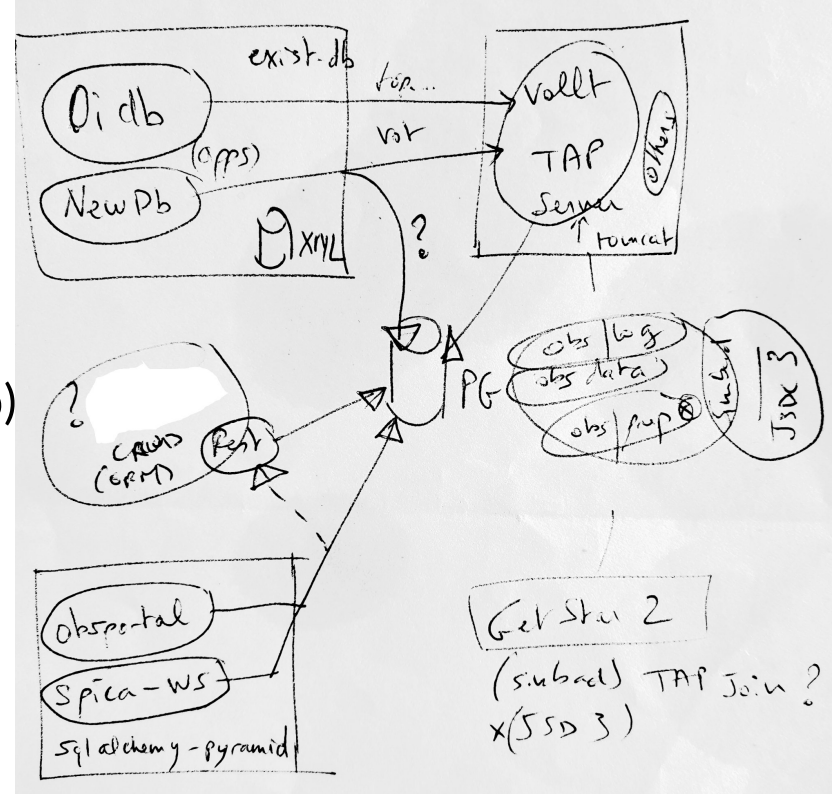
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SPICA-DB Project @ JMMC

SPICA-DB is developed on top of (OiDB + ObsPortal + TAP) services + JSDC data + few specific SPICA services to ingest data and manage database (authentication + specific web interface)

SPICA-DB project will lead to many benefits for CHARA & VLTI users:

- ASPRO2 enhancements:
  - Handle large programs (**filters**) + target extra informations
  - Manage observations with different instrument, modes (**multi-setup**)
  - Refine **Pops optimization** according to **groups**, selection … find best successive PoPs to follow a target in H.A.
  - **Improve interoperability** (votable / CSV) with VO tools
- Obs Portal / OiDB: SPICA / CHARA logs + data quality flags + index OIFITS files
- New JMMC TAP server : JSDC + obs portal + OiDB (unified view)



SPICA-DB Project @ JMMC

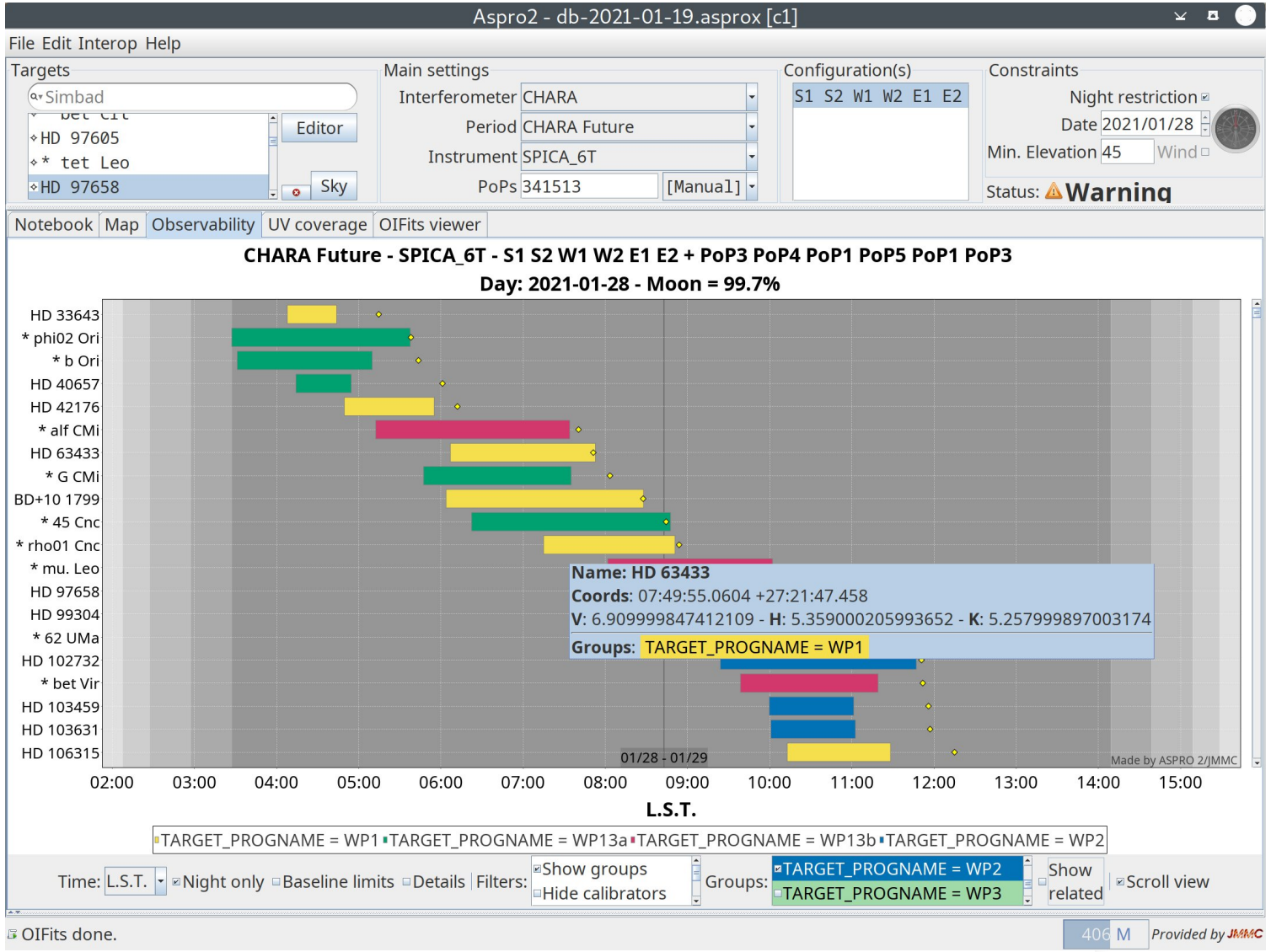
Early result:

Import SPICA's Science DB in ASPRO2:

~ 3000 sources grouped by Work Package

(best PoPs slow

& useless in such case)



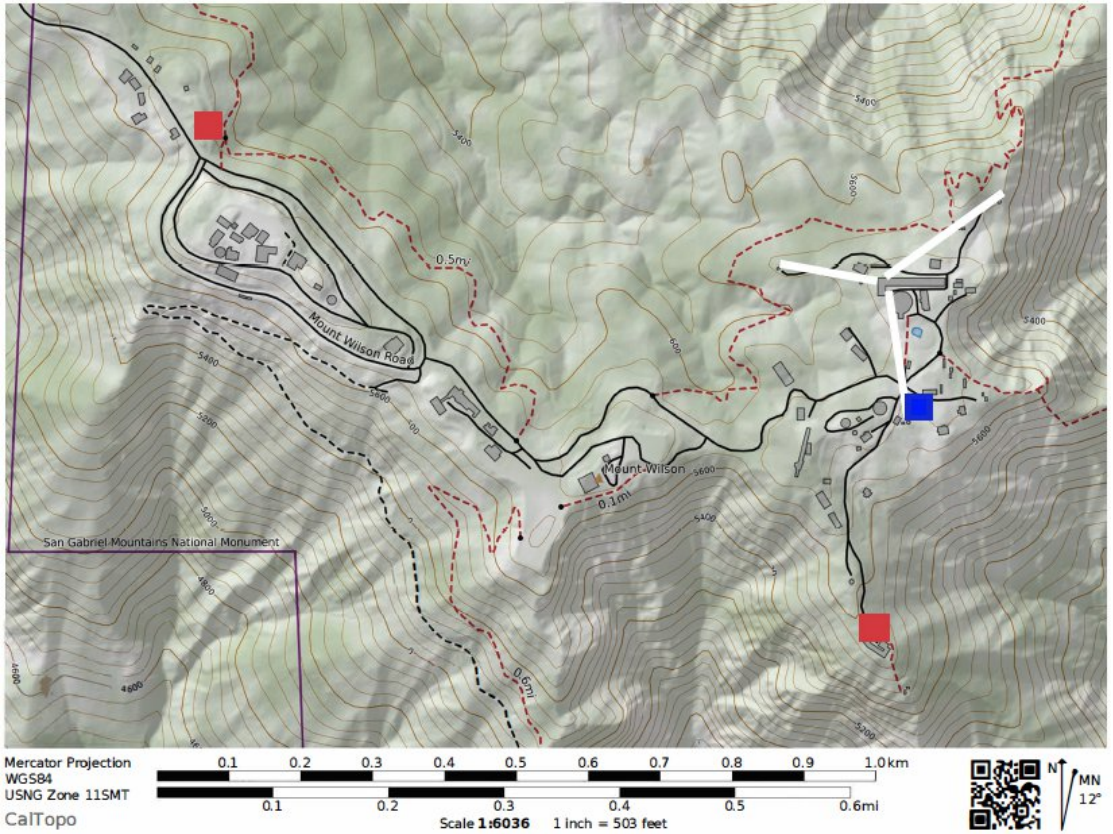
CHARA upgrade in ASPRO2: 7th to 12 telescopes

Aim: build a new ASPRO2 configuration editor & fix observability (refine optical path lengths, fiber length, PoPs, switchyard …)

- *Tiger team (Laurent, Gilles, Gail ?)*
- *Planning to be defined ? kick off ?*

Requirements:

- edit ASPRO2 configuration files: telescope positions, elements of delay ('POPS'), length and maximum velocity of each delay line cart, length of the beam transport system
- save these edited parameter files under a different file name
- load these alternative configuration files
- A well-defined format for the configuration files so that our own engineering software is able to create and save alternative configuration files.



Side topics

- Update LITpro / OImaging :
  - UI enhancements
  - Fix performance issues (be ready for next VLTI School)
  - Release new algorithms (genetic fitter, polychromatic data)
- OIFitsExplorer enhancements: binning, filtering
- Open more codes :
  - https://github.com/JMMC-OpenDev/
  - https://github.com/JMMC-OpenDev/jmmc-java-build to get source code and build all java applications
  - https://gricad-gitlab.univ-grenoble-alpes.fr/OSUG/JMMC

Final words

! Special thanks to Gilles Duvert, the author of ASPRO 1 ! still in the JMMC shuttle, giving commands to the new command crew before his retirement.

Already great CHARA support @ JMMC, let's go further with new opportunities (telescope upgrades, SPICA-DB...) and have a stronger collaboration !

Please report any problem or question

to the JMMC User Support (SUV team)

Feedback always appreciated and useful !

CHARA / JMMC action items to be planned:

- CHARA upgrade in ASPRO2
- CHARA databases <=> JMMC databases
- A2P2 for CHARA (cosmic debris) ?

Let's plan a regular virtual meeting ?