

# JMMC

# data format requirements

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VLTI reduced data workshop

2022-06-21



# Summary

- Short introduction OiDB
- Data content
  - OiFits
  - Metadata
- Requirements
  - Data injection
  - Validation/curation
  - Protection



## Optical interferometry DataBase



Target name or position

Enter target name or [visit the advanced form](#)

Please use next url to use OIBD's TAP server : <http://tap.jmmc.fr/volll/tap/>

- Central access to optical interferometry data
- Web & programmatic interface (IVOA Obscore/TAP)
- Multiple feeding
  - harvesting
  - user uploads
  - Survey synchronization (SPICA@CHARA)
- Ready for public or protected data
- Worldwide facilities (& space telescope simulated data )

# Short introduction

<https://oidb.jmmc.fr>

- Data products:
  - Obs records (L0)
  - OIFits files
    - Uncalibrated L1
    - Calibrated L2
    - Calibrated and published L3
- Data categories :
  - SCIENCE, CALIBRATOR
- Additional data (datalinks):
  - Quick views
  - Quality reports
  - Can be anything behind an URL : images,etc,...

# OiDB screenshots

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**Filters**

**Object:** Name or J2000 coordinates   
**Radius:** 2   
 arcmin   
**Date of observation:** after YYYY-MM-DD   
 before YYYY-MM-DD

**Instrument:** Any Instrument   
**Wavelength range:** any value   
**Data reduction level:**  L0,  L1,  L2,  L3   
**Data category:**  SCIENCE,  CALIB   
**Availability:**  Public,  Restricted,  All

**Collection:** Any Collection   
**DataPI:** Any DataPI   
**Program id:** program id   
**SubId:** sub id   
**ObsId:** ~MATIS

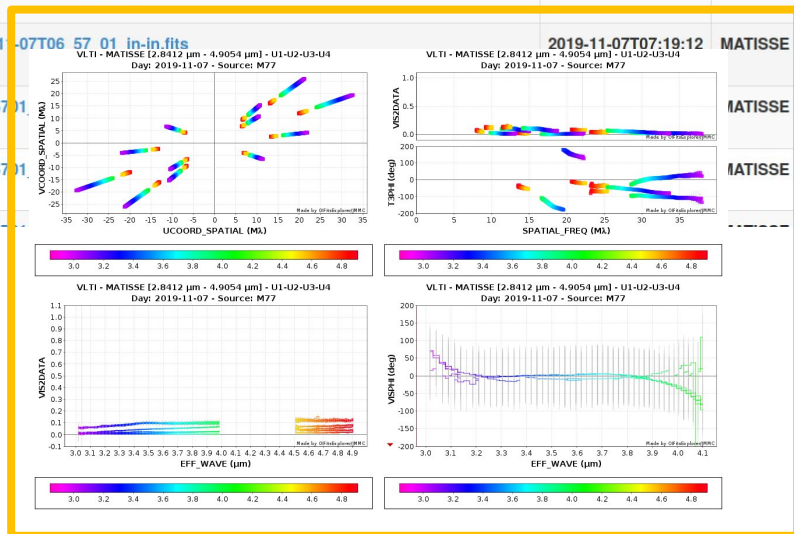
25 rows max. per page, sorted by Date   
 descending,  with all columns

Results 35 records from 0 obs logs and 35 oifits files

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	target_name	access_url	t_min	instrument_name	wlen_min	wlen_max	nb_channels	datapi
⚙	3 M77	<a href="#">m77_LM_2019-11-07T06_57_01_out-out.fits</a>	2019-11-07T07:26:23	MATISSE	2.84122460	4.90537740	110	Violeta Gamez Rosas
⚙	3 M77	<a href="#">m77_LM_2019-11-07T06_57_01_in-in.fits</a>	2019-11-07T07:19:12	MATISSE	2.84122460	4.90537740	110	Violeta Gamez Rosas
⚙	3 M77	<a href="#">2019-11-07T065701...</a>		MATISSE	7.90602900	13.03288500	121	Violeta Gamez Rosas
⚙	3 M77	<a href="#">2019-11-07T065701...</a>		MATISSE	7.90602900	13.03288500	121	Violeta Gamez Rosas



L band observation of Kappa Tuc

Any Collection

**L3 - Published calibrated OIFITS / suv**

L band observation of Kappa Tuc

**L3 - Published calibrated OIFITS / public**

Large granulation cells on the surface of the giant star  $\pi$ 1 Gruis

AMBER and MIDI observations of V838 Mon

Optical interferometry and Gaia measurement uncertainties reveal the physics of...

T Pyx AMBER observations

Numerical simulations and infrared spectro-interferometry reveal the wind colli...

The R CrB star V854 Cen

Infrared Interferometric Three-dimensional Diagnosis of the Atmospheric Dynamic...

The structure of disks around intermediate-mass young stars from mid-infrared l...

iot Peg

**L3 - Published calibrated OIFITS / VizieR**

VLTI observations of V4334 Sgr (Chesneau+, 2009)

Milli-arcsecond imaging of SS Lep (Blind+, 2011)

(epsilon) Aur visibility measurements (Mourard+, 2012)

Interferometry of (alpha) Eri (Domiciano de Souza+, 2012)

VLTI/MIDI AGN Large Program observations (Burtscher+, 2013)

The VLTI/MIDI survey of Massive YSOs (Boley+, 2013)

OiFits are split by granules, grouped by collections

# OiDB data format requirements

- OIFits first requirement level
  - **Every file must conform to OIFITS standard V1 or V2**
    - Validation codes rely on JMMC oitools. See also <http://oival.jmmc.fr/about.html>
  - OiDB validates user files during upload
    - Non oifits files are rejected
    - Published data (L3) are ingested without message
    - Users should try to fix reported errors for L1/L2
  - OiDB trusts metadata submissions (external deposit)

# OiDB data **content** requirements => OiDB metadata requirements

- Metadata requirements
  - Everything is optional, but the more information is provided the better
  - Data ingestion pre-fills some user fields looking for some standard keywords (progid, category...)
  - OiDB helps users to register targets with Simbad identifier
    - -> some target names are not resolved by simbad
- Metadata statistics highlight some faulty data
  - E.g. Obs date in the future or before 1900...
  - Target names and coordinates are varying (in OIFITS) so correct cross-identification is difficult (ex : Sirius ...)

# OiDB curation

- Standardization is very important :
  - Helped us to code some rules to help the users to go in the right direction
  - save time
- Some rules/logic may be hard to address using simple UI
  - Our approach consists in fixing specific issues by hand and implementing automatization when the need is well defined.
  - We developed an API to manage our catalogs and use it on OiDB to run in a fast and flexible way to fix database content.
    - We used to run manual sql commands but now prefer this declarative approach.

# OiDB data **protection** requirements

- Public data are easier to use, but some data must be protected
- Embargo periods follow archive data policy :
  - OiDB uses their release\_date as references
  - protected/secured OIFits + datalink may be hosted by OiDB (and remote)
  - JMMC accounts (email) can be linked to one or more datapi name so we can generate (every day) a protection file on remote data storage (PIONIER\_L2, SPICA)
- (SUV) expertise center & individual protected data deposits get an additional delay for reduced data release\_date



# Conclusion

- OIFitsExplorer tool can use the same credentials to retrieve and merge all of your protected data in a glance (+ public ones without any cost)
- Convinced by the interoperability between tools :
  - do more than the sum of what can be done by each individual tool.
- Good data & metadata help to provide some efficient gateways accross data repositories.
  - e.g. : just giving the proper id, your can visualize and explore all data of your PIONIER program

Questions ?