





# Optical interferometry DataBase (OiDB): Update and development perspectives

Gaspard Duchêne (IPAG) on behalf of the JMMC team























### Quick Overview





































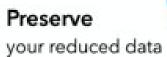




#### Quick Overview



#### Why share your data on OiDB?









Capitalize on the data reduction









VO protocols and tools

Create collaborations









12353 **OIFITS** 































#### Quick Overview



#### Why share your data on OiDB?





O DB

Capitalize on the data reduction





Increase your citation rate



Create

collaborations

Interoperability VO protocols and tools















12353 **OIFITS** 

13613 **GRANULES** 

501803 **OBS. LOGS** 



























# 2023 Updates



No major upgrades (user interface, underlying database)



















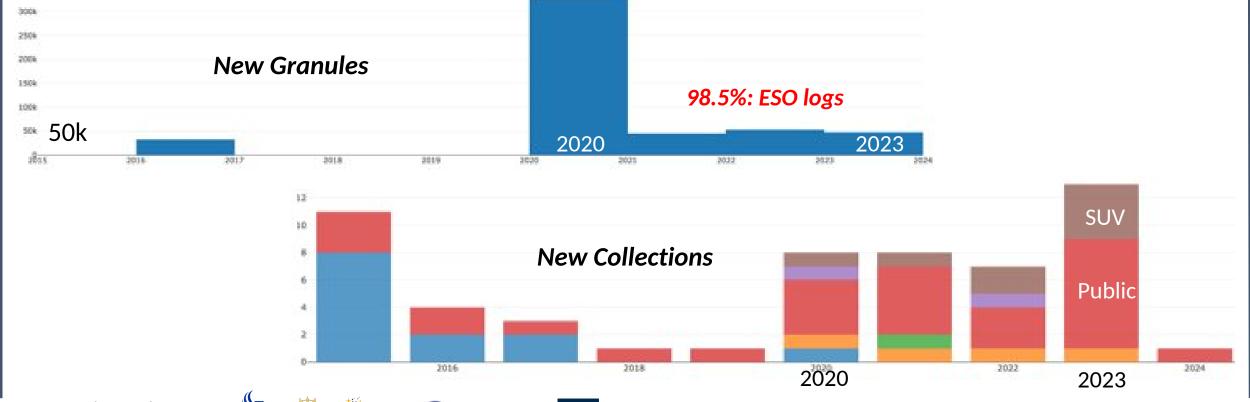




## 2023 Updates



- No major upgrades (user interface, underlying database)
- Ingestion of new data (more on this later!)
  - PIONIER, MATISSE, GRAVITY, CHARA

























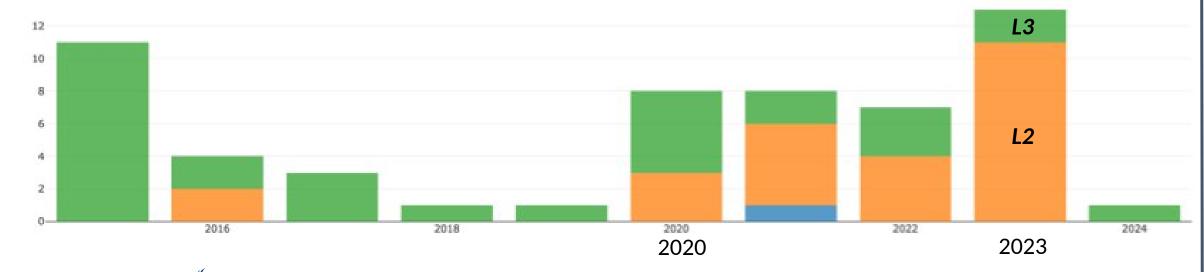




## 2023 Updates



- No major upgrades (user interface, underlying database)
- Ingestion of new data (more on this later!)
  - PIONIER, MATISSE, GRAVITY, CHARA
  - 3 new collections with L3 data (out of 25+ new science papers)
    - Clement+2022 (MIRC, MIRC-X, MYSTIC), Cannon+2023, Varga+2023 (MATISSE)



























#### O DB

# Perspective for 2024 and beyond

Overarching goal: better support the scientific needs of the community

























#### O DB

# Perspective for 2024 and beyond

- Overarching goal: better support the scientific needs of the community
- Identified needs from scientists' point of view:
  - Access as much data as possible in one database
  - Conduct scientific analysis (post-observing, incl. archival data)
  - Optimize collaborative work (large surveys, scattered collaborations)
  - Enable long-term preservation and stewardship of results























#### O ₽DB

# Perspective for 2024 and beyond

- Overarching goal: better support the scientific needs of the community
- Identified needs from scientists' point of view:
  - Access as much data as possible in one database
  - Conduct scientific analysis (post-observing, incl. archival data)
  - Optimize collaborative work (large surveys, scattered collaborations)
  - Enable long-term preservation and stewardship of results
- Actions for the JMMC team:
  - Translate these science goals into technical elements/needs
  - Define requirements and priority levels
    - Importance of community input!

























### Ingest more data in OiDB



- Actively track data based on availability statements in paper
  - Incite authors/groups to submit their L3 data
  - Identify authors/groups who are willing to submit data but don't have time/resources

bibcode	title	creator	date	Instruments	OIDB?	Data availability	Comment
2024AJ16764B	VLTI/GRAVITY Provides Evide	Balmer, William O	2/1/2024	GRAVITY	(12.1		
2024MNRAS.527L88D	Images of Betelgeuse with VL	Drevon, J.; Millour,	1/1/2024	MATISSE	L2+L3	OIDB direct link	Some data from 2023
2024MNRAS.527.8907T	Orbits and dynamical masses	Torres, Guillermo;	1/1/2024	MIRC-X, MYSTIC	12	Calibrated data will be av	ailable on OIDB and CH
2024A&A681A47V	Mid-infrared evidence for iro	Varga, J.; Waters, L	1/1/2024	PIONIER, MATISSE	L2, L3	OIDB link	
2023AJ166268B	33 New Stellar Angular Diam	Baines, Ellyn K.; Cla	12/1/2023	NPOI	0.5	Data freely available upo	n request
2023MNRAS.525.1142G	The carbonaceous dust at sub	GÃ;mez Rosas, Viol	10/1/2023	MATISSE	L3	Reduced data available o	n github
2023ApJ95699B	VLTI/GRAVITY Observations a	Balmer, William O.	10/1/2023	GRAVITY	(2)		
2023AJ166123K	Refining the Stellar Paramete	Korolik, Maria; Roe	9/1/2023	MIRC-X	-		
2023ARA&A61237E	Advances in Optical/Infrared	Eisenhauer, Frank;	8/1/2023				Review article
2023AJ16678A	The Great Dimming of the Hy	Anugu, Narsireddy;	8/1/2023	MIRC-X, MYSTIC	8278		
2023A&A676A.124B	FU Orionis disk outburst: Evid	Bourdarot, G.; Berg	8/1/2023	PIONIER, GRAVITY	L2, -	OIDB link	
2023A&A675A46C	The dusty circumstellar envir	Cannon, E.; Montar	7/1/2023	MATISSE	L3		
2023MNRAS.521.5255W	Binarity and beyond in A star:	Waisberg, Idel; Klei	6/1/2023	PIONIER, GRAVITY	-, L2	OIDB link	No PIONIER data in O
2023MNRAS.521.5232W	Binarity and beyond in A star:	Waisberg, Idel; Klei	6/1/2023	GRAVITY	L2	OIDB link	























# Ingest more data in OiDB



- Actively track data based on availability statements in paper
  - Incite authors/groups to submit their L3 data
  - Identify authors/groups who are willing to submit data but don't have time/resources
- Link to GRAVITY collection in prep. (ESO will have an L3 database)

bibcode	title	creator	date	Instruments	OIDB?	Data availability	Comment
2024AJ16764B	VLTI/GRAVITY Provides Evide	Balmer, William O.	2/1/2024	GRAVITY	(25)		
2024MNRAS.527L88D	Images of Betelgeuse with VL	Drevon, J.; Millour,	1/1/2024	MATISSE	L2+L3	OIDB direct link	Some data from 2023
2024MNRAS.527.8907T	Orbits and dynamical masses	Torres, Guillermo;	1/1/2024	MIRC-X, MYSTIC	121	Calibrated data will be ava	i <mark>l</mark> able on OIDB and CH
2024A&A681A47V	Mid-infrared evidence for iro	Varga, J.; Waters, L	1/1/2024	PIONIER, MATISSE	L2, L3	OIDB link	
2023AJ166268B	33 New Stellar Angular Diam	Baines, Ellyn K.; Cla	12/1/2023	NPOI	(15)	Data freely available upon	request
2023MNRAS.525.1142G	The carbonaceous dust at sub	GÃ;mez Rosas, Viol	10/1/2023	MATISSE	L3	Reduced data available on	github
2023ApJ95699B	VLTI/GRAVITY Observations a	Balmer, William O.	10/1/2023	GRAVITY	(2)		
2023AJ166123K	Refining the Stellar Paramete	Korolik, Maria; Ro∈	9/1/2023	MIRC-X	-		
2023ARA&A61237E	Advances in Optical/Infrared	Eisenhauer, Frank;	8/1/2023				Review article
2023AJ16678A	The Great Dimming of the Hy	Anugu, Narsireddy;	8/1/2023	MIRC-X, MYSTIC	-		
2023A&A676A.124B	FU Orionis disk outburst: Evid	Bourdarot, G.; Berg	8/1/2023	PIONIER, GRAVITY	L2, -	OIDB link	
2023A&A675A46C	The dusty circumstellar envir	Cannon, E.; Montar	7/1/2023	MATISSE	L3		
2023MNRAS.521.5255W	Binarity and beyond in A star	Waisberg, Idel; Klei	6/1/2023	PIONIER, GRAVITY	-, L2	OIDB link	No PIONIER data in O
2023MNRAS.521.5232W	Binarity and beyond in A star	Waisberg, Idel; Klei	6/1/2023	GRAVITY	L2	OIDB link	























#### Ingest more data in OiDB



- Actively track data based on availability statements in paper
  - Incite authors/groups to submit their L3 data
  - Identify authors/groups who are willing to submit data but don't have time/resources
- Link to GRAVITY collection in prep. (ESO will have an L3 database)
- Link to CHARA archive and/or reduced data

bibcode	title	creator	date	Instruments	OIDB?	Data availability	Comment
2024AJ16764B	VLTI/GRAVITY Provides Evide	Balmer, William O.	2/1/2024	GRAVITY	0.7		
2024MNRAS.527L88D	Images of Betelgeuse with VI	Drevon, J.; Millour,	1/1/2024	MATISSE	L2+L3	OIDB direct link	Some data from 2023
2024MNRAS.527.8907T	Orbits and dynamical masses	Torres, Guillermo;	1/1/2024	MIRC-X, MYSTIC	(2)	Calibrated data will be ava	ilable on OIDB and CH
2024A&A681A47V	Mid-infrared evidence for iro	Varga, J.; Waters, L	1/1/2024	PIONIER, MATISSE	L2, L3	OIDB link	
2023AJ166268B	33 New Stellar Angular Diam	Baines, Ellyn K.; Cla	12/1/2023	NPOI	( <del>-</del>	Data freely available upon	request
2023MNRAS.525.1142G	The carbonaceous dust at sub	:GÃ;mez Rosas, Viol	10/1/2023	MATISSE	L3	Reduced data available on	github
2023ApJ95699B	VLTI/GRAVITY Observations a	Balmer, William O	10/1/2023	GRAVITY	(2)		
2023AJ166123K	Refining the Stellar Paramete	Korolik, Maria; Roe	9/1/2023	MIRC-X	)		
2023ARA&A61237E	Advances in Optical/Infrared	Eisenhauer, Frank;	8/1/2023				Review article
2023AJ16678A	The Great Dimming of the Hy	Anugu, Narsireddy;	8/1/2023	MIRC-X, MYSTIC			
2023A&A676A.124B	FU Orionis disk outburst: Evid	Bourdarot, G.; Berg	8/1/2023	PIONIER, GRAVITY	L2, -	OIDB link	
2023A&A675A46C	The dusty circumstellar envir	Cannon, E.; Montar	7/1/2023	MATISSE	L3		
2023MNRAS.521.5255W	Binarity and beyond in A star	Waisberg, Idel; Klei	6/1/2023	PIONIER, GRAVITY	-, L2	OIDB link	No PIONIER data in O
2023MNRAS.521.5232W	Binarity and beyond in A star	Waisberg, Idel; Klei	6/1/2023	GRAVITY	L2	OIDB link	























## Conduct scientific analysis



- User interface improvements:
  - Handle "duplicate" entries in database
  - Download, quicklook multiple granules at once (=> download basket ?)
  - Improve data upload interface

























#### O DB

## Conduct scientific analysis

- User interface improvements:
  - Handle "duplicate" entries in database
  - Download, quicklook multiple granules at once (=> download basket ?)
  - Improve data upload interface
- Database content:
  - Archive data other than OIFITS files (reconstructed images, nulling data)
  - Improve Quality Flags (#, terminology, optional/mandatory)























### Conduct scientific analysis

- User interface improvements:
  - Handle "duplicate" entries in database
  - Download, quicklook multiple granules at once (=> download basket ?)
  - Improve data upload interface
- **Database content:** 
  - Archive data other than OIFITS files (reconstructed images, nulling data)
  - Improve Quality Flags (#, terminology, optional/mandatory)
- Handle ambiguous object names and imprecise coordinates

























# Optimize collaborative work



- Help facilitate execution of surveys (illustrated with SPICA example)
  - Handling of science catalogs
  - Catalog-to-OB pathway























#### Optimize collaborative work

- Help facilitate execution of surveys (illustrated with SPICA example)
  - Handling of science catalogs
  - Catalog-to-OB pathway
- Enable "private" collections for active collaborations
  - Tag appropriate datasets within OiDB
  - Allow "temporary" data for internal exchanges
  - Allow comparison between different reductions pipelines
  - Enable private exchanges of notes/comments between team members

























#### $O \not\parallel E$

## Long-term preservation of data

- Enable version-tracking of data products
  - Depending on DRP version
  - Depending on custom-tailored uses of a given DRP























# Long-term preservation of data

- Enable version-tracking of data products
  - Depending on DRP version
  - Depending on custom-tailored uses of a given DRP
- Provide DOIs
  - Increasing demand from journals and institutions
  - Requires long-term data preservation post-publication























## Long-term preservation of data

- Enable version-tracking of data products
  - Depending on DRP version
  - Depending on custom-tailored uses of a given DRP
- Provide DOIs
  - Increasing demand from journals and institutions
  - Requires long-term data preservation post-publication
- Provide direct links from journals/ADS
  - **OIFITS** files
  - Other dataproducts

























# Let's open the conversation!





















