

The JMMC in 2017

G .Duvert

ESO/Garching
March 9 2017

<http://www.jmmc.fr/doc/index.php?search=JMMC-PRE-0000-0023>

JMMC JEAN-MARIE MARIOTTI CENTER
Infrared and Optical Interferometry for Astronomy

The JMMC in 2017



(From the JMMC general assembly november 2015, Nice)

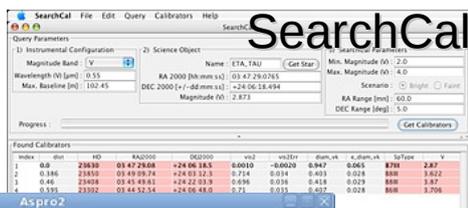
ESO/Garching
March 9 2017

JMMC JEAN-MARIE MARIOTTI CENTER
Infrared and Optical Interferometry for Astronomy



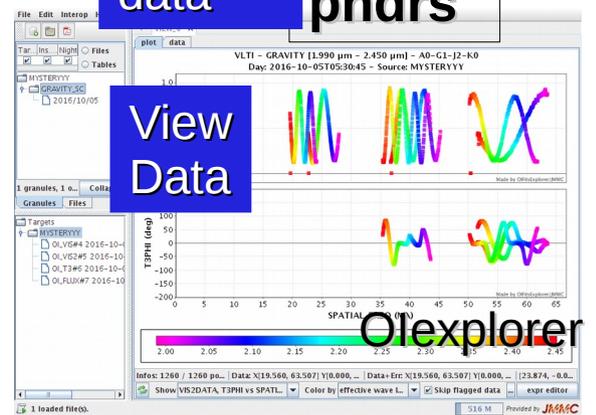
VLT

Prepare Observations



Reduce data
amclib
pndrs

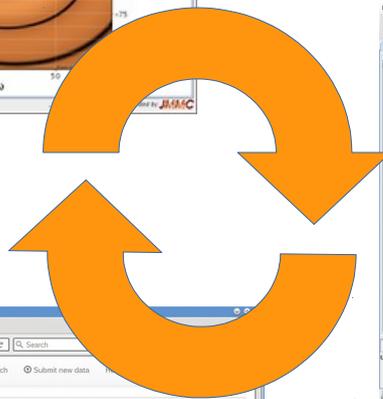
View Data



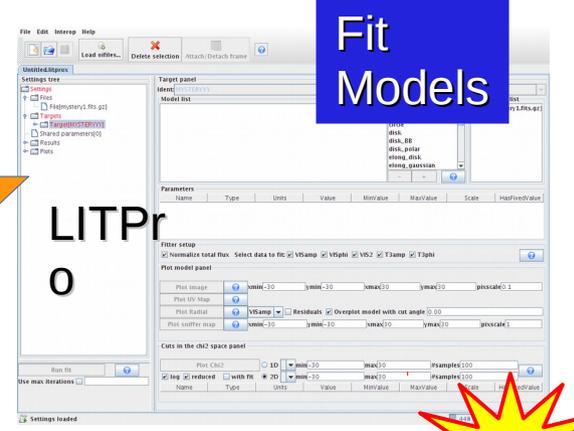
Olexplorer



CDS Catalogs



Fit Models



LITPRO



+ Training

+ User Support

+ OLBIN forum
And Publications

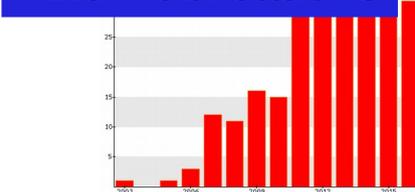
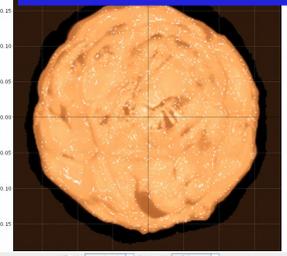
JSDC
JMDC

OiDB

L0 to L3
DataBases

Reconstruct
Images

OImaging



JMMC Yesterday

<http://www.jmmc.fr>

JMMC

Scientific Council

Pdt: T. Paumard

Director

Gilles Duvert

Directors Council

Pdt: DSAA INSU

Training

*A. Meilland
(OCA)*

Coordination Center (OSUG)

Technical Direction: G. Mella (OSUG)

Engineers : G. Mella (OSUG), L. Bourgès (OSUG), R. Jacquot (OSUG)

Research & Development Groups

Preparation of Observations
*Gilles Duvert
(IPAG/OSUG)*

Calibrators
*A. Chelli (LAGRANGE/
OCA)*

Instrument's DRS
*J-B Le Bouquin
(IPAG/OSUG)*

Model-fitting
*Isabelle Tallon-
Bosc
(CRAL/OSUL)*

**Software Development
&
Web services**

Image Reconstruction
*E. Thiébaud
(CRAL/OSUL)*

Data Bases
*M. Benisty (IPAG/OSUG)/
X. Haubois (ESO)*

OIFITSExplorer
*M. Benisty
(IPAG/OSUG)*

Network activities groups in



JMMC new structure

Pôle JMMC

Scientific Council
Pdt: T. Paumard

Director
Gilles Duvert

Directors Council
Pdt: DSAA INSU

Training
A. Meilland (OCA)

Coordination Center (OSUG)
Technical Direction: G. Mella (OSUG)

Software Development & Web services

Engineers : G. Mella (OSUG), L. Bourgès (OSUG), R. Jacquot (OSUG)

Grenoble
OSUG

Nice
OCA

Lyon
OSUL

Paris

Responsible:
G. Duvert
(IPAG/OSUG)

TOOLS & TECHNIQUES

Research & Development Groups

Preparation of Observations
Gilles Duvert
(IPAG/OSUG)

Calibrators
A. Chelli
(LAGRANGE/OCA)

Instrument'sDRS
J-B Le Bouquin
(IPAG/OSUG)

Model-fitting
Isabelle Tallon-Bosc
(CRAL/OSUL)

Image Reconstruction
E. Thiébaud
(CRAL/OSUL)

Data Bases
M. Benisty
(IPAG/OSUG)/
X. Haubois (ESO)

OIFITSExplorer
M. Benisty
(IPAG/OSUG)

Responsible:
A. Matter
(LAGRANGE/OCA)

VLTI CENTER

Support
(many)

In the next future: the french VLT CENTER

In summary: light version of ARCnodes

- Feb 2017: letter of intent sent to INSU.
- Light structure: 1-2 person/site (Nice, Paris, Lyon, Grenoble) + coord. at OCA (A. Matter). Rooms available. Travels not compensated.
- “Face-to-face” help in:
 - Proposal preparation;
 - GRAVITY & MATISSE pipeline data reduction;
 - Model fitting & Image reconstruction (JMMC tools)

VLT CENTER(s), Continued

To be followed:

- French VLT Center → How to return expertise on instrumental data (instrument health, observing methods & strategies, suggestions for DRS improvements...) to ESO?.
- Set-up of the network of VLT Expertise Centres accepted as a result of last proposal by Ell. **A funding of 19 person/month has been secured.** It should help raising VLT Centres at Porto/Portugal, Exeter/UK, [JMMC/France,] Liège/Belgium, Heidelberg/Germany.

MISCELLANEOUS NEWS 2016

- **New version of OIFITS format available (Duvert, Young and Hummel 2017, A&A, 597,A8)**
 - But use ArXiv version (maintained)
- **OifitsExplorer: many improvements.**
- **OiDB: official repository A&A L3, CHARA data.**
- **New stellar diameter catalog (JSDC) for ~450000 stars.**
- **OPTICON-funded task:**
 - **A specification for interchange btw. Image reconstruction programs**
 - **A “universal” GUI for image reconstruction: Oimaging.**

AND NOW Something Completely different...

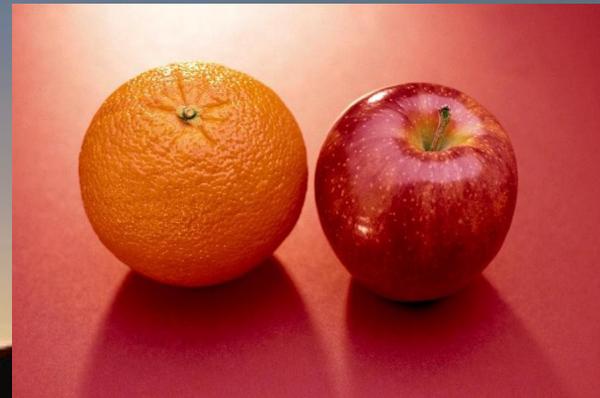
RAMBLING ABOUT

VLTI'S

EFFICIENCY

or

Comparing



Let's compare what is comparable.

- Interferometer = Sum of huge complex infrastructure (telescopes, delay lines, relay optics, dual beam, field rotators, control sw) and “instruments”. Everything must work OK together...
- ... *NOT* a single-telescope instrument ...
- ... compare with peers:

ALMA!

Recent opportunity:

Comparing two reports about global effectiveness of two Interferometric arrays: ALMA and VLTI

Source: ALMA Cycle 1 & 2 Summary Report available at <https://almascience.eso.org> edited in 4Q 2016.

- Exact figures on first 2 years of science use.

Source: “VLTI status update: a decade of operations and beyond”, Mérand et al, 2014, SPIE, Volume 9146

- Values estimated from the percentages given in the text.

RATIO SCIENCE / TIME

ALMA \$1.3B

VLT/SPHERE \$? 0.2 B?

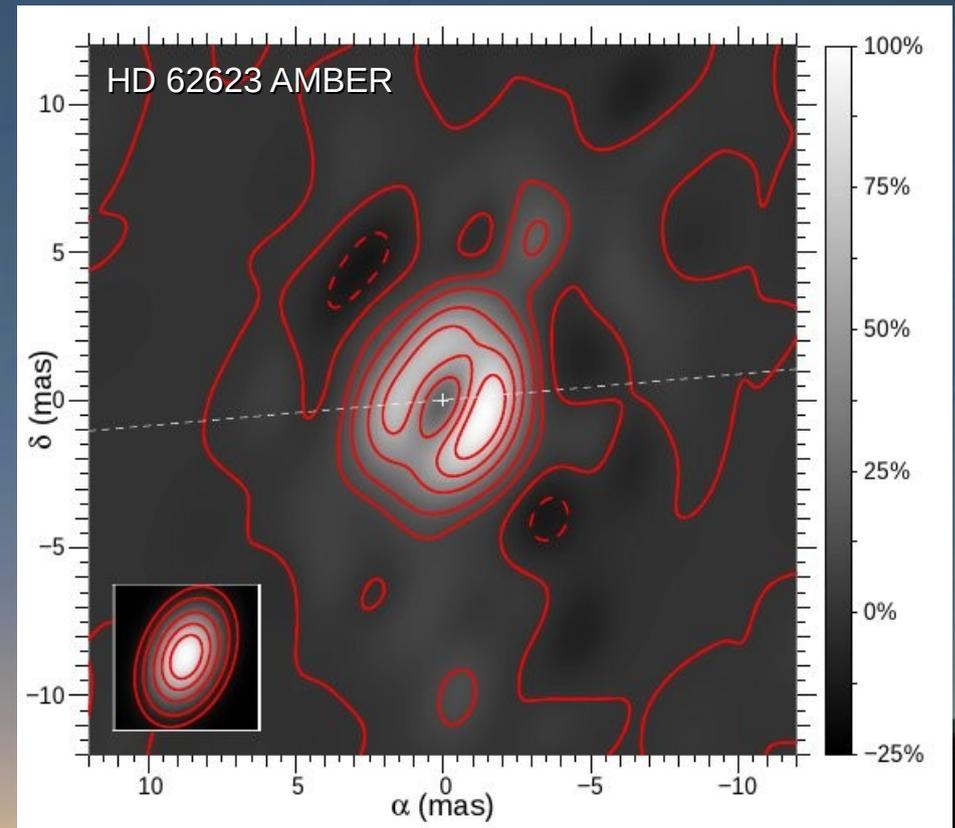
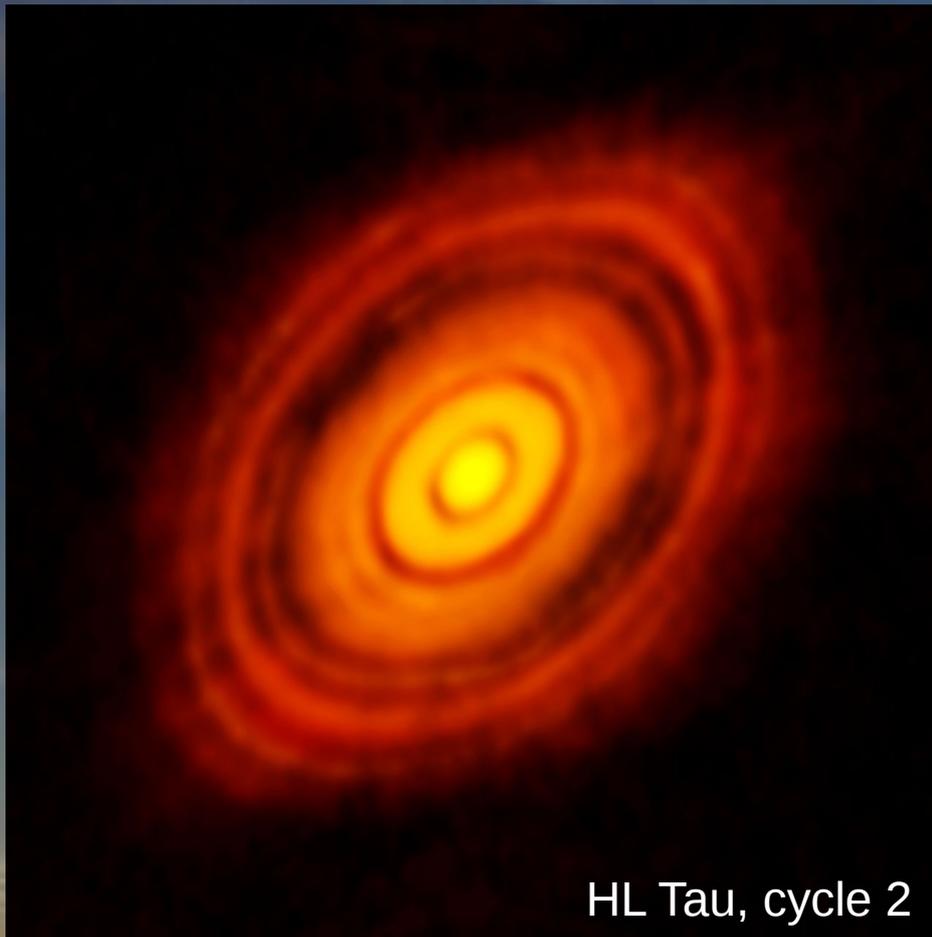
- Cycles 1 & 2.
Operations possibly not yet at top level.
- 24/24 operation (“days”)
- 2626 hours of observation (archived, science)
- For 344 projects.
- 113 publications.
- Ratio H/P: **23**

- 11 years (2003-2014) of not-always-mature operations... and before the gigantic effort presented yesterday.
- **12/24** operation (“nights”), non-Twilight Night usage: ~40% of total year hours
- Allocated time: ~50% (?)
- Losses (weather+tech): ~30% of above
- ~13500 hours of observation (archived, science).
- 250 publications at 2014.
- RatioH/P: 54
- (66/4 telescopes compensation) divide by 16...
- (Baseline number compensation) ...or by 357
- (per photon detected) ...

About the IMAGES (1)

ALMA

VLT/



NO PHOTO?

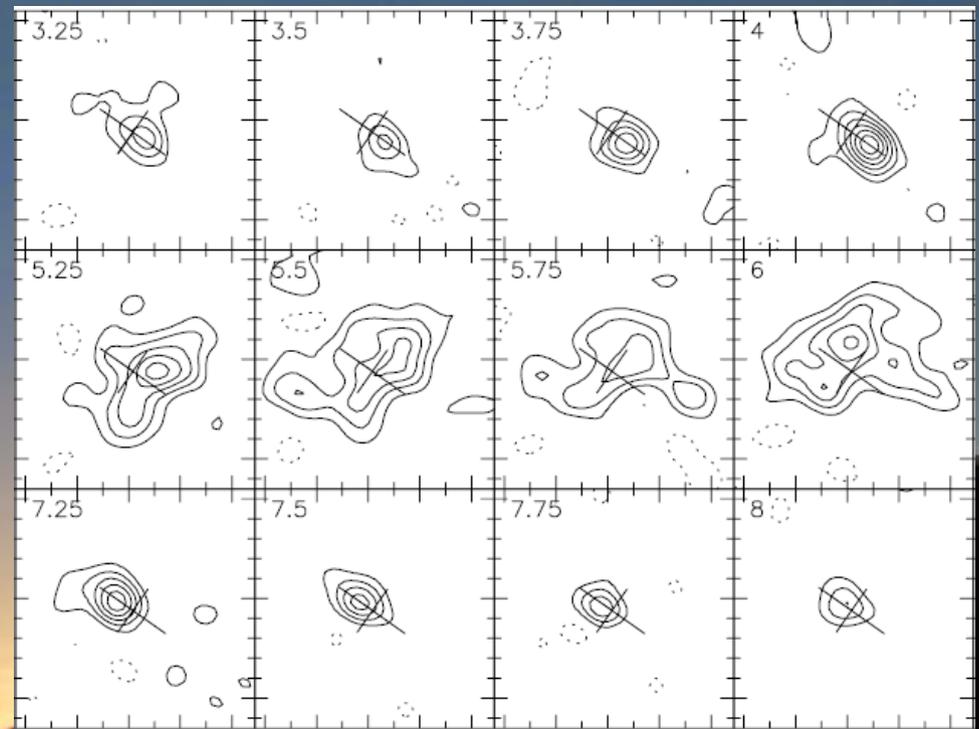
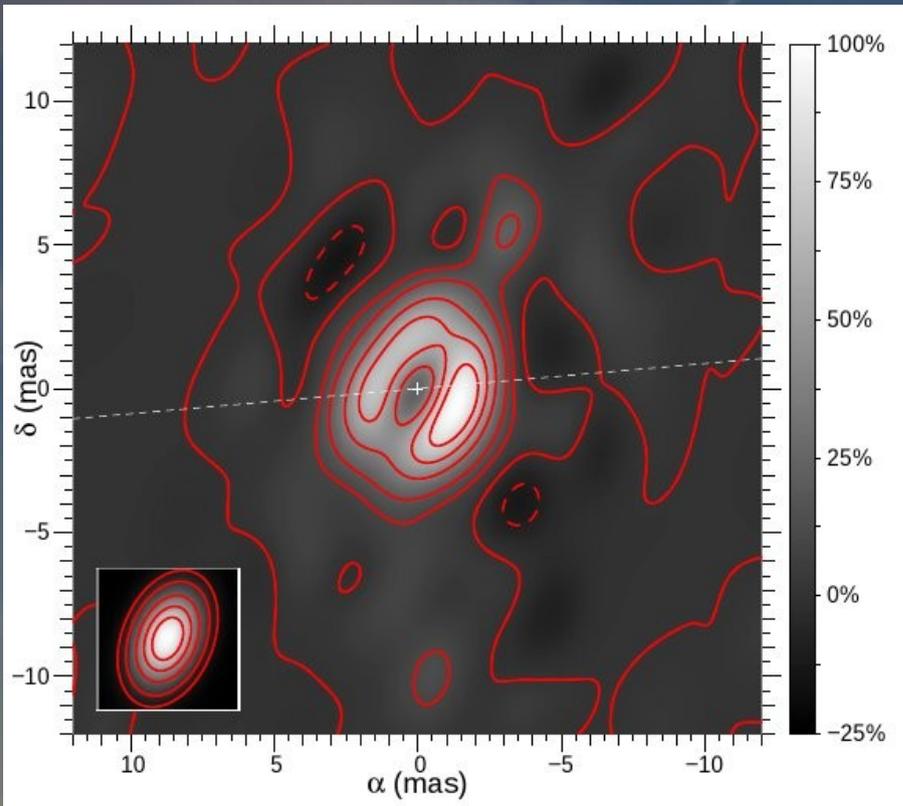
PLEASE COMPARE WITH SAME NUMBER OF TELESCOPES!

GM Aur

CO J=2-1 line

Dutrey & al, 1998, 100 citations

4 Antennas Plateau de Bure



HD 62623, Bry line, Millour et al 2011,
AMBER (3T) + SelfCal

50 citations

ESO/Garching
March 9 2017

JMMC

JEAN-MARIE MARIOTTI CENTER

Infrared and Optical Interferometry for Astronomy