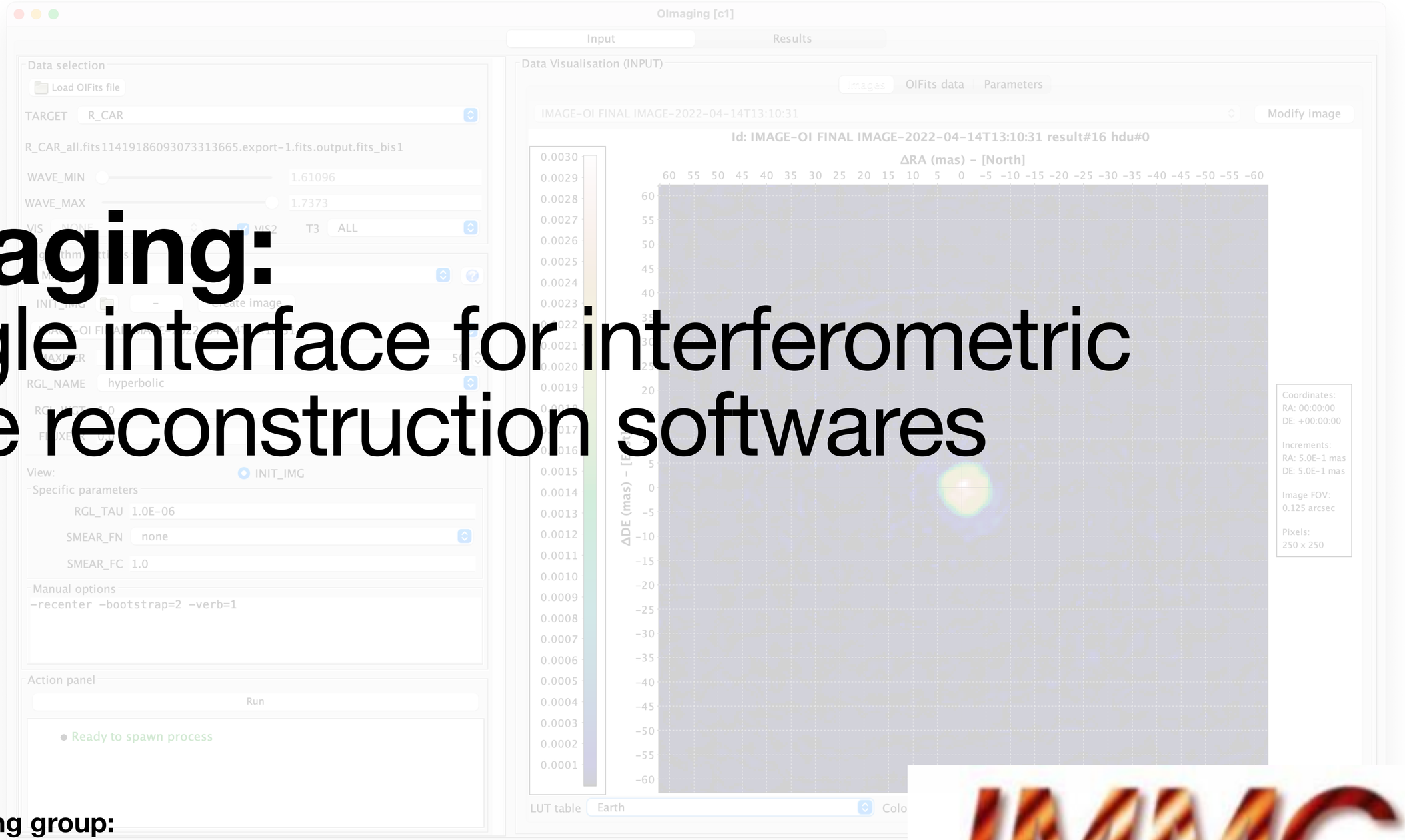
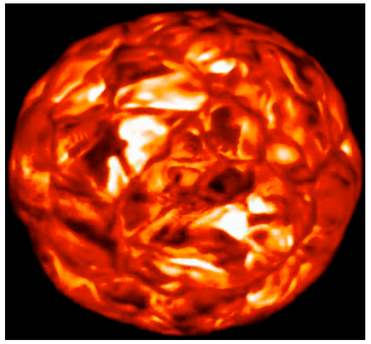
OImaging:
a single interface for interferometric image reconstruction softwares

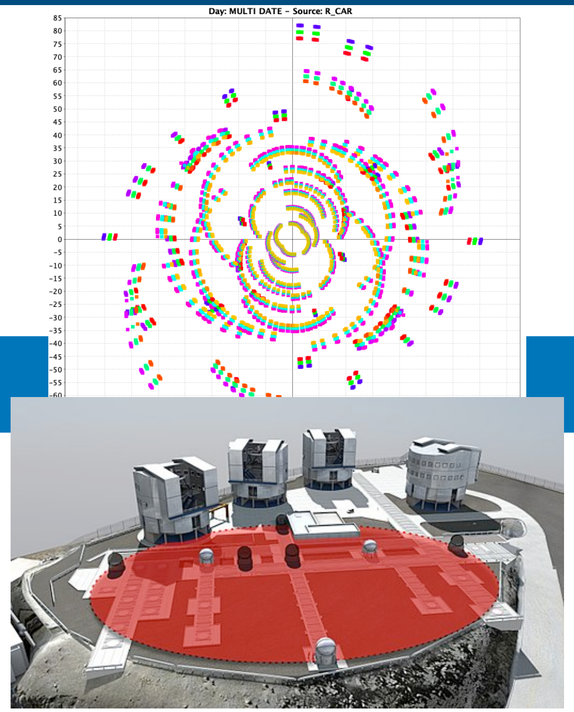


JMMC MFIR working group:
Ferréol Soulez, L. Bourgès, A. Kaszczyc, G. Mella, I. Tallon-Bosc, G. Duvert, E. Thiébaut, J. Kluska, J. Young, H. Beust, M. Tallon, N. Bruot, JP. Berger and L. Mugnier

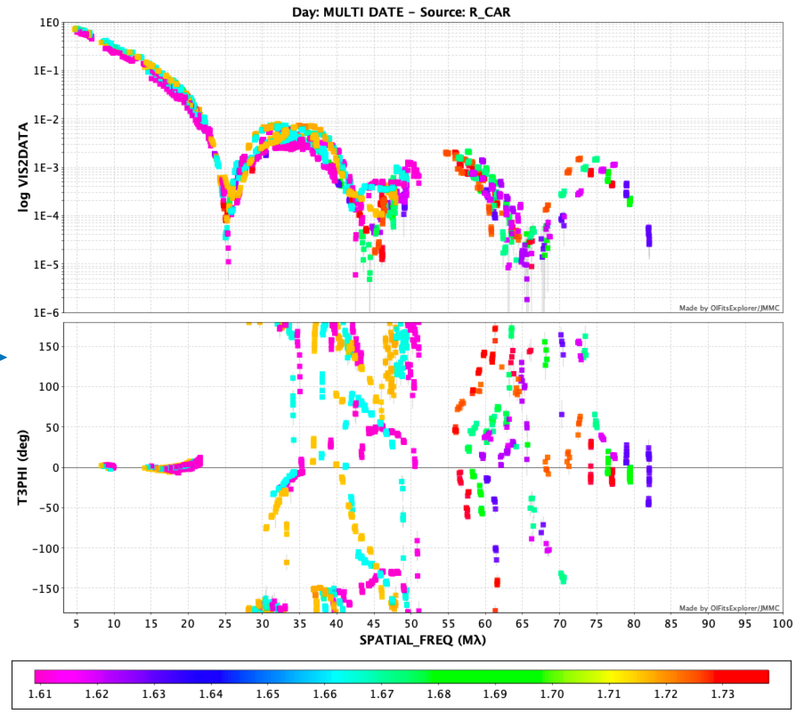
Image reconstruction in interferometry



Object



Interferometric instrument



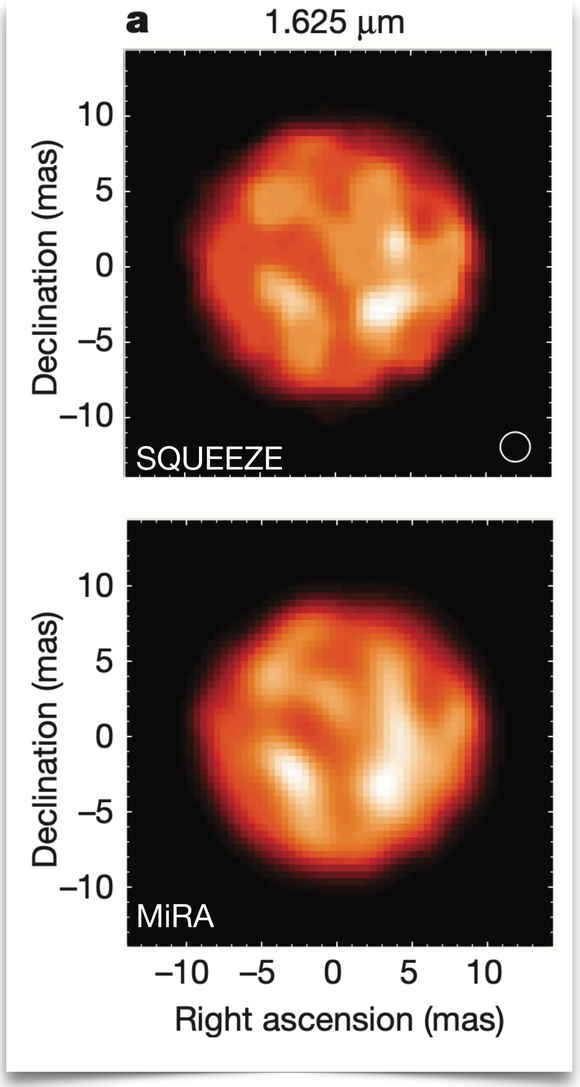
Measurements

Image reconstruction ?

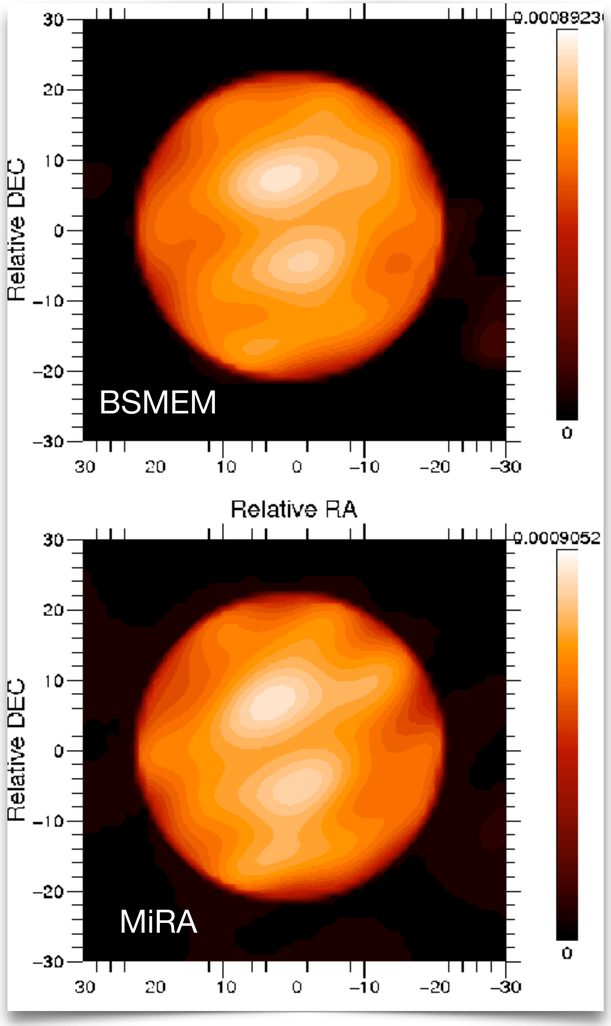
Image reconstruction softwares

BSMEM (Buscher.et al, 1994)	C
MACIM (Ireland et al, 2006)	C
MiRA (Thiébaut, 2008)	yorick
WISARD (Mugnier et al 2008)	IDL
SQUEEZE (Baron et al, 2010)	C
IRBIS (Hoffman et al, 2014)	C
SPARCO (Kluska et al, 2014)	yorick or C
ORGANIC (Claes et al 2020)	python
GR (GRAVITY col., 2022)	python

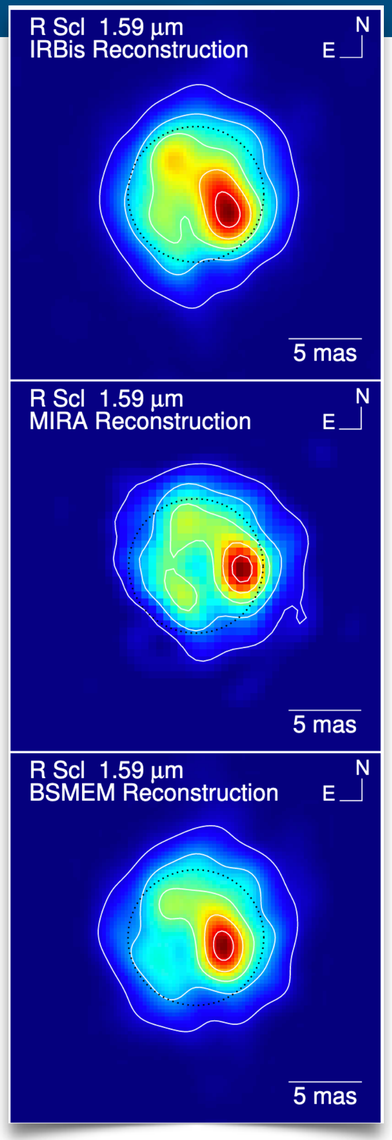
Comparing reconstructions softwares



π^1 Gruis (Paladini, 2018)



Betelgeuse (Haubois, 2009)

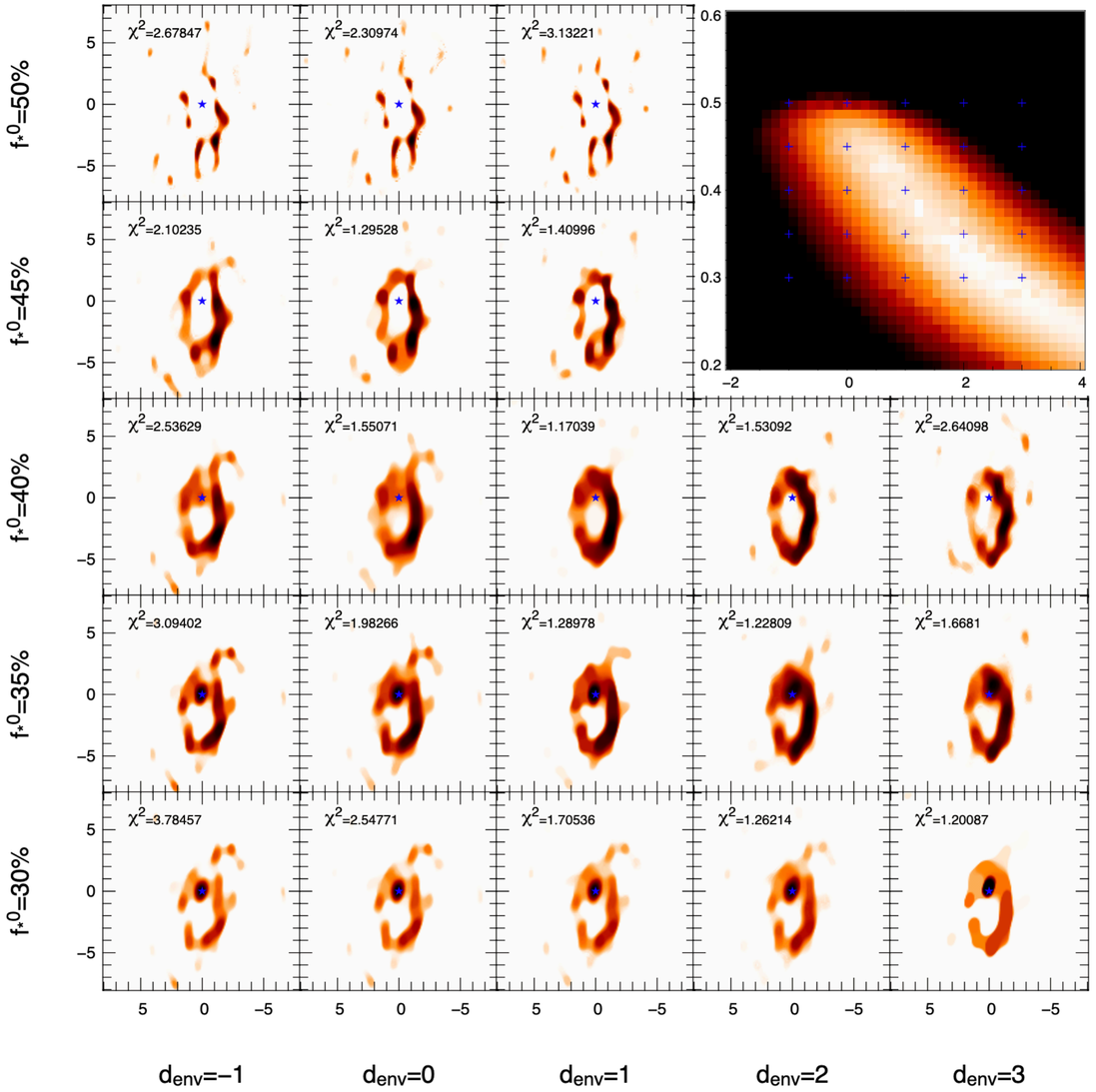


R Sculptoris (Wittkowski, 2017)

Benchmarking parameters

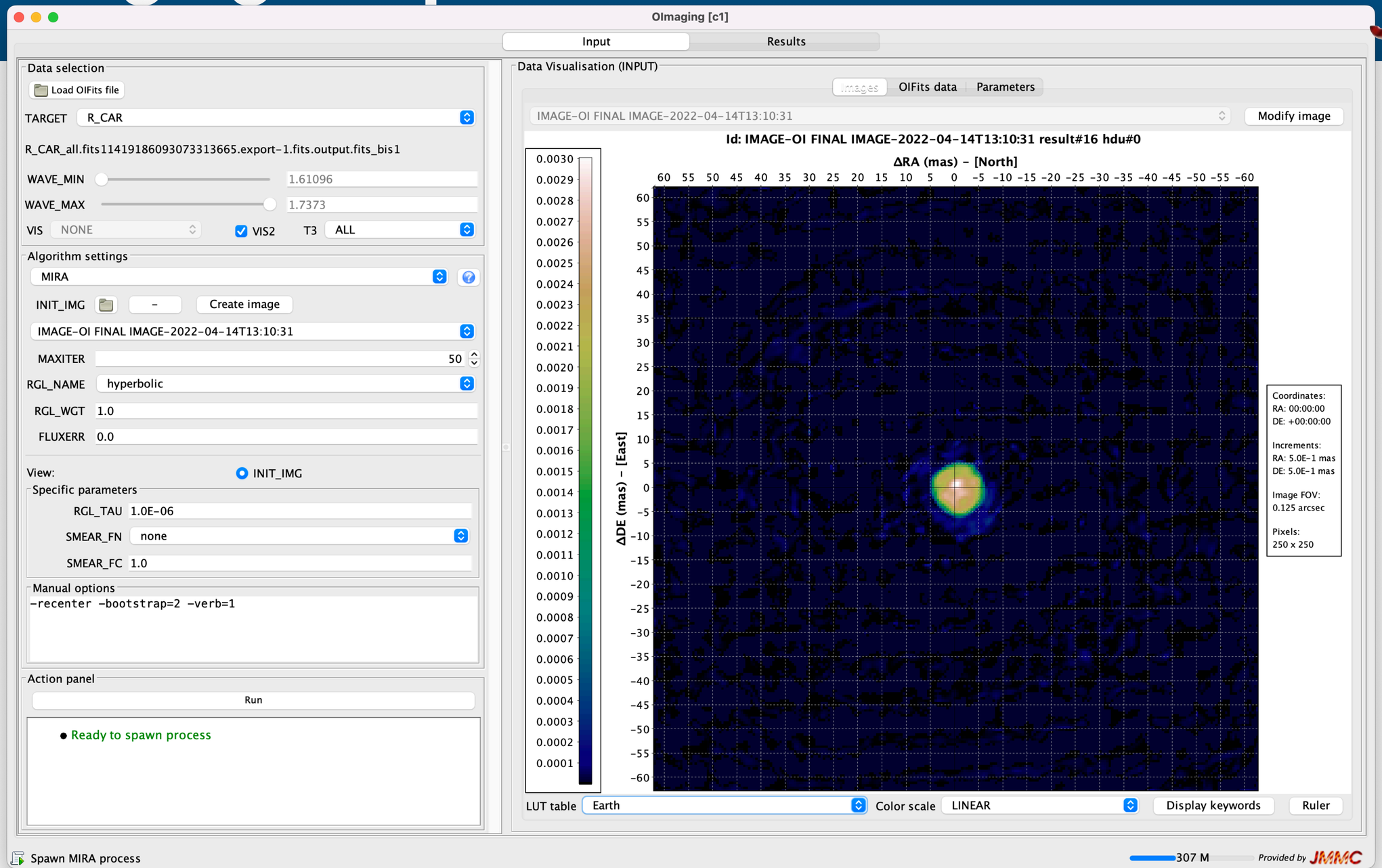
Comparing results with different

- Priors
- Parameters
- Initialization



(Kluska, 2014)

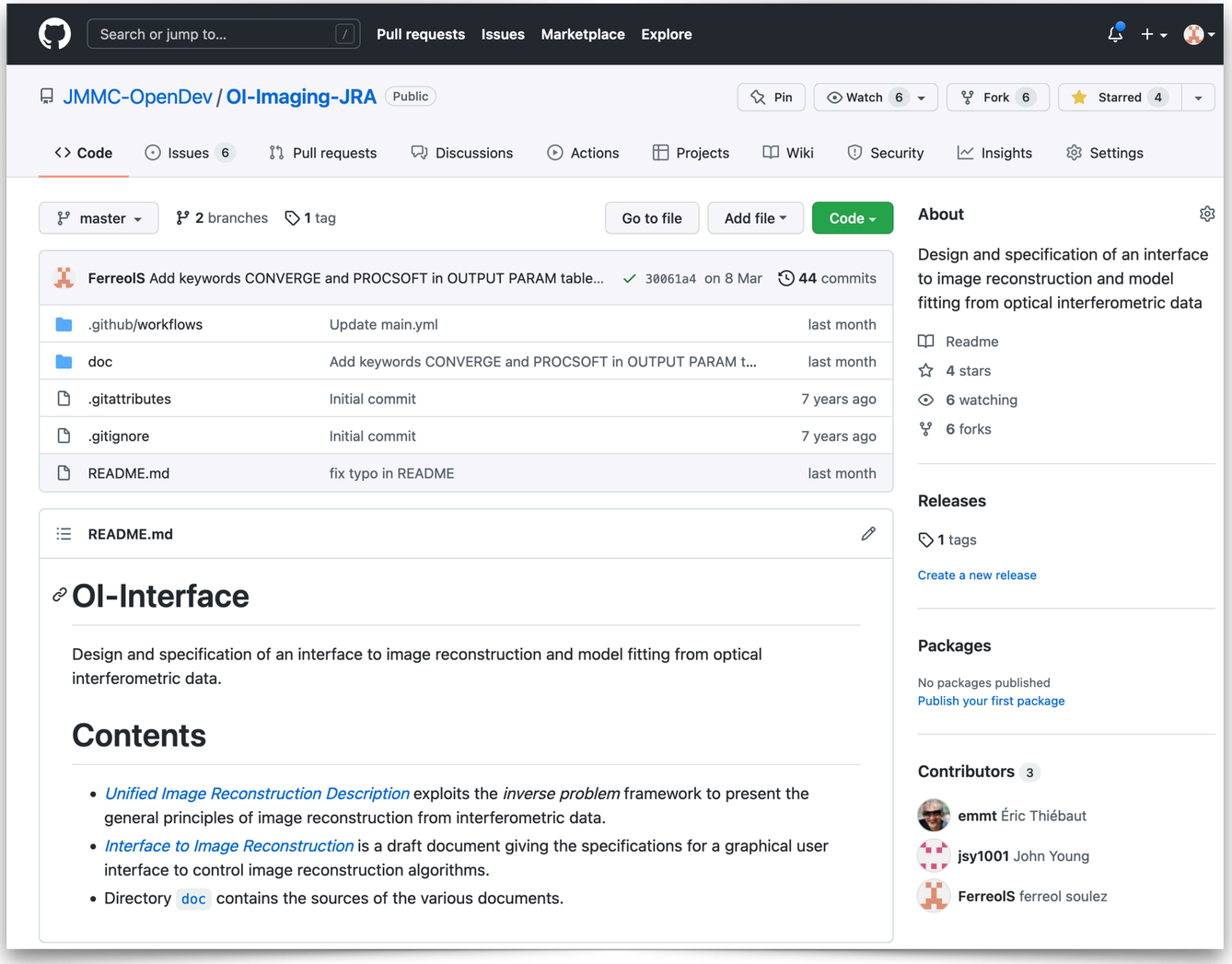
OImaging Graphical User Interface



OI-Interface: a single format to connect them all

A unified way to call reconstruction softwares

- Every information in a single OI-FITS file
- Simpler interaction with softwares
- Reproducible results

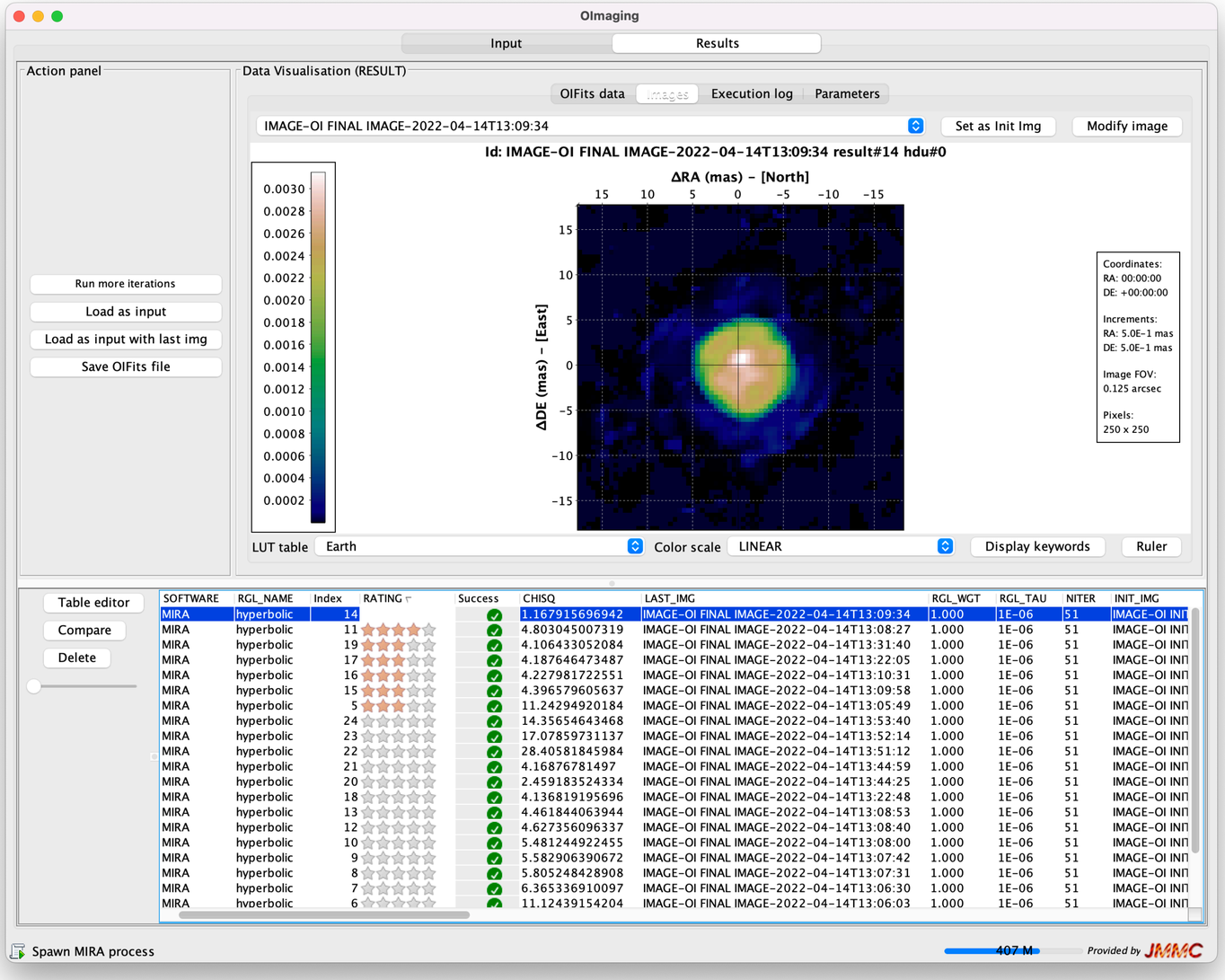


Conclusions

Checkout the new release !

https://www.jmmc.fr/english/tools/data-analysis/oimaging/

- Do not hesitate do ask for features,
- Report bugs,
- Help is available in your expertise center



OImaging: a collective project

JMMC

- **The big chiefs:**
  - I. Tallon-Bosc
  - J-P. Berger
  - G. Duvert

- **The developers:**
  - L. Bourgès
  - A. Kaszczyc
  - G. Mella
  - M. Pratoussy

- **The reconstruction software fathers:**
  - G. Duvert
  - J. Kluska
  - L. Mugnier
  - E. Thiébaut
  - J. Young

- **The beta-testers:**
  - J. Kluska
  - M. Montargès