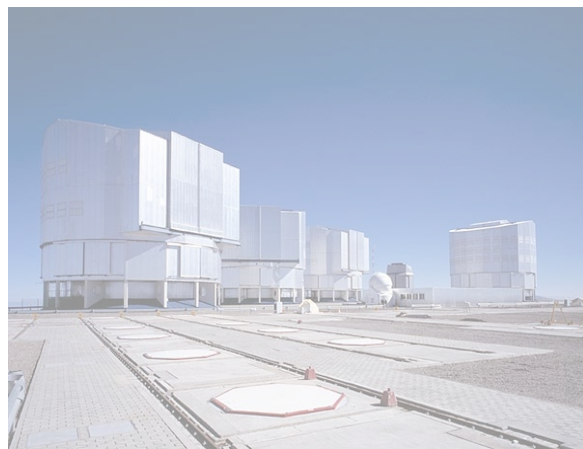
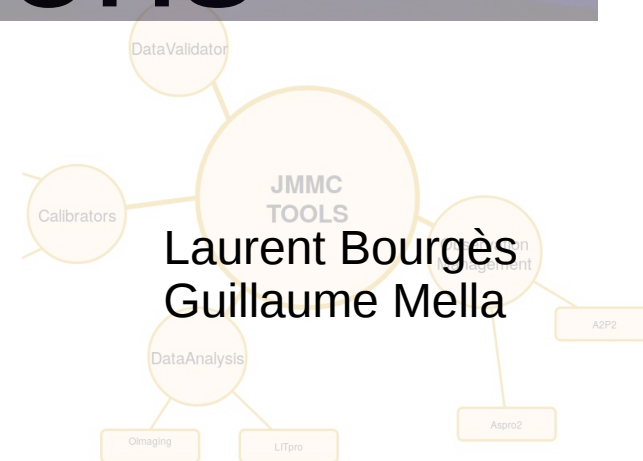
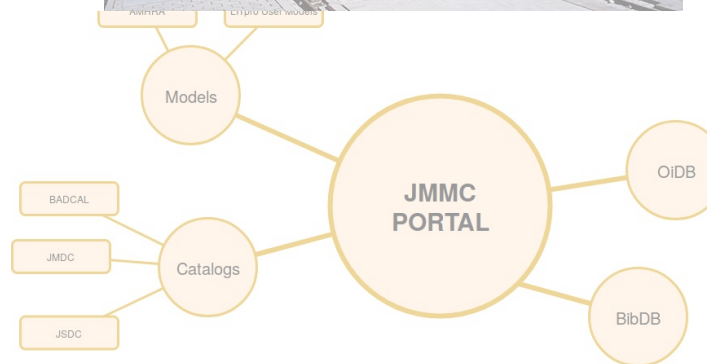


JMMC



Réalisations



09/04/2019

AG. JMMC

<http://www.jmmc.fr/doc/index.php?search=JMMC-PRE-0000-0028>

Services : boucle complète

Prepare Observations

A2P2

2018

Aspro 2

SearchCal

ID	RA2000	DEC2000	mag	dist	dist_err	RA2000	DEC2000	mag
10	01 47 29.64	+24 06 18.5	0.010	-0.0020	0.947	0.061	8781	2.87
11	01 49 29.74	+24 03 22.3	0.714	0.031	0.403	0.026	880	3.02
16	01 45 49.61	+24 02 20.9	0.906	0.031	0.416	0.029	880	3.82
32	01 44 52.54	+24 06 48.0	0.71	0.035	0.407	0.028	850	3.706

Reduce data
amdlib
pndrs

OIFITS Explorer

View Data

CDS Catalogs

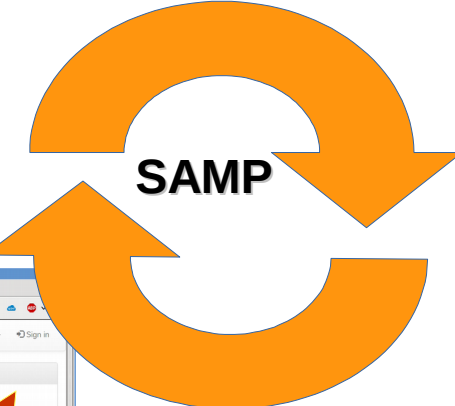
Vizier Search Page

Search Criteria	Record number assigned by the Vizier team. Should not be used for identification.
name	Record number assigned by the Vizier team. Should not be used for identification.
name	Record number assigned by the Vizier team. Should not be used for identification.
name	Record number assigned by the Vizier team. Should not be used for identification.

JSDC JMDC

2018

LO to L3 DataBases



LITPro

Fit Models

Reconstruct Images

Olmaging

2018

Roadmap

2018

★ PREPARE
CHRISTMAS
USER'S TOOLS

OiDB
QuickPlots
VO Registry
LO ESO

DEC

★ Java Apps ready for Java9+

OCT

MFIR 2
- SERVER'S INFRA OK

NOV

- Aspro2
'dual feed Gravity'
'model rotation/scaling'

AUG

SUMMER BREAK

SEP

MFIR 1

★ 4 Sept : advertise JMMC's users poll

JUN

- OIFitsExplorer
'Split and merge'

JUL

★ 8-14 july : VLT School

★ 31 july : A2P2 V1.5 - first CHARA integration

APR

MAY

- BOOK FOR YOUR GROUP

FEB

MAR

- ASPRO ESO-P102 ready

- A2P2 V1

★ AG JMMC

- delay on SERVER'S INFRA migration

JAN

Retrospective roadmap

- Planification délicate (disponibilité commune en // d'autres rythmes)
- Mieux anticiper les sprints (spécifications / besoins plus précis)
- Allonger les sprints (1 mois → 2 mois ?)
- Toujours 30% d'impondérables :(

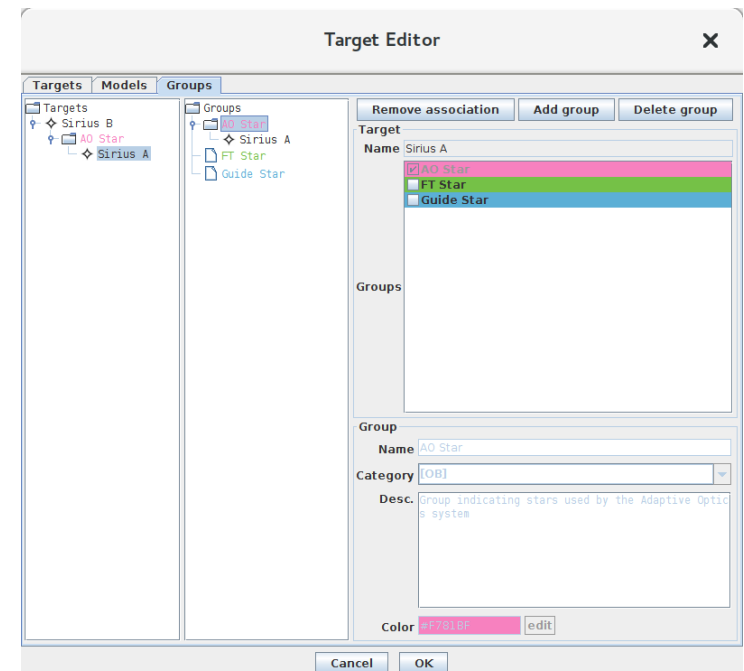
Effet positif au niveau du groupe technique :

- Alternance sur plusieurs groupes
- Motivation avec des objectifs concrets (petites victoires)

à programmer rapidement pour 2019 !

Aspro 2

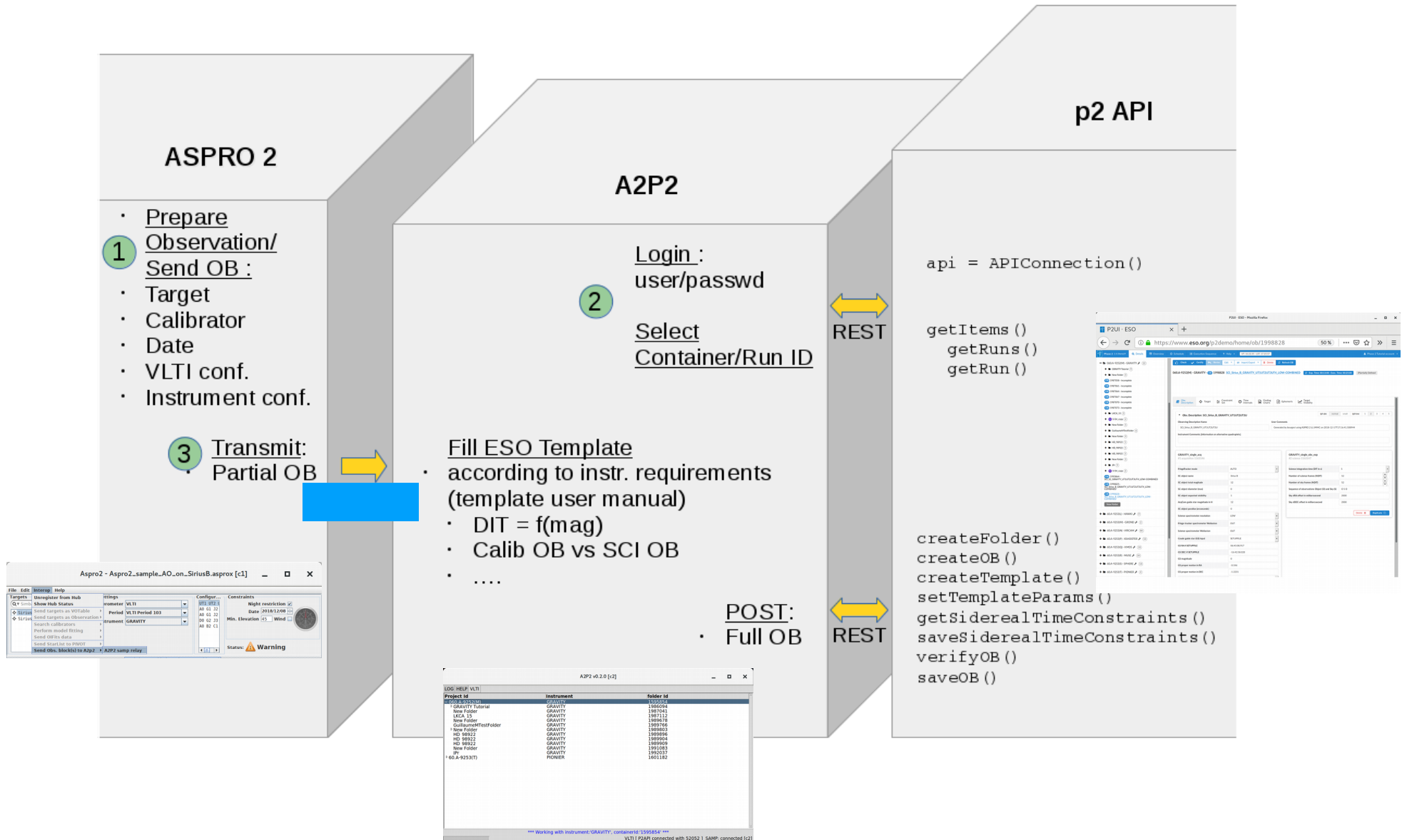
- Support MATISSE (ETC)
- Support AO NAOMI / CIAO (Strehl)
- Gestion target groups / tags (AO / FT / Guide stars)
- Modèles image / cube FITS :
 - Lien vers AMHRA
 - Rotation / scale
- Intégration A2P2 (O.B)

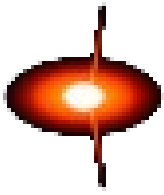


A2P2

- A2P2 : outil open-source python
 - <https://github.com/JMMC-OpenDev/a2p2> pour collaboration avec instrument scientists
 - Passerelle SAMP VO pour transmettre O.B (obxml) vers ESO P2 (API REST)
 - Tutoriel annoncé sur Olbin
<https://github.com/JMMC-OpenDev/a2p2/wiki/ASPRO2-A2P2-Tutorial>
- \$ pip install a2p2
- Première intégration CHARA à poursuivre

A2P2 workflow





AMHRA

"Analyse et Modélisation en Haute Résolution Angulaire"

- Interface web d'accès aux modèles astrophysiques :
 - Calcul en temps réel
 - Grille pré-calculée
- Interopérabilité ?
 - Format FITS cube
 - SAMP + https: statut ?
- VO ? UWS, VO SimD... ?

AMHRA service

The AMHRA ("Analyse et Modélisation en Haute Résolution Angulaire") WEB service is a working group of M010/JMMC. The main objective of the AMHRA is to develop and/or provide astrophysical models and data analysis tools dedicated to the scientific exploitation of high angular and high spectral facilities (in particular ESO-VLT instruments) by the astronomical community, including non-specialists in interferometry. Several tools are offered to the user that seeks to prepare, model, and analyze interferometric observations, notably those from the second generation of VLT instruments (GRAVITY and MATISSE), which provide unprecedented capabilities on high spectral and spatial resolution. A full description of AMHRA and references are provided [here](#).

The different types of tools offered or to be offered by AMHRA are:

- Polychromatic images from astrophysical models with fast-computation time (real-time models)
- Polychromatic images from a pre-calculated grid of astrophysical models
- Spectro-interferometric observables from model images (OIFitsModeler)
- Analysis and model-fitting tools for spectro-interferometry

Photo credit: European Southern Observatory

Real Time astrophysical models

- Kinetic Be Disk
- Disc and Stellar Continuum (DISCO)
- Evolved stars(RSG/AGB) with COSBOLD
- Binary Spiral Model

Pre-calculated grids of astrophysical models

- Supergiant B[e] with HDUST

Analysis and model-fitting tools

- OIFits Modeler
- IFits Modeler



SearchCal / JSDC

Peu d'activité jusqu'à présent :

- Mise à jour du JMDC
- Maintenance à prévoir
- Toujours pas de badcal intégré :(

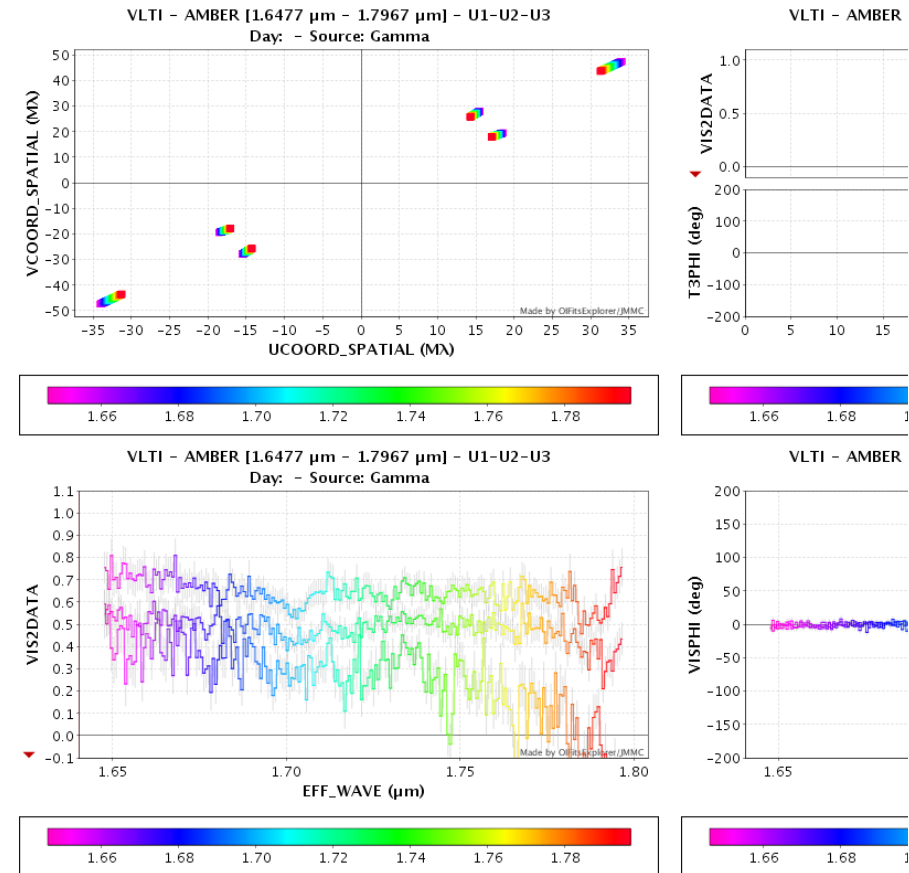
Vraie expertise qui pourrait être valorisée sur le service SIMBAD du CDS ...

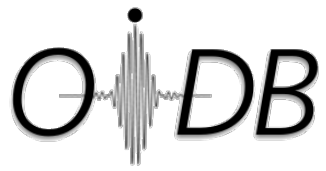
The screenshot shows the SearchCal [c1] application window. It has a menu bar (File, Edit, Query, Calibrators, Interop, Help) and a toolbar. The main area is divided into several sections:

- Query Parameters:**
 - 1) Instrumental Configur...: Magnitude Band: K, Wavelength (K) [um]: 2.2, Max. Baseline (m): 102.45
 - 2) Science Object: Name: Q ETA TAU, RA 2000 [hh:mm:ss]: 03 47 29.07655, DEC 2000 [+/-dd:mm:ss]: +24 06 18.4883, Magnitude (K): 2.636
 - 3) SearchCal Parameters: Min. Magnitude (K): 2.0, Max. Magnitude (K): 5.0, Scenario: Bright (selected), RA Range (mn): 120.0, DEC Range (deg): 5.0
- Progress:** A progress bar is visible.
- Found Calibrators (394 sources, 372 filtered):** A table with columns: Index, dist, HD, RAJ2000, DEJ2000, vis2, vis2Err, diam_chi2, LDD, e_LDD. The table contains 22 rows of data.
- Filters:** A section with various checkboxes and input fields for filtering results, such as "Reject stars farther than", "Reject stars with magnitude", "Reject Spectral Types", "Reject Luminosity Classes", "Reject Visibility below", "Reject Visibility Accuracy", "Reject Variability", "Reject Multiplicity", "Reject Invalid Object Types", and "Diameter quality".
- Status Bar:** Shows "searching calibrators... done.", "436 M", and "Provided by JMMC".

OIFitsExplorer

- Amélioration de la selection par instruments
- Export OIFits (merge)
- Histogrammes pour les données spectrales
- Mode ligne de commande





Optical Interferometry DataBase

- Import Observation Logs ESO (VizieR TAP B/ESO)
- TAP (taplib) + 'data links' (quick plots, pdf)
- Besoin SUV d'instances privées pour collaborations :
 - Droits d'accès par groupe ?
 - Embargo données ?
 - Synchronisation ?



LITpro

- Algo génétique implémenté en yorick
 - A tester
 - Ajout de paramètres spécifiques au GUI
- Besoins à venir :
 - Exécution asynchrone
 - Mode interactif (pas à pas, reprise...)
 - Support modèles utilisateurs

```
func lp_genfit_go(world, keywords=, verbose=, itmax=, callback=,
                 tol_degen=, tol_gradient=, tol_step=, nsol=,
                 ntrstep=, nelit=, mutproba=, tol_gen=)
/* DOCUMENT lp_genfit_go(world)

Most global wrapper upon the genetic fitting procedure in LITpro
environment WORLD. The routine returns the hash table WORLD in
which have been added all precious information about the fitting
procedure. These information is stored in a workspace, available
after the fit, using the function:

workspace = lpw_get_workspace(world, "fitter");

The workspace can also be accessed directly is the function was called using
ws = lp_genfit_go(world,..)

All the keywords can be given as entries of a single htable passed with
keyword KEYWORDS. So lp_genfit_go(world, itmax=20) is equivalent to
lp_genfit_go(world, keywords = h_new(itmax=20)). Keywords given directly
(not in the htable KEYWORDS) take precedence.

KEYWORDS:

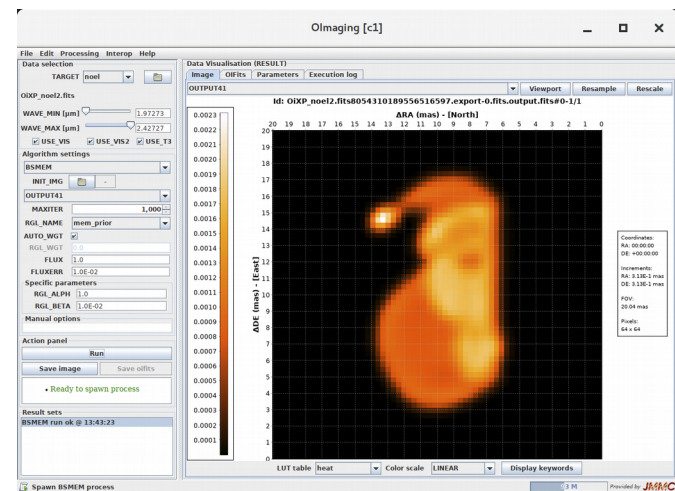
ITMAX=          - Maximum number of iterations (successive generations).
                 Default is 200.
CALLBACK=       - When set to a function, this function is called after
                 each step is achieved, with world as the only argument.
                 The intension is to allow some plotting to be done
                 during the convergence of the fitter.
VERBOSE=        - If set, no information is printed when doing the fit.
TOL_STEP=       - Tolerance on the smallest step. Each parameter is
                 normalized by its scale (see lp_set_parameter). The
                 fit is stopped if the norm of the vector of fitter
                 parameters is less than TOL_STEP. Default is 1e-6.
TOL_GRADIENT=   - Tolerance on null gradient. Fit is stopped if the norm
                 of the vector of derivatives of chi2 versus each
                 parameter is lower than TOL_GRADIENT. Default is 1e-8.
TOL_DEGEN=      - Tolerance on the detection on degenerencies. Default
                 is 1e-8.
NSOL=           - Size of a generation of solutions. Default is 100
NTRSTEP=        - Max. number of TRFIT steps to be added to the generations
                 after each step. May be 0. Default is 20.
NELIT=          - Number of elite population = number of best solutions to
                 be kept at next generation. May be 0. Default is 5
MUTPROBA=       - Probability of mutation of a child. Default is 0.1
TOL_GEN=        - Chi2 tolerance = convegence test. Default is 1e-5

SEE ALSO: lp_go_fit, lp_compute_residuals, lp_compute_chi2, lp_genfit_step.
*/
```

OImaging

Interface de reconstruction d'images

- Format OIFITS + OI_Image extension = format d'échange compact
- 3 logiciels BSMEM, WISARD, **MIRA**
- Reflexion en cours pour exécution de jobs en masse (\Leftrightarrow LITpro)
- Release publique : Noël 2018

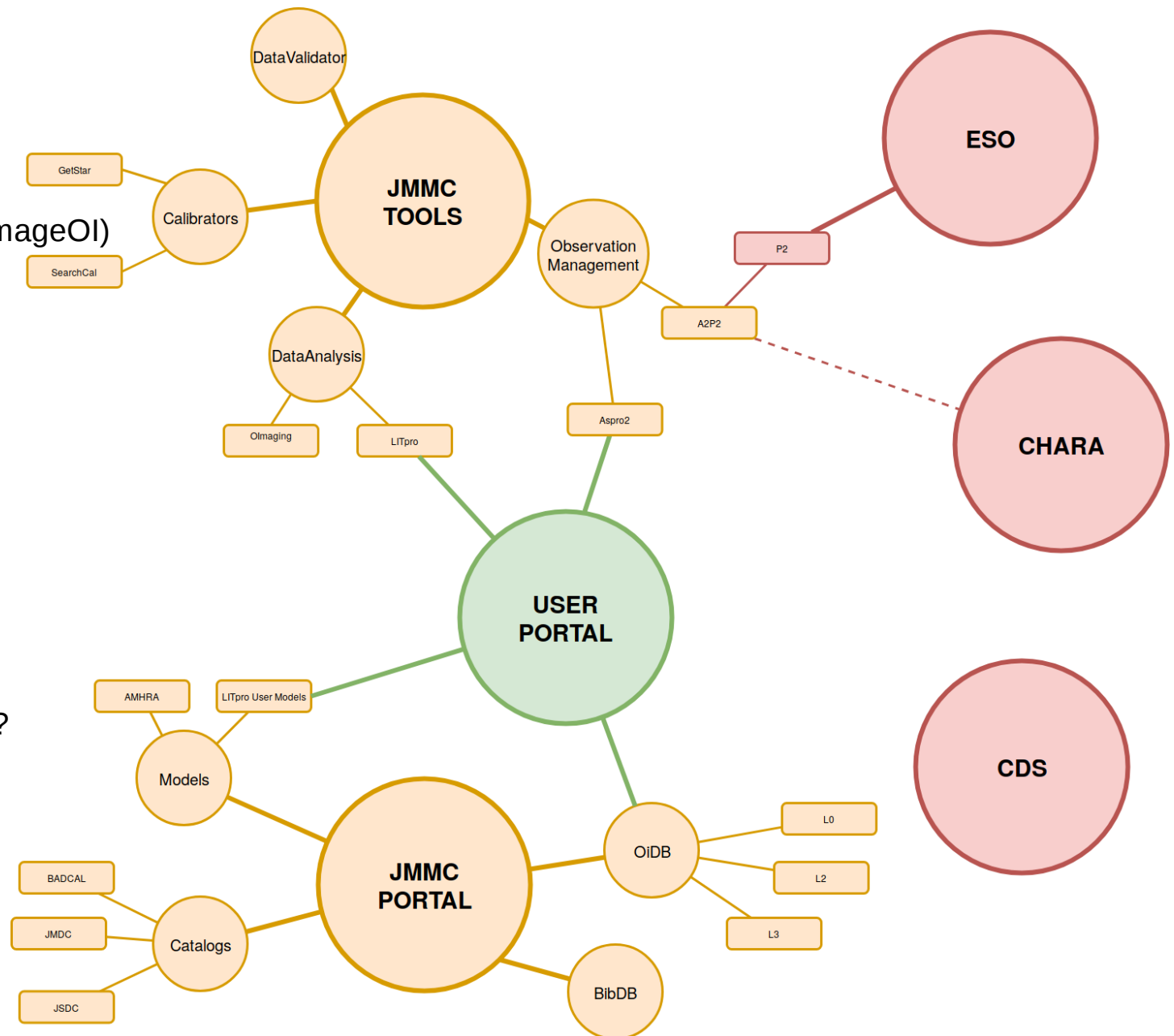


Actions 2019

- LITpro :
 - Mode asynchrone
 - Alléger la réponse xml (ImageOI)
 - User models GUI
 - Jobs //
- Oimaging :
 - Intégration de PAINTER
 - Images de départ
 - Comparaisons
 - Jobs //
- OiDB :
 - Liens L0 \leftrightarrow L2-3
 - Instances privées / SUV ?
- Portail utilisateur
- (maintenance)

Actions 2019

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09/04/2019

AG. JMMC