CHARA Meeting 2017
2017/03/14 - Pasadena

Service Status & Perspectives

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REF: JMMC-PRE-0000-0022
PLAN

- JMMC organisation
  - R&D groups
  - People involved
  - CHARA & ESO collaborations
- Service overview
  - Status
  - Perspectives
- Summary
- Feedback ?
JMMC Organisation

- R&D working groups:
  - ASPRO: the Astronomical Software to PRepare Observations (ASPRO)
  - Catalogue of calibration sources (SearchCal)
  - Instrument Data Reduction Software
  - Model fitting
  - Image reconstruction
  - Optical Interferometry Database (OiDB)
  - Technical staff and software development
- Training / Support
JMMC People
CHARA & ESO collaborations

• No contract but best-effort:
  • CHARA:
    - ASPRO 2 (POPs / Horizon / CHARA & instrument setup)
    - OIDB L0
  • ESO:
    - ASPRO 2: VLTI & instrument setup
    - calibrator catalog
    - OIDB L0

➢ Improve communication (meetings, contacts)
JMMC Service overview

- **Observation Preparation:**
  - ASPRO 2
  - SearchCal & JSDC
- **Data Processing:**
  - Amdlib (VLTI AMBER), PNDRS (VLTI PIONIER)
  - OIFits Explorer
- **Data Analysis:**
  - Model fitting: LITpro
  - Image reconstruction: **Oimaging** (mira / wizard / bsmem)
- **Databases:** OIDB, OLBIN BibDb
ASPRO 2

• 2016:
  - Export OB (GRAVITY)
  - Noise modeling & OIFits simulator improvements (MATISSE): see SPIE 2016
  - Enhanced OIFits viewer

• Future:
  - OB: ESO VOT4 integration / simplify VEGA StarList (to CHARA OB ?)
  - Group meeting needed
    • Import / export generic OBs
    • Observation strategies (groups, labels, priority)
    • Large-Program handling (tags, merge target lists)
SearchCal / JSDC 2

2014-2016:

- Huge effort on theoretical approach: JMDC / JSDC: see Chelli (2016A&A...589A.112C)
- JMDC: Vizier II/345 New measurements are welcome!
- JSDC 2 release: Vizier II/346 (~450,000 stars with SpType)
- SearchCal Server & GUI upgrade in progress to use the new diameter computation algorithms

Future:

- New SearchCal 5.0 release coming soon:
  - use internally JSDC 2 to be faster and more accurate
  - Only JSDC scenario [BVIJHKLMN]
- New GetStar service
Data reduction software

• 2016:

• Future:
  – Upgrade amdlib / pndrs / gravity drs to produce OIFITS v2 files?
OIFits Explorer

• 2016:
  – Improved plots (colors, point selection)
  – Added OI_Spectrum plot
  – Preliminary data view as granules (target / instrument / nights / files)

• Future:
  – Flag data & export (merged) OIFits files
  – OIFits 2 support: upgrade the OITools library (github)
  – Re-implement completely the data selection (workspace / dataset / subset) graphically or by using filter criteria
  – GUI improvements:
    • Overlay simulated data vs observation data for LITpro / Oimaging
LITpro: see Isabelle report

• 2015-2016:
  – New Fitter support (gutsy & genetic fitters): global min.
  – User model support (yorick) = replace the present functions by an algebra combining:
    • a set of basic model functions with
    • a set of operators (transforms & filters)

• Future:
  – Improve chi2 map
  – Beta test new fitter implementations
  – Finalize the User model implementation + GUI enhancements + web model function repository
  – OIFits 2 support (OI_SPECTRUM, OI_VIS diff)
OImaging

- JRA4 Opticon project initiative = interface + report
  - New OImaging GUI supporting BSMEM run locally or remotely (JMMC new server with docker images):
    still in "internal" alpha testing during few weeks

- Future:
  - Beta Release with remote BSMEM / WISARD
  - Improve model vs observation data on OIFits viewer plots
  - Complete list of supported software (mira, irbis, squeeze...)

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OIDB

• 2016:
  - Associate PI from ESO Programs (PIONIER)
  - Added usage statistics

• Future:
  - OIFits QuickView on the web portal
  - Update Observations logs CHARA (L0) automatically?
  - Import Observations logs ESO VLTI (L0)
  - Improve exchanges with CDS (A&A...) to better collect published OI data (L3)
JMMC Infrastructure

- Push OSS contributions:
  - OITools ...

- Server upgrades:
  - 1 VM to many VM (micro-services)
  - VMWare + Docker approach
  - Migration in 2017: service by service
  - frontend/backend architecture
  - more modularity = less dependencies, more scalability, more reliability
Summary

+ Training
+ User Support
+ OLBIN forum
And Publications

VLTI + Training + User Support + OLBIN forum

SearchCal
Prepare
Observations

aspro
View
Data

Oiexplorer

amdlib
pndrs

Reduce
data

LITPro

CDS Catalogs
New!

L0 to L3
DataBases

OiDB

Fit
Models

Reconstruct
Images

OImaging

CHARA

JSDC

JMDC

CHARA

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Last word...

- Feedback is always welcome!
  - Bug reports
  - Enhancement requests
  - User support

Thank you for your attention