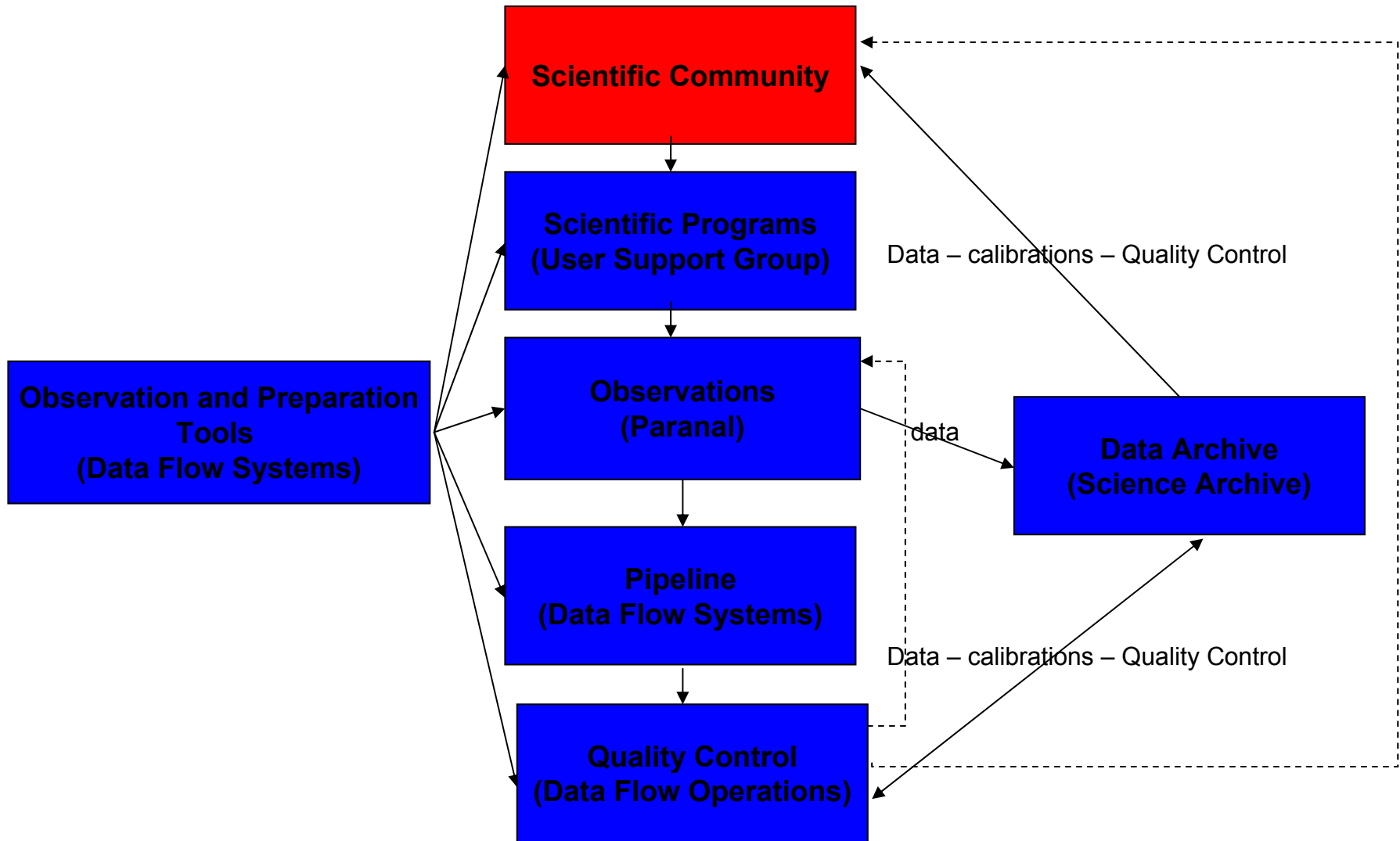


# Data Flow Operations :

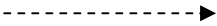
## Quality control and Instrument trending for the VLTI

I. Percheron, ESO

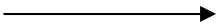
# VLTI Operations



Indirect connection



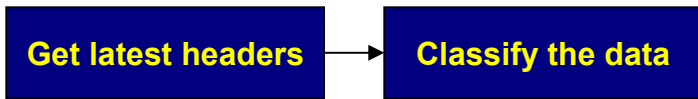
direct connection



# Data Flow Operations

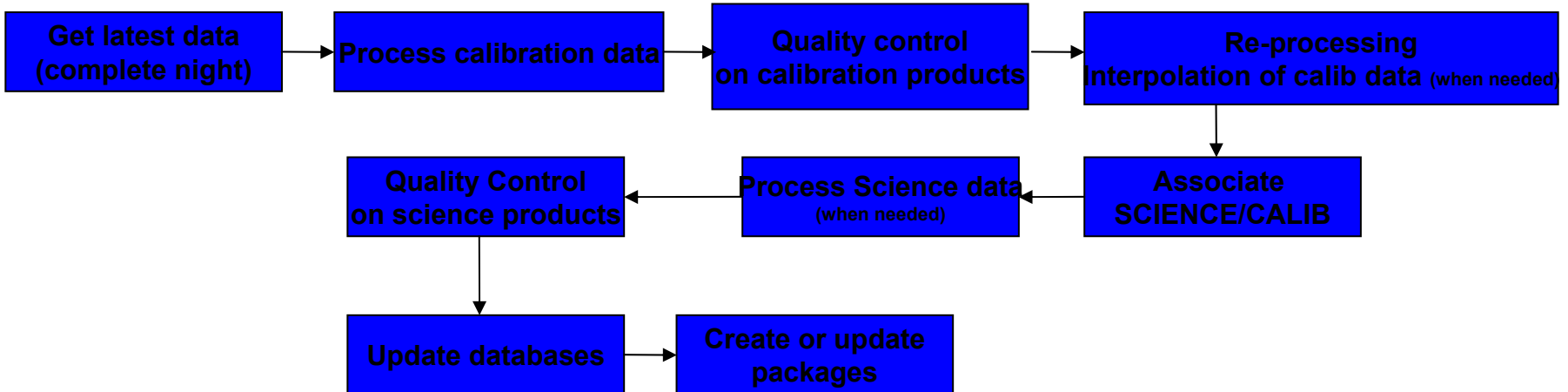
- **Data management** : raw data – pipeline products – packages
- **Operations** : Calibration Plan, Quality Control parameters and astronomical calibrators program
- **Trending** : Health check of the instrument

# DFO daily workflow



Daily :

- Verify headers sent from Paranal
- Associate raw data to verify the calibrations

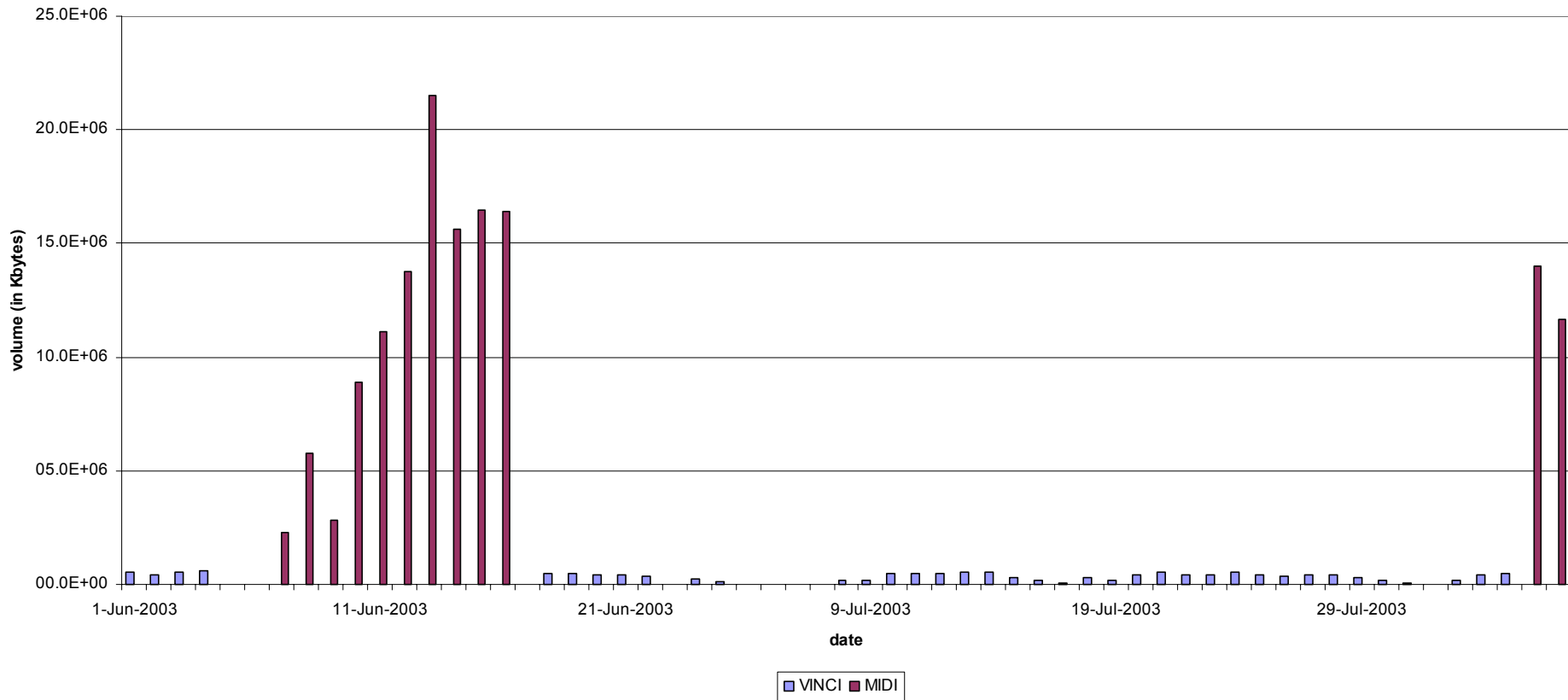


Weekly :

- retrieve all raw data in the Garching archive
- Associate - Process – Calibrate - Control data – update calibration database
- Pack data to be send by the archive to the user

# Data management and volume

During the first MIDI runs, the amount of data per night reached 20GB. The data volume is with the present instrument mode of around 1GB per uncalibrated Visibility point



# Raw data : tools

- **Daily basis :**
  - automatic ftp from Paranal of raw files fits headers
  - Automatic ftp from Paranal of pipeline QC log files
- **Weekly-bi weekly basis :**
  - Retrieval of the data from the archive (*DVD monitor + RetrieveRaw*)
  - Generation of lists of observations based on configuration files (*extractRaw*)
  - Classification of the OBs in different categories such as CALIB or SCIENCE for processing
  - OBs are associated for processing following some rules (*findAssoc*)
    - fringe acquisition OBs are associated with their corresponding photometry files (in the case of MIDI)
    - Science objects are associated with the corresponding astronomical calibrator

# Raw data

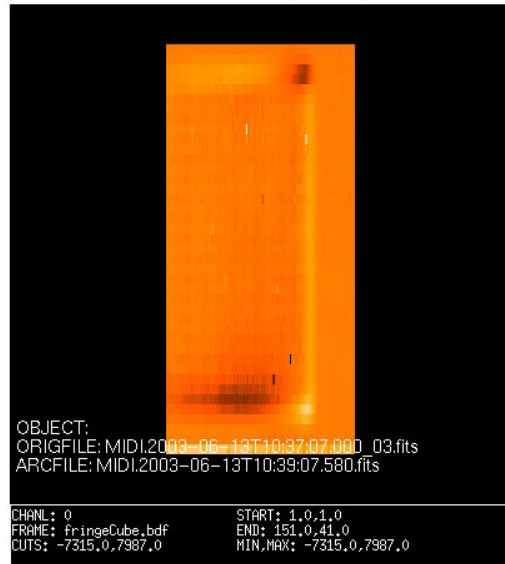
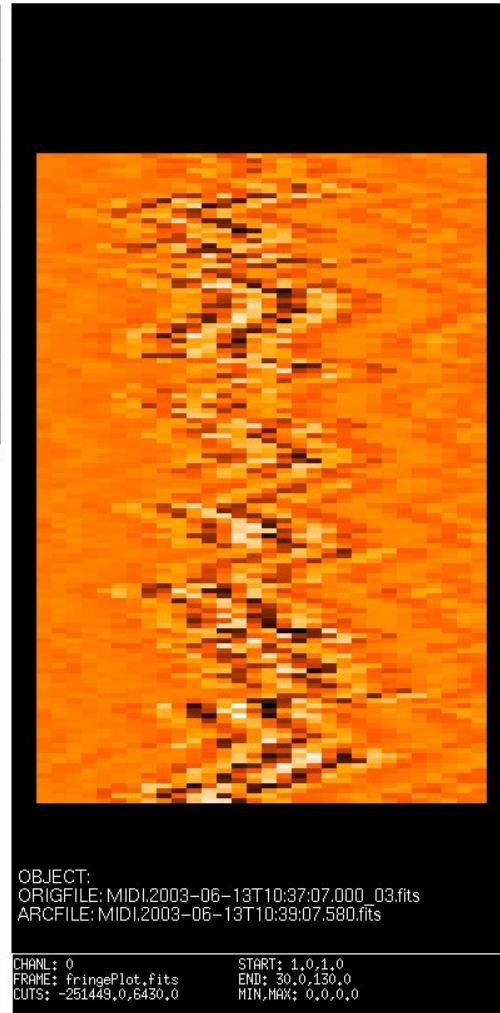
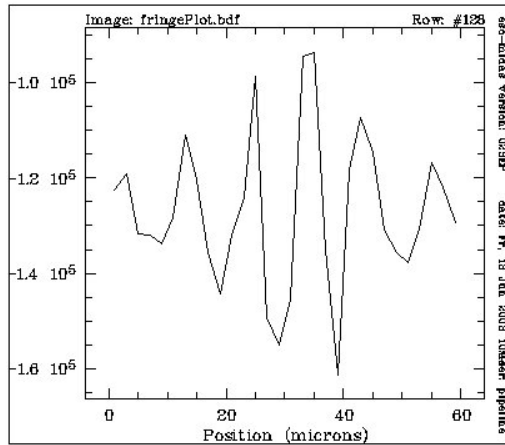
- Raw headers and QC log files are obtained daily from Paranal
- Raw data are obtained on a regular basis from the archive in Garching

VINCI DVD monitor   LIVES   GIRAF   FORB1   FORB2   VIMOS   ISAAC   NACO   MIDI							
This page shows the most recent DVDs with data physically available from the Archive. Scanned are all DVDs for the present and past month. Shown are results for the latest 15 DVD The content is refreshed once per hour. Find download info here.							
Last DVD: VI/FI_PITS_0097							
Last update: 2003-08-19 09:01:03							
2003-06-30	FITS_0091						
2003-07-01	FITS_0091						
2003-07-02	FITS_0091						
2003-07-04	FITS_0091						
2003-07-06	FITS_0091						
2003-07-07	FITS_0091						
2003-07-08	FITS_0091						
2003-07-09	FITS_0091						
2003-07-10		FITS_0092					
2003-07-11		FITS_0092					
2003-07-12			FITS_0093				
2003-07-13		FITS_0092					
2003-07-14		FITS_0092	FITS_0093				
2003-07-15			FITS_0093				
2003-07-16		FITS_0092					
2003-07-17			FITS_0093				
2003-07-18			FITS_0093				
2003-07-19			FITS_0093				
2003-07-20			FITS_0093	FITS_0094			
2003-07-21				FITS_0094			
2003-07-22				FITS_0094			
2003-07-23				FITS_0094			
2003-07-24				FITS_0094	FITS_0095		
2003-07-25					FITS_0095		
2003-07-26					FITS_0095		
2003-07-27					FITS_0095		

# VLT Interferometry pipeline structure (MIDI)

MIDI.2003-06-13T10:39:07.580.fits

Combiner	Disperser	Spatial Filter	Filter	File	Object
HIGH_SENS	PRISM	SLIT_0.2	OPEN	3/3	hd168454





# VLT pipeline structure (MIDI)

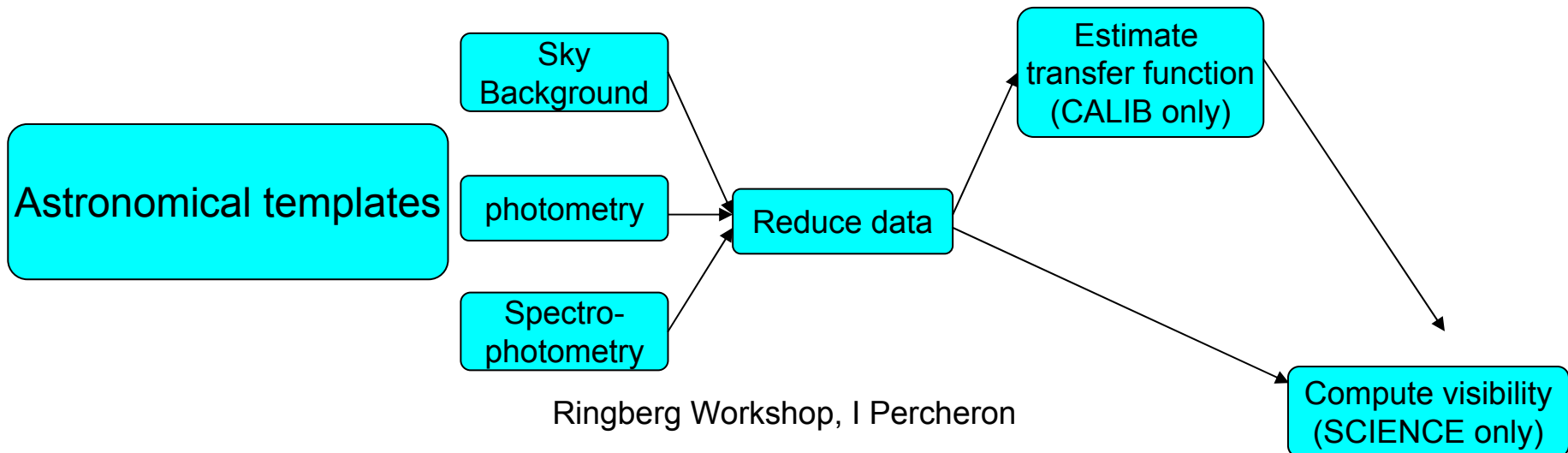
- Raw data are associated
- Products are produced using the different pipeline recipes

## Technical calibrations

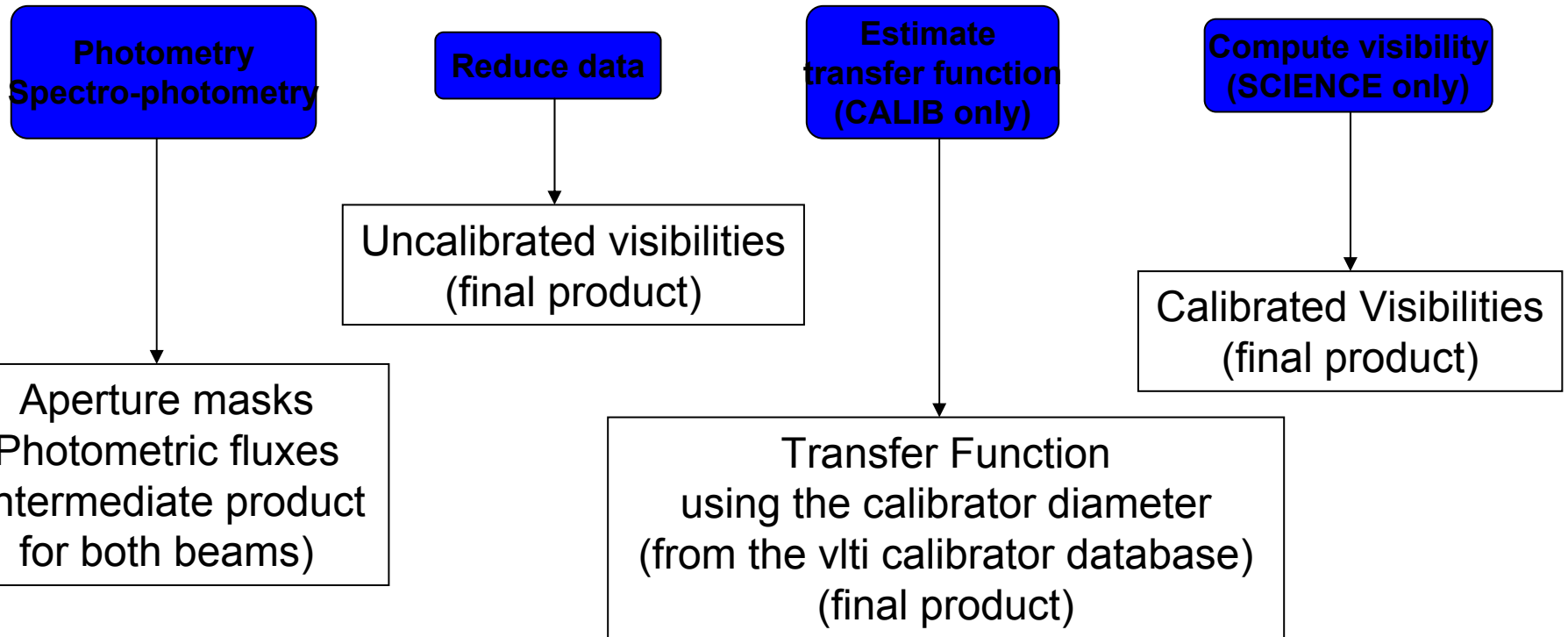
- flat
- dark
- wave

## Scientific calibrations

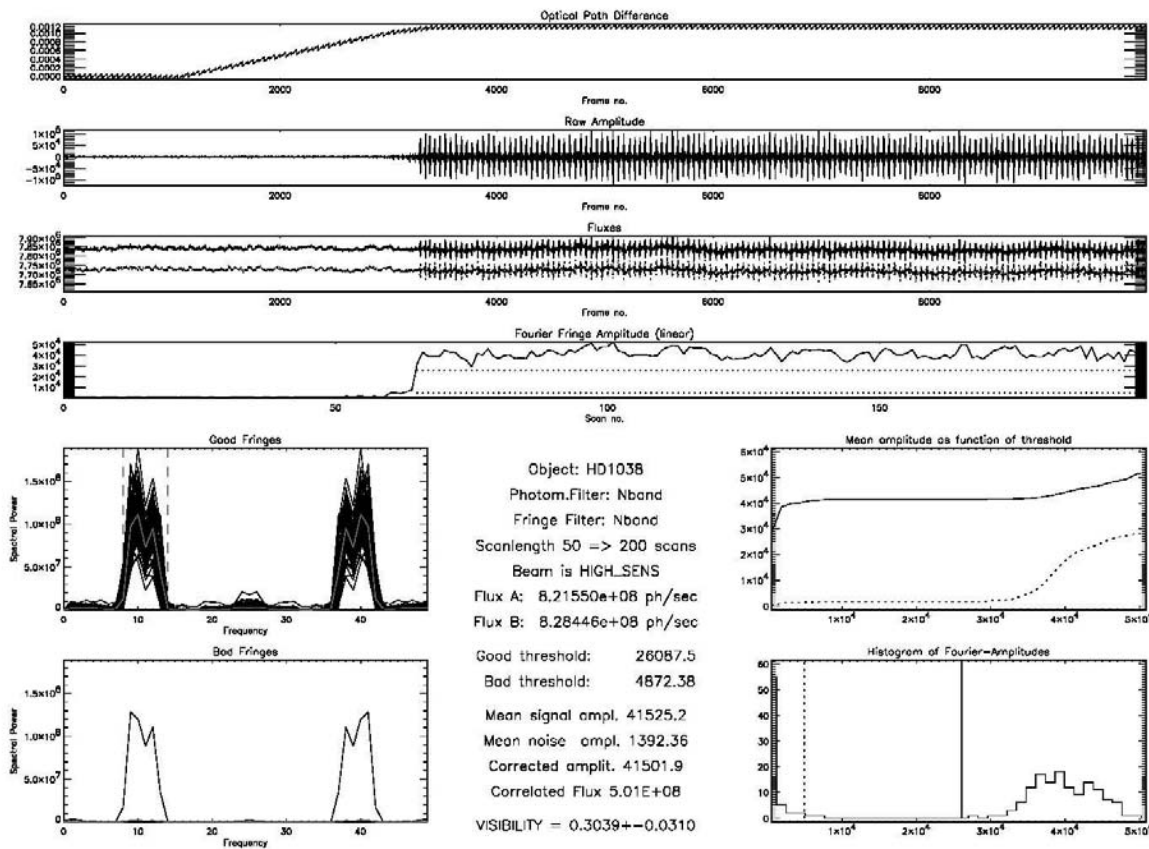
- spectral sensitivity
- zero point



# VLTI pipeline products and QC parameters (MIDI)



# VLT I off line software evaluation (MIDI consortium software - Heidelberg)



# Quality control

- Check Calibration products (MIDI)
  - update of the calibration data base.
- Check technical observations (VINCI – MIDI)
  - Instrument health check
- Check astronomical calibrators and science objects (VINCI-MIDI)
  - Sensitivity of the instrument
- Estimate the Instrumental Transfer Function by Observing astronomical calibrators (VINCI-MIDI)
  - Stability of the TF and instrument trending

# Quality control :

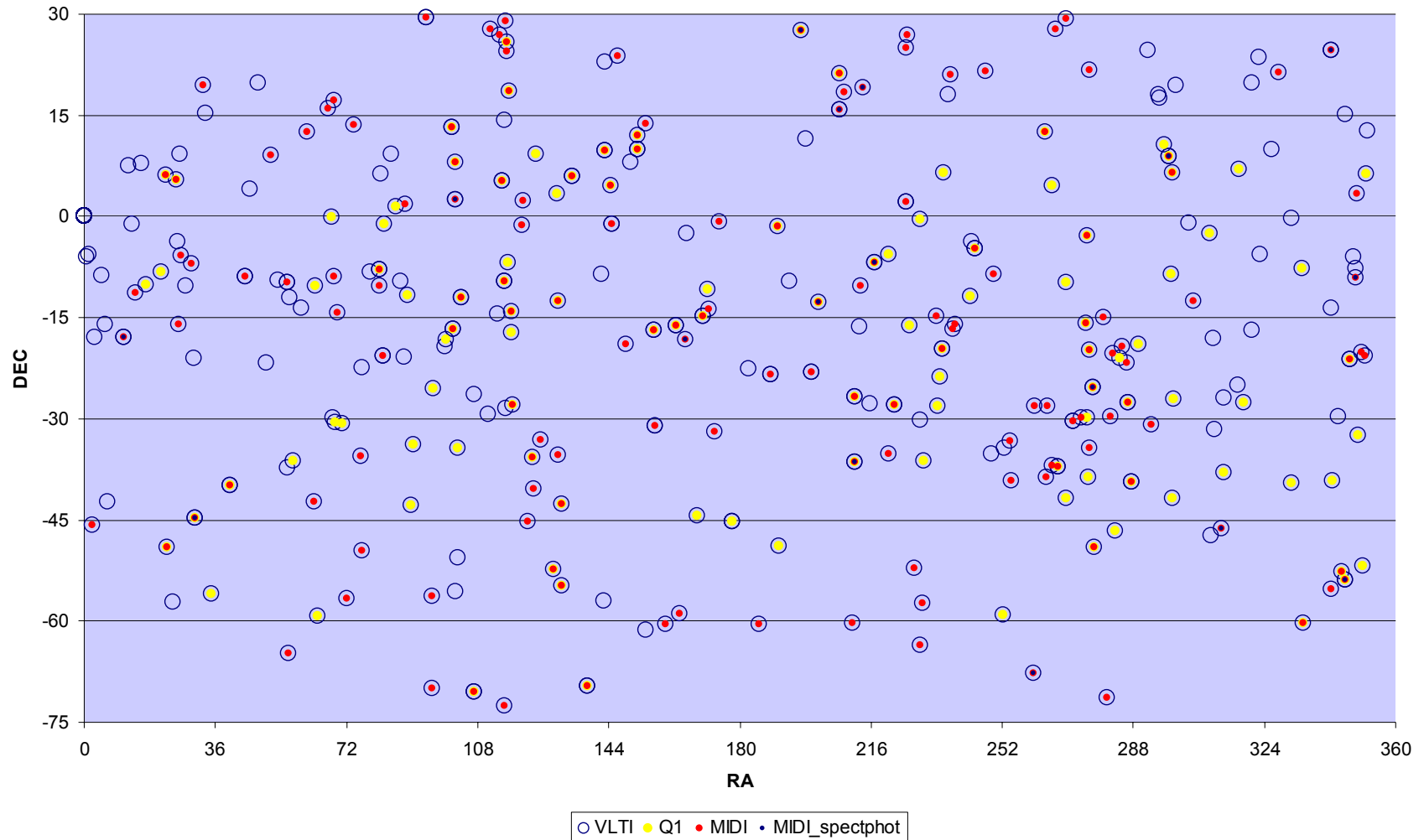
Observing calibrators to estimate the instrumental Transfer Function

- How to choose a calibrator
  - close from the target
  - single source, unresolved or diameter know with a good accuracy
  - No photometric variability
  - No infrared excess and a compact atmosphere
  - Spectral type

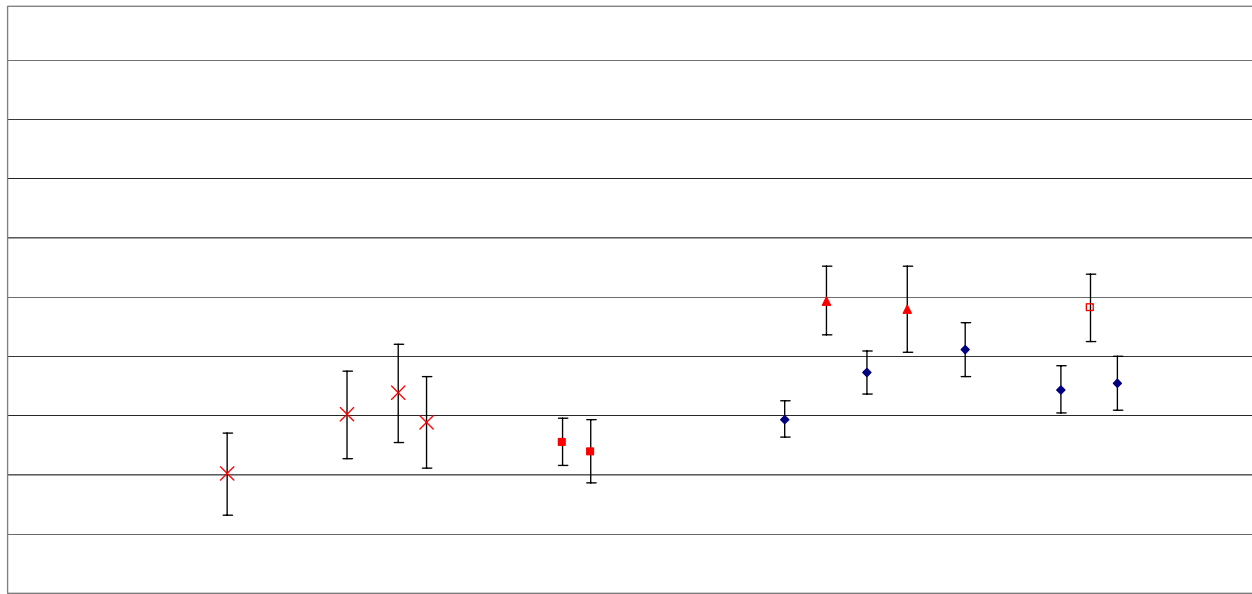
# Estimation of the transfer function :

Observing astronomical calibrators and providing tools to the community (CaVIN)

CaVIN includes VINCI (VLT calibrator group) and MIDI (MIDI consortium) calibrators



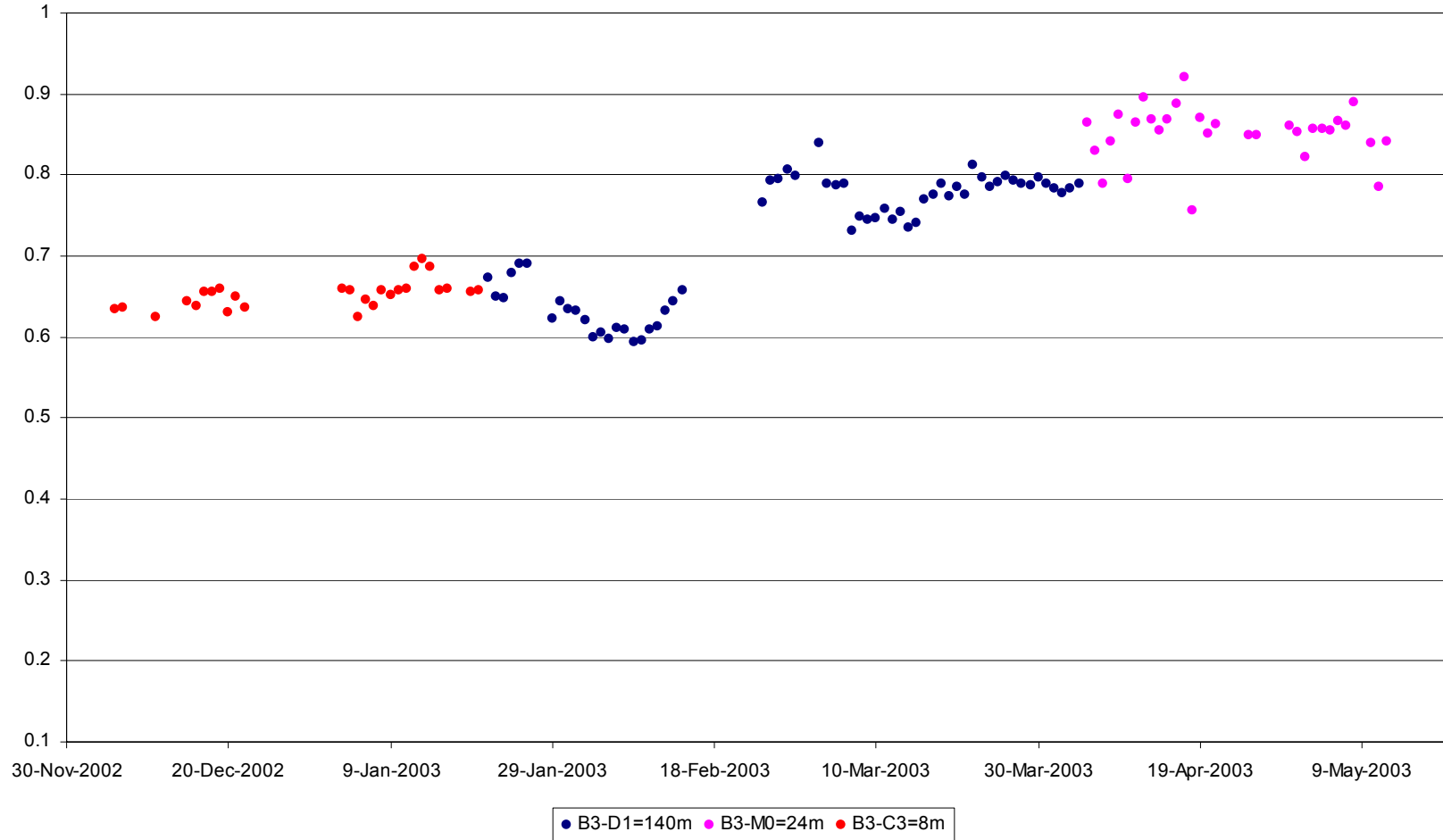
# MIDI Quality Control and trending



Exemple of uncalibrated Visibilities obtained during the night

# Trending (VINCI)

Instrumental Transfer function obtained with VINCI, the VLTI commissioning instrument over several months





# Data Packages

- VINCI : public releases of the data.  
([http://www.eso.org/projects/vlti/instru/vinci/vinci\\_data\\_sets.html](http://www.eso.org/projects/vlti/instru/vinci/vinci_data_sets.html))

- MIDI : data will be packed and released like with the other VLT instruments.

At the beginning raw data and basic QC parameters will be provided. In the future pre-processed data could also be provided to the user.

# Conclusion

- DFO tools are set up to manage – process – control - pack the VLTI data in a similar way than with the other VLT instruments.