



Workflow Instructions

- To run this workflow on the demo data:
 - Turn on highlighting. Choose "Tools"-> "Animate at Runtime" from top menu and set it to "1".
 - Press the "Run" button OR **cntrl-R** to start the workflow.
- To run on a different data set:
 - Click on **ROOT_DATA_DIR** and set as appropriate.
 - All subdirectories of **RAWDATA_DIR** will be searched for data.
 - If desired, change **END_PRODUCTS_DIR**.
 - Press the "Run" button OR **cntrl-R** to start the workflow.
- To monitor the progress of the workflow:
 - Open "Window" -> "Runtime Window"
 - Press the "Run" button OR **cntrl-R** to start the workflow.

Setup Directories

Input:

- *ROOT_DATA_DIR: /home/freudling/efsd/data/
- *RAWDATA_DIR: \$ROOT_DATA_DIR/reflex_input/lives_blue

Working Directories:

- *BOOKKEEPING_DIR: \$ROOT_DATA_DIR/reflex_book_keeping/lives_blue
- *LOGS_DIR: \$ROOT_DATA_DIR/reflex_logs/lives_blue
- *TMP_PRODUCTS_DIR: \$ROOT_DATA_DIR/reflex_tmp_products/lives_blue
- *END_PRODUCTS_DIR: \$ROOT_DATA_DIR/reflex_end_products/lives_blue

Output:

- *END_PRODUCTS_DIR: \$ROOT_DATA_DIR/reflex_end_products/lives_blue

Global Parameters

= actor with interactive option

- *PDS_VIEWER: tv Files viewer to use for the inspection of input/output products
- *ESORedgets: --suppress-prefix=TRUE esorex arguments
- *baseDir: false Change "BaseDir" to true to enable BOOKKEEPING_DIR, TMP_PRODUCTS_DIR and LOGS_DIR each time the workflow is run (Lazy Mode won't work anymore). This is set automatically

Doing your own Data Reduction – Pipelines at ESO

Step 1: Data Organisation and Selection

Step 2: Creation of Master Calibration Files

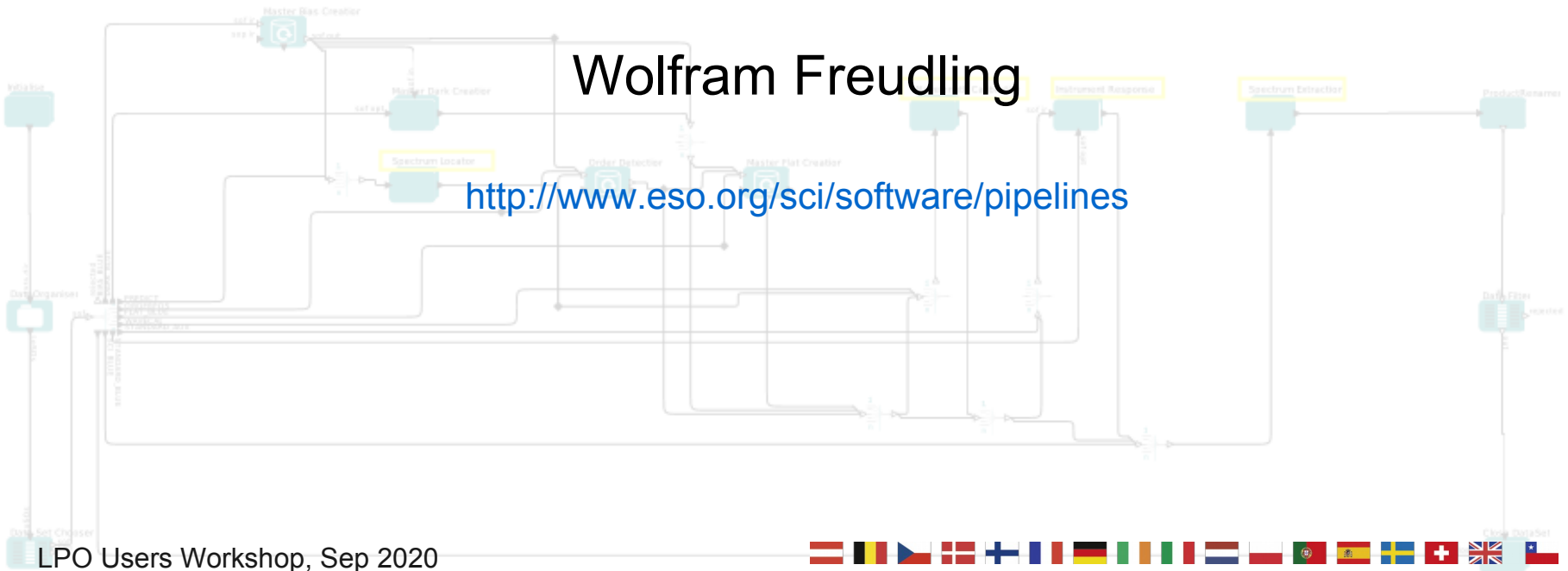
Step 3: Wavelength and Response Calibration

Step 4: Spectrum Extraction

Step 5: Output Organisation

Wolfram Freudling

<http://www.eso.org/sci/software/pipelines>



What is Data Reduction and why should I worry about it?

- Processing of raw data to scientifically useful Products.
- ESO is doing it for you! Archive contains science products.

• Why worry about it:

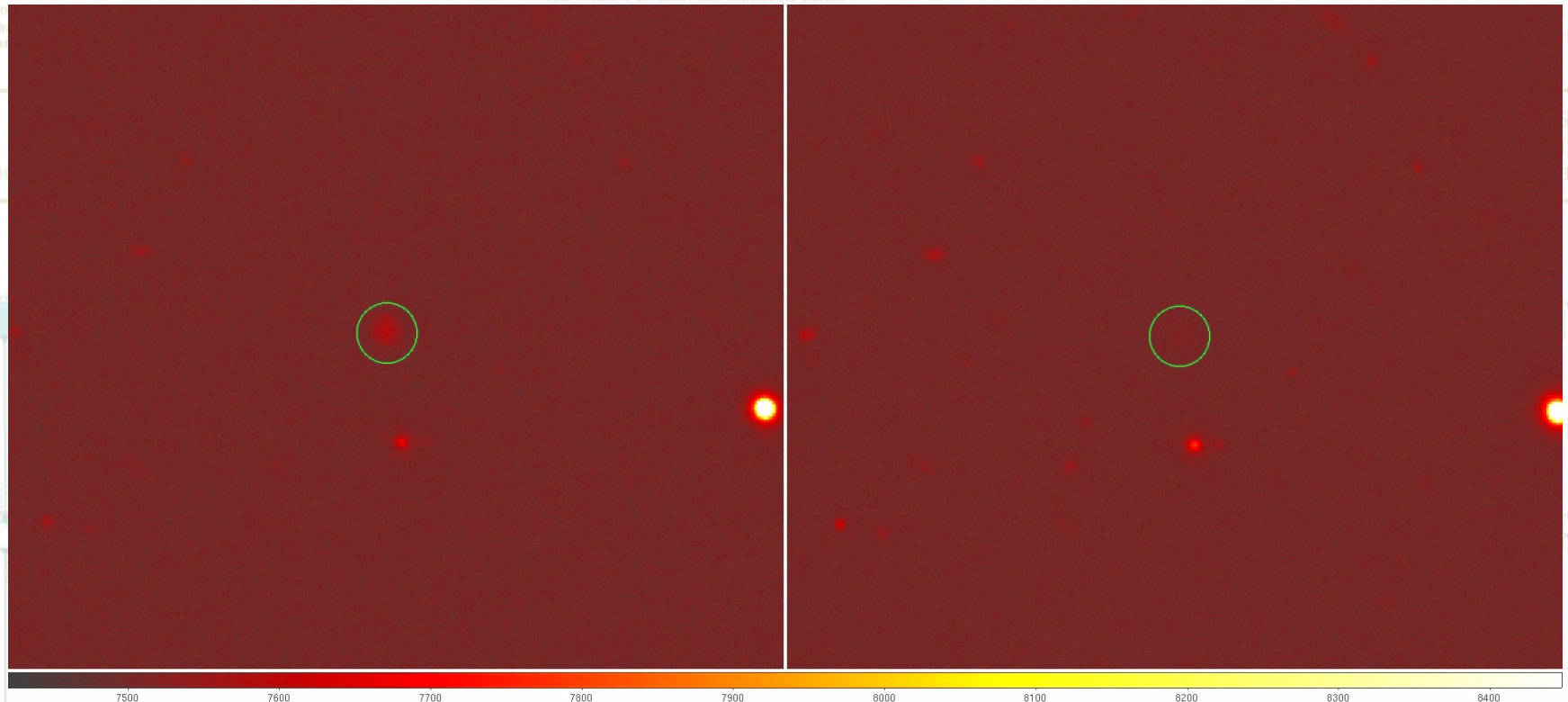
- Reduce data (instruments, observing mode, time frame) without science data products in archive.
- Re-process data using different strategy / parameters.
- Post-process archive products.
- **Understand your data and the impact of processing on results.**

Three exciting ESO Discoveries you (probably) never heard about

1. Redshift 8.8 Ly- α galaxy discovered with VIRCAM

Narrow band image corresponding to
Ly- α redshift of 8.8

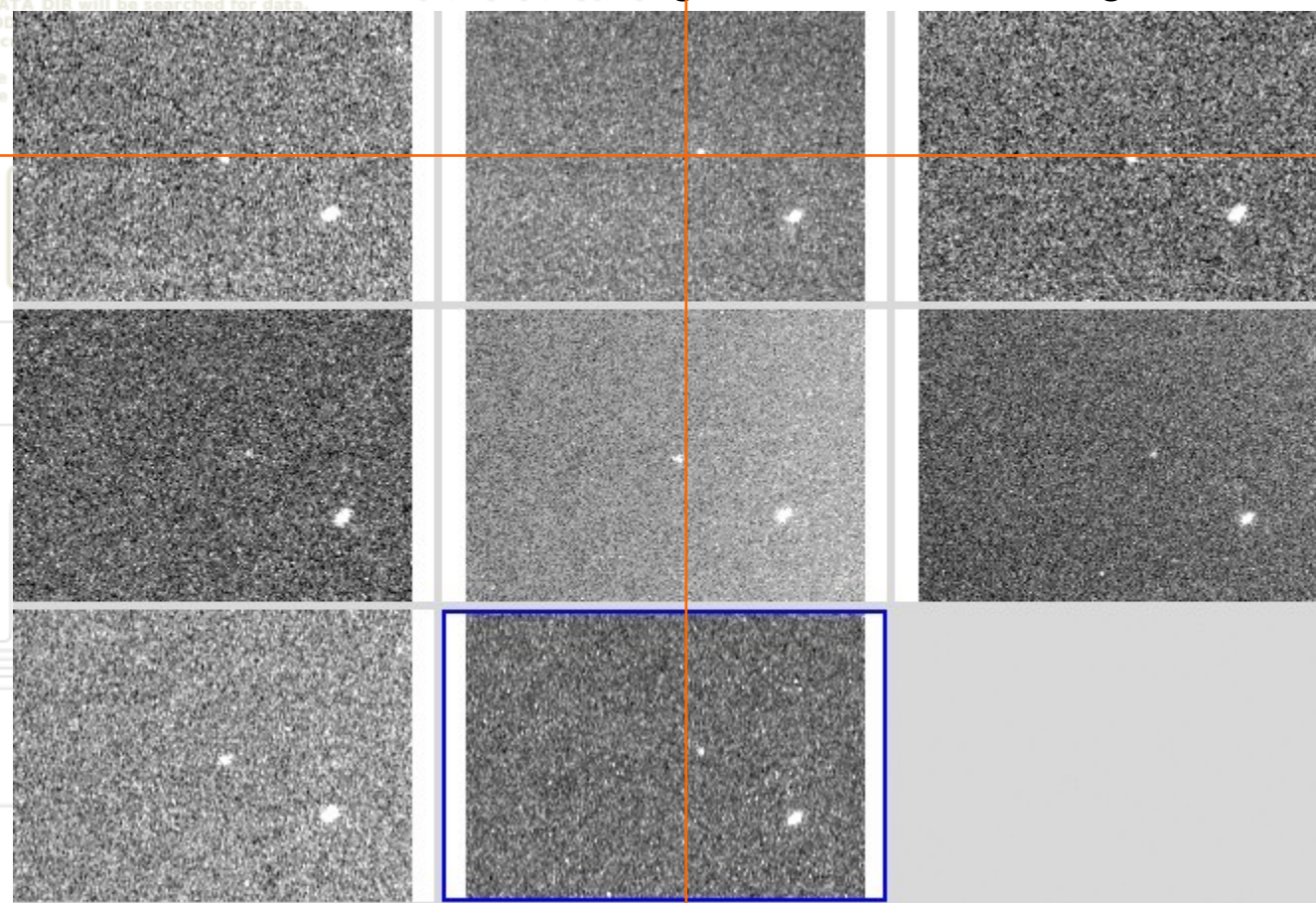
J-band image of same region



Three exciting ESO Discoveries you (probably) never heard about

1. Redshift 8.8 Ly- α galaxy discovered with VIRCAM

Individual narrow band image used for final image:



Step 1:
Data Organisation
and Selection

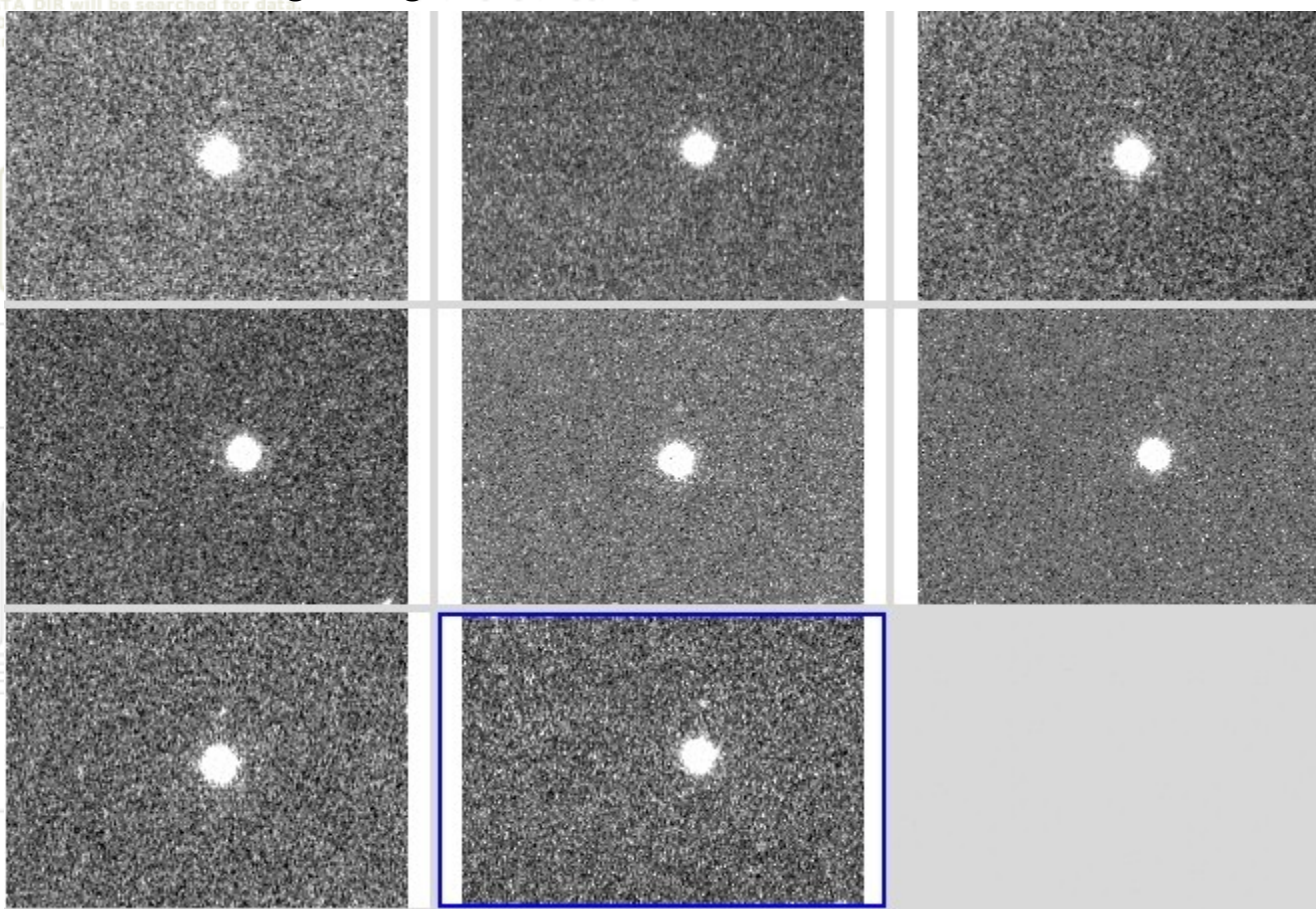
Step 5:
Output
Organisation



Three exciting ESO Discoveries you (probably) never heard about

1. Redshift 8.8 Ly- α galaxy discovered with VIRCAM

Preceding images

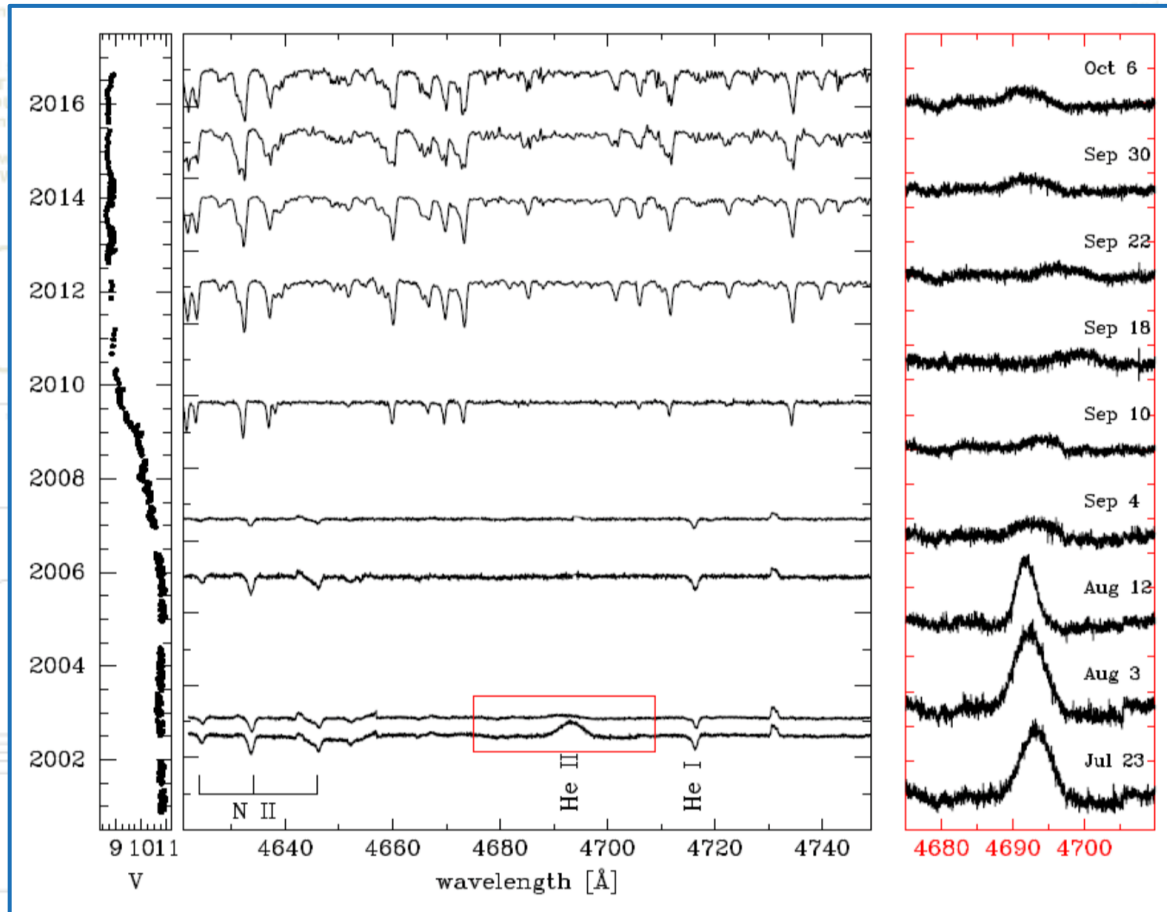


Step 1: Data Organisation and Selection

Step 5: Output Organisation

Three exciting ESO Discoveries you (probably) never heard about

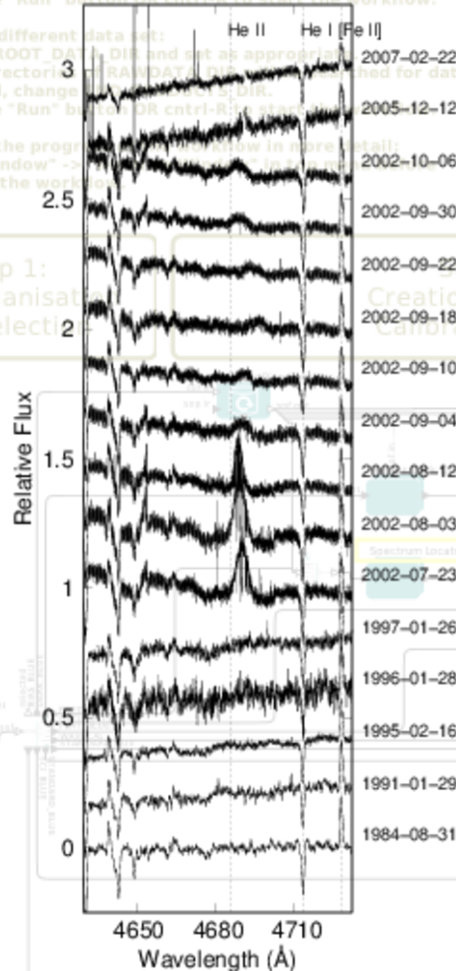
3. LMC Variable R71 Spectral Change during eruption



THE MAGELLANIC CLOUDS NEWSLETTER 146 – 4 April
2017

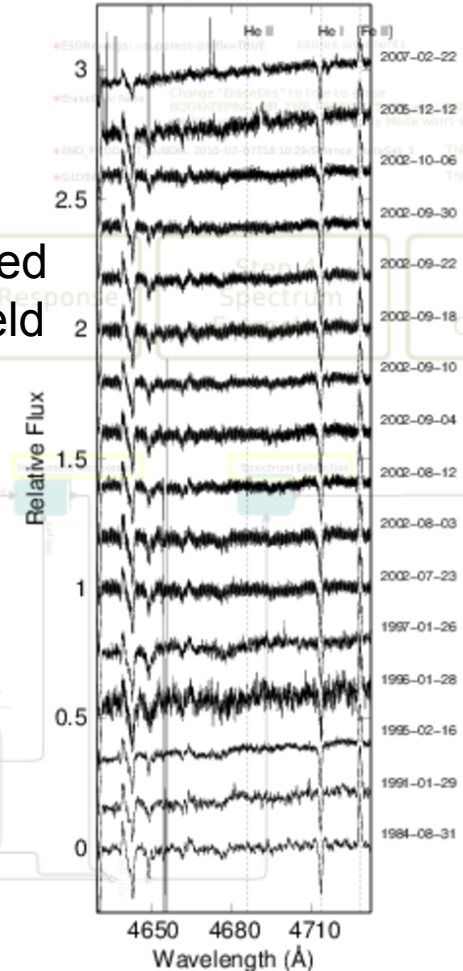
Three exciting ESO Discoveries you (probably) never heard about

2. LMC Variable R71 Spectral Change during eruption



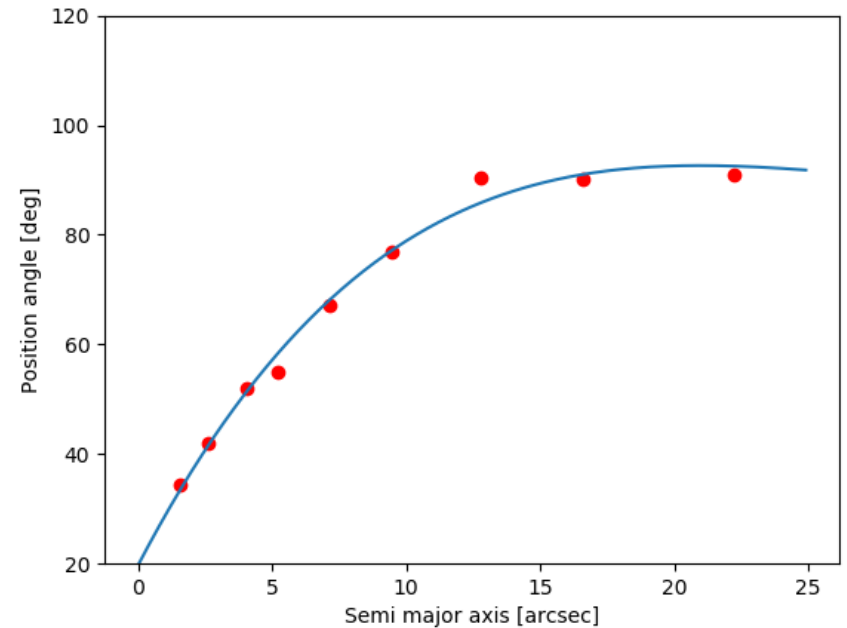
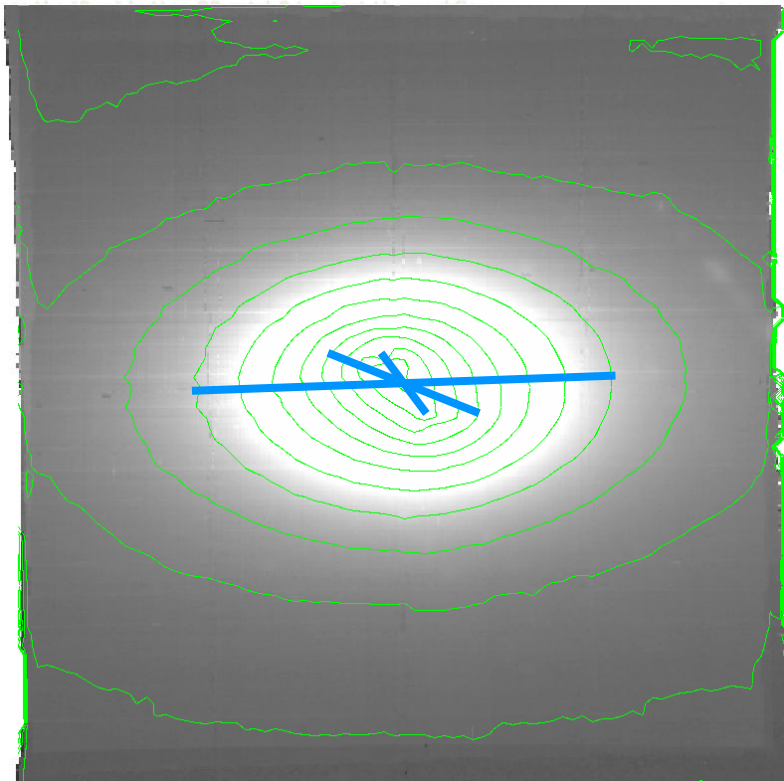
Same data, improved parameter for flatfield processing:

(reduction and plots by Andrea Mehner)



Three exciting ESO Discoveries you (probably) never heard about

3. MUSE Discovery of twisted Isophotes in NGC 4473

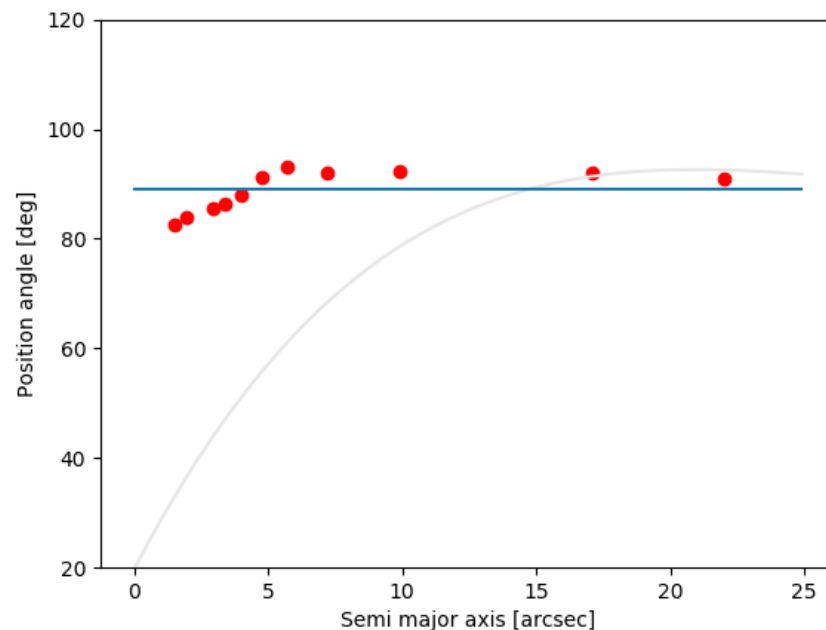
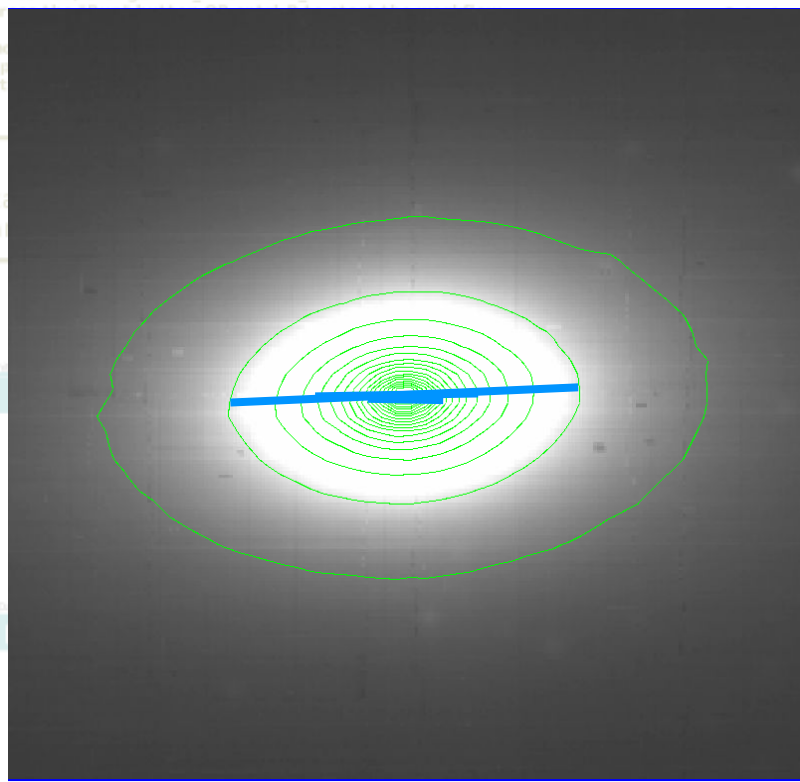


Credits: Lodovico Coccato

Three exciting ESO Discoveries you (probably) never heard about

3. MUSE Discovery of twisted Isophotes in NGC 4473

Same data, improved alignment of individual cubes:



ESO Data Reduction System

Plot and inspect the results

Set recipe parameters

Reduction algorithms "Recipes"
input: FITS files + parameters
Output: FITS files
Instrument Consortia, Pipeline Systems Group, Science Data Products Group

Organize data so that they can be fed to a recipe

Organize output for subsequent recipes



Workflow Instructions

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 - Press the "Run" button OR cntrl-R to start the workflow.
- To run on a different data set:
- Click on ROOT_DATA_DIR and set as appropriate. All subdirectories of RAW_DATA_DIR will be searched for data.
 - If desired, change END_PRODUCTS_DIR.
 - Press the "Run" button OR cntrl-R to start the workflow.

To monitor the progress of the workflow in more detail:

- Open "Window" -> "Runtime Window" in top menu before starting the workflow.

Setup Directories

- ROOT_DATA_DIR: /sdp_test_data/mmeeser/eso-pipelines/data_wkf/
- Input:**
- RAW_DATA_DIR: \$ROOT_DATA_DIR/reflex_input/hawki
- Only change CALIB_DATA_DIR if you do NOT want to use the calibration data delivered with the pipeline:
- CALIB_DATA_DIR: /sdp_test_data/mmeeser/eso-pipelines/hawki-2.4.1/calib/ha...
 - TWOMASS_CATALOGUE_DIR:
 - PPMXL_CATALOGUE_DIR:
 - LOCAL_CATALOGUE_DIR:
- None of the directories below should be a subdirectory of RAW_DATA_DIR or CALIB_DATA_DIR
- Output:**
- END_PRODUCTS_DIR: \$ROOT_DATA_DIR/reflex_end_products
 - LOGS_DIR: \$ROOT_DATA_DIR/reflex_logs/hawki
 - TMP_PRODUCTS_DIR: \$ROOT_DATA_DIR/reflex_tmp_products/hawki
 - BOOKKEEPING_DB: \$BOOKKEEPING_DIR/bookkeeping.db

Global Parameters

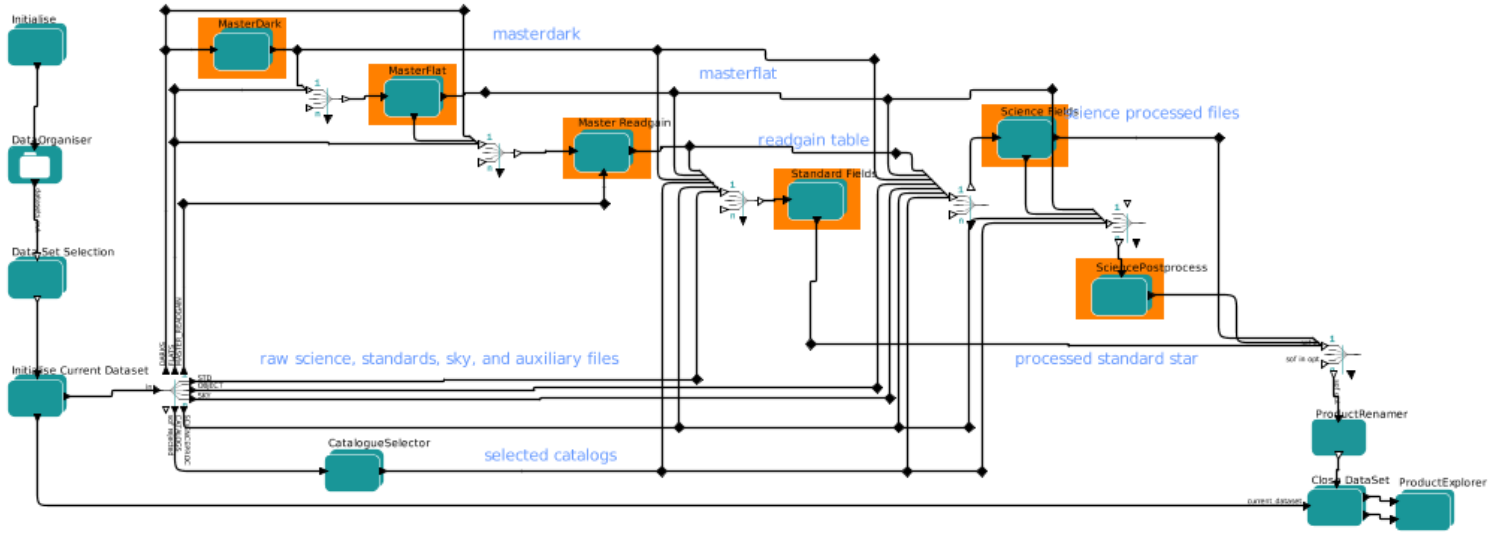
- RecipeFailureMode: Ask
 - EraseDirs: false
 - FITS_VIEWER: fv
 - GlobalPlotInteractivity: true
 - SelectDatasetMethod: Interactive
 - ProductExplorerMode: Triggered
 - Compute readgain table: false
- Legend:** = actor with interactive option
- Global parameter for the behaviour when a recipe fails. 'Ask' means that each time a recipe fails, the choice to continue or stop will be presented. 'Continue' means that the workflow will ignore errors and continue. 'Stop' means the workflow will stop.
- Change "EraseDirs" to 'true' to erase BOOKKEEPING_DIR, TMP_PRODUCTS_DIR and LOGS_DIR each time the workflow is run (Lazy Mode will not work anymore)
- Program to use for the inspection of input/output products. Use full path name if it is not in the standard path.
- Set to "false" to disable interactive GUIs for the whole workflow. Each interactive actor can specify its own setting, which overwrites the choice given here.
- Specify how datasets for processing are selected ("All", "New" = never tried before, "Reduced" = successfully run before, "Failed" = unsuccessfully run before), or set to "None".
- Specify when you want to see the ProductExplorer GUI. "Triggered" = show it after all data sets have been reduced. "Enabled" = show it after each dataset. "Disabled" = never show it
- true: compute the readgain table from raw frames in the dataset. false: uses the readgain table from static calibrations. Default: false.

EsoReflex Data Reduction Environment

Catalogue Selection

Select catalogues (on local machine and/or CDS search). Input values must be within the allowed ranges; at least one photometric and one astrometric valid catalogues must be provided (either from local machine or for CDS search). If these criteria are not fulfilled, the workflow will stop. No check is done beforehand.

- ASTROM_CATALOGUE: 1 Select catalogues on local machine
- PHOTOM_CATALOGUE: 0 2MASS: 1; PPMXL: 2; LOCAL
- CDS ASTROMETRIC CATALOGUE: wise CDS astrometric catalogue, <none | 2mass | usnob | ppmxl | wise>
- CDS PHOTOMETRIC CATALOGUE: 2mass CDS photometric catalogue, <none | 2mass | ppmxl | wise>



Auxiliary and debug parameters, please do not change: GLOBAL_TIMESTAMP: 2016-11-21T11:50:29 ESORexArgs: --suppress-prefix=TRUE END_PRODUCTS_SUBDIR: 2016-02-18T15:55:12/HAWKI.2008-11-18T00:22:15.321_tpl N_SELECTED_DATASETS: 1



FORS Workflow For Imaging Data (v. 5.1.4)

Workflow Instructions

To run this workflow on the demo data:

- Turn on highlighting. Choose "Tools" -> "Animate at Runtime" from top menu and set it to "1".
- Press the "Run" button OR cntrl-R to start the workflow.

To run on a different data set:

- Click on RAW_DATA_DIR and set as appropriate. All subdirectories of RAW_DATA_DIR will be searched for data.
- If desired, change END_PRODUCTS_DIR.
- IMPORTANT: END_PRODUCTS_DIR should not be a subdirectory of the RAW_DATA_DIR, otherwise it will be searched for raw data!
- Press the "Run" button OR cntrl-R to start the workflow.

The general concepts of Reflex are described in Astron. Astrophys., 559, A96. Please credit this paper in publications on research that used Reflex.

Workflow tutorial and Fors pipeline manual can be found here: http://www.eso.org/sci/software/pipelines/#reflex_workflows

Setup Directories

Input:

- ROOT_DATA_DIR: \$HOME/reflex_data/
- RAW_DATA_DIR: /opt/local/share/esopipes/datademo/fors/
- Only change CALIB_DATA_DIR if you do NOT want to use the calibration data delivered with the pipeline:
- CALIB_DATA_DIR: /opt/local/share/esopipes/datastatic/fors-5.1.4/

Output:

- END_PRODUCTS_DIR: \$ROOT_DATA_DIR/reflex_end_products

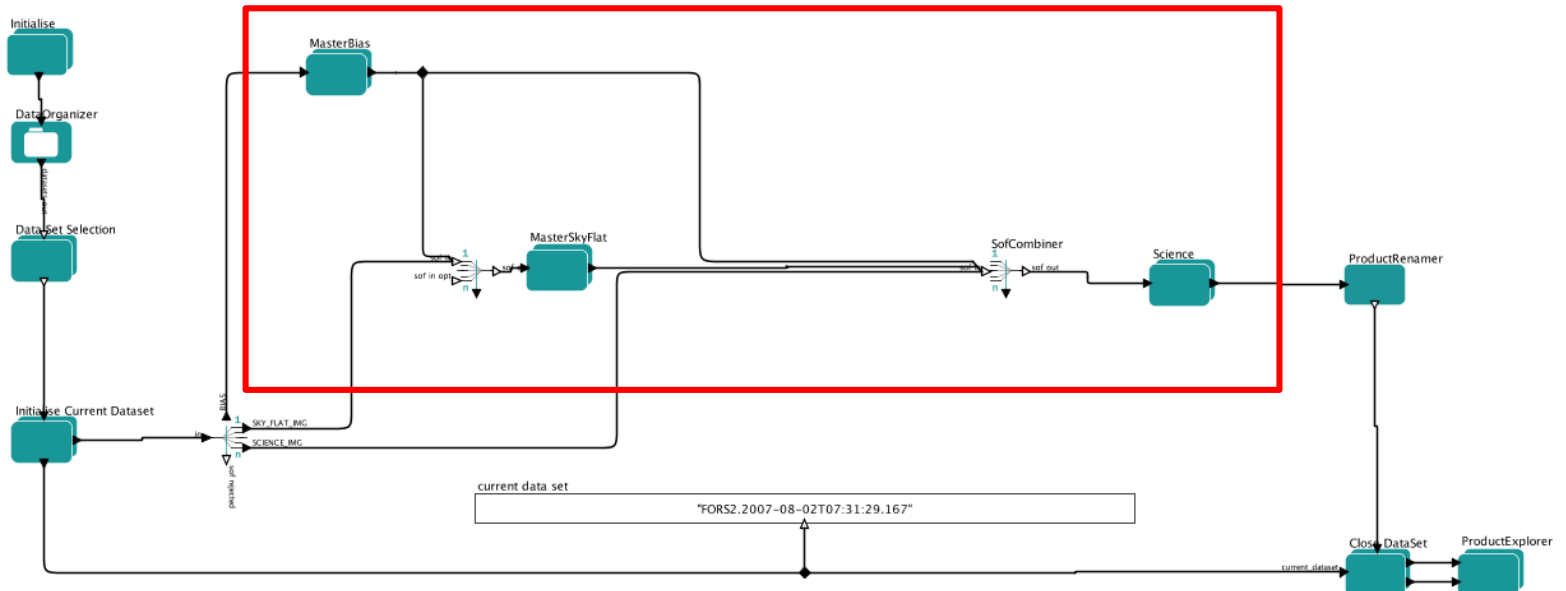
Working Directories:

- BOOKKEEPING_DIR: \$ROOT_DATA_DIR/reflex_book_keeping/fors-ima
- LOGS_DIR: \$ROOT_DATA_DIR/reflex_logs/fors-ima
- TMP_PRODUCTS_DIR: \$ROOT_DATA_DIR/reflex_tmp_products/fors-ima
- BOOKKEEPING_DB: \$BOOKKEEPING_DIR/bookkeeping.db

Global Parameters

= actor with interactive option

- RecipeFailureMode: Ask
Global parameter for the behaviour when a recipe fails. 'Ask' means that each time a recipe fails, the choice to continue or stop will be presented. 'Continue' means that the workflow will ignore errors and continue. 'Stop' means the workflow will stop.
- EraseDirs: false
Change "EraseDirs" to 'true' to erase BOOKKEEPING_DIR, TMP_PRODUCTS_DIR and LOGS_DIR each time the workflow is run (Lazy Mode will not work anymore)
- FITS_VIEWER: fv
Program to use for the inspection of input/output products. Use full path name if it is not in the standard path.
- GlobalPlotInteractivity: true
Set to "false" to disable interactive GUIs for the whole workflow. Each interactive actor can specify its own setting, which overwrites the choice given here.
- SelectDataSetMethod: Interactive
Specify how datasets for processing are selected ("All", "New" = never tried before, "Reduced" = successfully run before, "Failed"=unsuccessfully run before), or set to "Interactive" for interactive selection.
- ProductExplorerMode: Triggered
Specify when you want to see the ProductExplorer GUI. "Triggered" = show it after all data sets have been reduced. "Enabled" = show it after each dataset. "Disabled" = never show it



FORS Workflow For Imaging Data (v. 5.1.4)

Workflow Instructions

To run this workflow on the demo data:

- Turn on highlighting. Choose "Tools"-> "Animate at Runtime" from top menu and set it to "1".
- Press the "Run" button OR `ctrl-R` to start the workflow.

To run on a different data set:

- Click on RAW_DATA_DIR and set as appropriate. All subdirectories of RAW_DATA_DIR will be searched for data.
- If desired, change END_PRODUCTS_DIR.
- IMPORTANT: END_PRODUCTS_DIR should not be a subdirectory of the RAW_DATA_DIR, otherwise it will be searched for raw data!
- Press the "Run" button OR `ctrl-R` to start the workflow.

The general concepts of Reflex are described in Astron. Astrophys., 559, A96. Please credit this paper in publications on research that used Reflex.

Workflow tutorial and Fors pipeline manual can be found here: http://www.eso.org/sci/software/pipelines/#reflex_workflows

Setup Directories

Input:

- ROOT_DATA_DIR: \$HOME/reflex_data/
 - RAW_DATA_DIR: /opt/local/share/esopipes/datademo/fors/
- Only change CALIB_DATA_DIR if you do NOT want to use the calibration data delivered with the pipeline:
- CALIB_DATA_DIR: /opt/local/share/esopipes/datademo/fors-5.1.4/

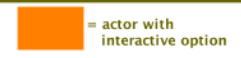
Output:

- END_PRODUCTS_DIR: \$ROOT_DATA_DIR/reflex_end_products

Working Directories:

- BOOKKEEPING_DIR: \$ROOT_DATA_DIR/reflex_book_keeping/fors-ima
- LOGS_DIR: \$ROOT_DATA_DIR/reflex_logs/fors-ima
- TMP_PRODUCTS_DIR: \$ROOT_DATA_DIR/reflex_tmp_products/fors-ima
- BOOKKEEPING_DB: \$BOOKKEEPING_DIR/bookkeeping.db

Global Parameters



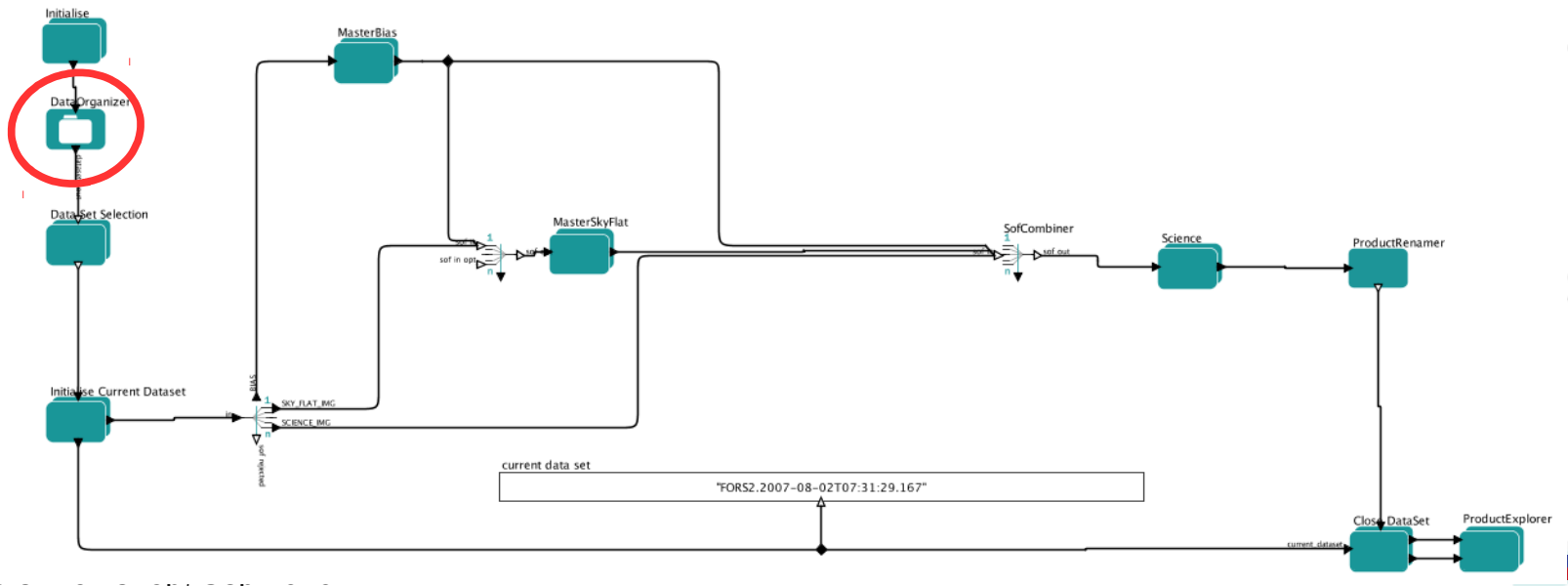
- RecipeFailureMode: Ask
Global parameter for the behaviour when a recipe fails. 'Ask' means that each time a recipe fails, the choice to continue or stop will be presented. 'Continue' means that the workflow will ignore errors and continue. 'Stop' means the workflow will stop.
- EraseDirs: false
Change "EraseDirs" to 'true' to erase BOOKKEEPING_DIR, TMP_PRODUCTS_DIR and LOGS_DIR each time the workflow is run (Lazy Mode will not work anymore)
- FITS_VIEWER: fv
Program to use for the inspection of input/output products. Use full path name if it is not in the standard path.
- GlobalPlotInteractivity: true
Set to "false" to disable interactive GUIs for the whole workflow. Each interactive actor can specify its own setting, which overwrites the choice given here.
- SelectDataSetMethod: Interactive
Specify how datasets for processing are selected ("All", "New" = never tried before, "Reduced" = successfully run before, "Failed"=unsuccessfully run before), or set to "Interactive" for interactive selection.
- ProductExplorerMode: Triggered
Specify when you want to see the ProductExplorer GUI. "Triggered" = show it after all data sets have been reduced. "Enabled" = show it after each dataset. "Disabled" = never show it

Step 1: Data Organisation and Selection

Step 2: Creation of Master Calibration Files

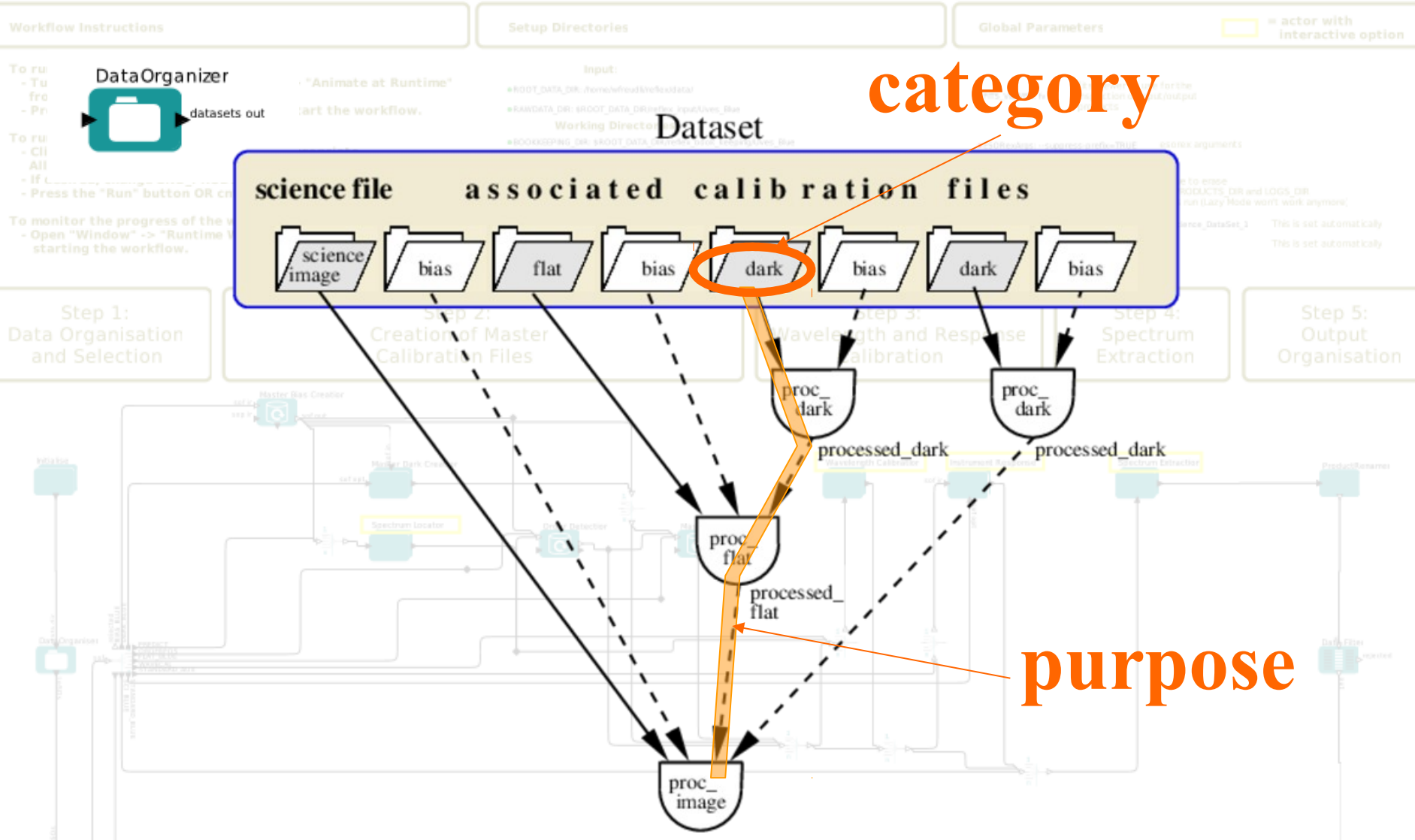
Step 3: Science Reduction

Step 4: Output Organisation





UVE Data Organizer (4.7.8) Data Organisation



FORS Workflow For Imaging Data (v. 5.1.4)

Workflow Instructions

To run this workflow on the demo data:

- Turn on highlighting. Choose "Tools"-> "Animate at Runtime" from top menu and set it to "1".
- Press the "Run" button OR cntrl-R to start the workflow.

To run on a different data set:

- Click on RAW_DATA_DIR and set as appropriate. All subdirectories of RAW_DATA_DIR will be searched for data.
- If desired, change END_PRODUCTS_DIR.
- IMPORTANT: END_PRODUCTS_DIR should NOT be a subdirectory of the RAW_DATA_DIR, otherwise it will be searched for raw data!**
- Press the "Run" button OR cntrl-R to start the workflow.

The general concepts of Reflex are described in Astron. Astrophys., 559, A96. Please credit this paper in publications on research that used Reflex.

Workflow tutorial and Fors pipeline manual can be found here: http://www.eso.org/sci/software/pipelines/#reflex_workflows

Setup Directories

Input:

- ROOT_DATA_DIR: \$HOME/reflex_data/
 - RAW_DATA_DIR: /opt/local/share/esopipes/datademo/fors/
- Only change CALIB_DATA_DIR if you do NOT want to use the calibration data delivered with the pipeline:
- CALIB_DATA_DIR: /opt/local/share/esopipes/datastatic/fors-5.1.4/

Output:

- END_PRODUCTS_DIR: \$ROOT_DATA_DIR/reflex_end_products

Working Directories:

- BOOKKEEPING_DIR: \$ROOT_DATA_DIR/reflex_book_keeping/fors-ima
- LOGS_DIR: \$ROOT_DATA_DIR/reflex_logs/fors-ima
- TMP_PRODUCTS_DIR: \$ROOT_DATA_DIR/reflex_tmp_products/fors-ima
- BOOKKEEPING_DB: \$BOOKKEEPING_DIR/bookkeeping.db

Global Parameters ■ = actor with interactive option

● RecipeFailureMode: Ask

Global parameter for the behaviour when a recipe fails. 'Ask' means that each time a recipe fails, the choice to continue or stop will be presented. 'Continue' means that the workflow will ignore errors and continue. 'Stop' means the workflow will stop.

● EraseDirs: false

Change "EraseDirs" to 'true' to erase BOOKKEEPING_DIR, TMP_PRODUCTS_DIR and LOGS_DIR each time the workflow is run (Lazy Mode will not work anymore)

● FITS_VIEWER: fv

Program to use for the inspection of input/output products. Use full path name if it is not in the standard path.

● GlobalPlotInteractivity: true

Set to "false" to disable interactive GUIs for the whole workflow. Each interactive actor can specify its own setting, which overwrites the choice given here.

● SelectDatasetMethod: Interactive

Specify how datasets for processing are selected ('All', 'New' = never tried before, 'Reduced' = successfully run before, 'Failed' = unsuccessfully run before), or set to "Interactive" for interactive selection.

● ProductExplorerMode: Triggered

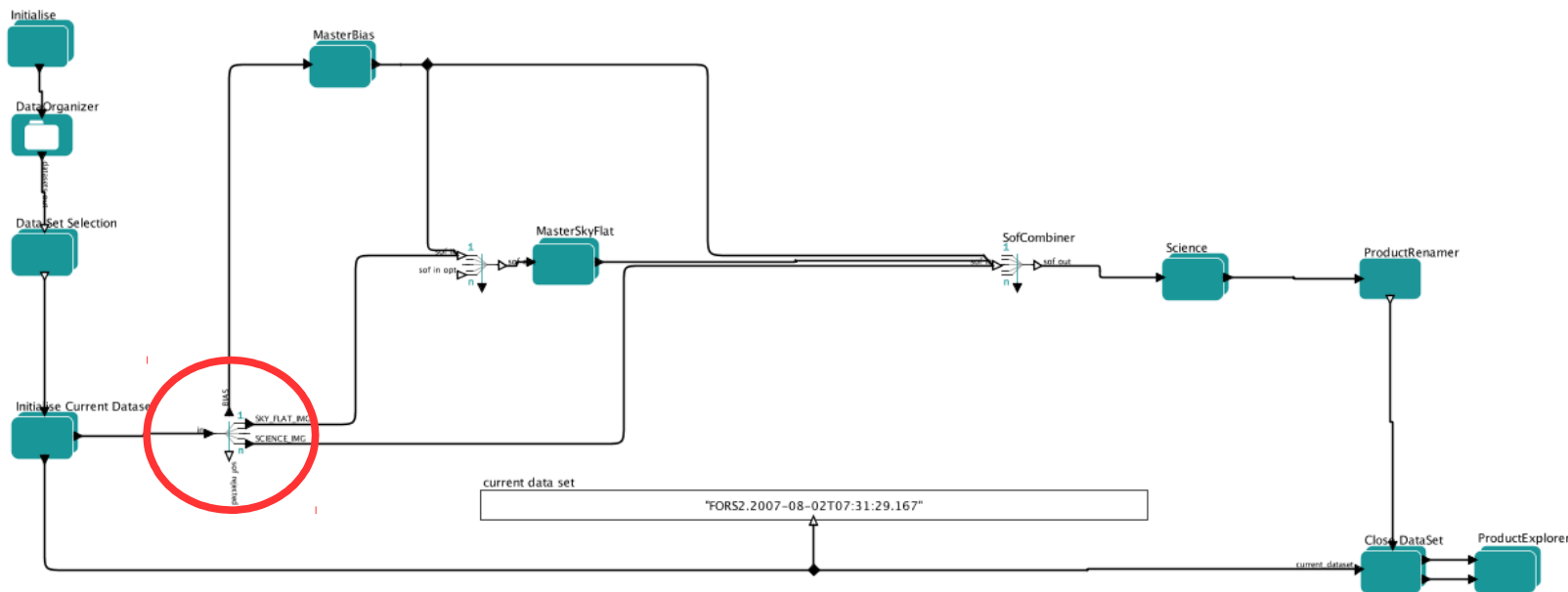
Specify when you want to see the ProductExplorer GUI. "Triggered" = show it after all data sets have been reduced. "Enabled" = show it after each dataset. "Disabled" = never show it

Step 1: Data Organisation and Selection

Step 2: Creation of Master Calibration Files

Step 3: Science Reduction

Step 4: Output Organisation



FITS Router

sorting by category



LIVESTREAM: FITS Router: Sort Spectra by Category (v. 4.7.8)

Workflow Instructions

To run this workflow on the demo data:
- Turn on highlighting. Choose "Tools" -> "Animate" in top menu and set it to "1".
- Press the "Run" button OR cntrl-R to start the workflow.

To run on a different data set:
- Click on ROOT_DATA_DIR and set as appropriate.
- All subdirectories of RAWDATA_DIR will be searched for data.
- If desired, click on "Use" to start the workflow.

To monitor the workflow in more detail:
- Open "Workflow" in top menu before starting.

Setup Directories

Input:

*ROOT_DATA_DIR: /home/fof/fitstool/data
*RAWDATA_DIR: \$ROOT_DATA_DIR/raw/

Working Directories:

*TMP_PRODUCT_DIR: \$ROOT_DATA_DIR/products
*TMP_PRODUCT_SUBDIR: \$ROOT_DATA_DIR/products/

*TMP_PRODUCT_SUBDIR: \$ROOT_DATA_DIR/products/

If TMP_PRODUCT_DIR or ROOT_DATA_DIR is changed using the Browse button, the leading file has to be removed manually.

Global Parameters

= actor with interactive option

*FITS_VIEWER: tv
Fits viewer to use for the inspection of input/output products

*baseDir: false
Change "baseDir" to true to enable ROOT_KOSSIPING_DIR, TMP_PRODUCT_DIR and COOS_DIR each time the workflow is run (Lazy Mode won't work anymore).

*IMG_PRODUCT_SUBDIR: 2010-07-07T18:10:29/Scenes_DataSet_3
This is set automatically

*GLOBAL_TIMESTAMP: 2010-07-07T18:10:29
This is set automatically

Step 1: Data Organisation and Selection

Step 2: Creation of Calibration Files

Step 3: Calibration

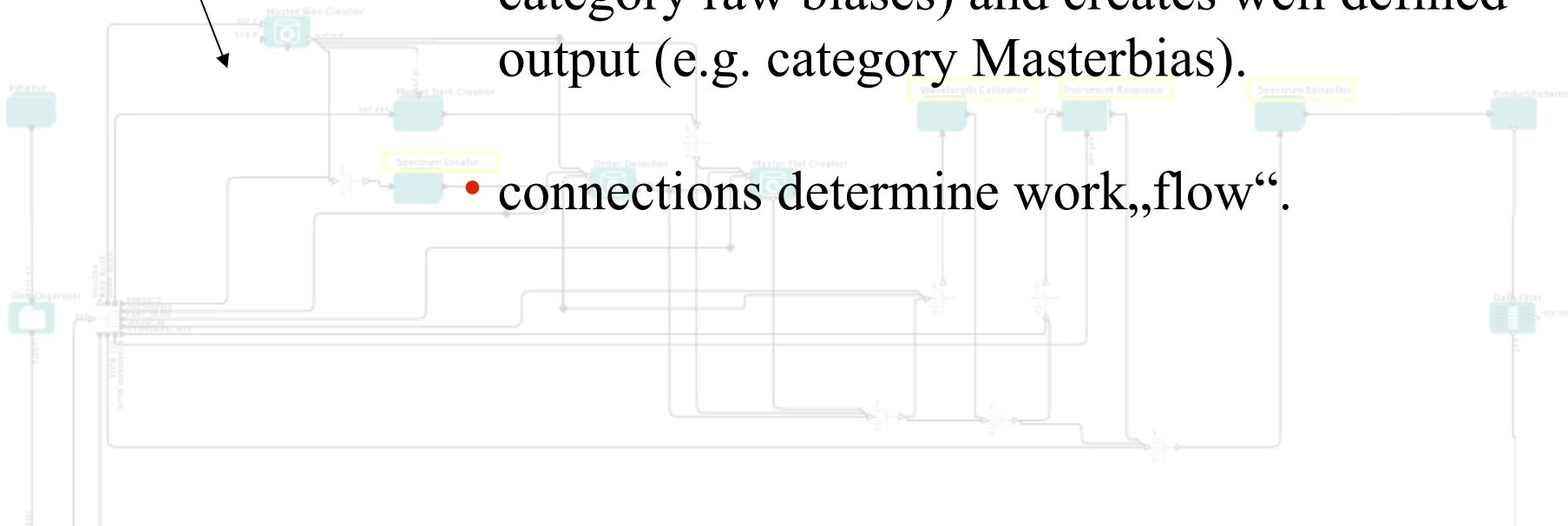
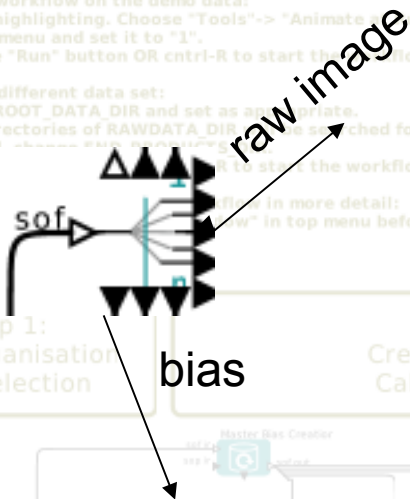
Step 4: Extraction

Step 5: Output Organisation

- routing by category is explicit: specify what recipe needs

- each recipe needs well defined input (e.g. category raw biases) and creates well defined output (e.g. category Masterbiases).

- connections determine work,,flow“.



FORS Workflow For Imaging Data (v. 5.1.4)

Workflow Instructions

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- Turn on highlighting. Choose "Tools"-> "Animate at Runtime" from top menu and set it to "1".
- Press the "Run" button OR cntrl-R to start the workflow.

To run on a different data set:

- Click on RAW_DATA_DIR and set as appropriate. All subdirectories of RAW_DATA_DIR will be searched for data.
- If desired, change END_PRODUCTS_DIR.
- IMPORTANT: END_PRODUCTS_DIR should not be a subdirectory of the RAW_DATA_DIR, otherwise it will be searched for raw data!
- Press the "Run" button OR cntrl-R to start the workflow.

The general concepts of Reflex are described in Astron. Astrophys., 559, A96. Please credit this paper in publications on research that used Reflex.

Workflow tutorial and Fors pipeline manual can be found here: http://www.eso.org/sci/software/pipelines/#reflex_workflows

Setup Directories

Input:

- ROOT_DATA_DIR: \$HOME/reflex_data/
 - RAW_DATA_DIR: /opt/local/share/esopes/datademo/fors/
- Only change CALIB_DATA_DIR if you do NOT want to use the calibration data delivered with the pipeline:
- CALIB_DATA_DIR: /opt/local/share/esopes/datastatic/fors-5.1.4/

Output:

- END_PRODUCTS_DIR: \$ROOT_DATA_DIR/reflex_end_products

Working Directories:

- BOOKKEEPING_DIR: \$ROOT_DATA_DIR/reflex_book_keeping/fors-ima
- LOGS_DIR: \$ROOT_DATA_DIR/reflex_logs/fors-ima
- TMP_PRODUCTS_DIR: \$ROOT_DATA_DIR/reflex_tmp_products/fors-ima
- BOOKKEEPING_DB: \$BOOKKEEPING_DIR/bookkeeping.db

Global Parameters



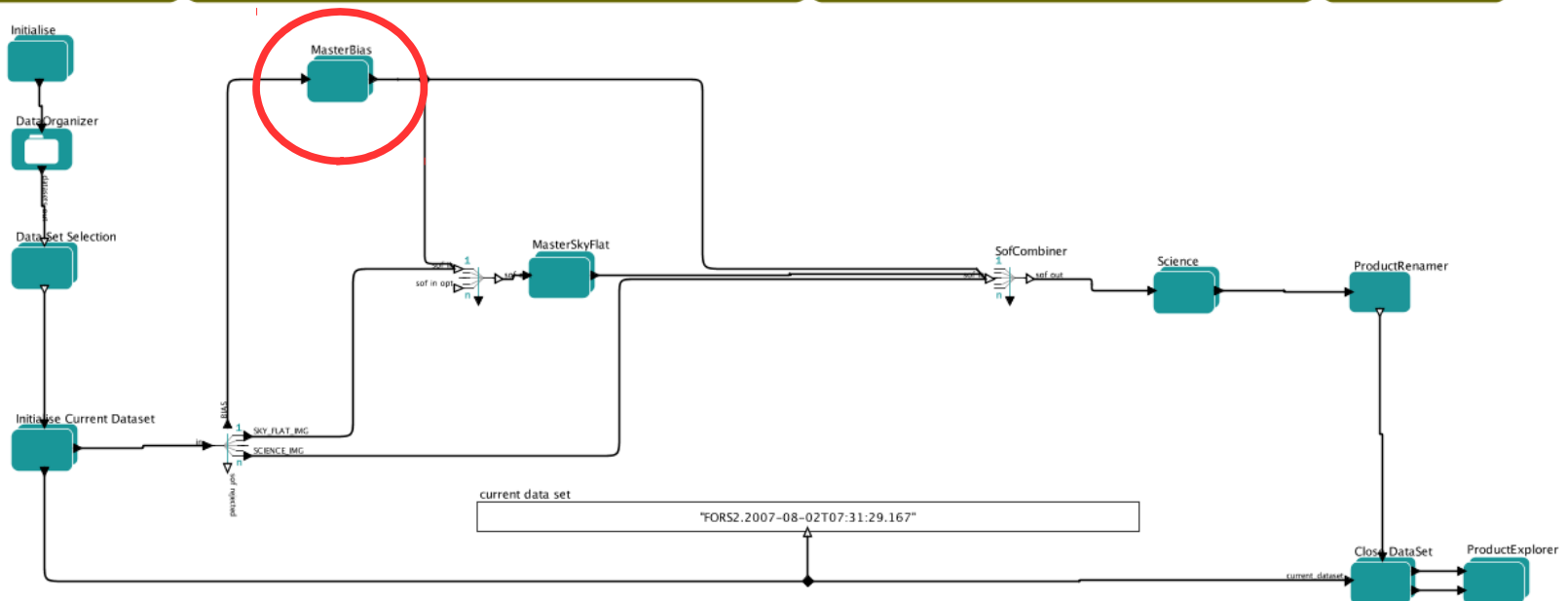
- RecipeFailureMode: Ask
Global parameter for the behaviour when a recipe fails. 'Ask' means that each time a recipe fails, the choice to continue or stop will be presented. 'Continue' means that the workflow will ignore errors and continue. 'Stop' means the workflow will stop.
- EraseDirs: false
Change "EraseDirs" to 'true' to erase BOOKKEEPING_DIR, TMP_PRODUCTS_DIR and LOGS_DIR each time the workflow is run (Lazy Mode will not work anymore)
- FITS_VIEWER: fv
Program to use for the inspection of input/output products. Use full path name if it is not in the standard path.
- GlobalPlotInteractivity: true
Set to "false" to disable interactive GUIs for the whole workflow. Each interactive actor can specify its own setting, which overwrites the choice given here.
- SelectDataSetMethod: Interactive
Specify how datasets for processing are selected ("All", "New" = never tried before, "Reduced" = successfully run before, "Failed"=unsuccessfully run before), or set to "Interactive" for interactive selection.
- ProductExplorerMode: Triggered
Specify when you want to see the ProductExplorer GUI. "Triggered" = show it after all data sets have been reduced. "Enabled" = show it after each dataset. "Disabled" = never show it

Step 1: Data Organisation and Selection

Step 2: Creation of Master Calibration Files

Step 3: Science Reduction

Step 4: Output Organisation



FORS Workflow For Imaging Data (v. 5.1.4)

Workflow Instructions

To run this workflow on the demo data:

- Turn on highlighting. Choose "Tools" -> "Animate at Runtime" from top menu and set it to "1".
- Press the "Run" button OR cntrl-R to start the workflow.

To run on a different data set:

- Click on RAW_DATA_DIR and set as appropriate. All subdirectories of RAW_DATA_DIR will be searched for data.
- If desired, change END_PRODUCTS_DIR.
- IMPORTANT: END_PRODUCTS_DIR should not be a subdirectory of the RAW_DATA_DIR, otherwise it will be searched for raw data!
- Press the "Run" button OR cntrl-R to start the workflow.

The general concepts of Reflex are described in Astron. Astrophys., 559, A96. Please credit this paper in publications on research that used Reflex.

Workflow tutorial and Fors pipeline manual can be found here: http://www.eso.org/sci/software/pipelines/#reflex_workflows

Setup Directories

Input:

- ROOT_DATA_DIR: \$HOME/reflex_data/
 - RAW_DATA_DIR: /opt/local/share/esopipes/datademo/fors/
- Only change CALIB_DATA_DIR if you do NOT want to use the calibration data delivered with the pipeline:
- CALIB_DATA_DIR: /opt/local/share/esopipes/datastatic/fors-5.1.4/

Output:

- END_PRODUCTS_DIR: \$ROOT_DATA_DIR/reflex_end_products

Working Directories:

- BOOKKEEPING_DIR: \$ROOT_DATA_DIR/reflex_book_keeping/fors-ima
- LOGS_DIR: \$ROOT_DATA_DIR/reflex_logs/fors-ima
- TMP_PRODUCTS_DIR: \$ROOT_DATA_DIR/reflex_tmp_products/fors-ima
- BOOKKEEPING_DB: \$BOOKKEEPING_DIR/bookkeeping.db

Global Parameters

= actor with interactive option

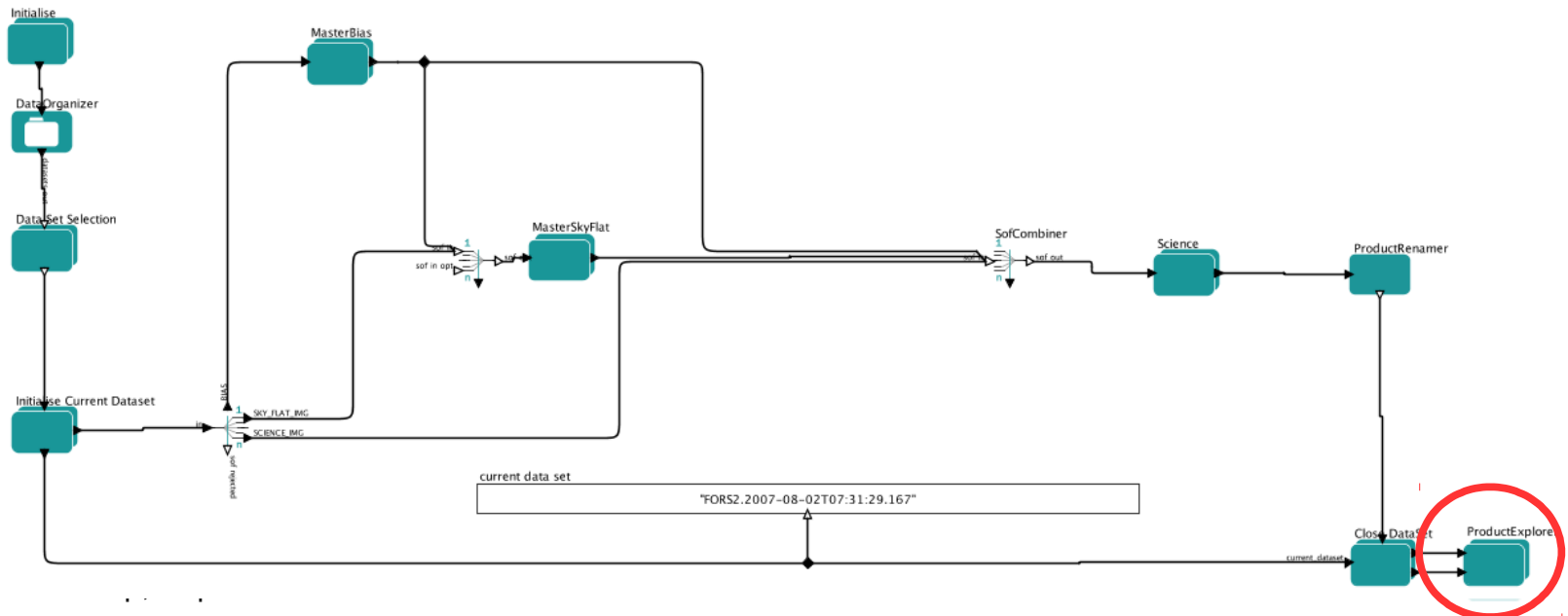
- RecipeFailureMode: Ask
Global parameter for the behaviour when a recipe fails. 'Ask' means that each time a recipe fails, the choice to continue or stop will be presented. 'Continue' means that the workflow will ignore errors and continue. 'Stop' means the workflow will stop.
- EraseDirs: false
Change "EraseDirs" to 'true' to erase BOOKKEEPING_DIR, TMP_PRODUCTS_DIR and LOGS_DIR each time the workflow is run (Lazy Mode will not work anymore)
- FITS_VIEWER: fv
Program to use for the inspection of input/output products. Use full path name if it is not in the standard path.
- GlobalPlotInteractivity: true
Set to "false" to disable interactive GUIs for the whole workflow. Each interactive actor can specify its own setting, which overwrites the choice given here.
- SelectDataSetMethod: Interactive
Specify how datasets for processing are selected ("All", "New" = never tried before, "Reduced" = successfully run before, "Failed" = unsuccessfully run before), or set to "Interactive" for interactive selection.
- ProductExplorerMode: Triggered
Specify when you want to see the ProductExplorer GUI. "Triggered" = show it after all data sets have been reduced. "Enabled" = show it after each dataset. "Disabled" = never show it

Step 1: Data Organisation and Selection

Step 2: Creation of Master Calibration Files

Step 3: Science Reduction

Step 4: Output Organisation



Exploring results



Users Workflow for LPO Sources and Archival Data (v. 4.7.8)

Workflow Instructions

To run this workflow on the demo data:
- Turn on highlighting. Choose "Tools" -> "Animate at Runtime" from top menu and set it to "1".
- Press the "Run" button OR cntrl-R to start the workflow.

To run on different datasets:
- Click on "Tools" -> "Change Dataset".
- All subdirectories will be updated.
- If desired, change END_PRODUCTS_DIR.
- Press the "Run" button OR cntrl-R to start the workflow.

To monitor the progress of the workflow in more detail:
- Open "Window" -> "Runtime Window" in top menu before starting the workflow.

Setup Directories

Input:

*ROOT_DATA_DIR: /home/fof/keck/data/
*RANDATA_DIR: \$ROOT_DATA_DIR/reflex_inputFiles_Base

Working Directories:

*BOOKKEEPING_DIR: \$ROOT_DATA_DIR/reflex_book_keepingFiles_Base
*LOGS_DIR: \$ROOT_DATA_DIR/reflex_logsFiles_Base
*TMP_PRODUCTS_DIR: \$ROOT_DATA_DIR/reflex_tmp_productsFiles_Base

Output:

*END_PRODUCTS_DIR: \$ROOT_DATA_DIR/reflex_end_products

If END_PRODUCTS_DIR or ROOT_DATA_DIR is changed using the Browse button, the leading file name has to be removed manually.

Global Parameters

= actor with interactive option

*FITS_VIEWER: hv
Fits viewer to use for the inspection of input/output products

*ESORedvga: --suppress-prefix=TRUE
esorex arguments

*BaseDir: false
Change "BaseDir" to true to enable BOOKKEEPING_DIR, TMP_PRODUCTS_DIR and LOGS_DIR each time the workflow is run (Lazy Mode won't work anymore).

*END_PRODUCT_SUFFIX: 2010-07-07T18:10:29/Science_DataSet_3
This is set automatically

*GLOBAL_TIMESTAMP: 2010-07-07T18:10:29
This is set automatically

● Inspect final results

● Compare and keep track of different reduction runs

● Explore Provenance

● Plot (and replot) final and intermediate products

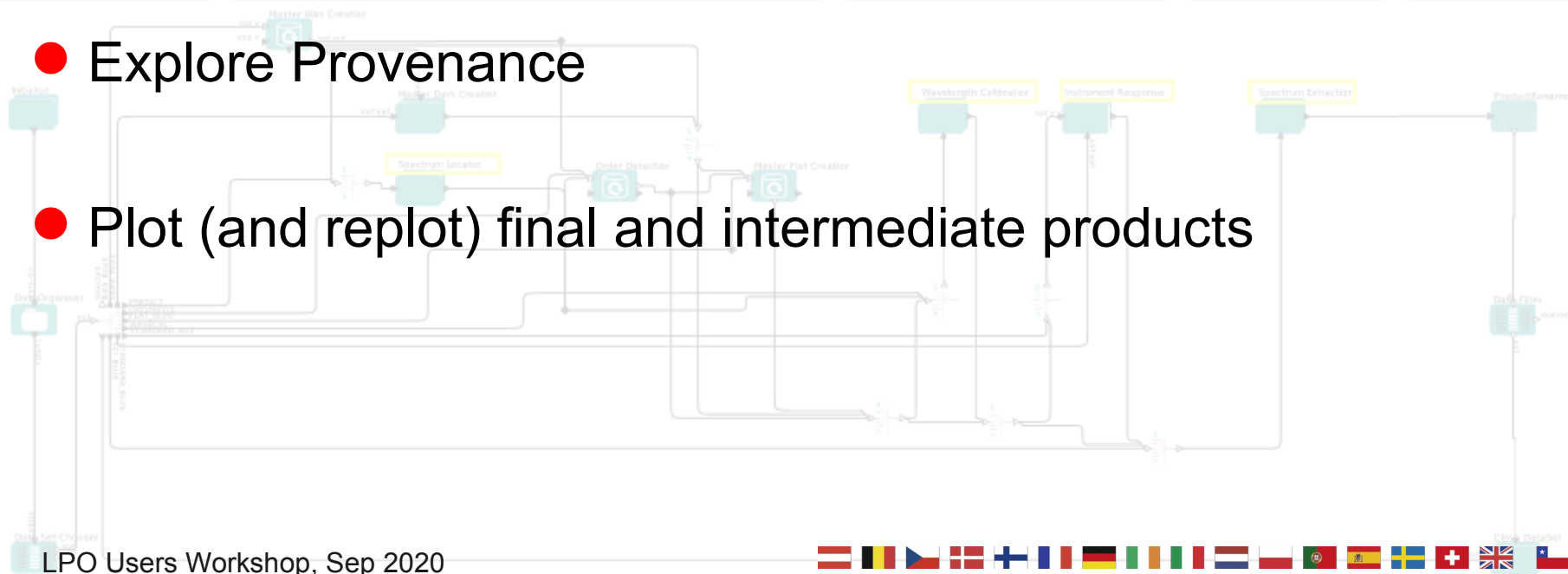
Step 1:
Data Organisation
and Selection

Step 2:
Creation of Master
Calibration Files

Step 3:
Wavelength and Response
Calibration

Step 4:
Spectrum
Extraction

Step 5:
Output
Organisation



Workflow Instructions

To run this workflow on the demo data:

- Turn on highlighting. Choose "Tools"-> "Animate at Runtime" from top menu and set it to "1".
- Press the "Run" button OR cntrl-R to start the workflow.

To run on a different data set:

- Click on ROOT_DATA_DIR and set as appropriate. All subdirectories of RAW_DATA_DIR will be searched for data.
- If desired, change END_PRODUCTS_DIR.
- Press the "Run" button OR cntrl-R to start the workflow.

To monitor the progress of the workflow in more detail:

- Open "Window" -> "Runtime Window" in top menu before starting the workflow.

Setup Directories

- ROOT_DATA_DIR: /sdp_test_data/mmeiser/eso-pipelines/data_wkf/

Input:

- RAW_DATA_DIR: \$ROOT_DATA_DIR/reflex_input/hawki
- CALIB_DATA_DIR: /sdp_test_data/mmeiser/eso-pipelines/hawki-2.4.1/calib/ha...
- TYDMASS_CATALOGUE_DIR:
- PPMXL_CATALOGUE_DIR:
- LOCAL_CATALOGUE_DIR:

None of the directories below should be a subdirectory of RAW_DATA_DIR or CALIB_DATA_DIR

Output:

- END_PRODUCTS_DIR: \$ROOT_DATA_DIR/reflex_end_products
- BOOKKEEPING_DIR: \$ROOT_DATA_DIR/reflex_book_keeping/hawki
- LOGS_DIR: \$ROOT_DATA_DIR/reflex_logs/hawki
- TMP_PRODUCTS_DIR: \$ROOT_DATA_DIR/reflex_tmp_products/hawki
- BOOKKEEPING_DB: \$BOOKKEEPING_DIR/bookkeeping.db

Working Directories:

- BOOKKEEPING_DIR: \$ROOT_DATA_DIR/reflex_book_keeping/hawki
- LOGS_DIR: \$ROOT_DATA_DIR/reflex_logs/hawki
- TMP_PRODUCTS_DIR: \$ROOT_DATA_DIR/reflex_tmp_products/hawki
- BOOKKEEPING_DB: \$BOOKKEEPING_DIR/bookkeeping.db

Catalogue Selection

Select catalogues (on local machine and/or CDS search). Input values must be within the allowed ranges; at least one photometric and one astrometric valid catalogues must be provided (either from local machine or for CDS search). If these criteria are not fulfilled, the workflow will stop. No check is done beforehand.

- ASTROM_CATALOGUE: 1 Select catalogues on local machine
- PHOTOM_CATALOGUE: 0 2MASS: 1; PPMXL: 2; LOCAL
- CDS ASTROMETRIC CATALOGUE: wise CDS astrometric catalogue, <none | 2mass | usnob | ppmxl | wise>
- CDS PHOTOMETRIC CATALOGUE: 2mass CDS photometric catalogue, <none | 2mass | ppmxl | wise>

Global Parameters

 = actor with interactive option

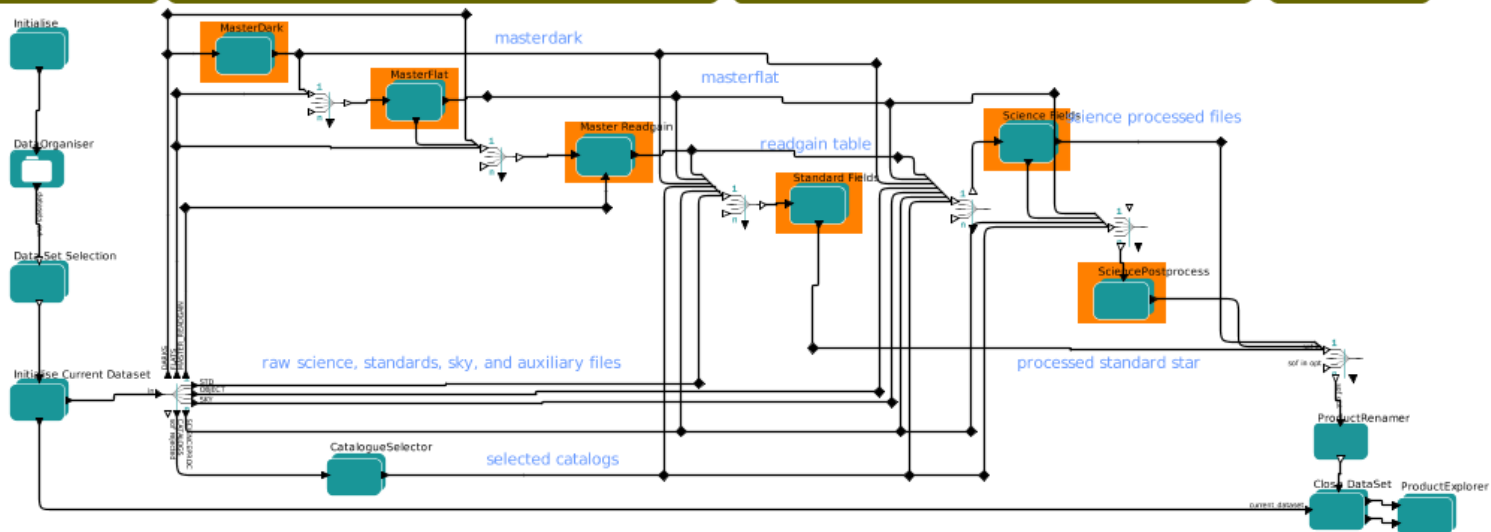
- RecipeFailureMode: Ask Global parameter for the behaviour when a recipe fails. 'Ask' means that each time a recipe fails, the choice to continue or stop will be presented. 'Continue' means that the workflow will ignore errors and continue. 'Stop' means the workflow will stop.
- EraseDirs: false Change "EraseDirs" to 'true' to erase BOOKKEEPING_DIR, TMP_PRODUCTS_DIR and LOGS_DIR each time the workflow is run (Lazy Mode will not work anymore)
- FITS_VIEWER: fv Program to use for the inspection of input/output products. Use full path name if it is not in the standard path.
- GlobalPlotInteractivity: true Set to "false" to disable interactive GUIs for the whole workflow. Each interactive actor can specify its own setting, which overwrites the choice given here.
- SelectDataSetMethod: Interactive Specify how datasets for processing are selected ("All", "New" = never tried before, "Reduced" = successfully run before, "Failed" = unsuccessfully run before), or set to "Interactive" for interactive selection.
- ProductExplorerMode: Triggered Specify when you want to see the ProductExplorer GUI. "Triggered" = show it after all data sets have been reduced. "Enabled" = show it after each dataset. "Disabled" = never show it
- Compute readgain table: false true: compute the readgain table from raw frames in the dataset. false: uses the readgain table from static calibrations. Default: false.

Step 1: Data Organisation and Selection

Step 2: Creation of Master Calibration Files

Step 3: Standard Star and Science Images Reduction

Step 4: Output Organisation



Iteratively Improving Results



UVES Workflow For Point Source Blue Arm Echelle Data (v. 4.7.8)

Workflow Instructions

Setup Directories

Global Parameters

= actor with interactive option

● Lazy mode: Don't redo unnecessary steps

● Lazy mode for recipes.

● It works by comparing the input of the current execution with *all* the previous recipe executions:

- All files must be the same
- All files must have the same checksum
- All files must have the same date
- All recipe parameters must be the same

● If a recipe at the beginning of the workflow is set to *Not-Lazy mode*, the input of the next recipes will be new and lazy mode will not be triggered.

● Lazy mode for DataOrganizer.

- It avoids the organization of all the data in subsequent workflow runs.
- It works similar to lazy mode for recipes

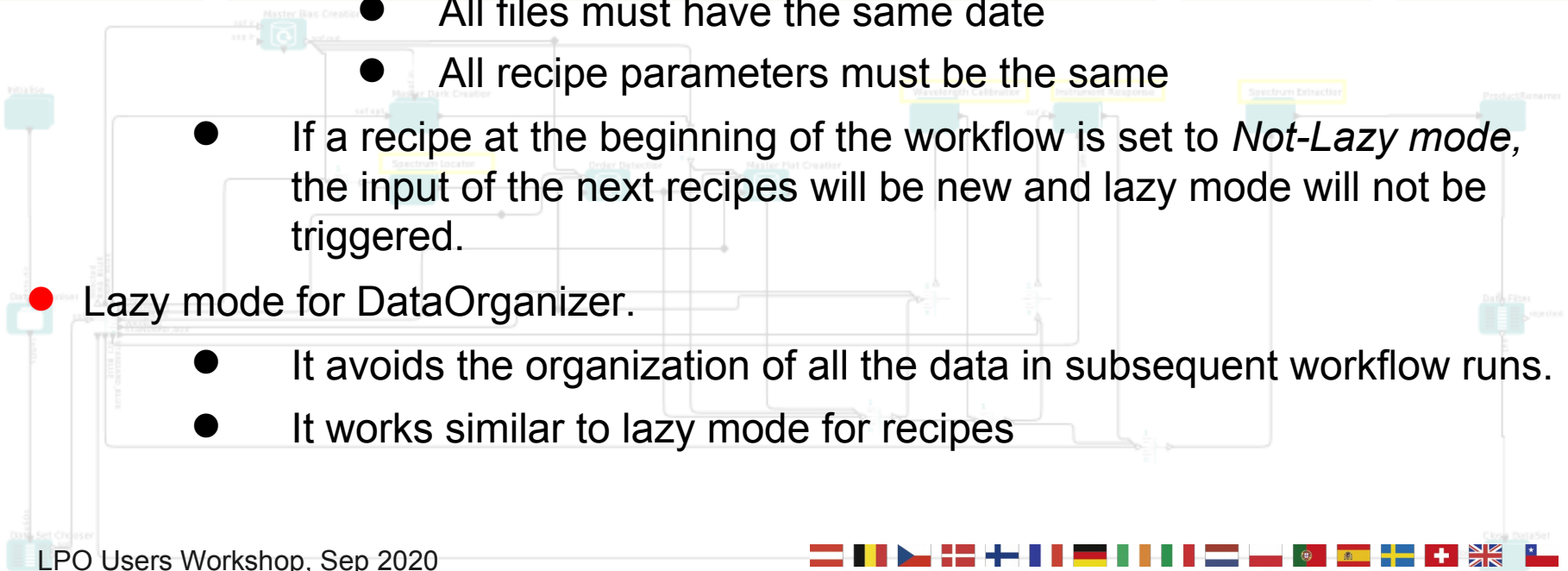
Step 1:
Data Organisation
and Selection

Step 2:
Creation of
Calibration Files

Step 3:
Calibration

Step 4:
Spectrum
Extraction

Step 5:
Output
Organisation



Summary



UVISIM Echelle Data (v. 4.7.8)

Setup ESO Reflex

Global Parameters

= actor with interactive option

- Step-by-step tutorials available for all workflows.
- Uses the same recipes that are used at the telescope, for Quality Control and for the Production of Data Products in archive.

- Documents dependencies.

- Organizes data.

- Runs sequence of recipes with single click.

- Monitors progress.

- Does bookkeeping.

- Plots results.

- Allows pre-defined interaction.

- Allows insertion of user procedures in any language.

