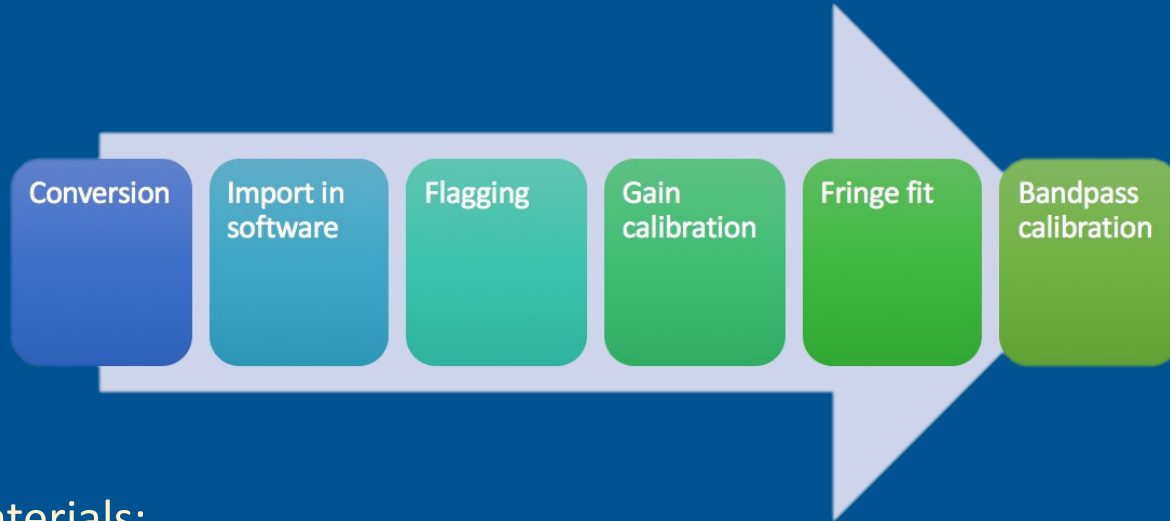


# VLBI Advanced tutorial

Getting your hands *REALLY* dirty

# Remember the calibration steps

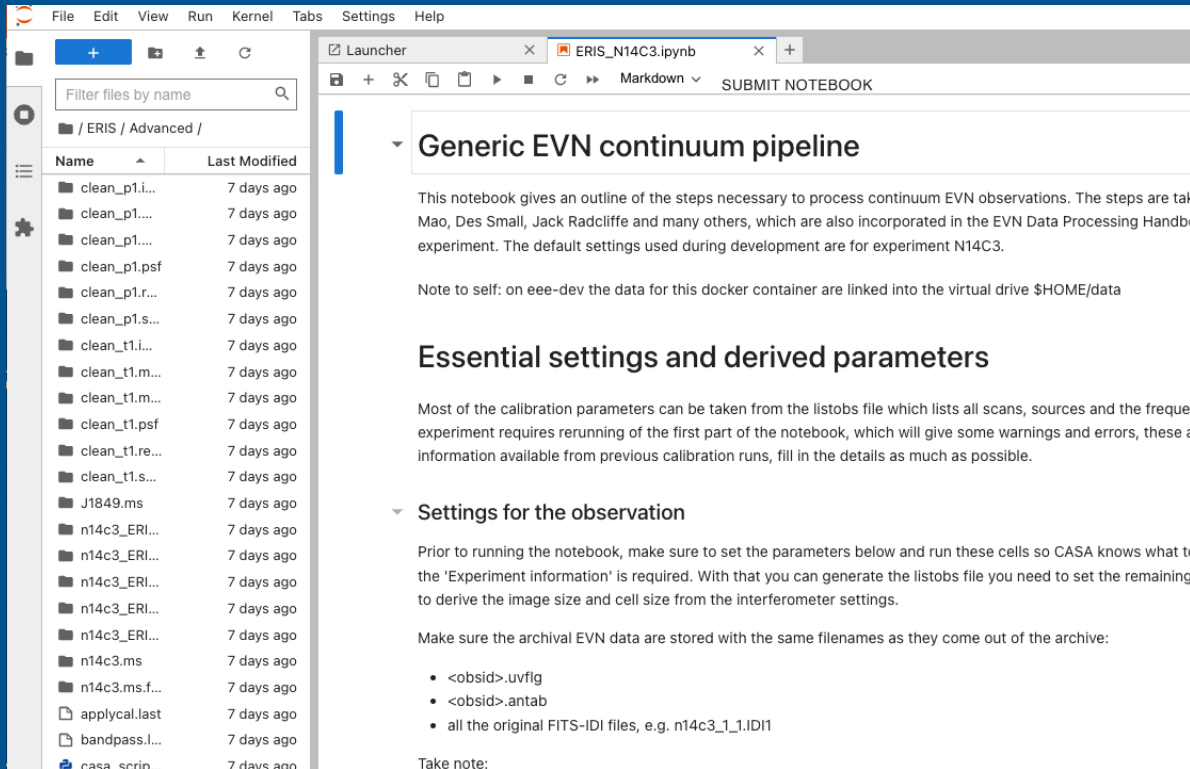


Online materials:

[Gitea repository](#)

[DARA EVN continuum tutorial](#)

# Jupyter-CASA interface



The screenshot displays the Jupyter-CASA interface. On the left is a file browser pane showing a directory structure under '/ERIS / Advanced /'. It lists various files including 'clean\_p1.i...', 'clean\_p1....', 'clean\_p1...', 'clean\_p1.psf', 'clean\_p1.r...', 'clean\_p1.s...', 'clean\_t1.i...', 'clean\_t1.m...', 'clean\_t1.m...', 'clean\_t1.psf', 'clean\_t1.re...', 'clean\_t1.s...', 'J1849.ms', 'n14c3\_ERI...', 'n14c3\_ERI...', 'n14c3\_ERI...', 'n14c3\_ERI...', 'n14c3\_ERI...', 'n14c3.ms', 'n14c3.ms.f...', 'applycal.last', 'bandpass.i...', and 'casa\_scrip...'. All files are listed as '7 days ago'.

The main pane on the right shows a Jupyter notebook titled 'ERIS\_N14C3.ipynb'. The notebook has a 'Launcher' tab and a 'SUBMIT NOTEBOOK' button. The content of the notebook is as follows:

## Generic EVN continuum pipeline

This notebook gives an outline of the steps necessary to process continuum EVN observations. The steps are taken from the work of Mao, Des Small, Jack Radcliffe and many others, which are also incorporated in the EVN Data Processing Handbook. The default settings used during development are for experiment N14C3.

Note to self: on eee-dev the data for this docker container are linked into the virtual drive \$HOME/data

## Essential settings and derived parameters

Most of the calibration parameters can be taken from the listobs file which lists all scans, sources and the frequencies. If the experiment requires rerunning of the first part of the notebook, which will give some warnings and errors, these are often due to information available from previous calibration runs, fill in the details as much as possible.

## Settings for the observation

Prior to running the notebook, make sure to set the parameters below and run these cells so CASA knows what to expect. The 'Experiment information' is required. With that you can generate the listobs file you need to set the remaining parameters. To derive the image size and cell size from the interferometer settings.

Make sure the archival EVN data are stored with the same filenames as they come out of the archive:

- <obsid>.uvflag
- <obsid>.antab
- all the original FITS-IDI files, e.g. n14c3\_1.IDI1

Take note:



# This tutorial (morning part)

1. Getting your data from the EVN archive
2. Work through the calibration
3. For flagging: use the flagfile provided if it takes you more than 15 minutes
4. Brief explanation on use of the flagmanager



# This tutorial

## Preparations:

- Have the materials downloaded from [Gitea](#)
- Make sure you type `git pull` before starting
- Go into the Advanced folder

# The EVN Archive

- Go to [archive.jive.nl](https://archive.jive.nl)
  - In the box 'Select experiment' type N14C3
  - Click 'show experiment'
- 
- The FITS-IDI files are under 'Fitsfiles'
  - For pre-2022 also download metadata from 'Pipeline calibration'
    - 'Associated EVN calibration': this is the ANTAB file
    - 'UVFLG flagged data': all flags from the log in UVFLG format

# Choose your poison

- Jupyter notebook
- DARA tutorial
- Your own data



# Flagmanager demo

Or: how to avoid loosing all your data to flags

- Bookkeeping is still important!