SALT Data Pipeline

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Outline

- How data gets to you

- Daily pipeline

- Status of data reductions

- Adding to the code

What happens after your observation happens

SALTFIRST

You can get your data immediately by selecting get e fast option in PIPT

Pipeline Process

Prepare Data

Clean Images

Create documentation

Data Quality

Record the data

Archive

FTP

Alert

The pipeline is designed to handle the daily reduction, archiving, and distribution of the data. Each day at 10:30 am, the pipeline automatically begins processing the data from the previous night. An SA will verify the data quality before beginning a separate task that finish the pipeline processing.

Data Product: All data are delivered in multi-extension FITS format along with observing logs, data quality, and observing conditions.

Performance: At SALT data rates we have no problem with reducing the data in real time and a typical night will be done in about 30 minutes with the current architecture.

Data Products

```
doc   product   raw
2013-1-RSA_POL-001/doc:
2013-1-RSA_POL-001_20130510_elsdata.fits   ObservationSequence20130510.html
AstronomersLog20130510.html                PipelineLog20130510.html
CapeTownNotes20130510.html                 header_salt.jpg
EnvironmentLog20130510.html                style.css
InstrumentDiagnostics20130510.html         style_home.css

2013-1-RSA_POL-001/product:
mbxgpP201305100018.fits   mbxgpP201305100039.fits   mbxgpP201305100061.fits
mbxgpP201305100019.fits   mbxgpP201305100040.fits   mbxgpS201305100006.fits
mbxgpP201305100020.fits   mbxgpP201305100041.fits   mbxgpS201305100009.fits
mbxgpP201305100021.fits   mbxgpP201305100042.fits
mbxgpP201305100038.fits   mbxgpP201305100043.fits

2013-1-RSA_POL-001/raw:
P201305100018.fits   P201305100038.fits   P201305100042.fits   S201305100009.fits
P201305100019.fits   P201305100039.fits   P201305100043.fits
P201305100020.fits   P201305100040.fits   P201305100061.fits
P201305100021.fits   P201305100041.fits   S201305100006.fits
```
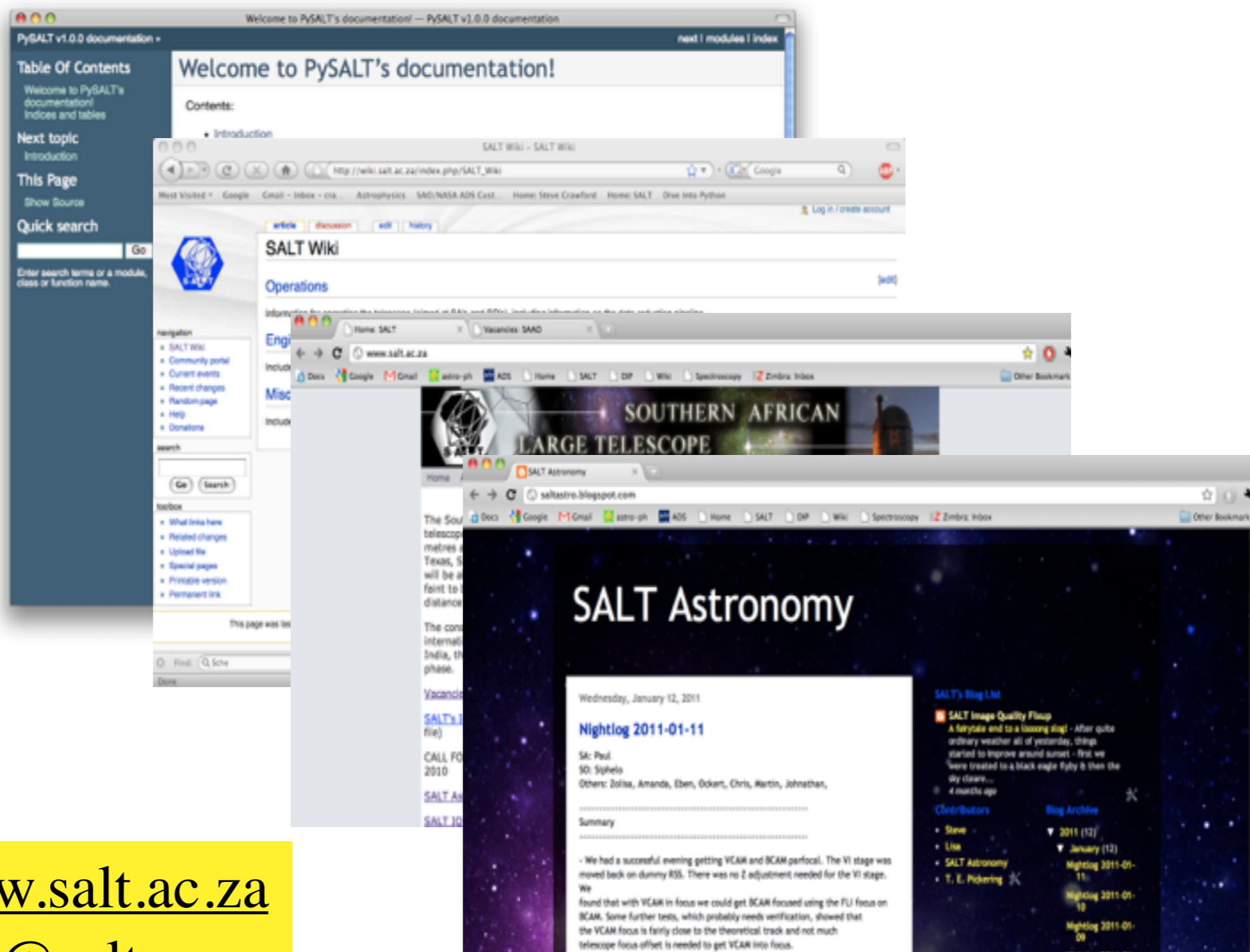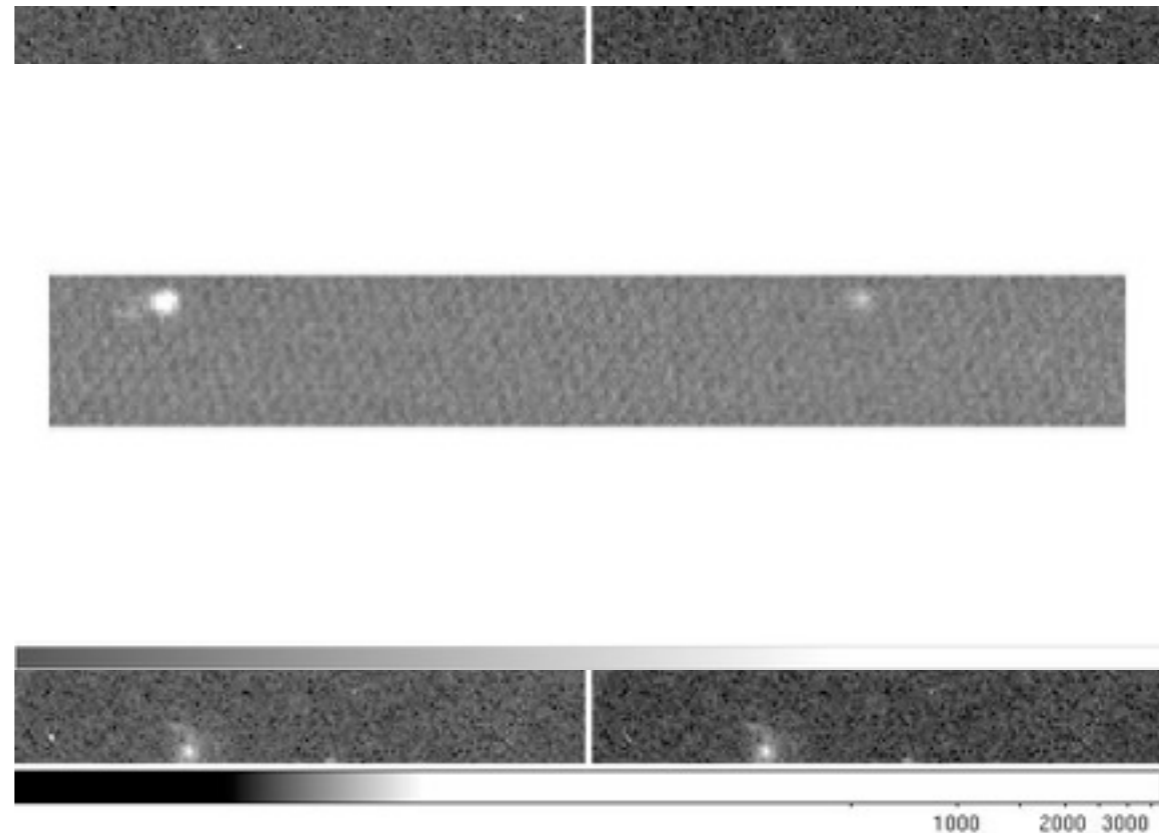
Communication

1. Blogs
2. Website
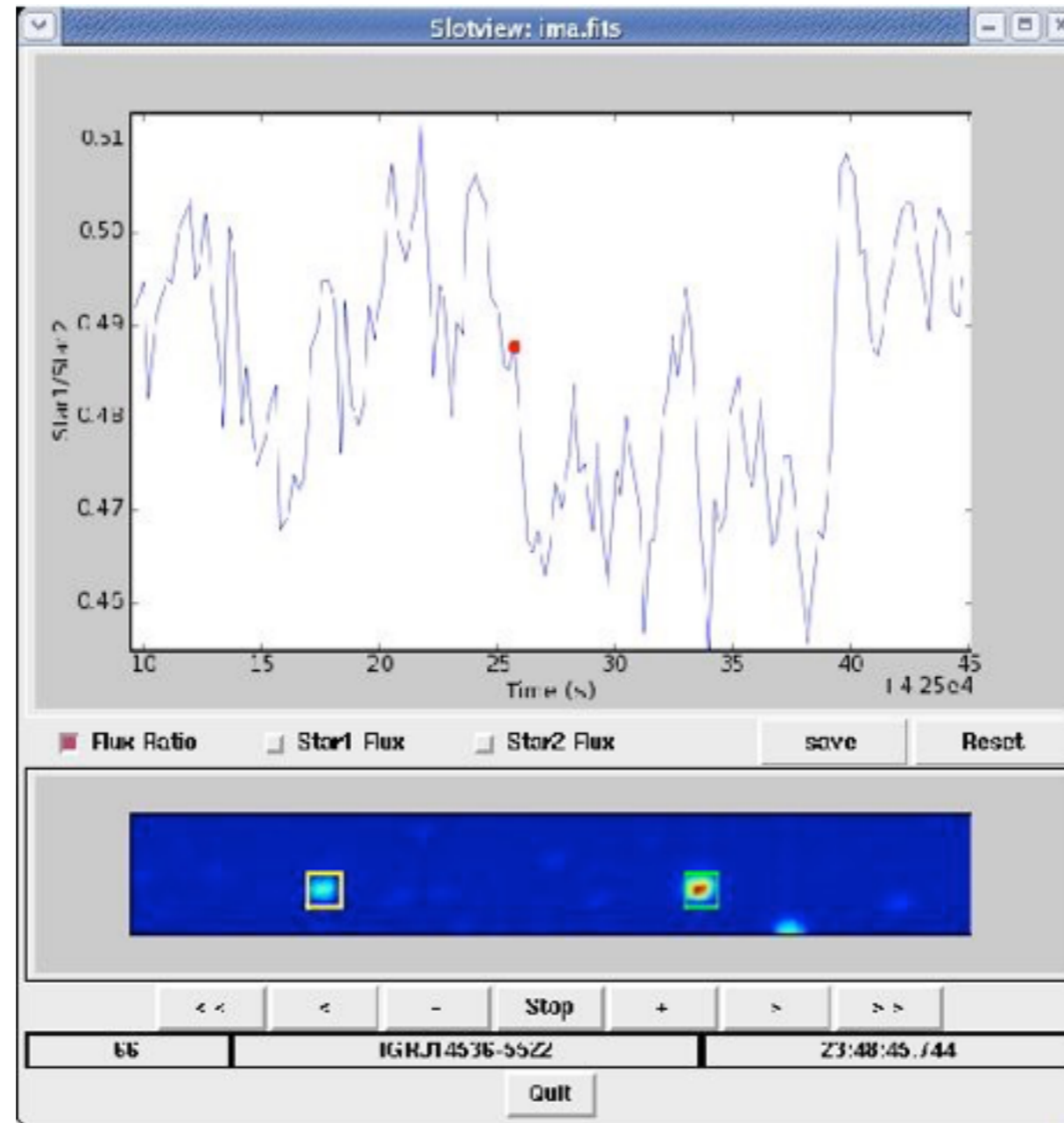3. Wiki
4. Programming Documentation

Main Website: www.salt.ac.za
Questions: salthelp@salt.ac.za

SALTICAM

- prepare
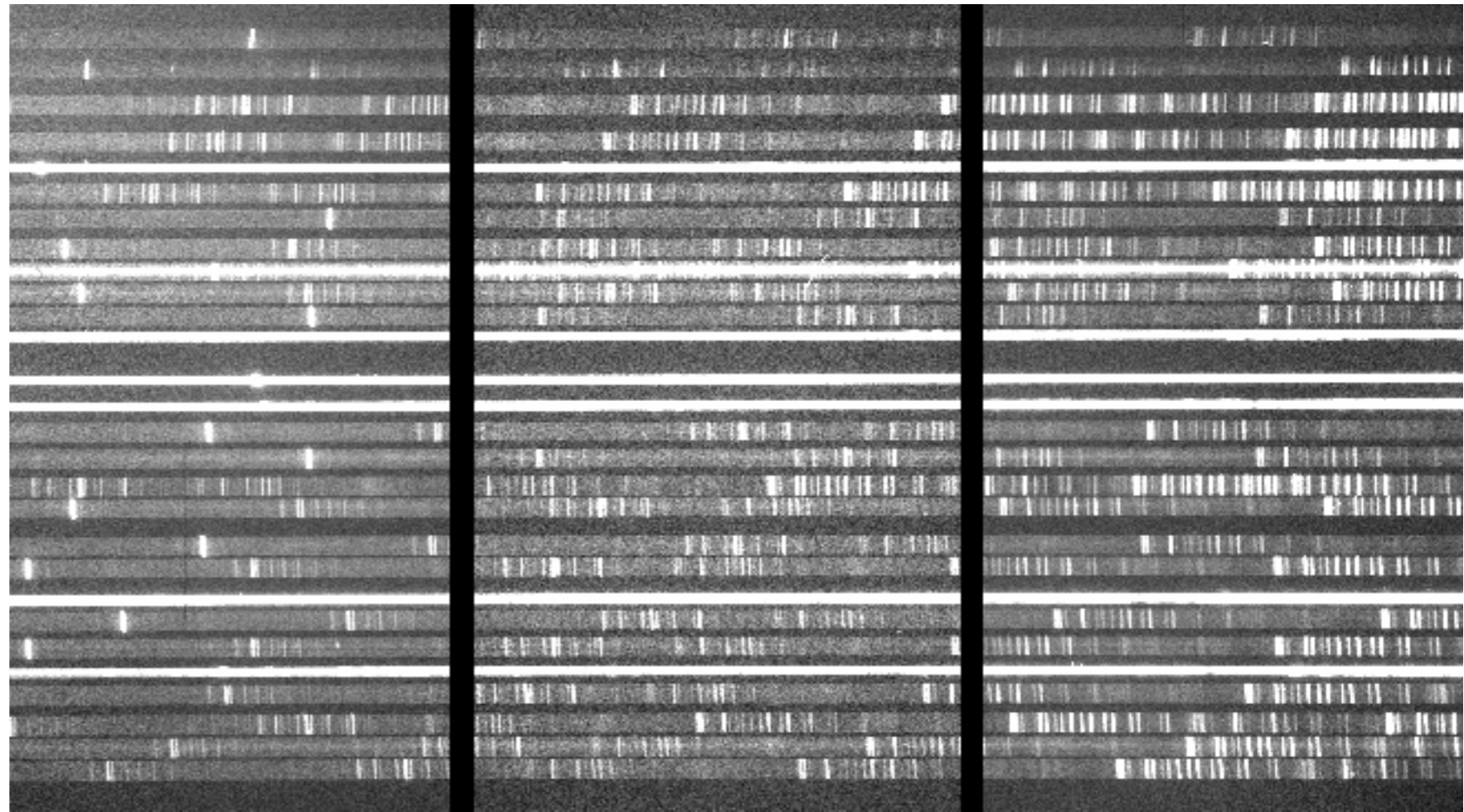
- overscan

- gain

- cross-talk

- mosaic
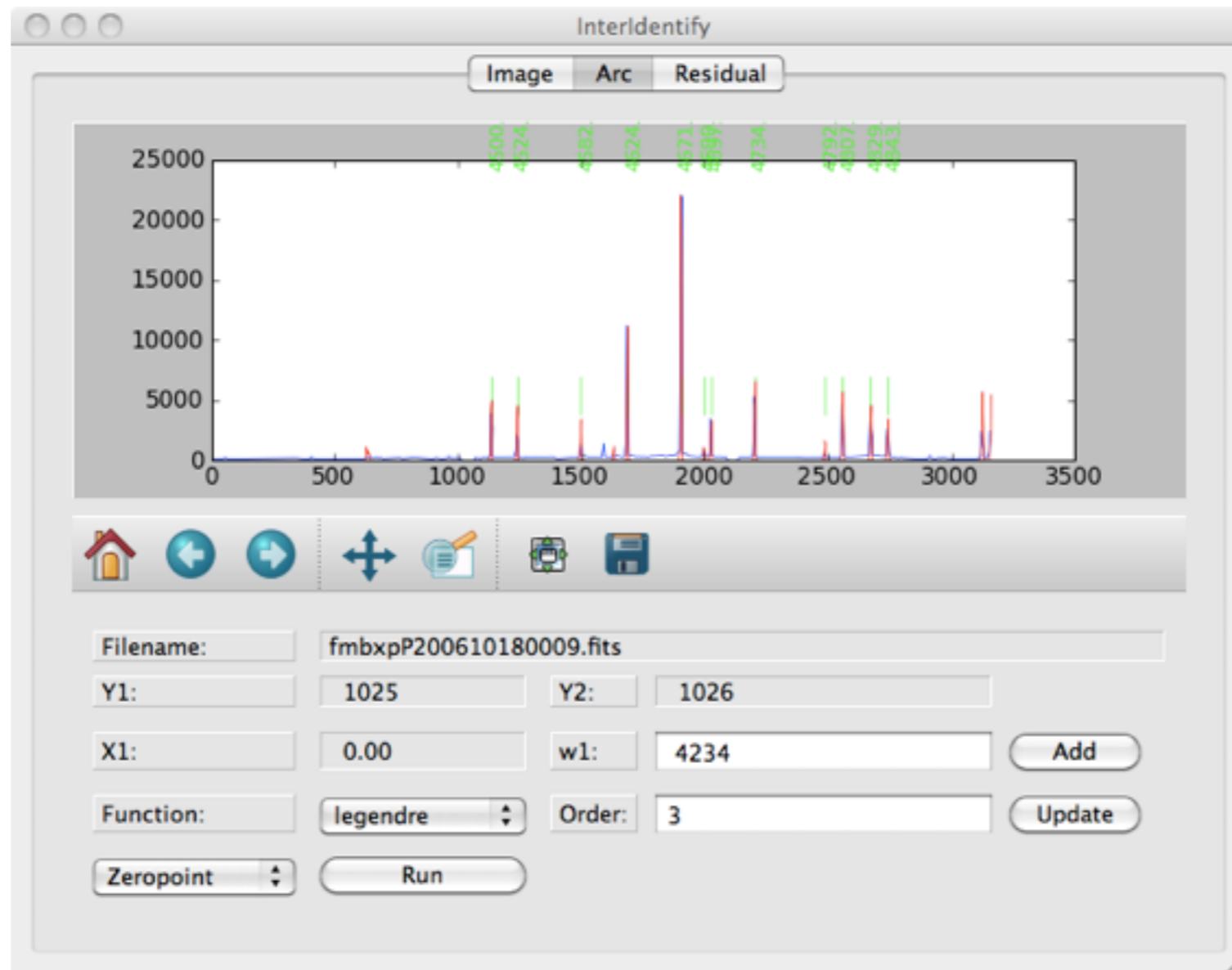
High Speed Mode

RSS

- prepare

- overscan
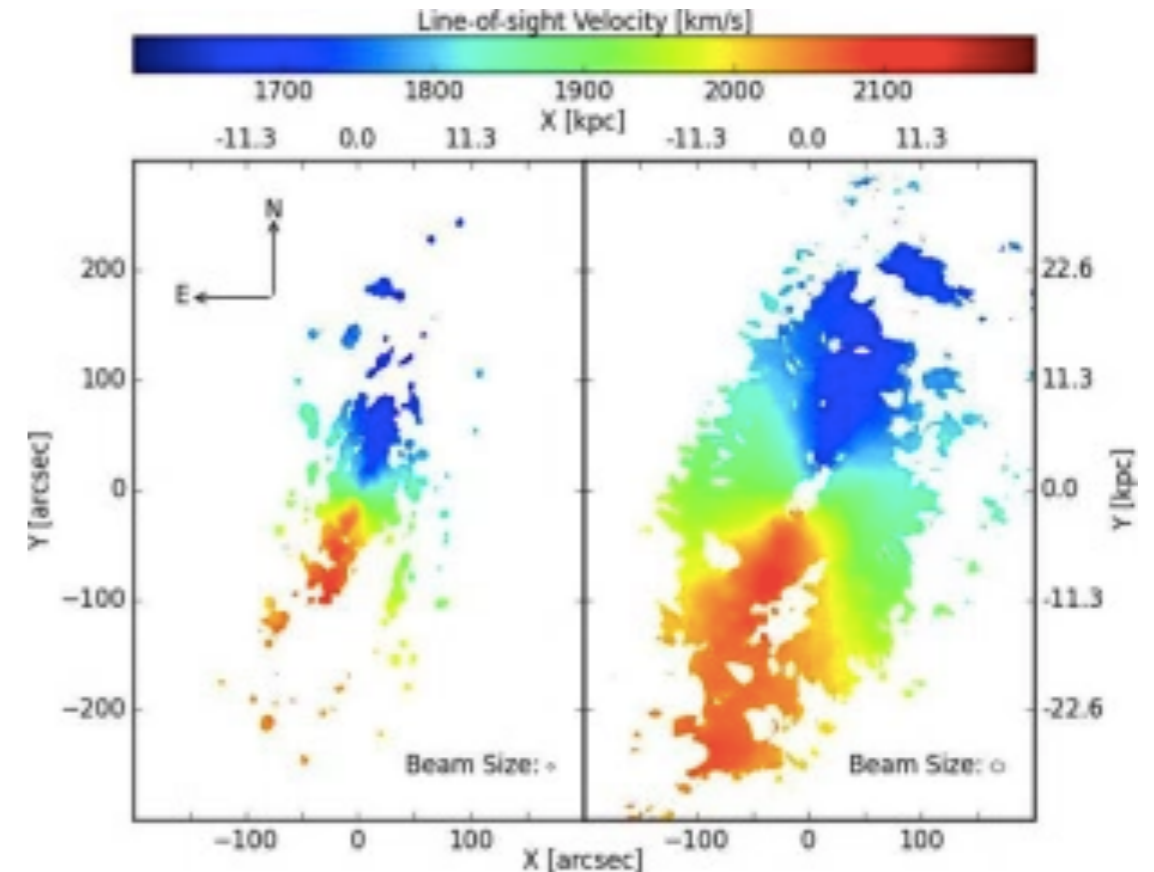
- gain

- cross-talk

- mosaic

Example of MOS

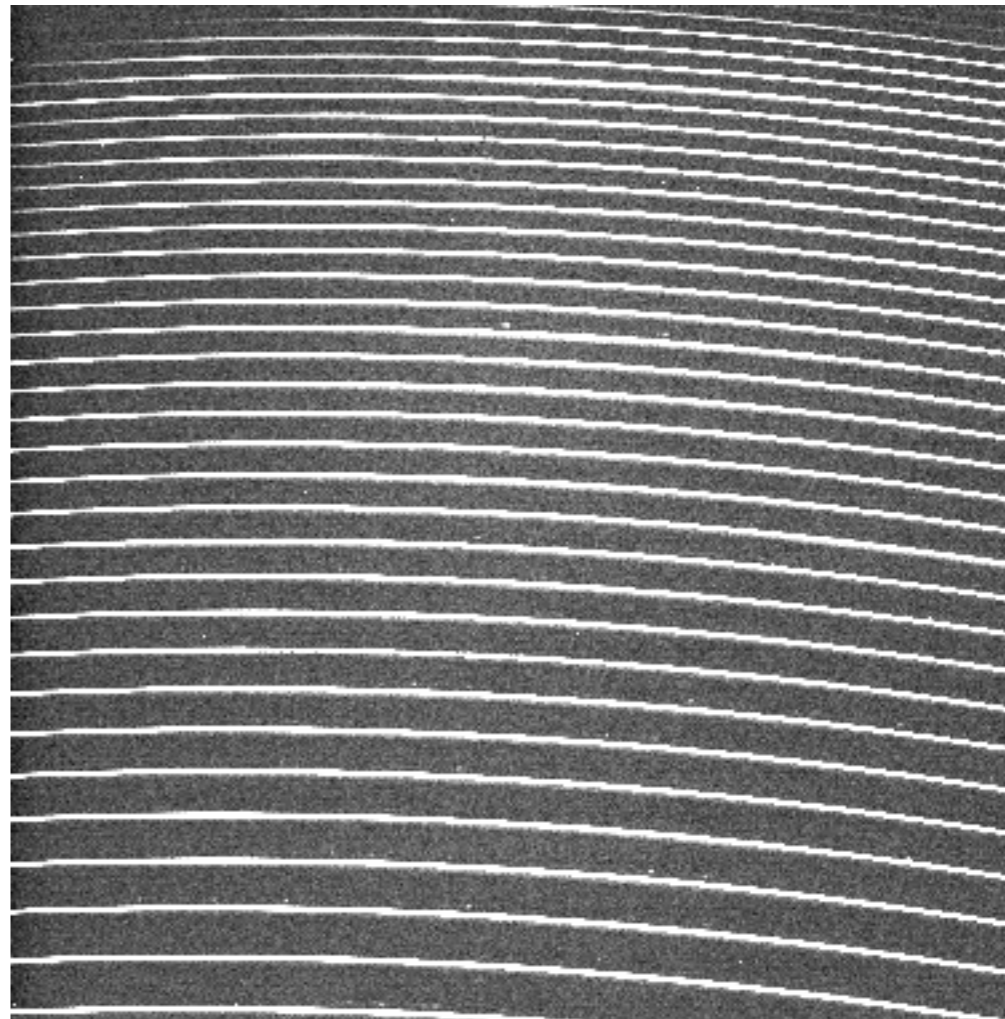# Long slit reductions

Tools for other modes

- Polarimetry

- Fabry Perot

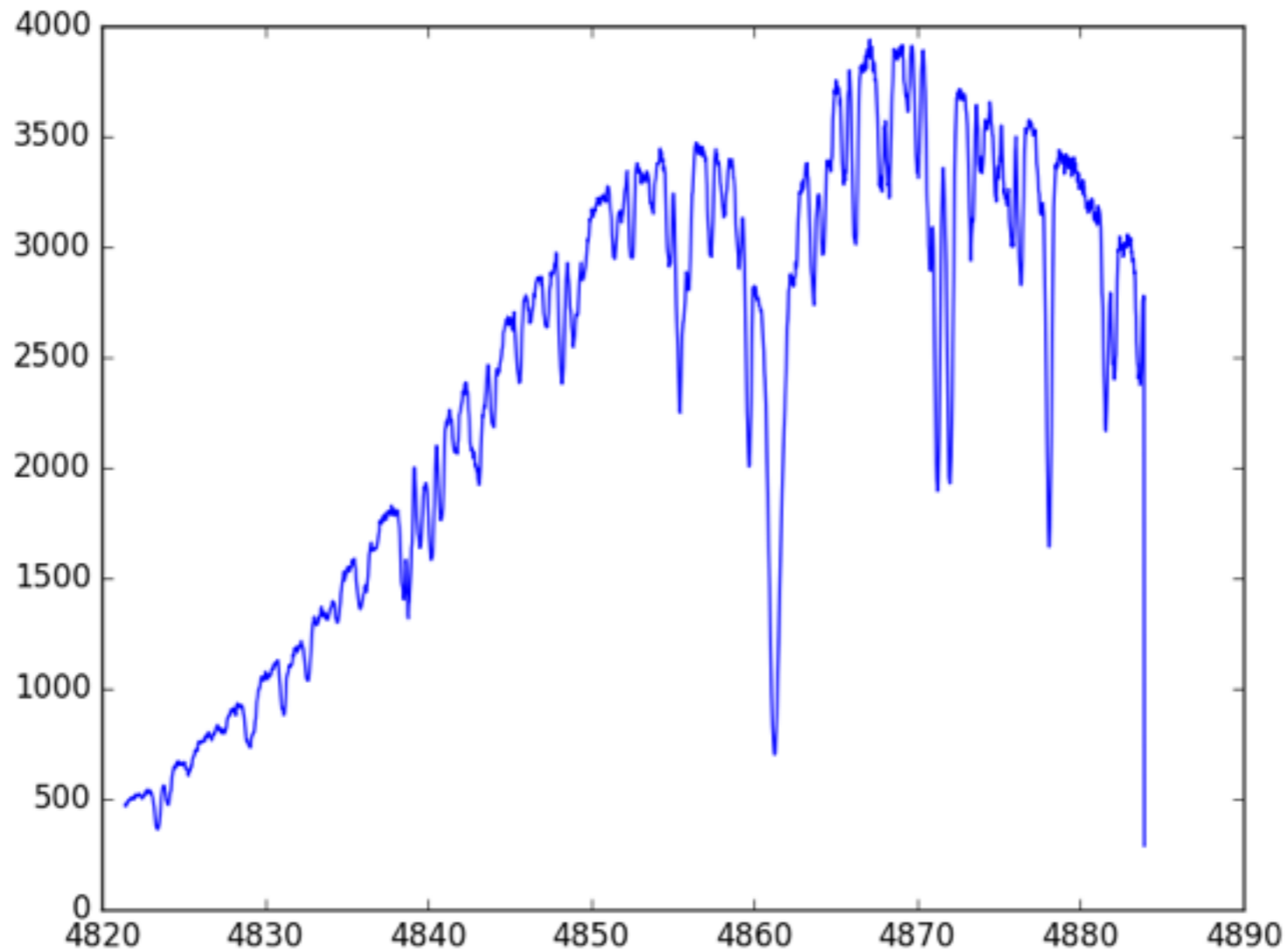- Full reductions of LS and MOS with scripts in zsalt package

HRS

- prepare

- overscan

- gain

- cross-talk

- mosaic

Advance HRS Pipeline

Now being distributed with 2016-2. Can be run with work (at this workshop!) for data back to Nov 2014

PySALT v0.50

PySALT is the Python/PyRaf software package for SALT data reduction and analysis. The next version of PySALT package includes:

PIPETOOLS
Tasks to automate the data reduction And data handling

SALTRED
Basic CCD data Reductions (Up to flat data with astrometric solutions)

SLOTTOOLS
Slotmode photometry And analysis tools

SPECTOOLS
Tools to provide wavelength and flux calibrated data

FPTOOLS
Fabry-Perot related software (still in development)

http://www.pysalt.salt.ac.za/

Code

- PySALT — reduction and tools for analysis

- pipetools — codes that handle

- salt sandbox — useful scripts / examples

- pyhrs — HRS reductions

- polsalt — polarimetric reductions

- zsalt — scripts to provide pipeline reductions from raw data

- User available codes (when available linked on SALTSandbox)
  - Longslit (Various)
  - MOS (M. Hilton)
  - FP (Rutgers code)

Contribute your own code!

This workshop

- Later today reduce an example of SALT data using the pysalt tools

- Tomorrow, work on reducing your own data with the help of the SALT team

- Unconference on Friday — what issues do you want to discuss