

SALT Data Pipeline

Steve Crawford

Outline

- How data gets to you
- Daily pipeline
- Status of data reductions
- Adding to the code

What happens after
your observation
happens



SALTFIRST



The screenshot shows the SALTFIRST software interface. At the top, there are tabs for 'Info', 'DQ', 'Spectra', and 'Log'. Below the tabs is a table of metadata fields and their values. At the bottom of the window, there is a 'Check for Data' button.

Field	Value
Filename:	H201701300017.ft
TIME-OBS:	02:23:53.492
OBJECT:	Cn1-1_HD330036
PROPID:	2016-2-SCI-034
EXPTIME:	500.0
CCDSUM:	1 1
GAINSET:	SLOW
ROSPEED:	400000.000000
OBSMODE:	MEDIUM RESOLUTION
DETMODE:	Normal
CCDTYPE:	Science
FILTER:	
GRATING:	
GR-ANGLE:	
AR-ANGLE:	
MASKID:	
LAMPID:	NONE
FOCUS:	
TELAZ:	128.951968415
TELALT:	48.9522226833
SEEING:	
NSOURCES:	
BMEAN:	
BMDPT:	
BSTD:	

Check for Data

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

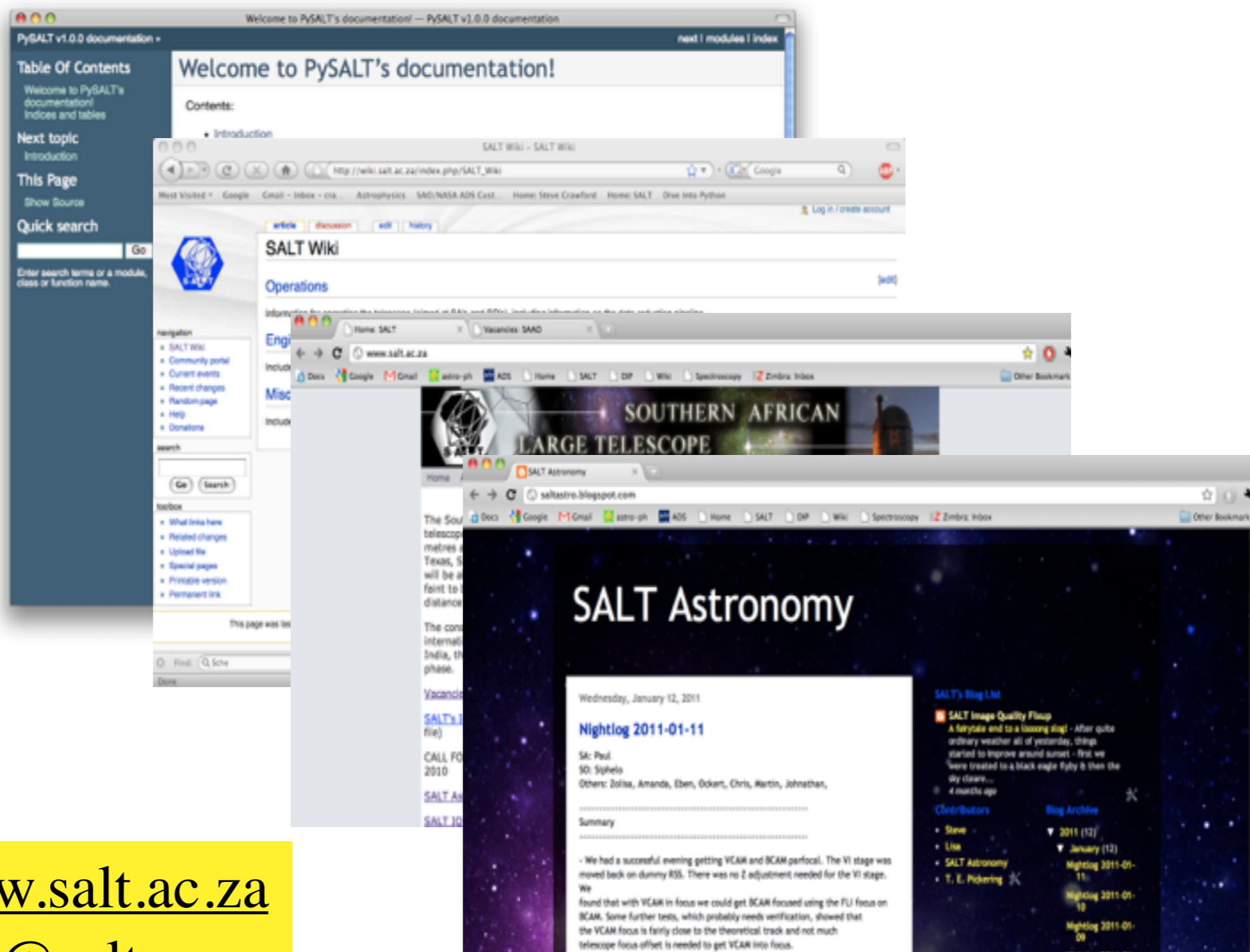
2013-1-RSA_POL-001/raw:
P201305100018.fits  P201305100038.fits  P201305100042.fits  S201305100009.fits
P201305100019.fits  P201305100039.fits  P201305100043.fits
P201305100020.fits  P201305100040.fits  P201305100061.fits
P201305100021.fits  P201305100041.fits  S201305100006.fits
```



Communication

SALT
Data Pipeline
Science with SALT

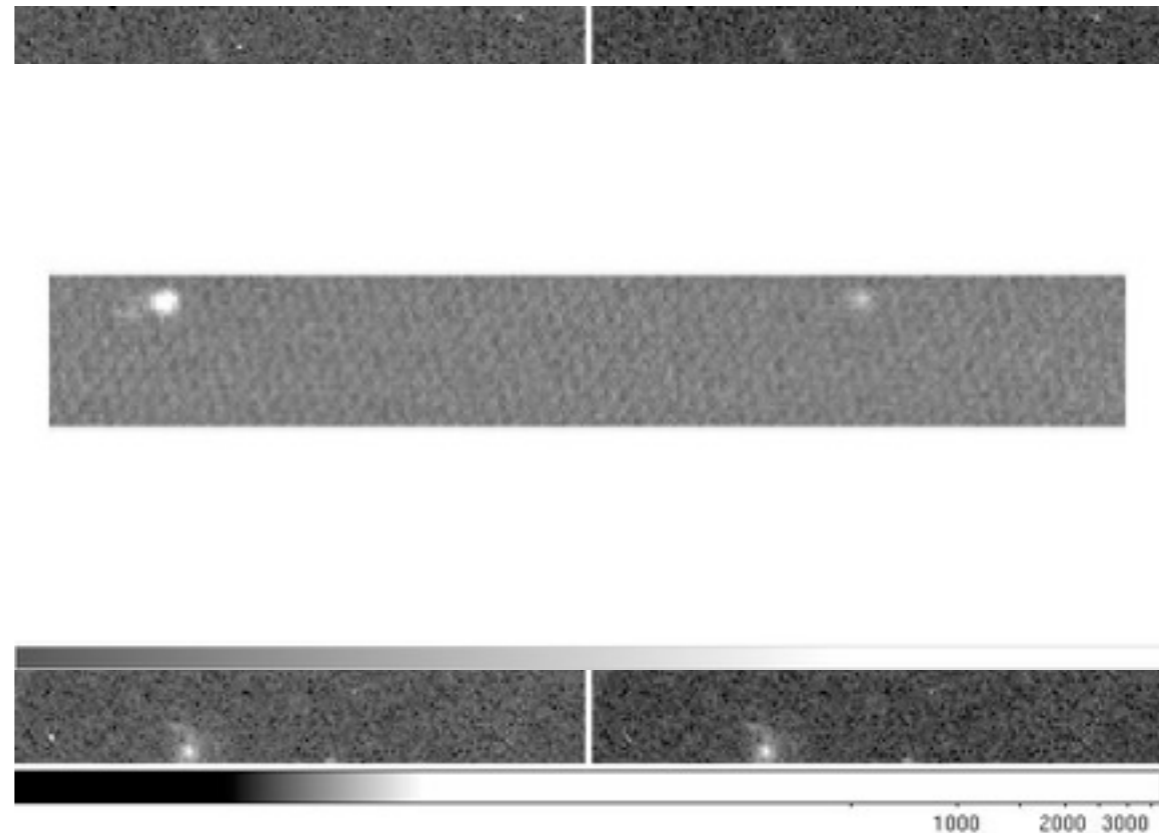
1. Blogs
2. Website
3. Wiki
4. Programming Documentation



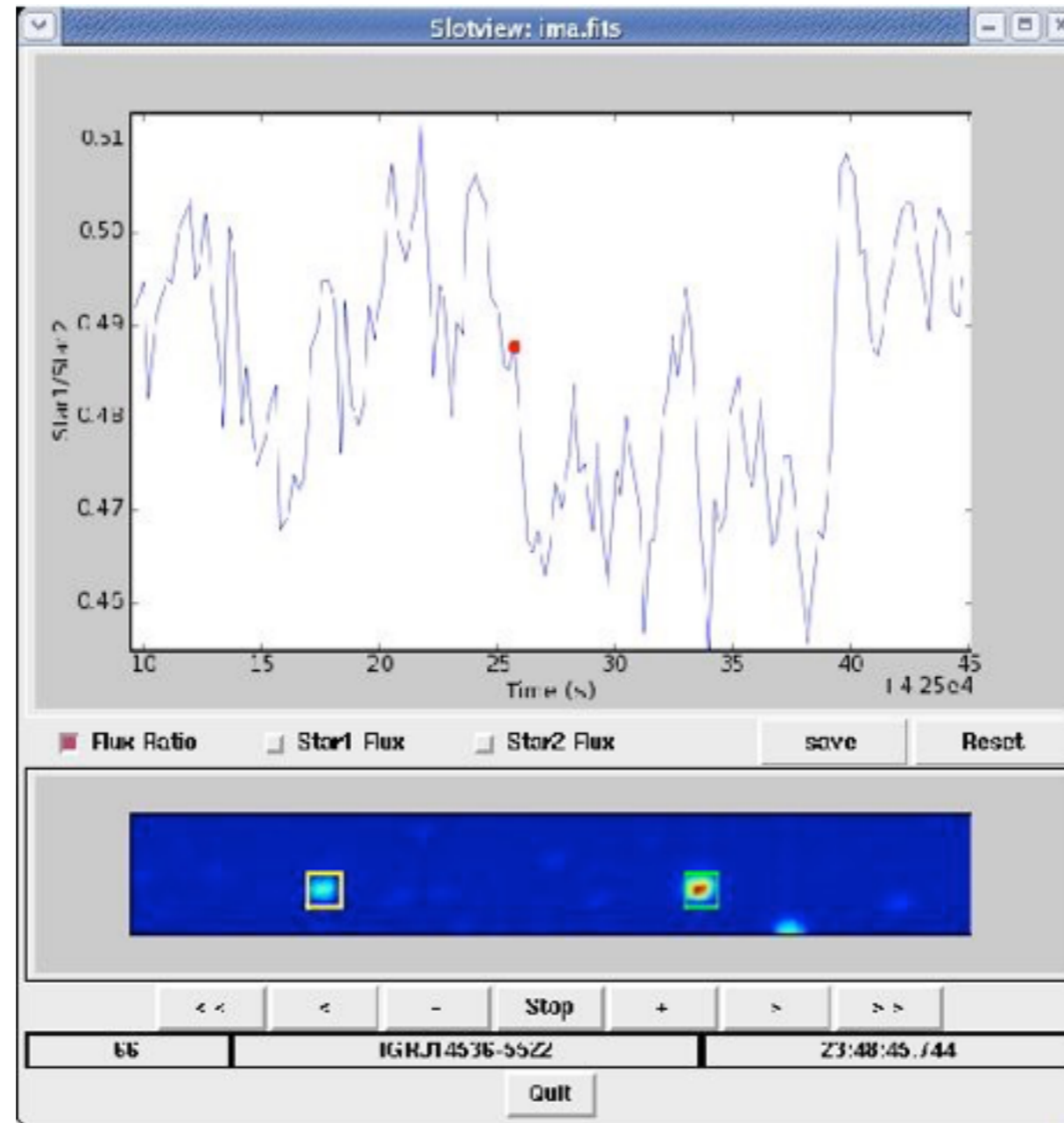
Main Website: www.salt.ac.za
Questions: salthelp@salt.ac.za

SALTICAM

- prepare
- overscan
- gain
- cross-talk
- mosaic

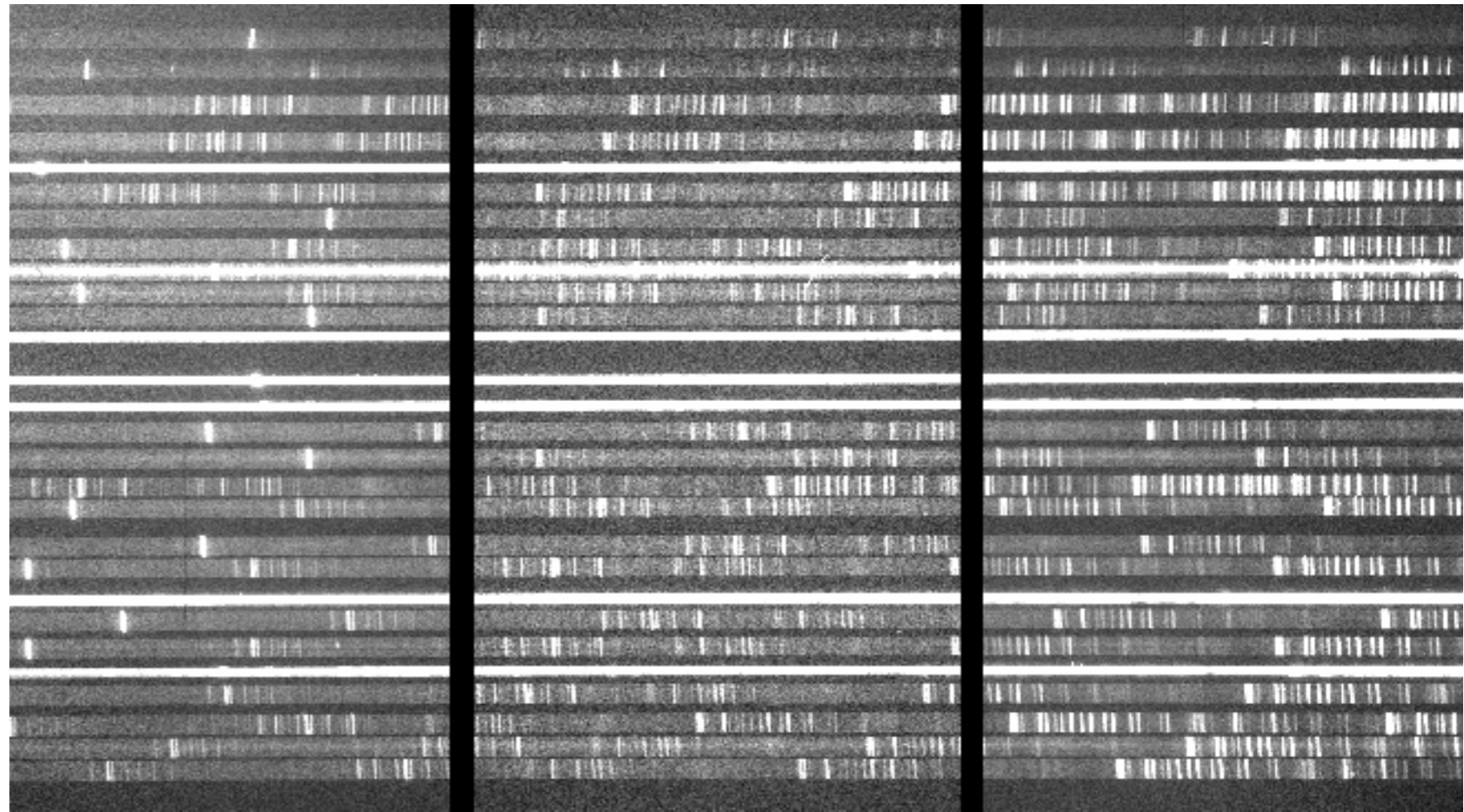


High Speed Mode



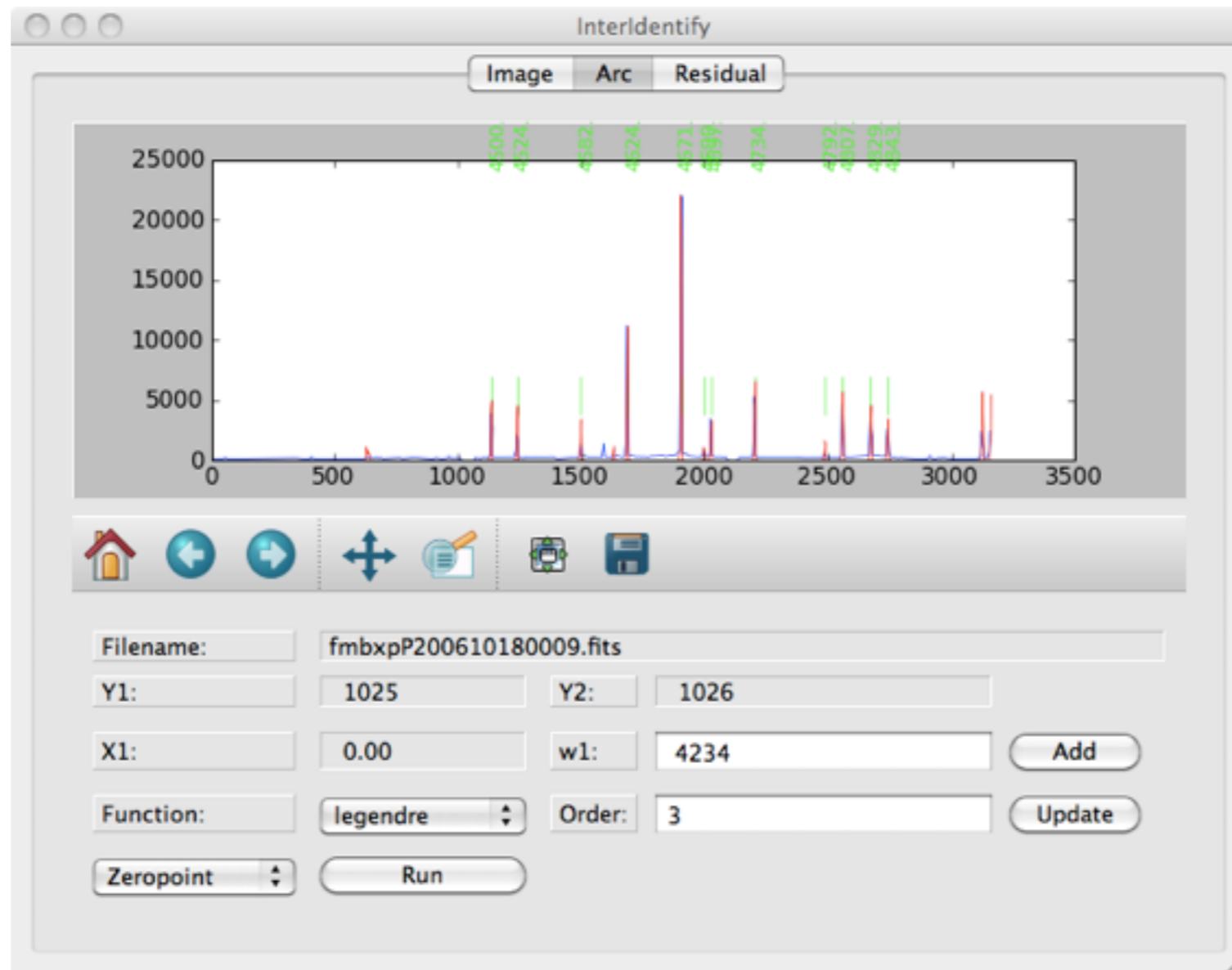
RSS

- prepare
- overscan
- gain
- cross-talk
- mosaic



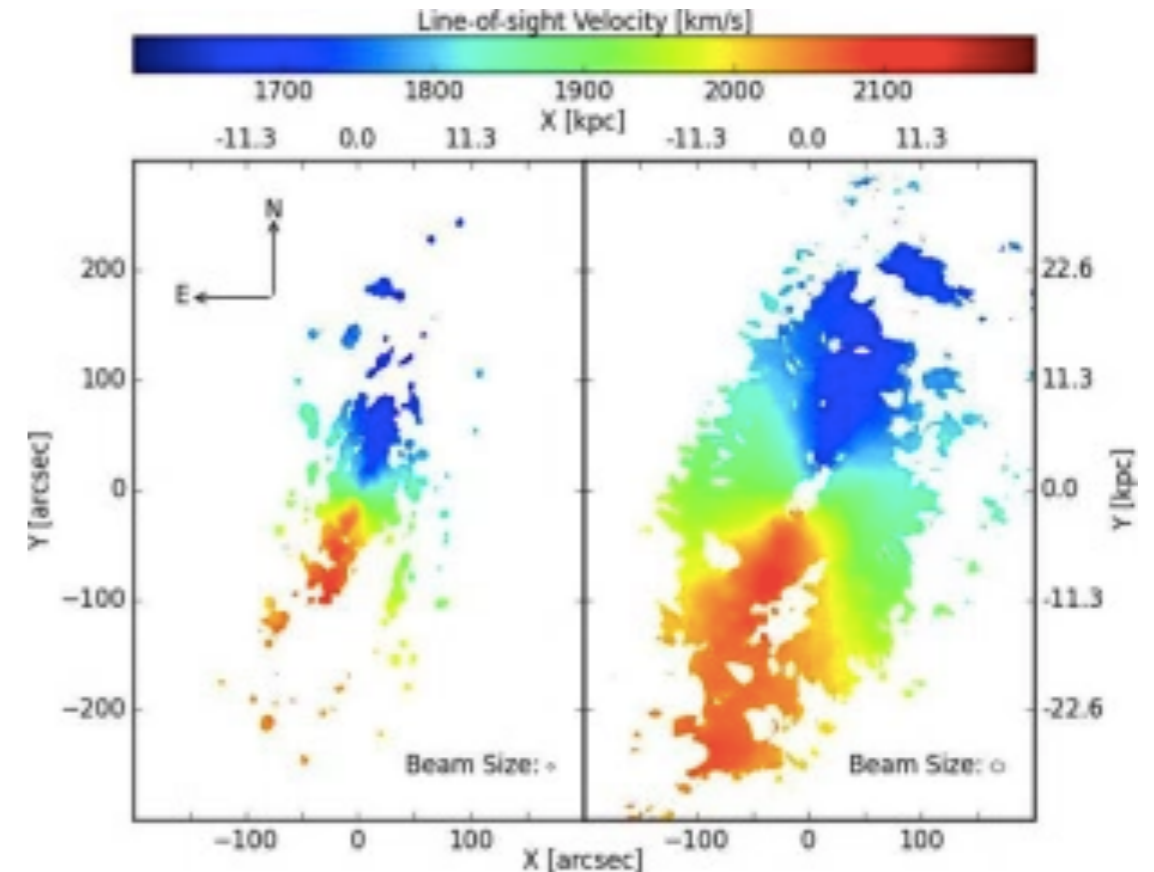
Example of MOS

Long slit reductions



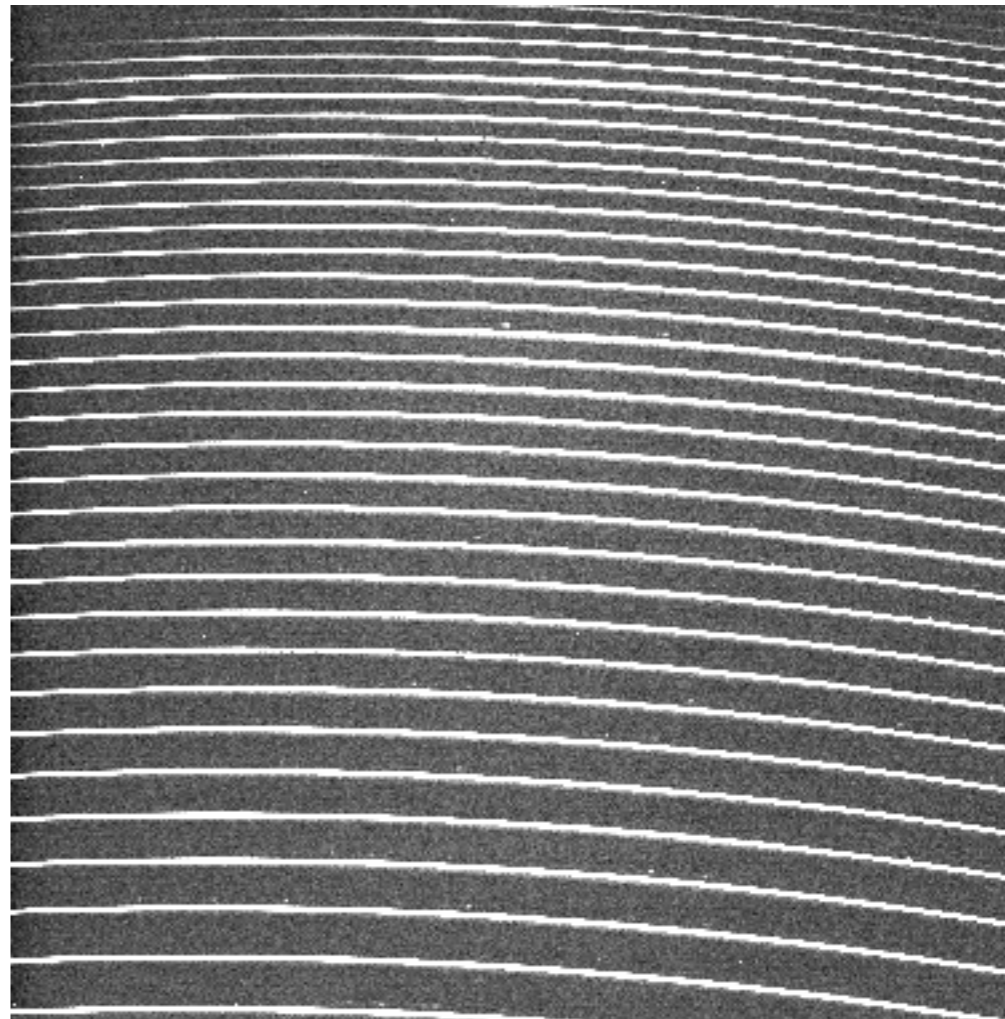
Tools for other modes

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

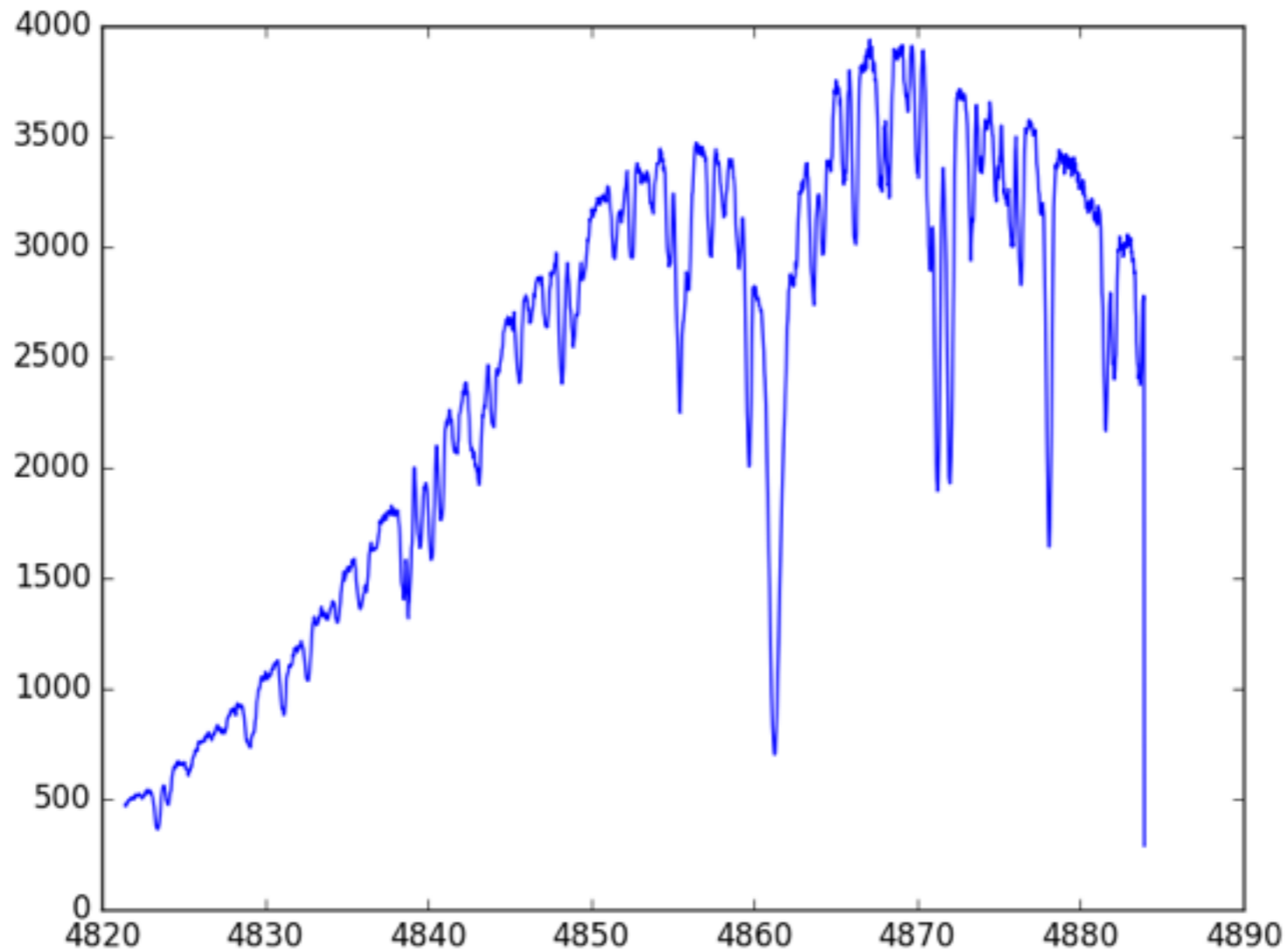


HRS

- 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

SALT
Data Pipeline
Science with SALT

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
- polysalt — 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!

saltastro / pysalt

Unwatch 8 Star 3 Fork 9

Code Issues 33 Pull requests 0 Projects 0 Wiki Pulse Graphs Settings

Python/Pyraf software for the reduction and analysis of SALT data

New Add topics

339 commits 5 branches 0 releases 2 contributors BSD-3-Clause

Branch: master New pull request Create new file Upload files Find file Clone or download

crawfordsm committed on GitHub Merge pull request #125 from crawfordsm/fix_agg Latest commit cb2d3d2 3 days ago

data	add 14.375 PG900 config	a year ago
doc	rm bvit tasks from helpfiles	2 years ago
lib	Now records all errors thrown in log	a year ago
plugins	update to pyds9	4 days ago
proptools	update to pyds9	4 days ago
saltfirst	changed to use RSSwav.db	a year ago
saltfp	added error call	a year ago

<https://github.com/saltastro>

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