User Software: Progress and Next Steps

Closing Step 1 Meeting
10 November 2008

**Michael Wise**

Standard Imaging

Step 1

- GSM design document
- Prototype script for major cycle source detection
- Standard pipeline framework implementation(s)
- RM synthesis imaging tool specification

Step 2

- First implementation of GSM database
- Final image cube format definition
- Prototype mosaicing script (based on CASACORE)
- First implementation of RM synthesis tool

Step 3

- Updates to standard data product definitions
  - *Updates to Measurement Set definition*
  - *Definitions for ancillary metadata (cal. solutions, etc.)*
- Image quality scripts

Source Detection Pipeline

Known Pulsars
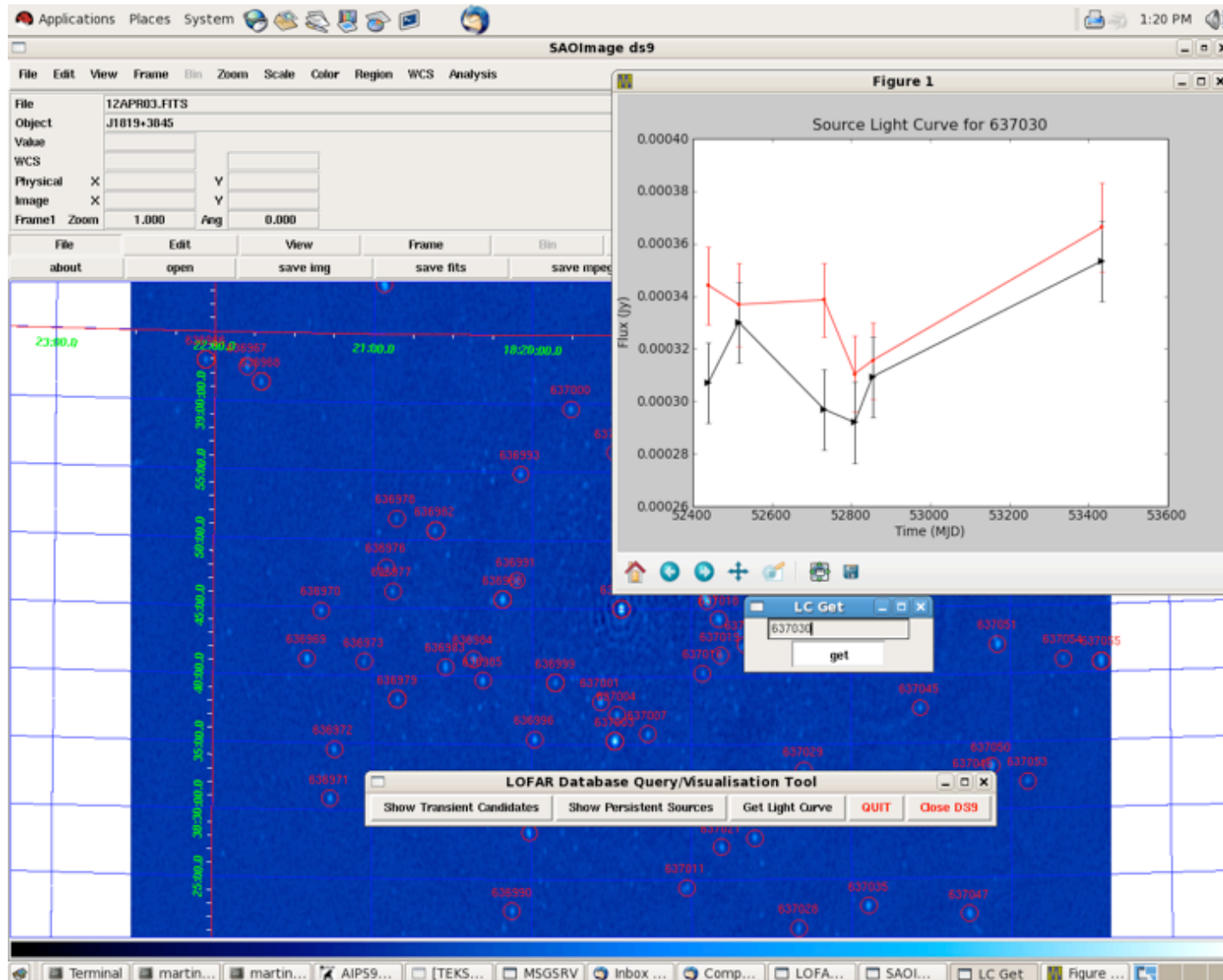
Step 1

- Definition of BF and TAB metadata
- Channelization and down-sampling in BF data writer
- Native support in DAL for PRESTO/SIGPROC formats

Step 2

- Finalize design for TAB module
- BF data writer handling streaming data
- Python wrappers for PRESTO/SIGPROC tools

Step 3

- TAB module implementation
- BF data writer under MAC/SAS control
- BF data writer connected to SAS database
- Python version of pulsar processing pipeline
- Updates to BF data writer to handle 4-bit mode(?)

Pulsar Data
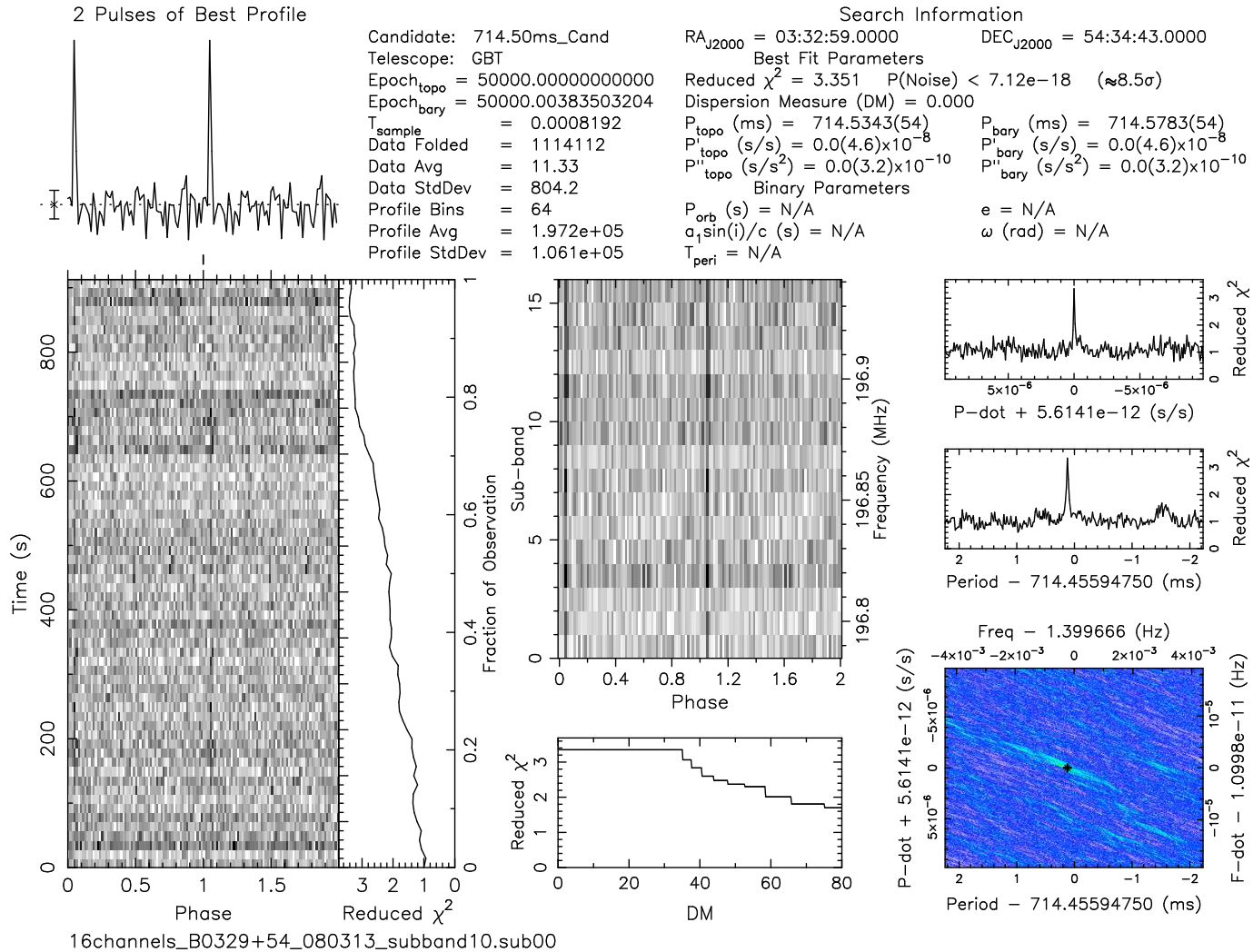

B0329+54 (courtesy J. Hessels)

VHECR

Step 1

- DAL data classes for time series data
- Finalize TBB metadata (station cal., trigger parameters, etc.)
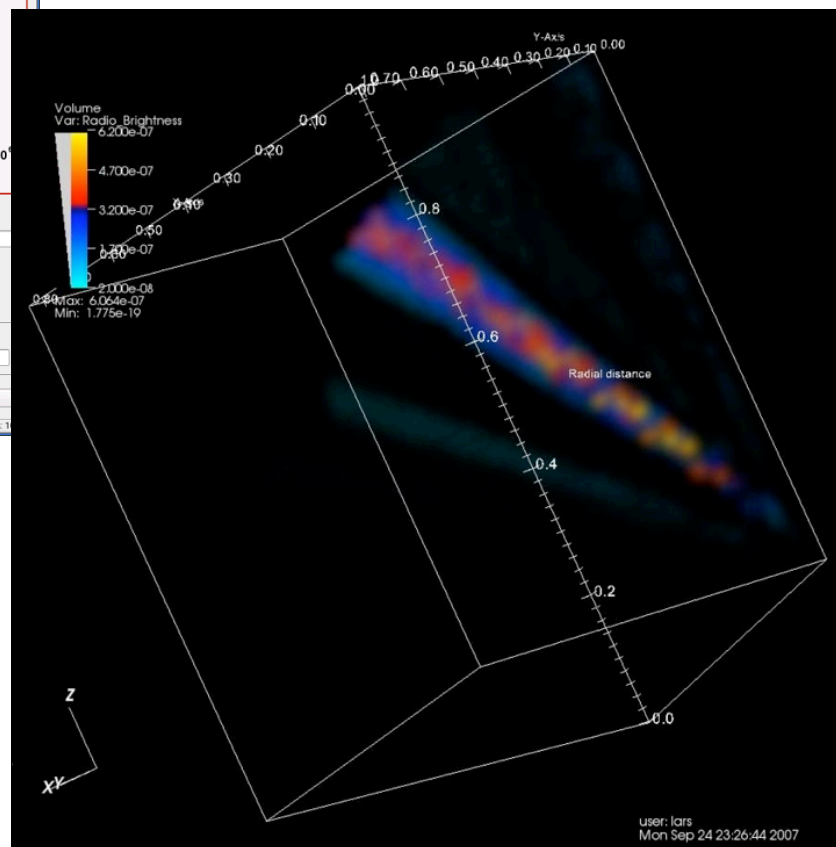- Specification for Visit plugin to visualize CR image cubes

Step 2

- Near field imager working with LOFAR TBB data dumps
- TBB dumps under MAC/SAS control
- Prototype CR post-processing pipeline
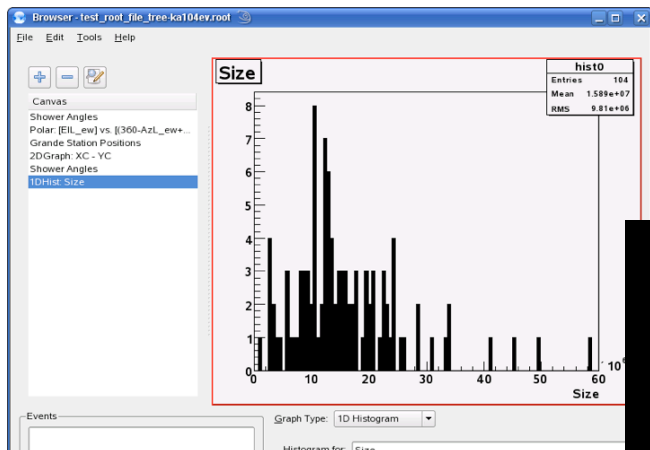- Prototype of Visit plugin

Step 3

- TBB data writer under MAC/SAS control
- TBB data writer connected to SAS database
- Definition and implementation of CR event database
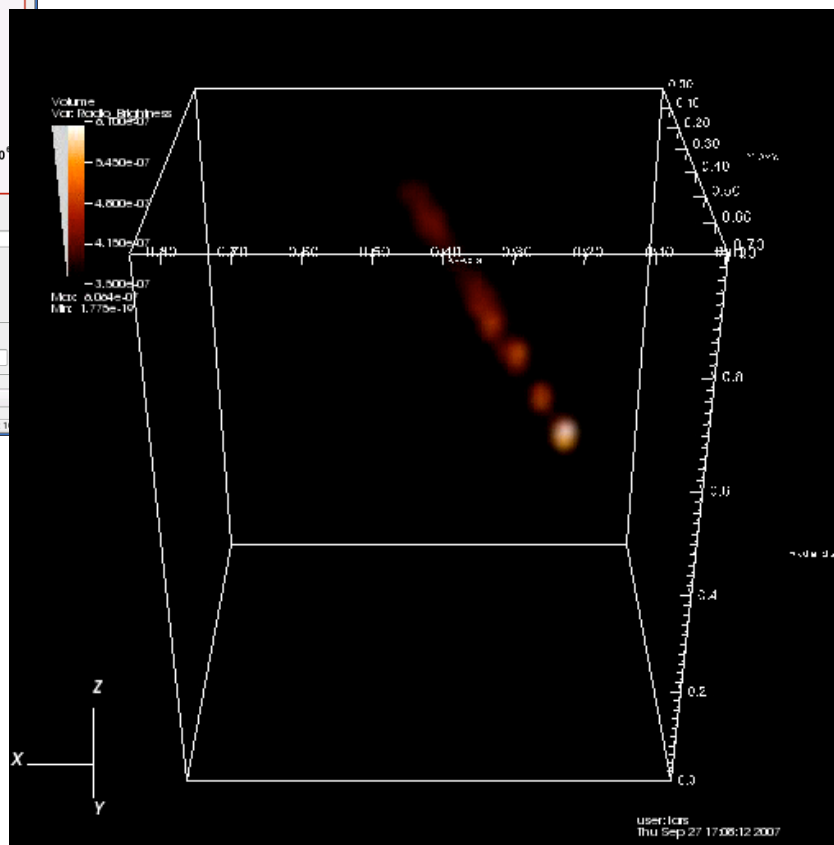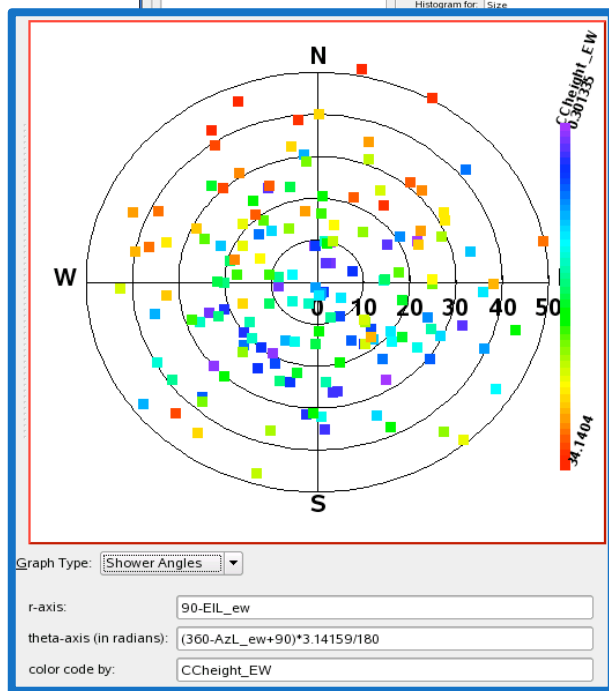- Python version of CR processing pipeline
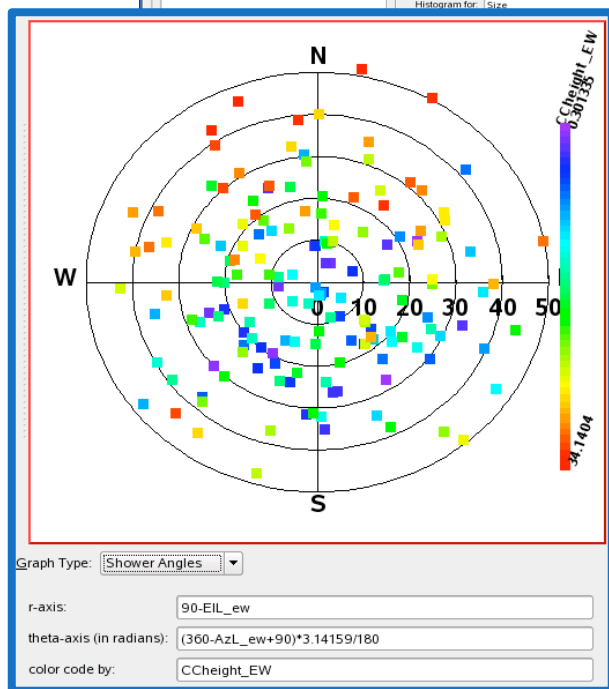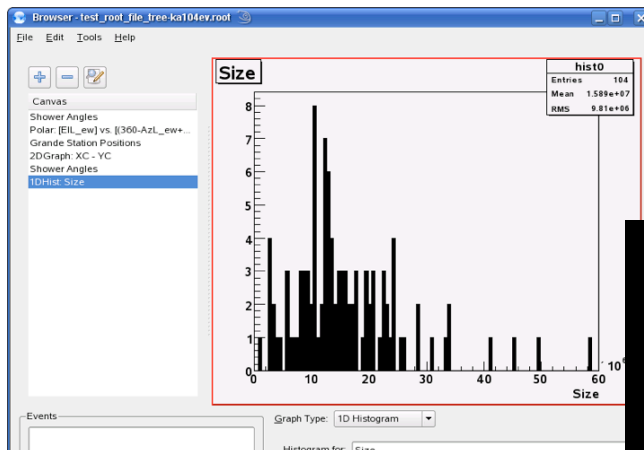
CR Data Inspection

Near-field imaging

(courtesy L. Bähren)

CR Data Inspection

Near-field imaging

(courtesy L. Bähren)
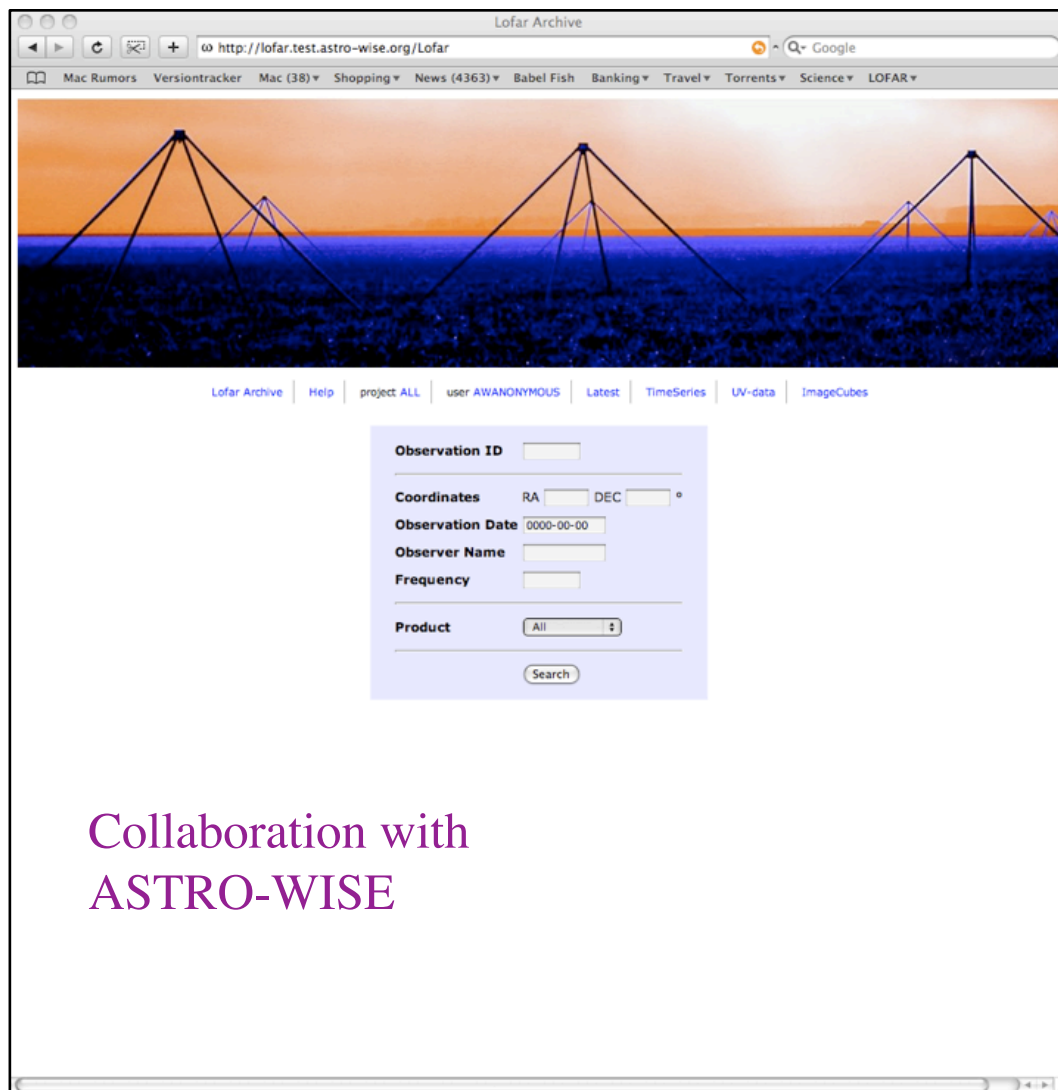
"Walk-on" Tasks

Step 1

- DAL updates and support for Archive prototyping
- Evaluation of CMAKE for LOFAR build environment
- Evaluation of graphics libraries (s2plot, Visit, VisIVO, etc.)
- CMAKE build scripts for Qt and PyQt graphics libraries
- Test scripts for CImager
- Parallelized version of transient pipeline

Step 2

- Specification for CR particle detector CEP connection
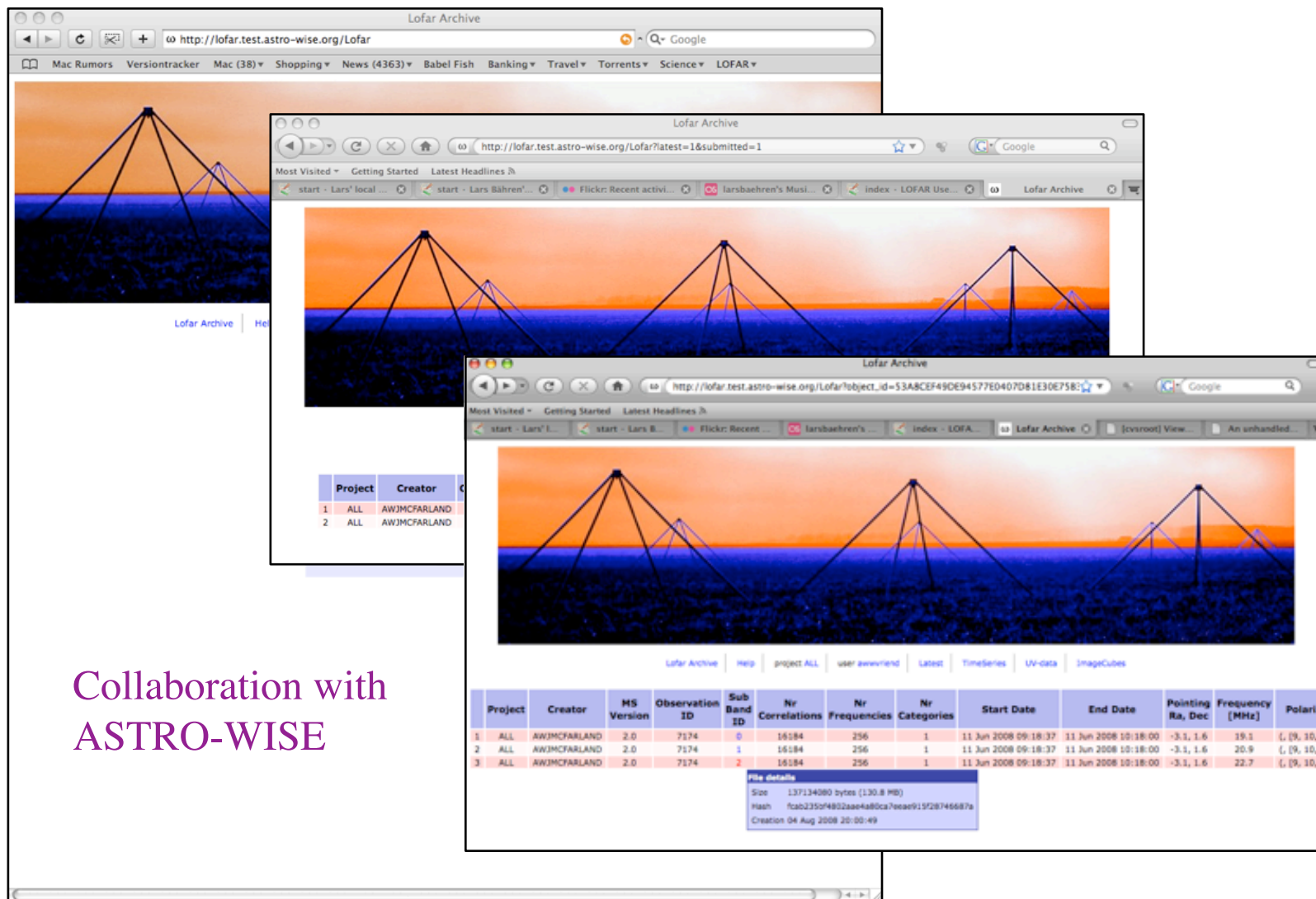- Incorporate pyrap into the build system
- DAL data classes for FITS files

Step 3

- Specification for 3D source detection module

Archive Prototype

Collaboration with
ASTRO-WISE

(courtesy W.-J. Friend and J. McFarland)

Archive Prototype

Collaboration with
ASTRO-WISE

(courtesy W.-J. Friend and J. McFarland)