Pulsar Busy Week 9:
The week of 200+ observations and More...

Jason Hessels

on behalf of

Nico Vermaas, Ken Anderson, Aris Noutsos, Aris Karastergiou, Masaya Kuniyoshi, Ben Stappers, Vishal Gajjar, Anastasia Alexov, Vlad Kondratiev, Anya Bilous, Tom Hassall, Thijs Coenen, Sander ter Veen, Joeri van Leeuwen, Andre Gunst, Yuan Tang, Ruud Overeem, Arthur Coolen, Jan David Mol, and Patrick Weltevrede

LOFAR

ASTRON

Pulsar Busy Week 9

- Aris K., Andre, Masaya, Jason: Effelsberg single station observations
- Anastasia: Pipeline and MoM interaction
- Nico: MoM observing
- Ben, Aris N.: Coherent dedispersion and voltage data
- Jason: Coordination, observing and analysis
- Joeri: B0809+74 single pulses, tied-array data
- Vishal, Vlad, Thijs: Search pipeline
- Vlad, Anastasia: Web summaries
- Anya, Vlad: LBA >20 MHz data
- Tom: Scattering data, analysis support
- Yuan, Ashish: general support
- Arthur, Ruud, Jan David: debugging
- Ken: pipeline framework
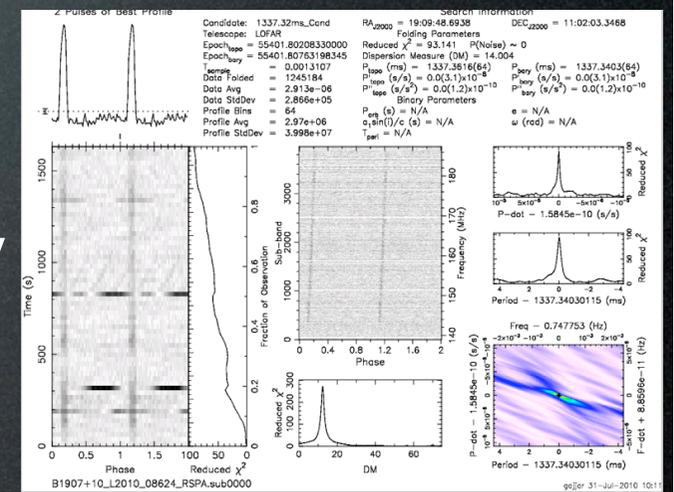- Sander: triggerring, data format support
- Patrick: writing to PSRFITS

LOFAR

ASTRON

Searching

- We have started doing "blind" searches of our datasets.
- These will take ~5x real time using a single Ice node with 8 cores.
- The beam pattern causes "surprises"!
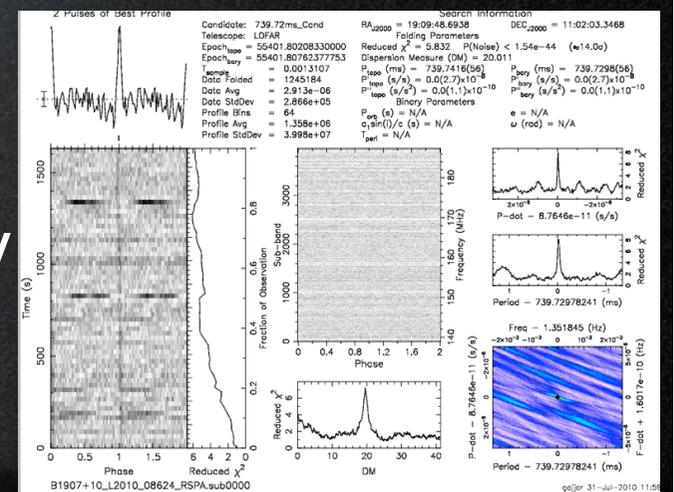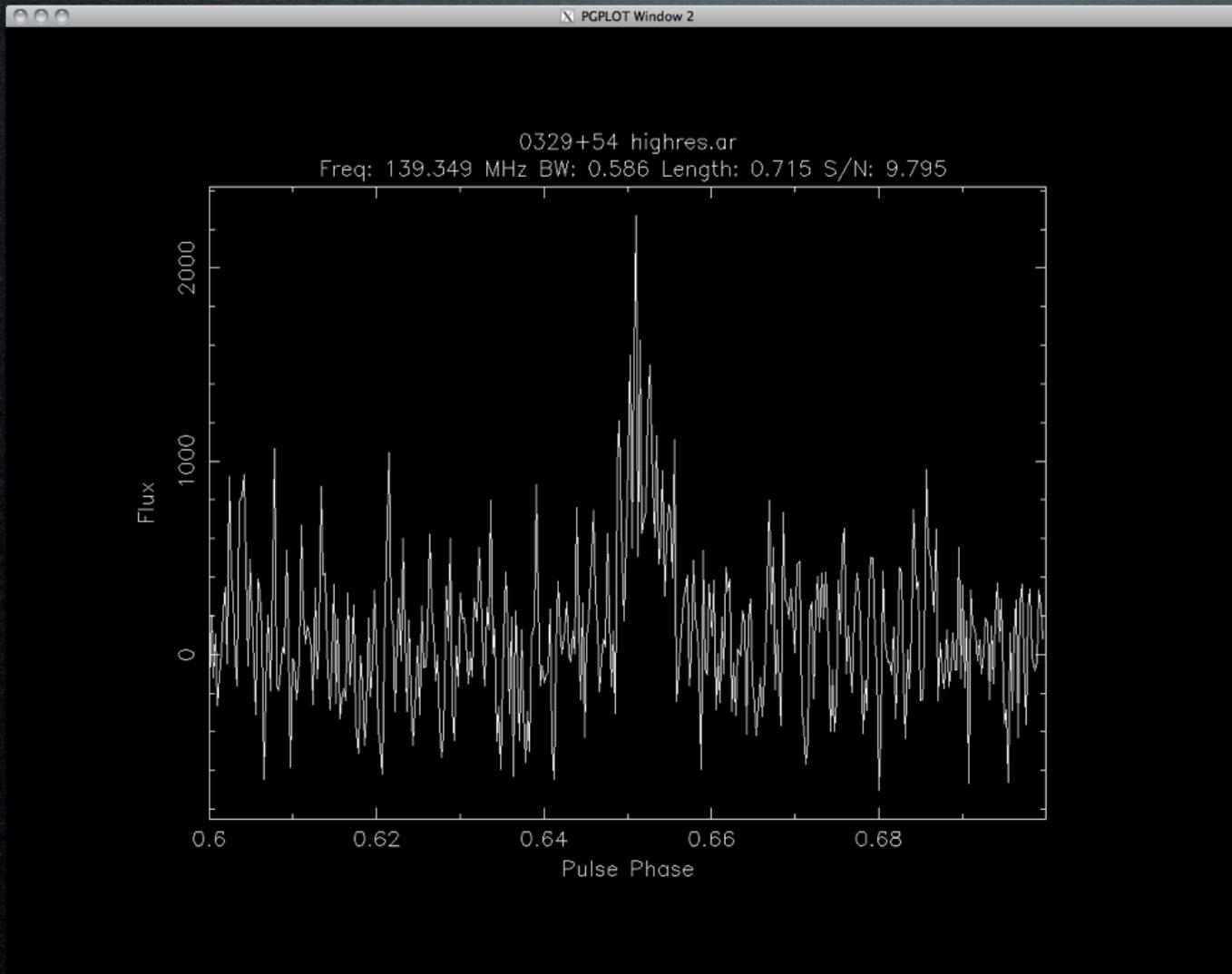- RFI appears very manageable.

B1907+10
Field center
15 sigma
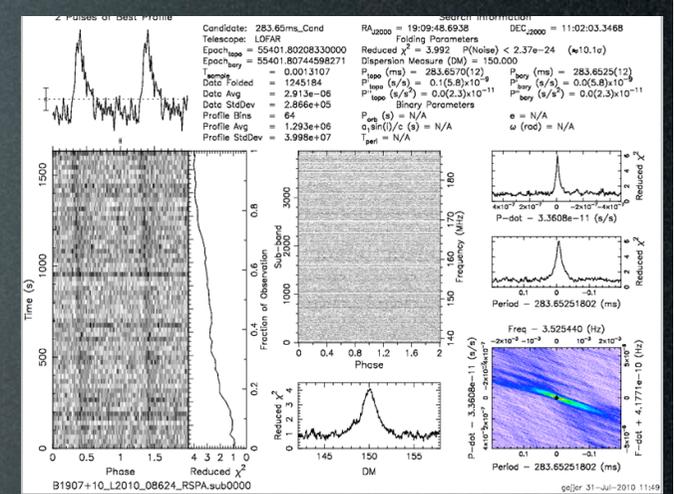
B1919+21
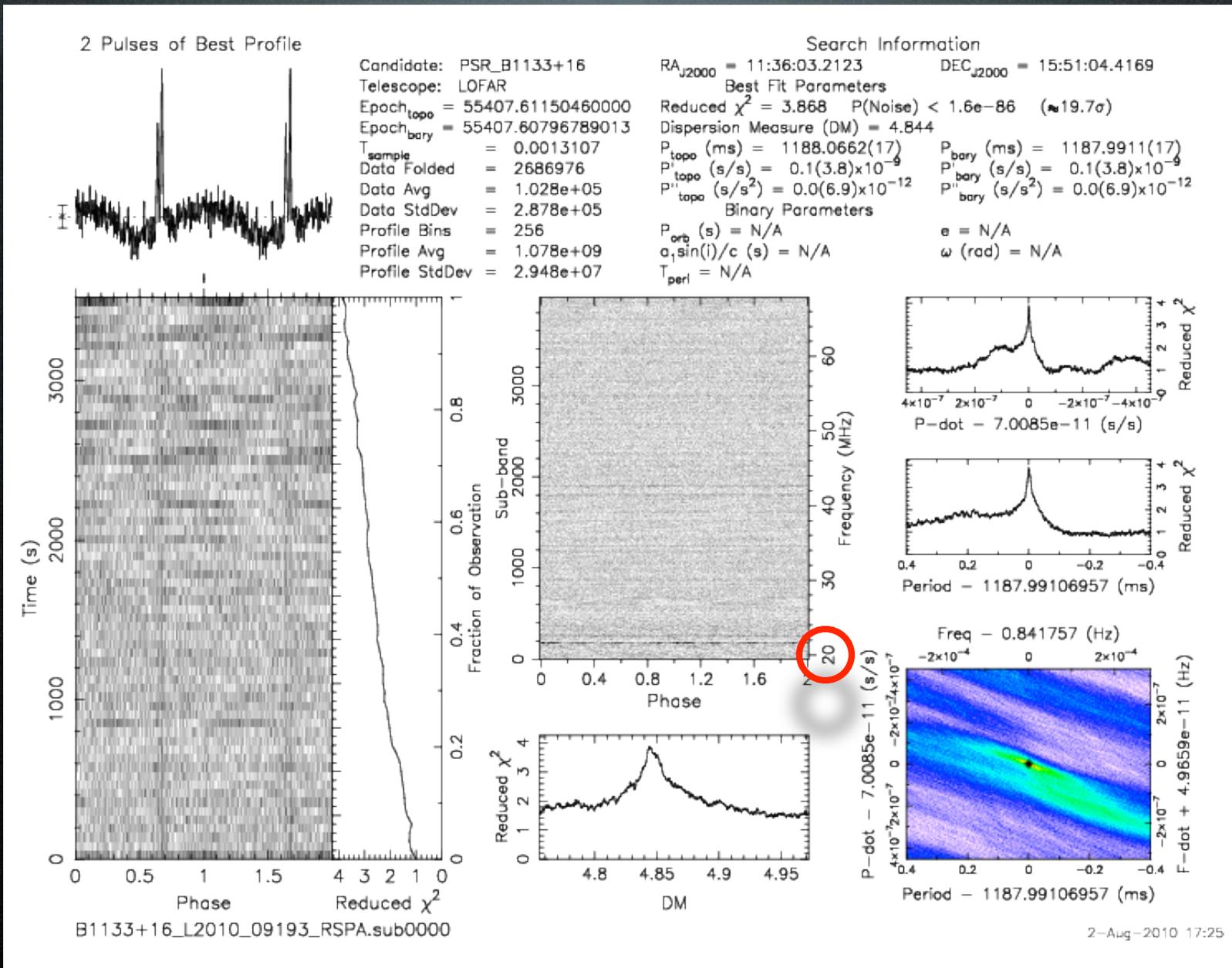11 deg away
28 sigma

B1508+55
64 deg away
14 sigma

LOFAR

ASTRON

Coherent dedispersion

- No residual DM smearing (2ms at 140MHz).
- Only 3 subbands!
- Time res ~180us here.
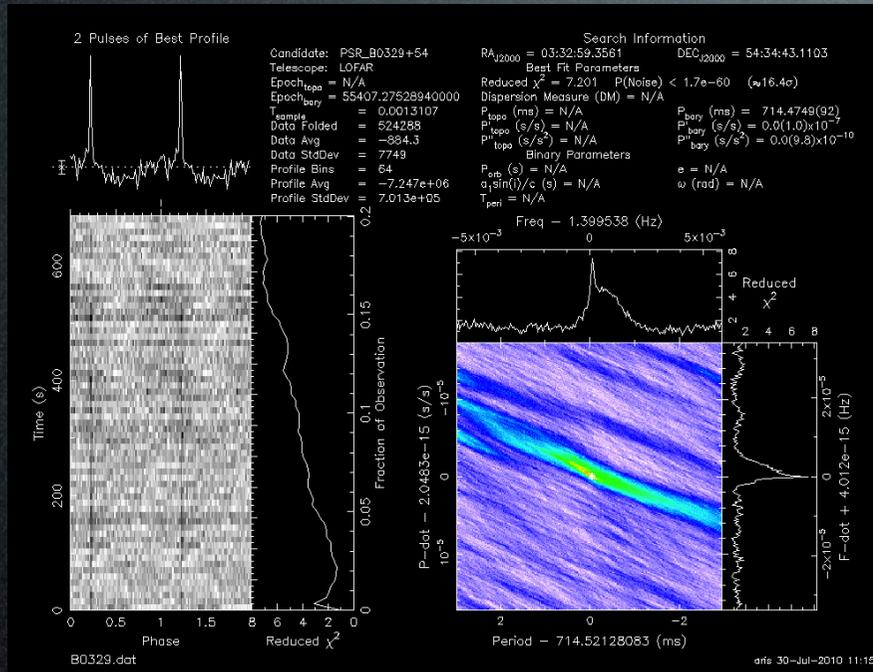- Can now read pulsar data into PRESTO, Sigproc, PSRCHIVE, dspsr.

LBA Observations >20MHz

LBA Observations >20MHz

Power spectrum, LBA, B1133+16, 1 hour
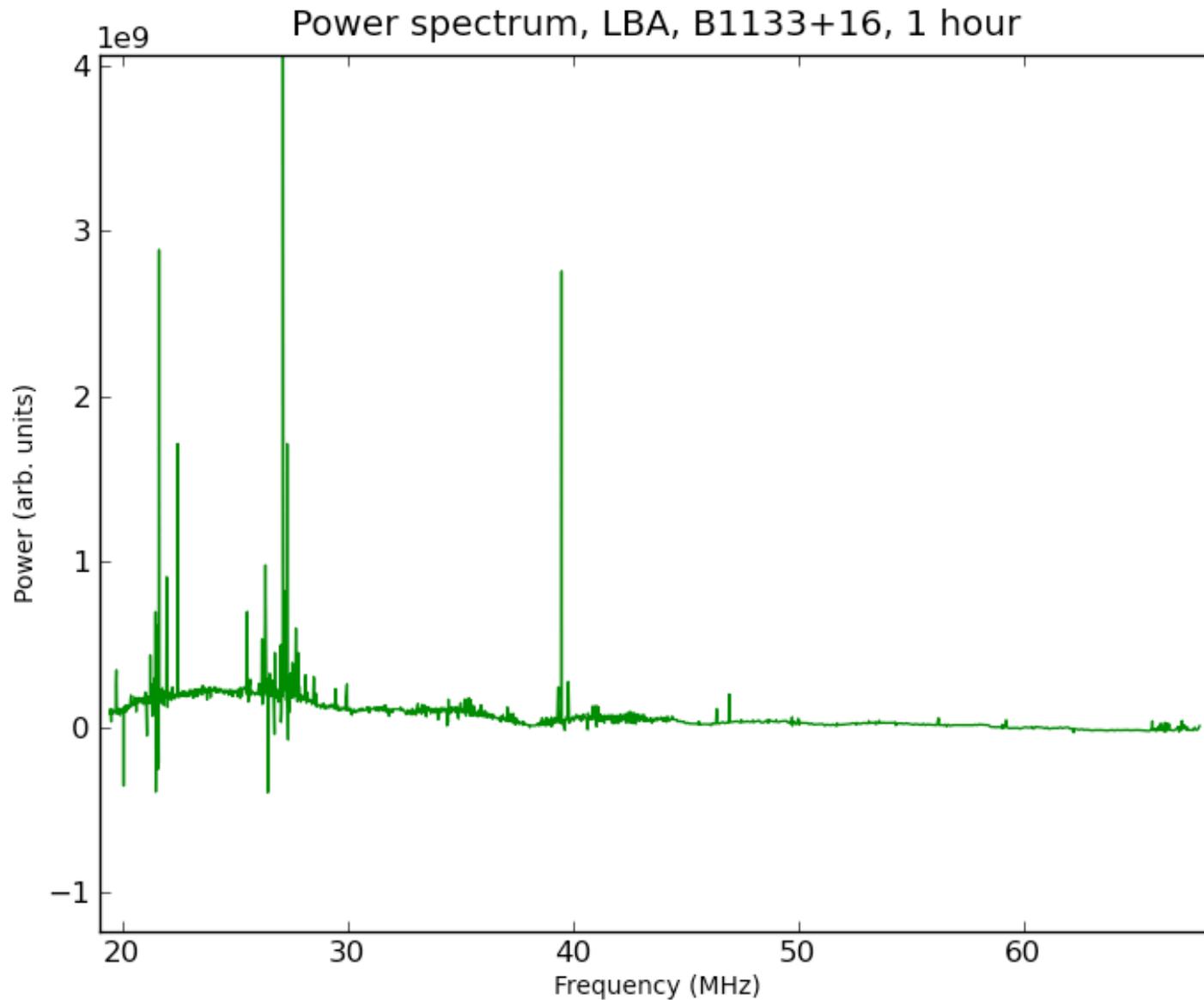
Effelsberg Stand-Alone Mode
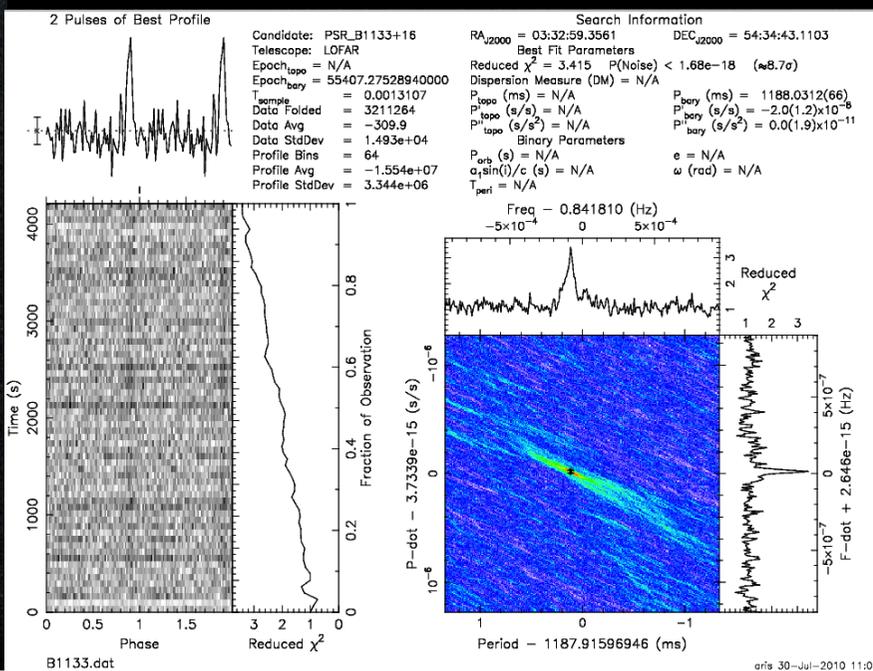
- Collected using the Oxford single station machine and "Pelican" pipeline.
- GPU-based machine is for real-time searches.
- Aris K. spent the preceeding week at Effelsberg.
- Still apparently issues with HBA observing at Effelsberg.

Automated observing with MoM

- Use templates and a simple shell script that makes .xml observing files which can be imported.
- Look-up table of pulsar positions.
- 200+ observations done in this way. Very robust.

Making our way to 100 pulsars...
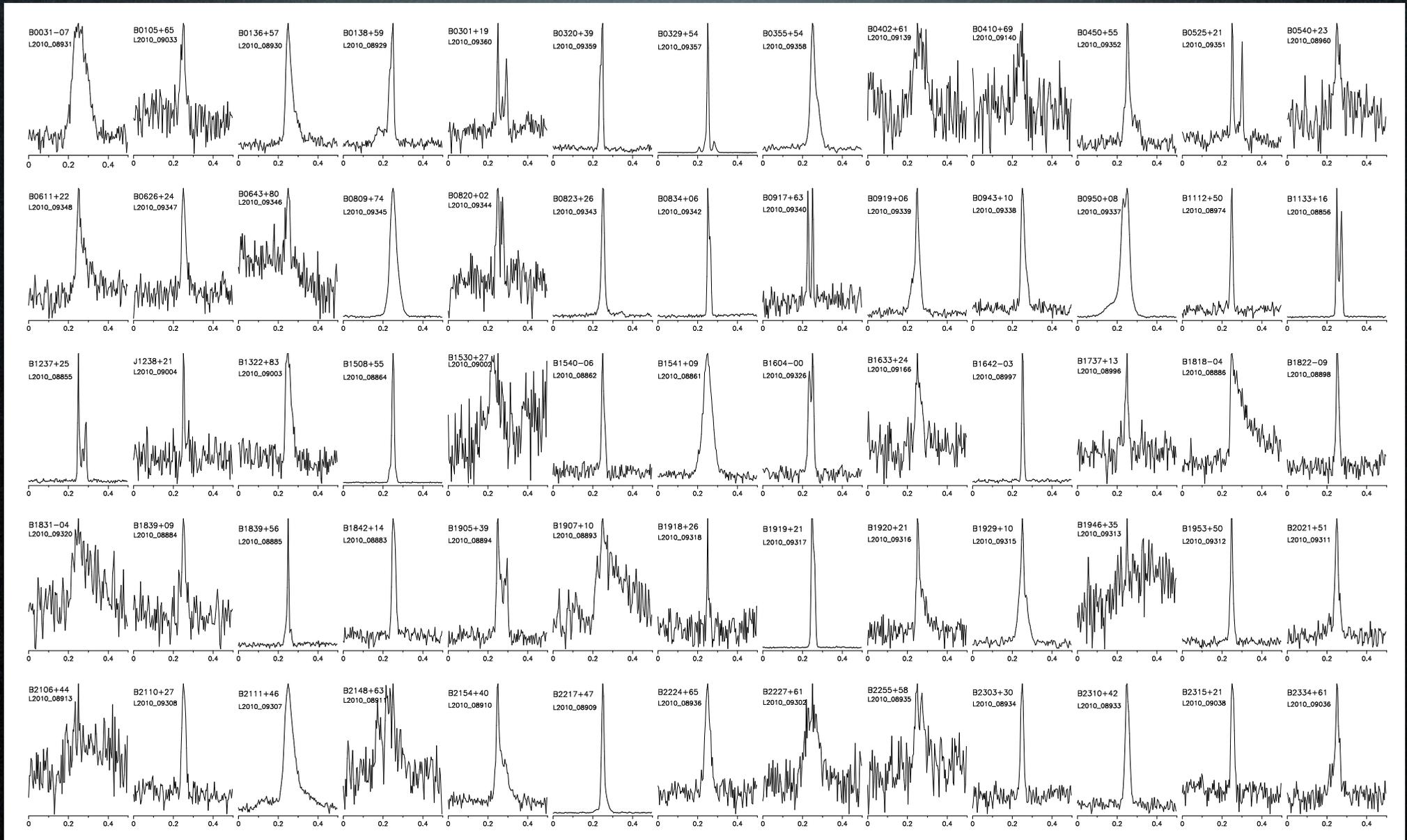
Suggestions/Issues

- We need to clean the storage nodes on the offline cluster.
- Need to identify a standard suite of test observations to be run regularly.
- Hand off regular pulsar observing to the RO.
- MoM/.xml method a potential interim method for scheduling lots of observation. May be interesting for MSSS.
- Need an online table of healthy stations, and ideally the ability to select these all at once.
- Still issues with the Effelsberg HBAs we think.
- Pulsar group would like to use sub5 and sub6. Good idea to unmount NFS dirs on the weekend.
- Complete list of feedback being sent to RO!

LOFAR

ASTRON