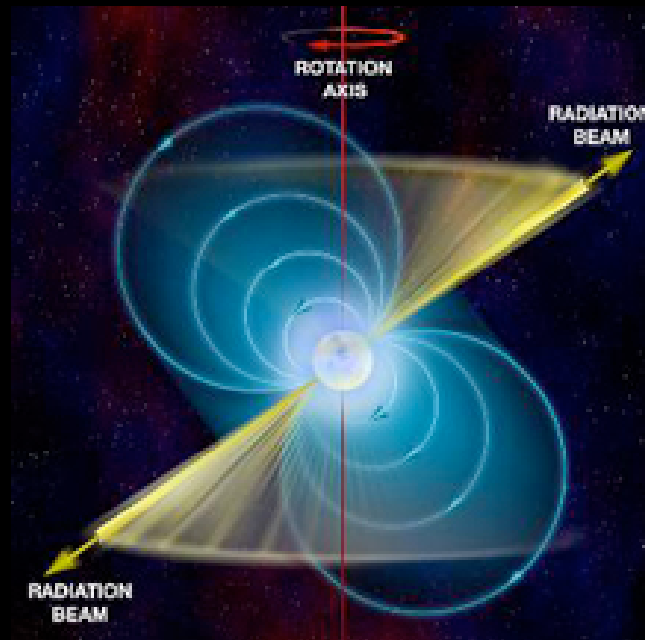


Recent pulsar commissioning tests (i.e. beam-formed data mode)

HBA Digital (station) and tile (analog) tracking



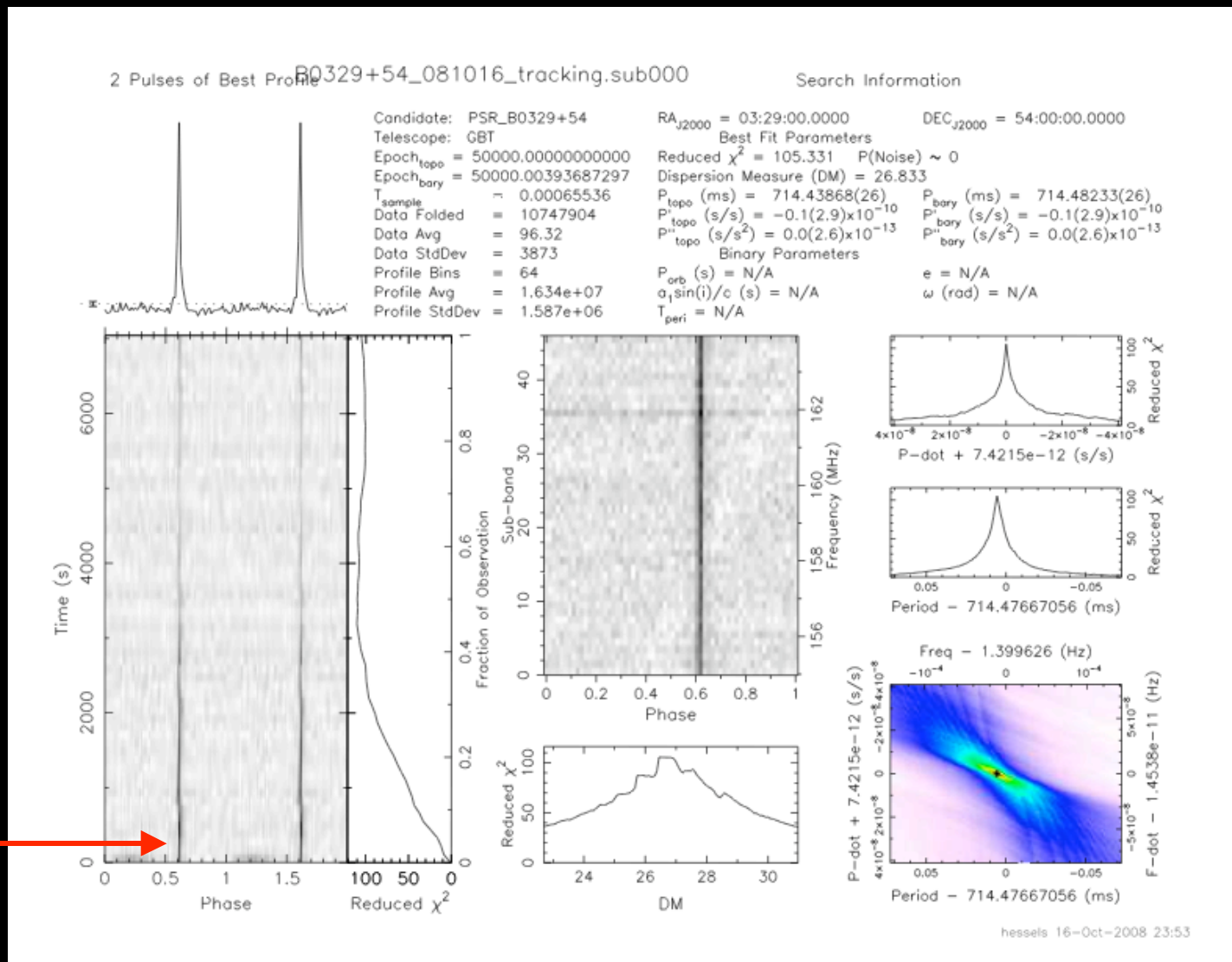
Jason Hessels, Michiel Brentjens, Joeri van Leeuwen,
Ben Stappers, Tom Hassall, & Observers



LOFAR Status Meeting - 12 Nov 2008



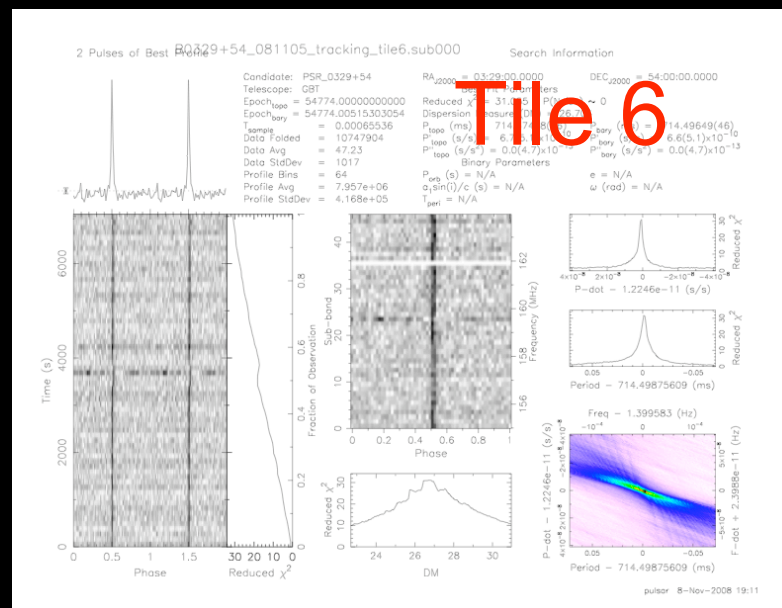
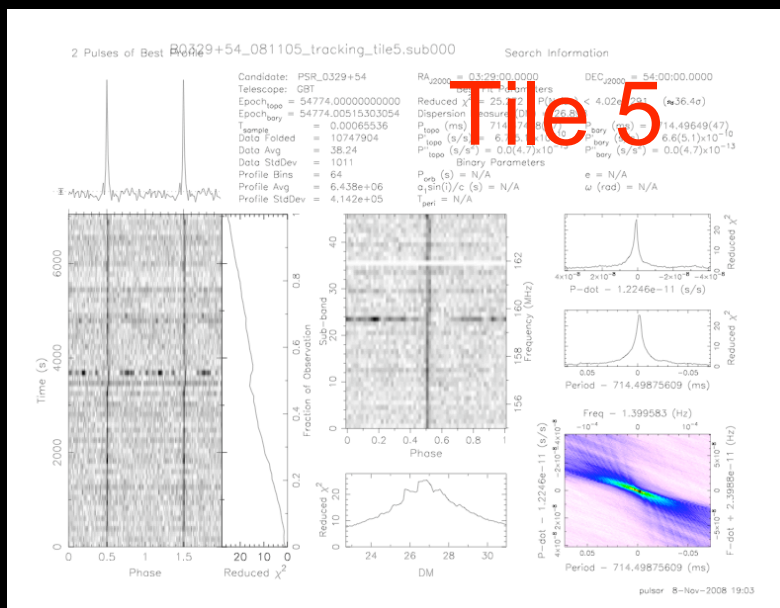
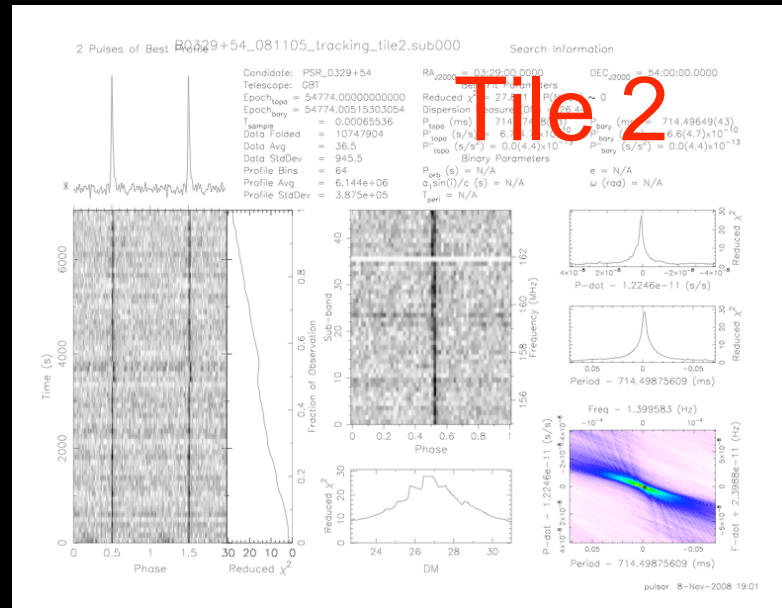
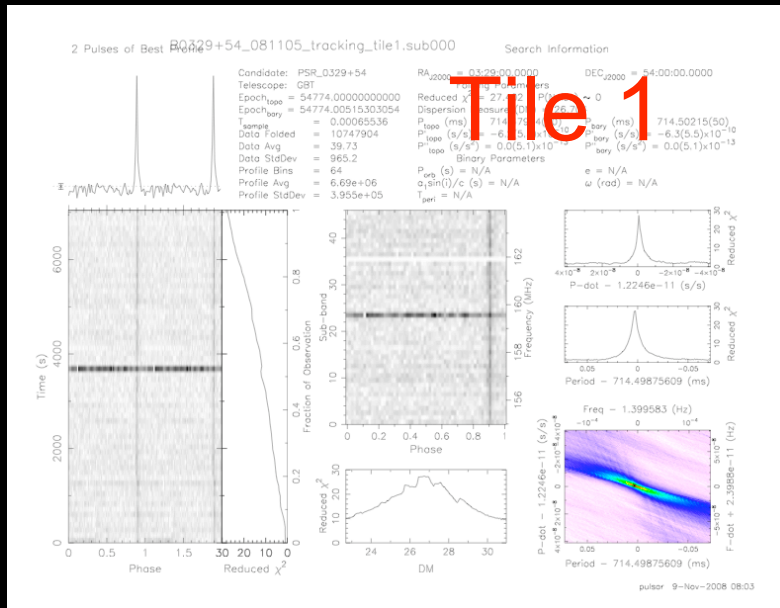
There appear to be tracking issues with the HBA tiles in beam-formed mode...



Seen pre-BG/P by Ben and Ramesh and in this 16 Oct. 2008 observation

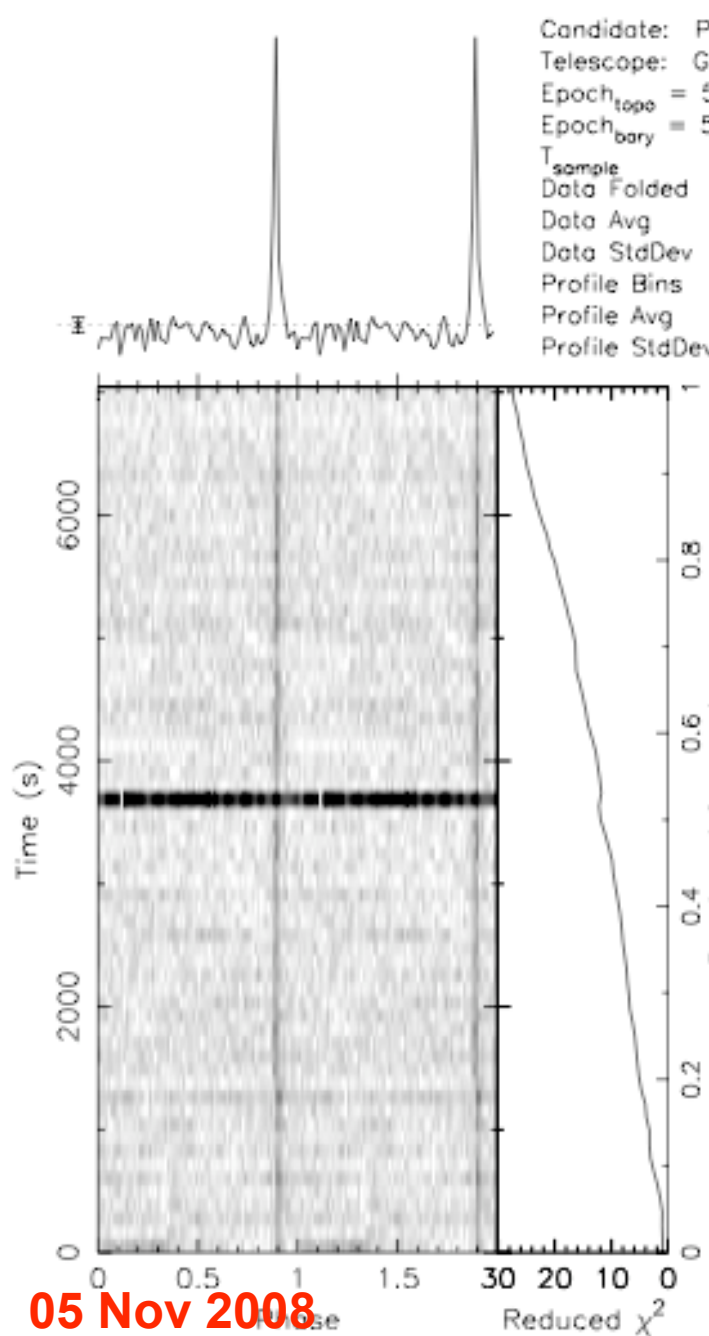
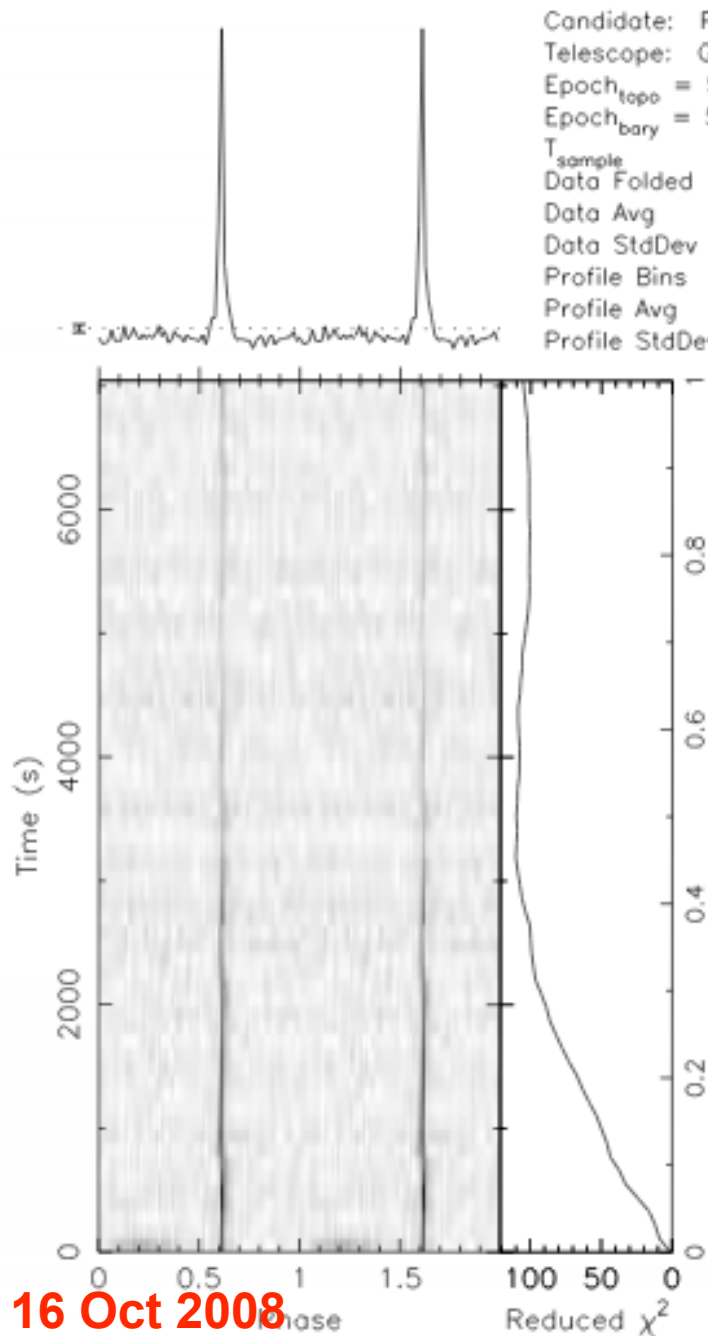
4 x single tile tracking obs of B0329+54

05 Nov 2008



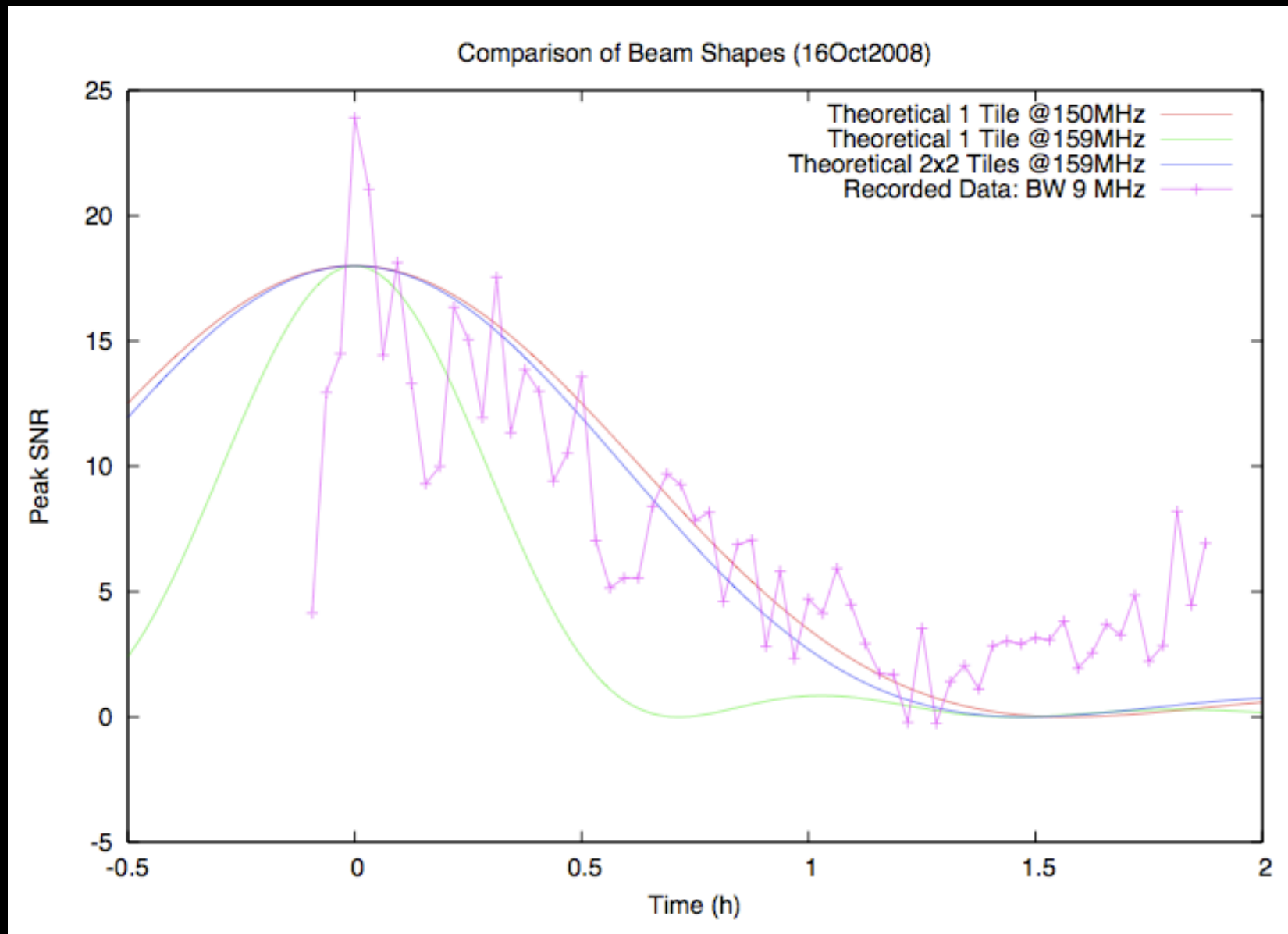
4 Tiles Added

Single Tile



It appears that the Tile (analog) beam tracks source successfully, while station (digital) beam does not.

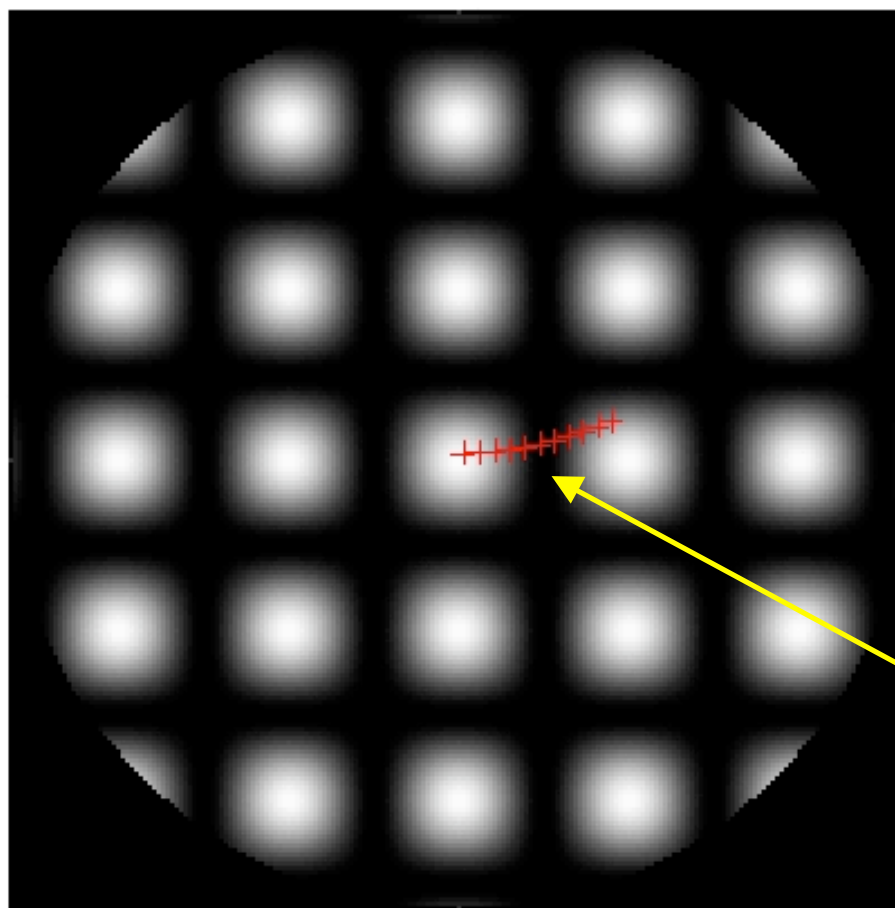
First try comparison with beam model



Beam model: Tom Hassall, Ben Stappers

Station (4 tile) beam model

(*not* multiplied with single dipole beam)



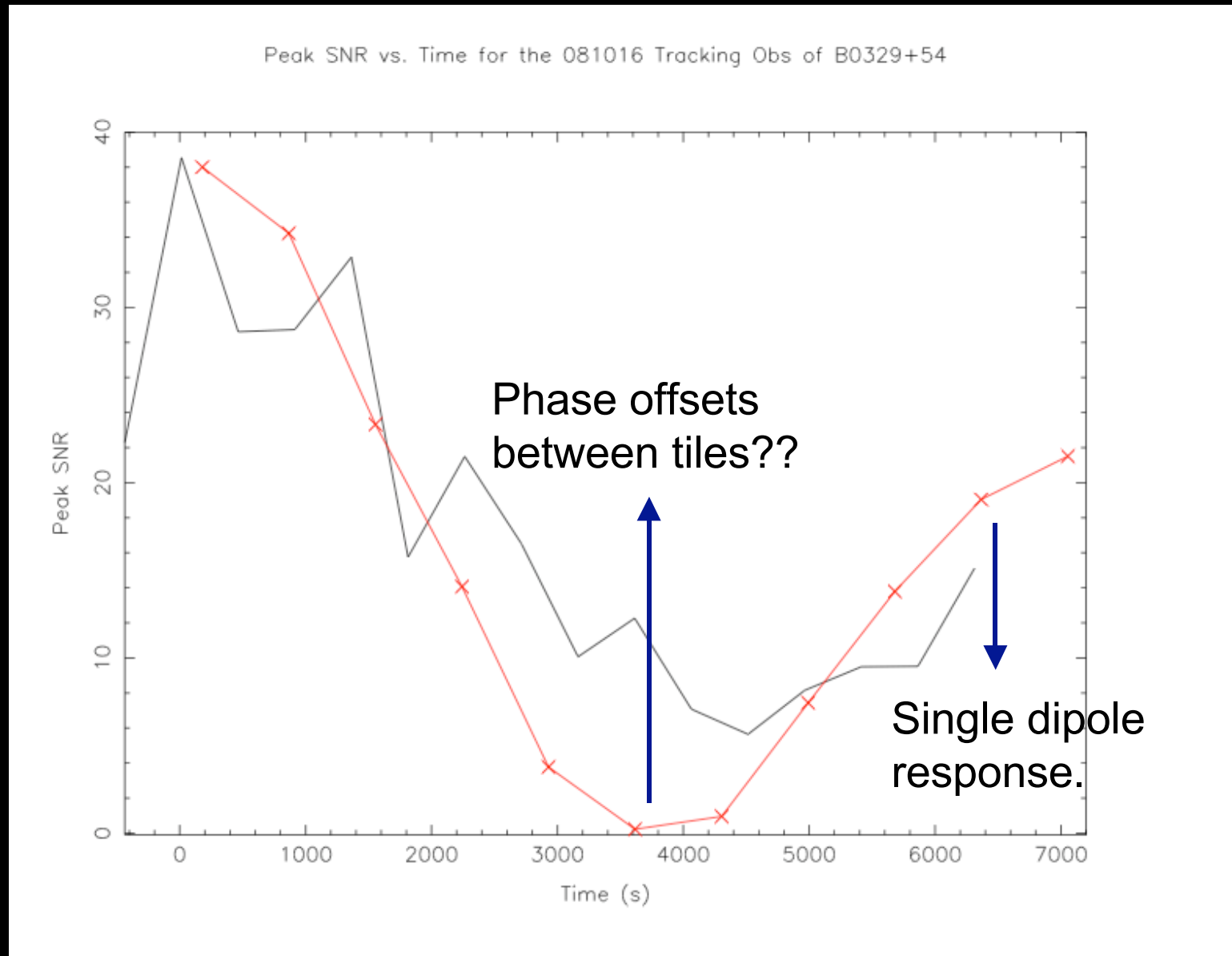
Path of
B0329+54
from transit
for 2hr.

0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9

Beam model: Michiel Brentjens

Revised comparison with beam model

Plausible explanation for *second peak in SNR*



To Do:

- Get HBA delay read-back working (done?).
- Inspect digital beam-forming code.
- Inspect data with independent reduction code.
- Tweak delay compensation and fringe tracking parameters and re-observe?
- Pointing updating issue (default 100,000s!) fixed by Michiel.

The Good News

- Analog beam tracks.
- We can easily detect bright pulsars with a single tile in a ~ 1 hr integration (educational possibilities).
- RFI is very manageable in the observations we've taken recently.
- Scheduling and execution of beam-formed observations is becoming easier (still a ways to go though).

LOFAR Pulsar “Busy Week”

Nov. 17th - 21st, 2008

Intensive set of pulsar-mode (beam-formed) commissioning tests (Ben & Tom visiting)

- Investigate tracking with station beam.
- Simultaneous single tile / combined data-taking.
- Observe a different pulsar (please!).
- Detect a millisecond pulsar.
- Investigate spectral index issues identified early on by Ben and Ramesh.