Pulsar Busy Week 4
Mid-Week Progress Report

Jason Hessels
on behalf of

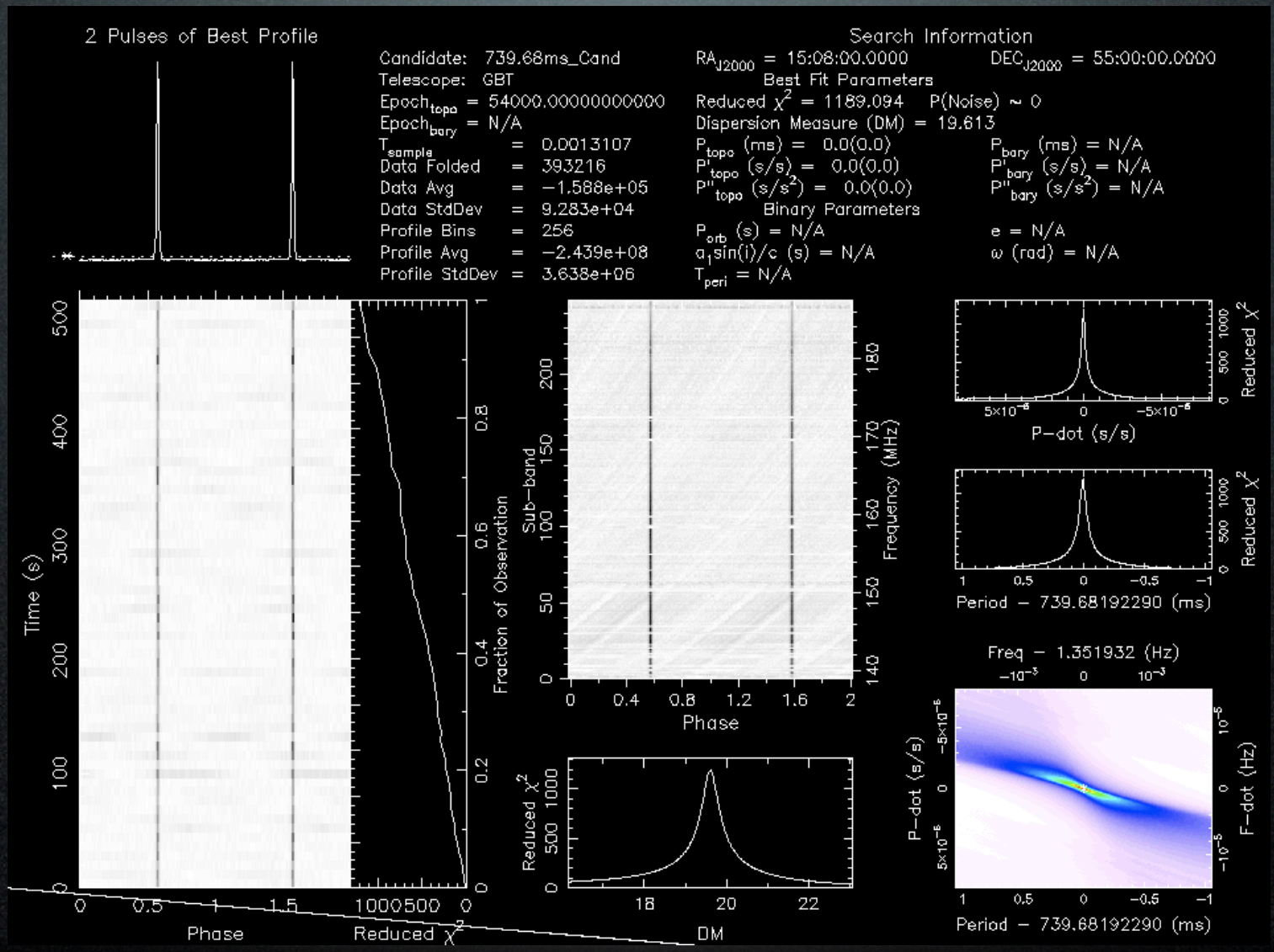
LOFAR Pulsar Working Group (Ashish Asgekar, Anastasia Alexov, Tom Hassall, Aris Noutsos, Ben Stappers, Joeri van Leeuwen)
ASTRON HPC Group (Alwin de Jong, Jan David Mol)

LOFAR Status Meeting
September 23rd, 2009

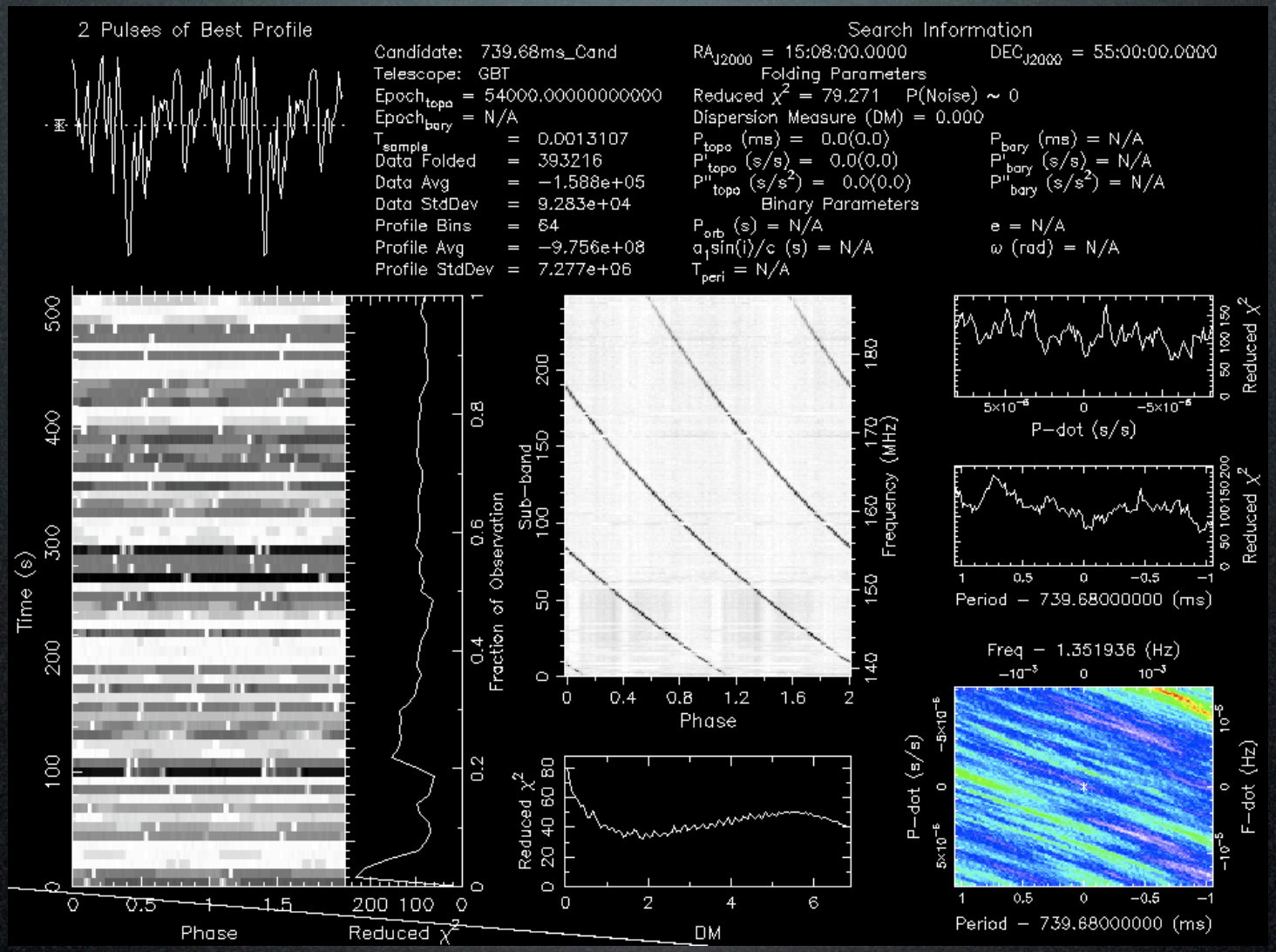
Pulsar Busy Week 4: Goals

- LBA pulsar observations - Done (prior to PBW4)
- Effelsberg pulsar observations - Done (prior to PBW4)
- bf2h5 (HDF5 write) devel./tests - Done (prior to PBW4)
- Incoherent station summation - Done (yesterday)
- Simultaneous pulsar/imaging observations - In progress
- Full Stokes pulsar observations
- Simultaneous LBA/HBA observations

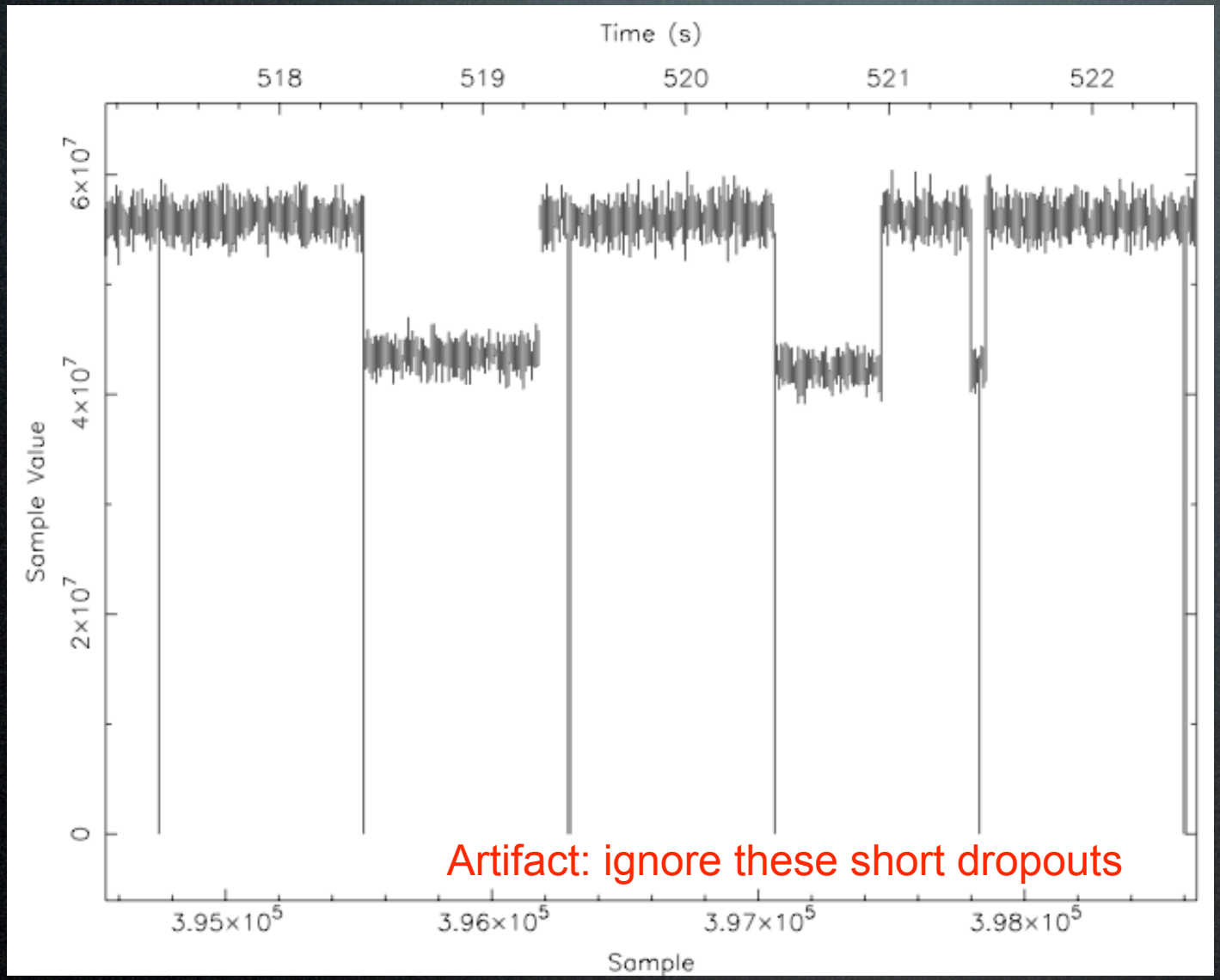
PSR B1508+55: RS106+RS208+CS302+RS307+RS503 Summed Incoherently



PSR B1508+55: RS106+RS208+CS302+RS307+RS503
Summed Incoherently - DM set to 0.0 pc cm^{-3}



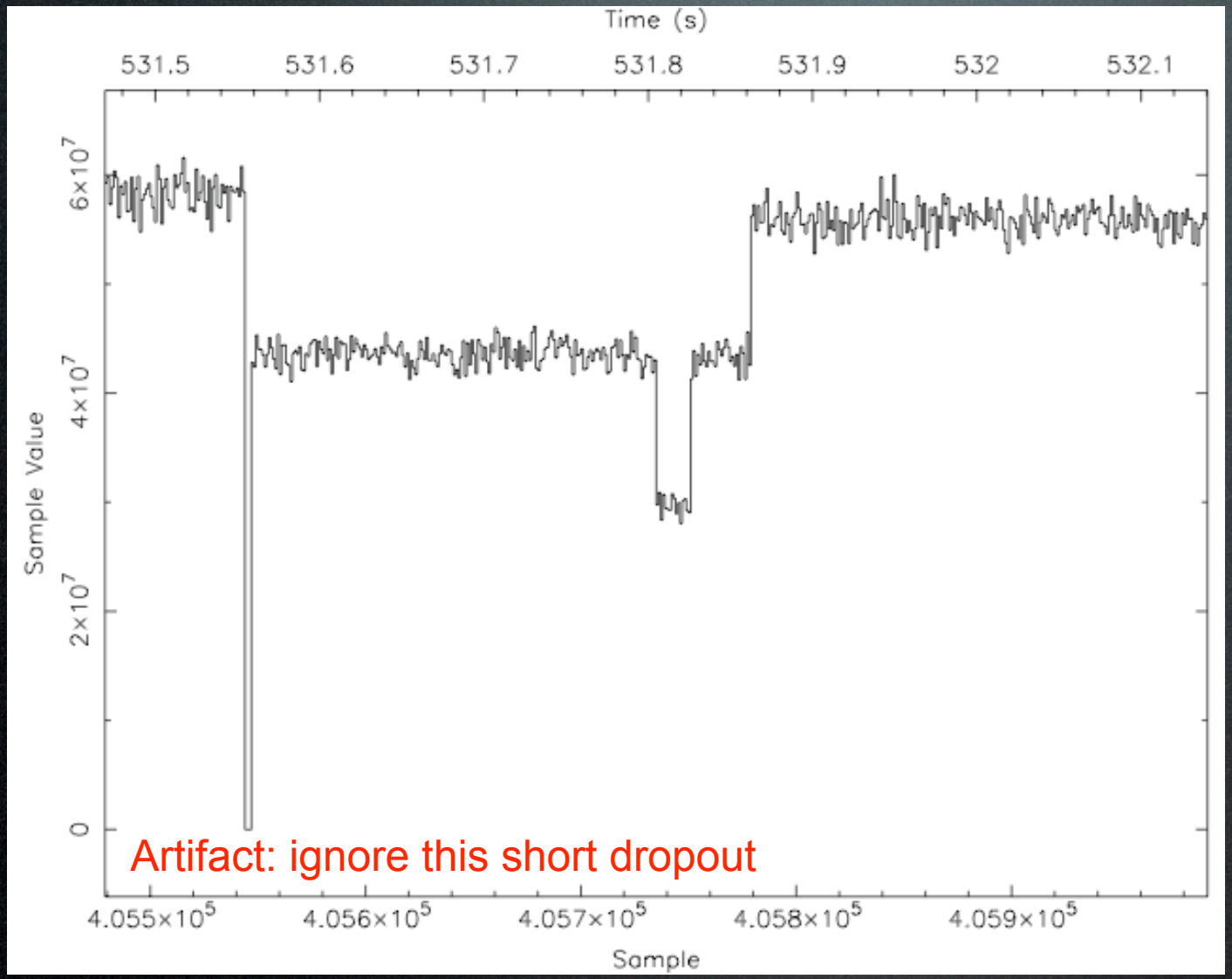
PSR B0950+08: RS106+RS208+CS302+RS307
Summed Incoherently - Station Dropouts



4 Stations

3 Stations

PSR B0950+08: RS106+RS208+CS302+RS307
Summed Incoherently - Station Dropouts



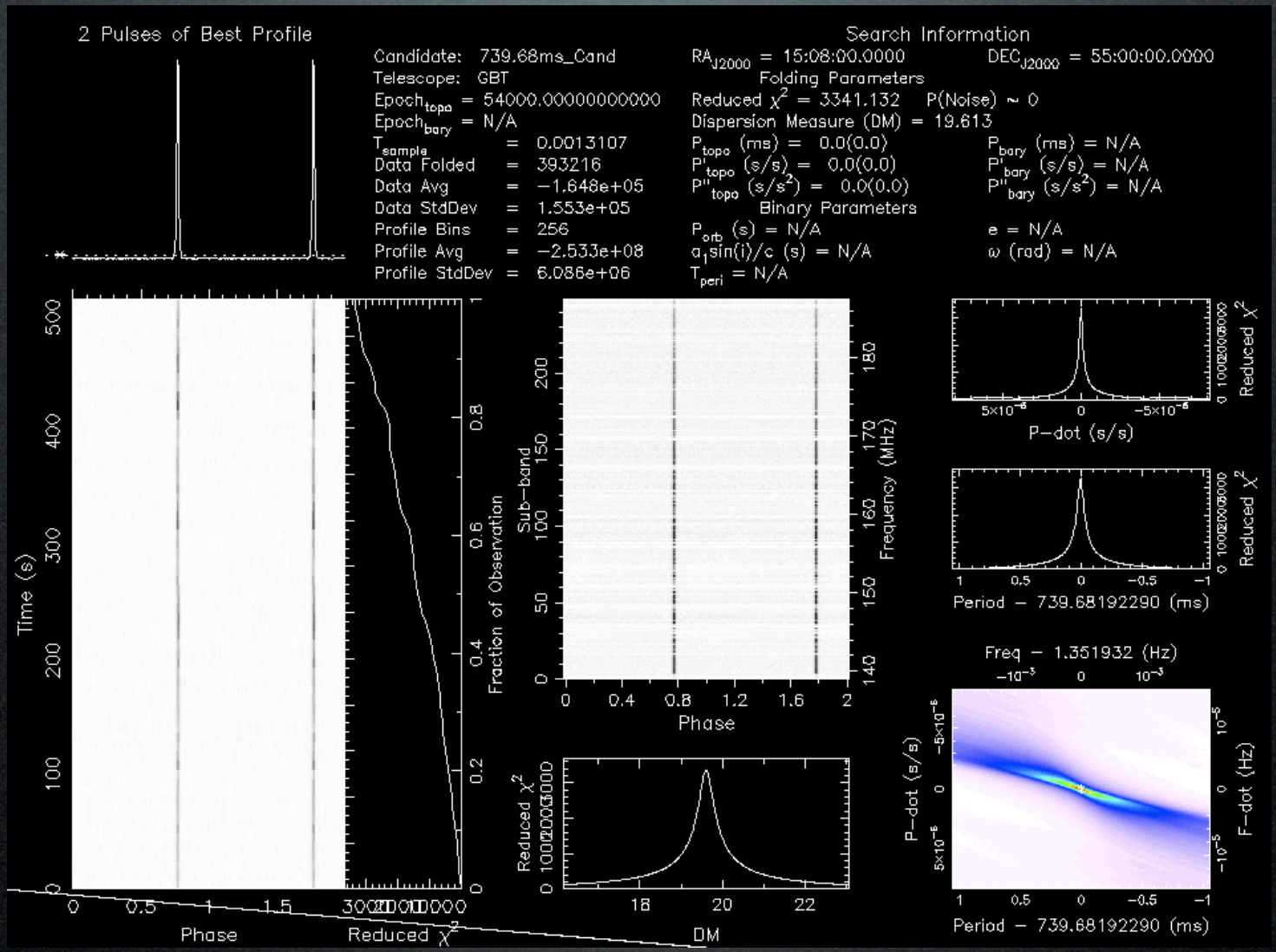
4 Stations

3 Stations

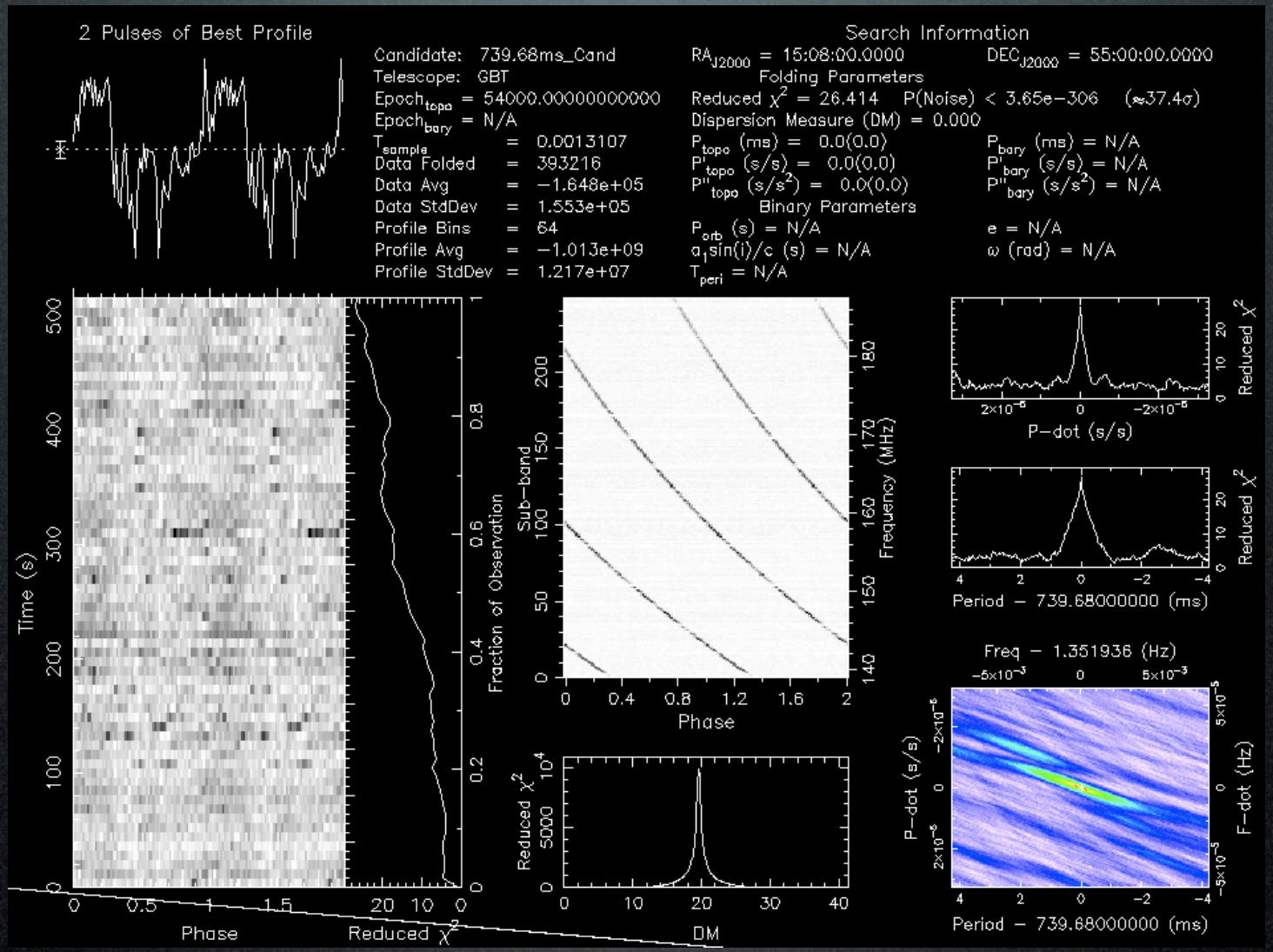
2 Stations

Need to correct for number of active stations.

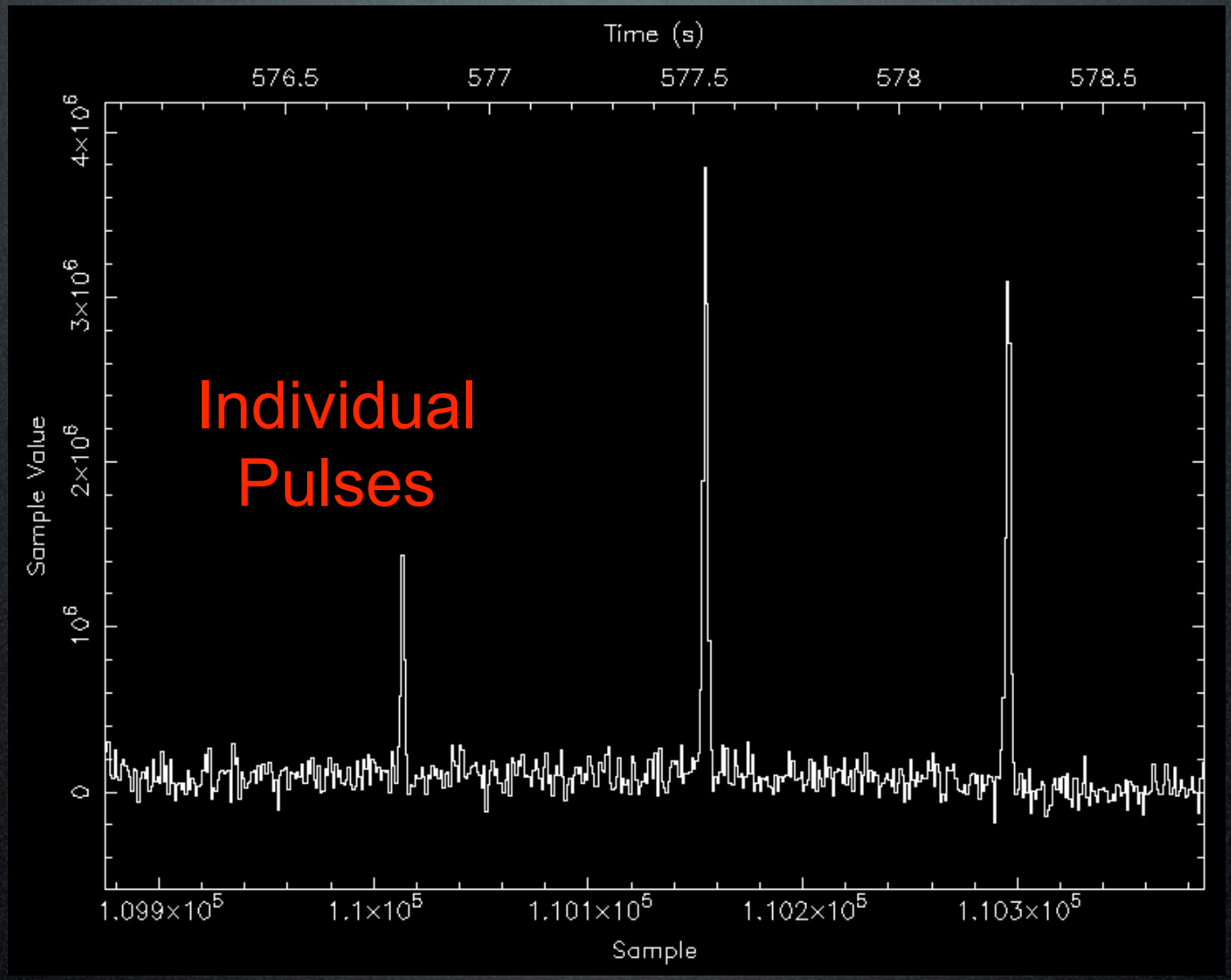
PSR B1508+55: RS106+RS208+CS302+RS307+RS503
Summed Incoherently - Corrected for station dropouts



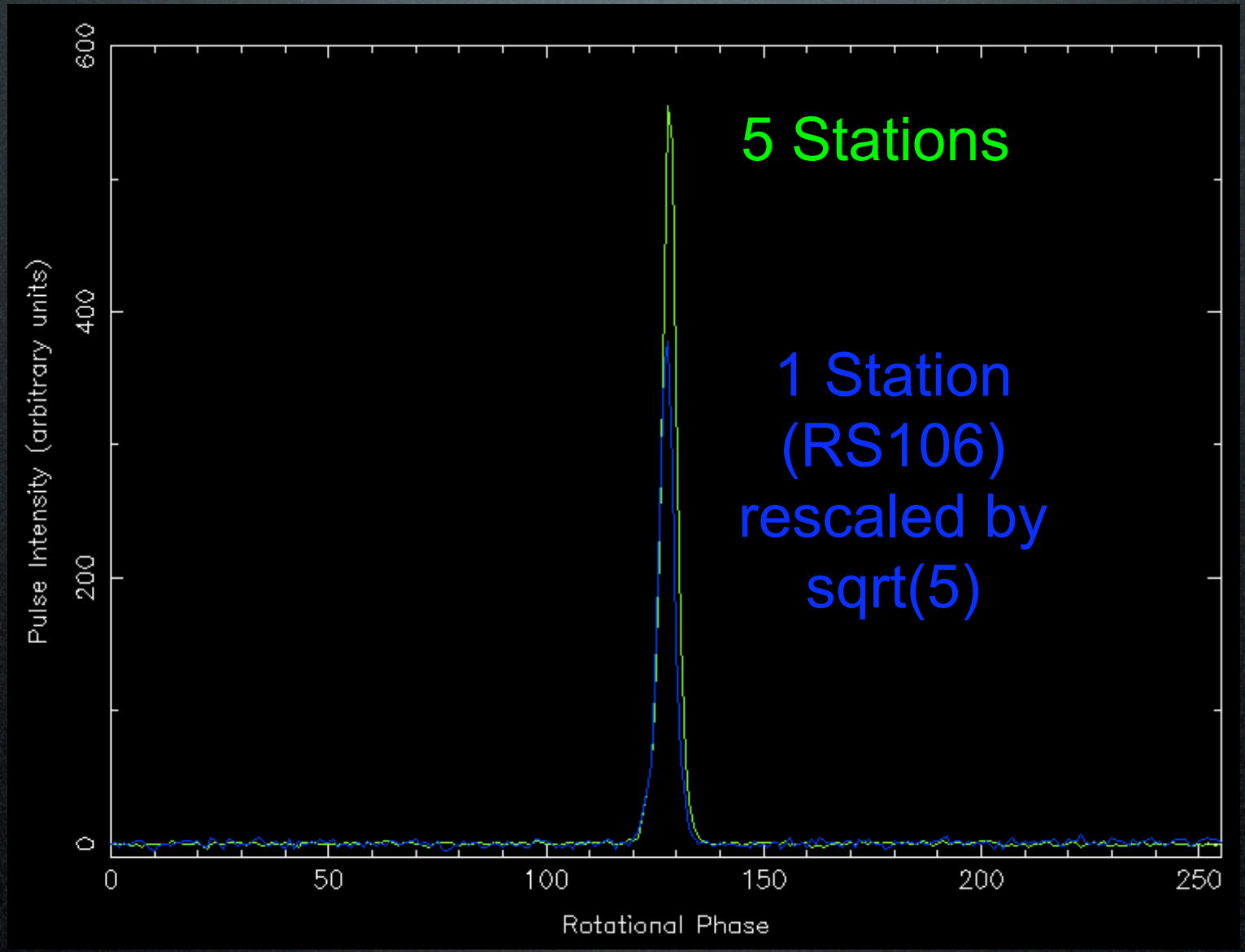
PSR B1508+55: RS106+RS208+CS302+RS307+RS503
Summed Incoherently - Corrected for station dropouts, DM=0



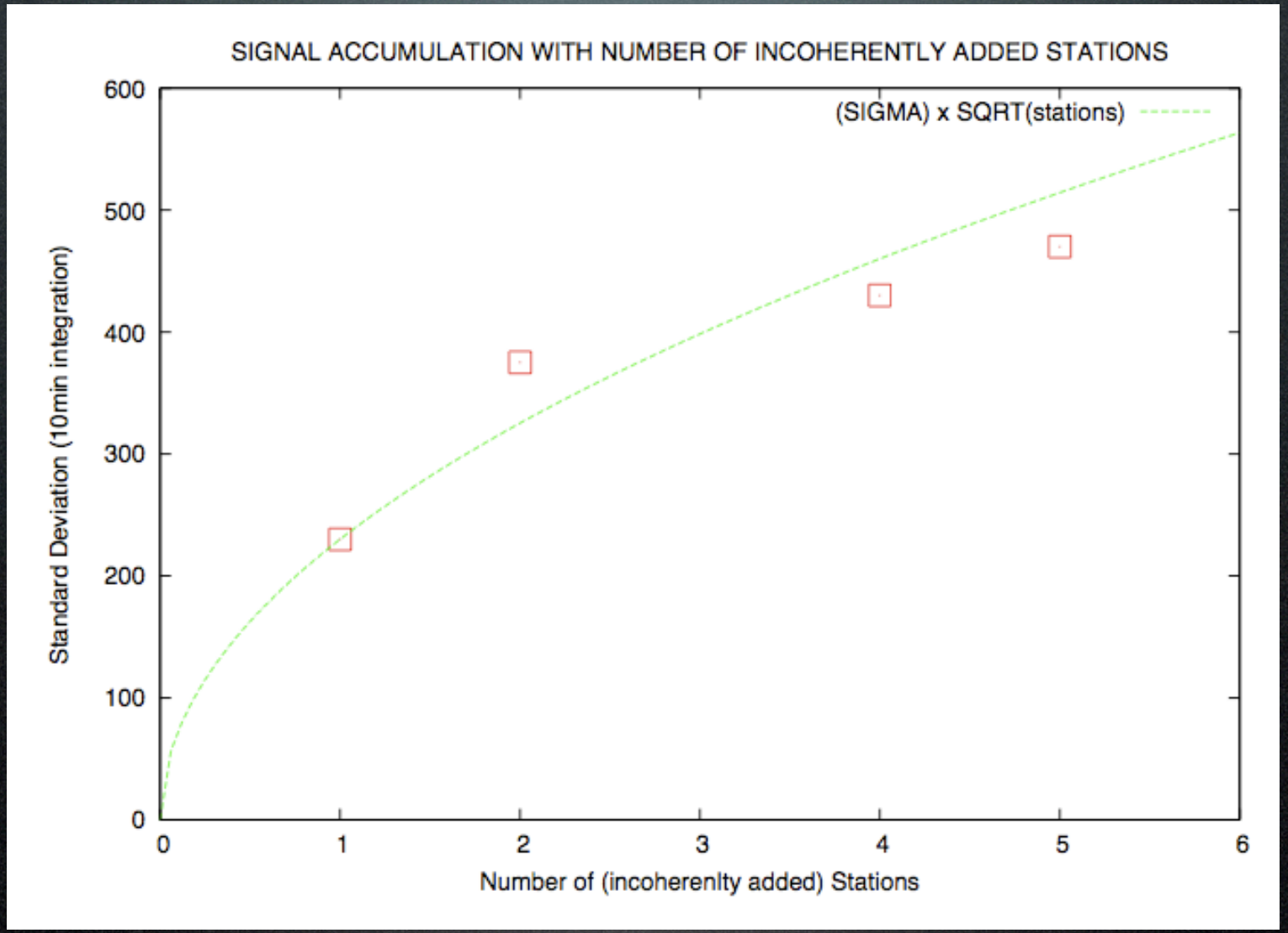
PSR B1508+55: RS106+RS208+CS302+RS307+RS503
Summed Incoherently - Corrected for station dropouts



Comparing SNR between 1 and 5 stations



Scaling of sensitivity with $N_{station}$



Summary

- First successful observations with an incoherent summation of stations.
- Sensitivity appears to follow the expected square-root-number-of-stations scaling.
- Simultaneous pulsar/imaging observation of B0809+74 with 5 Dutch stations planned.
- PBW5 from Nov. 9th-13th: use Superterp, hopefully coherently added.