COBALT

LSM Update 2014/05/28

H.A. Holties for the COBALT team

16/5/2014: BG/P Switched off

Credits: E.-J. Luchies, H. Meijering (CIT)

28 May 2013

Achieved

- Contributed to investigation of data loss from international stations
- Memory claim COBALT OutputProc vs local processing
  - Unbounded buffer growth when IO limited (solved)
- Data recorded for IS/CS sensitivity scaling
  - COBALT runs being processed
- Characterized max subbands pulsar gridding observation (➜ 300 SB for 4 rings)
- LBA delay compensation corresponds to HBA at sub ns level after ionospheric correction
- Absolute time reference, first results

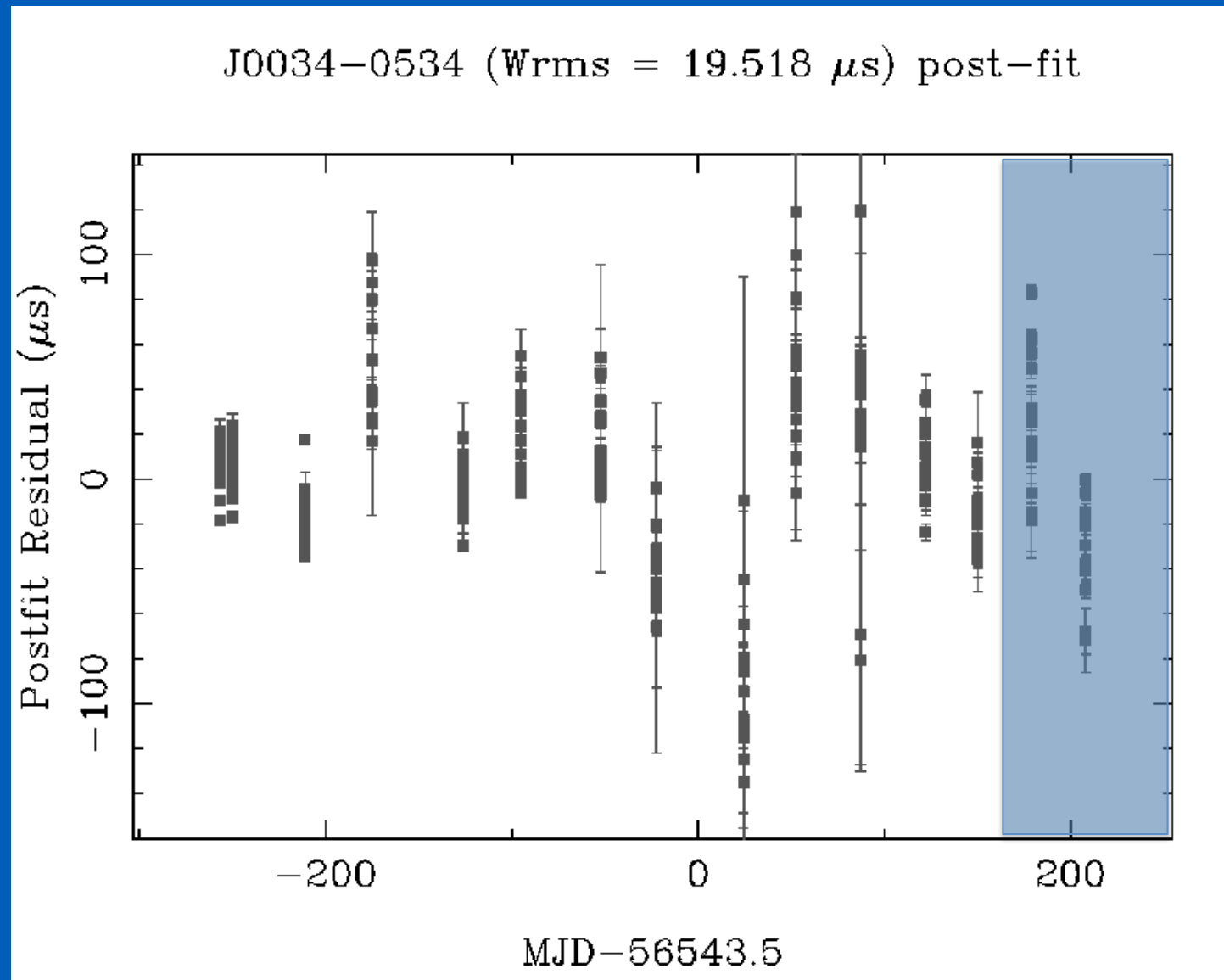# Absolute time reference

- Shaded: COBALT
- Model fit BG/P only

(Vlad Kondratiev)

J0034−0534 (Wrms = 31.572 μs) pre−fit
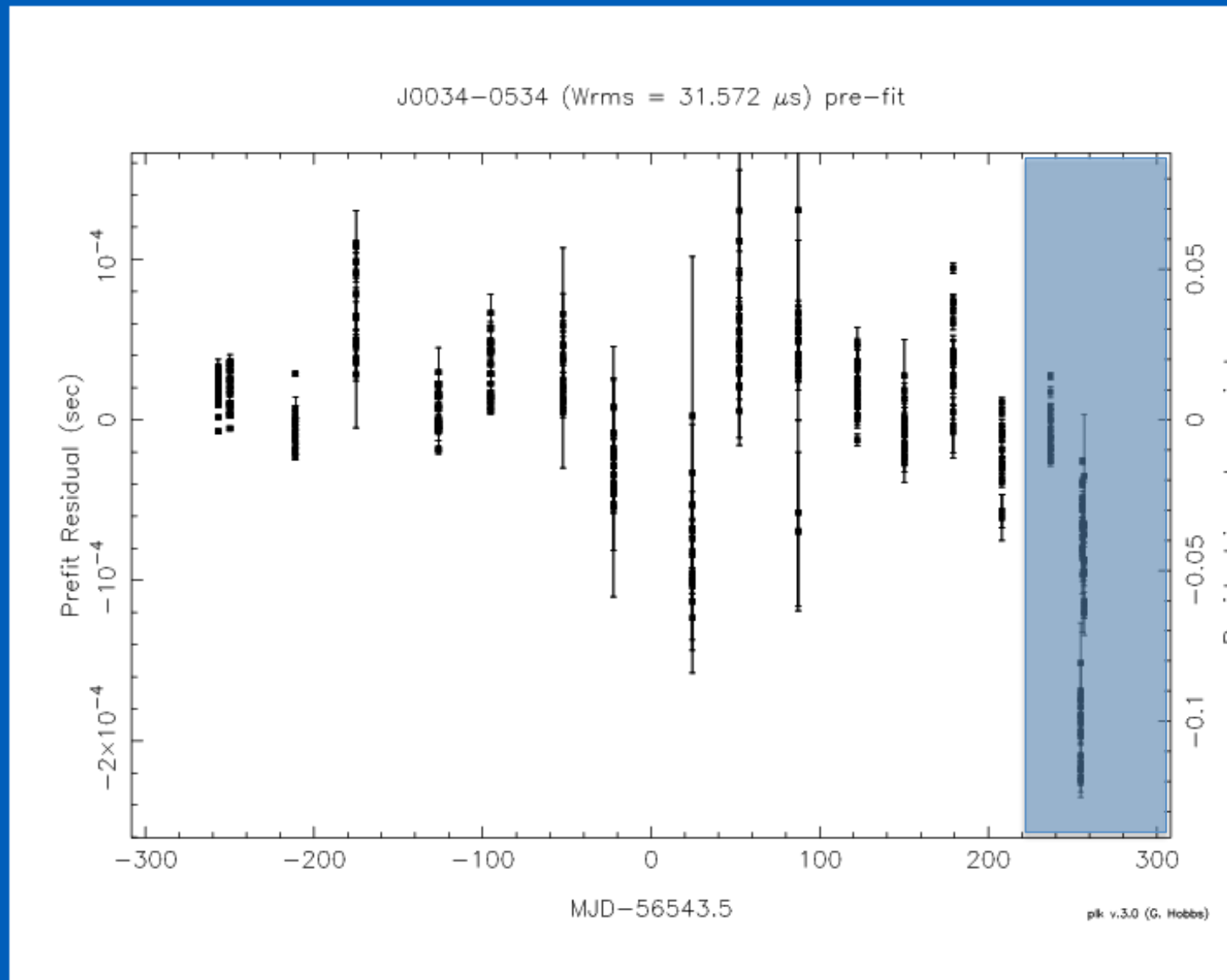
Absolute time reference

- Shaded: COBALT

- Model fit including COBALT

- Looks OK

- Produce more results to confirm

J0034−0534 (Wrms = 19.518 μs) post-fit

Postfit Residual (μs)

MJD−56543.5

Still some concerns

- LBA ionospheric phase change may result in apparent shift larger than TAB size

- Data losses still occuring
  - Network? Continue to monitor

- Strong RFI found in recent BF observations
  - Thunderstorm activity?

- In one case Pulsar not found where expected
  - May just be pulsar behaviour + RFI
  - Pointing issue when using tab rings?
  - Issue seen in tests involving IS + CS: related?

Next steps 1

- Commissioning of pulsar observations
  - Confirm absolute time reference/determine stability
  - Determine SNR scaling CS/IS with #stations
  - Validate relative pointing of TAB's when using TAB rings
  - Pulsar survey observation of weak source
- Determine LBA phase corrections

LOFAR

AST‑RON

Next steps 2

- Main concern: System installation
  - Procedure System rollout/rollback (CIT)
  - Procedure post-install (ASTRON)
  - Test & validate rollout procedures
  - Plan for COBALT system update
- Finish development – Almost there...
  - Enhance operational interfaces (PVSS)
  - 'Official' commissioning report
  - Finalize Documentation