COBALT

ASTRON

LSM Update 2014/04/16

H.A. Holties

Achieved

ASTRON

- Correctness Beamformed data processing
- GPU kernel optimizations
- Support for #subbands per file
- OutputProc performance improved
  - 2nd transpose included
  - Performance now sufficient for RT performance

BF Processed Data

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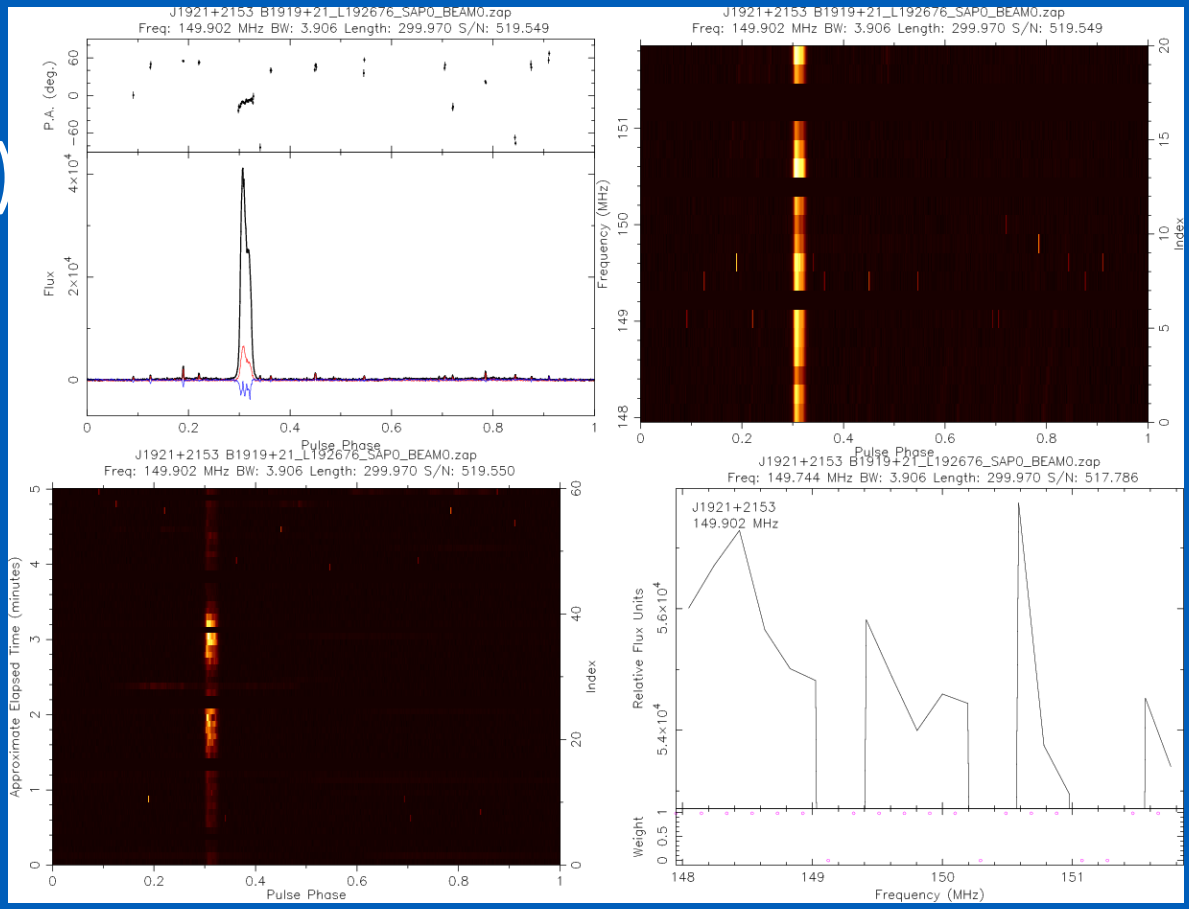
- Figure: (V. Kondratiev)
- Recorded data
- B1919+21 1CH/SB (195 kHz)
- Residual RFI
- CS & CV Validated
- Minor issue CS+IS filesize in non-RT mode



BF Performance

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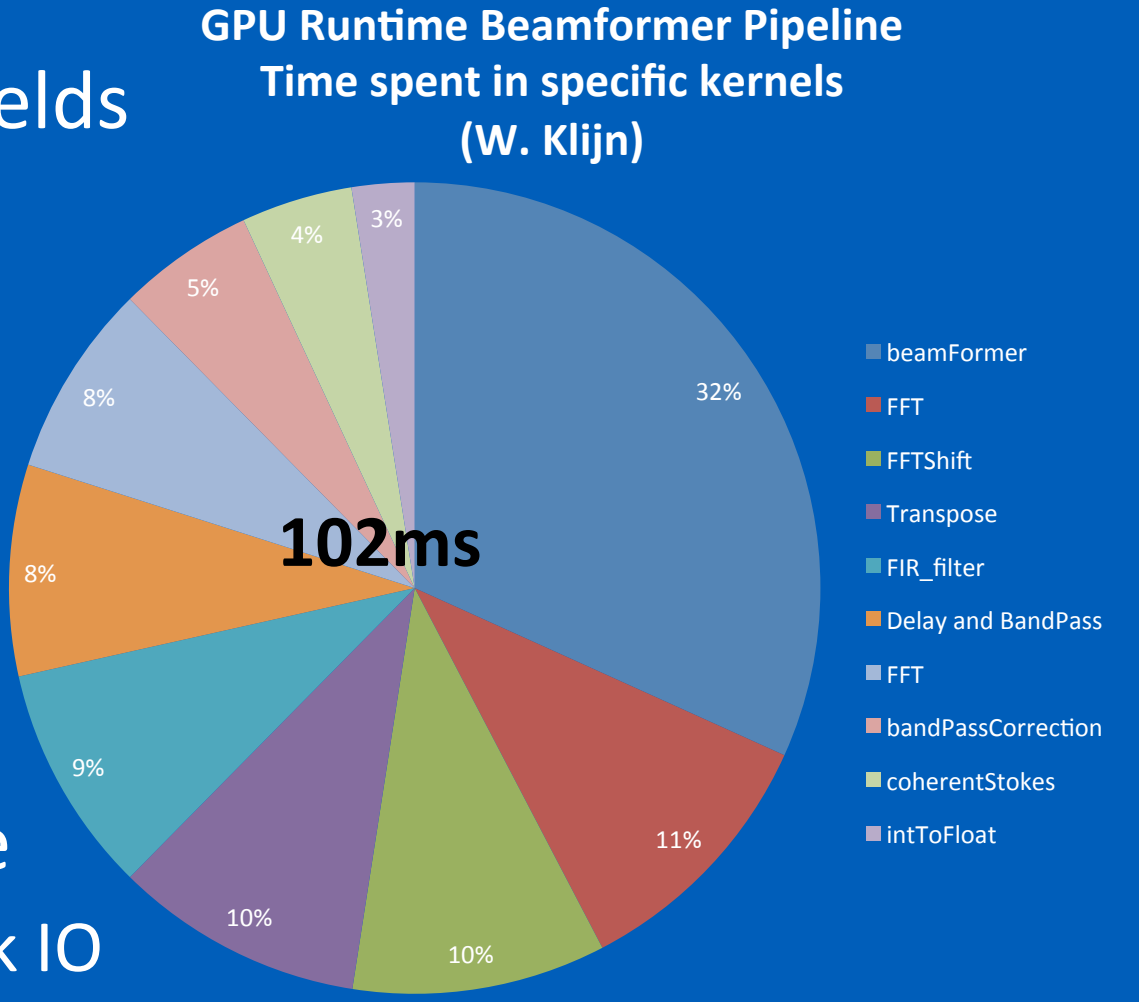
- GPU Kernels
  CS 127 TABs, 48 fields
  - Delay & Bandpass
    22 ➔ 6 ms
  - CoherentStokes
    80 ➔ 3 ms (1 TAB)
  - 16 bit Target:
    125 ms
- Support for
  #subbands per file
  - Improve CEP2 disk IO



COBALT System Issues

ASTRON

- Network/bandwidth limitations
  - Severe
    - Data loss under load
    - from CBT006, CBT007, CBT008 to locus051 – locus075
    - Currently limits COBALT output to ~30 Gbps
    - NB CBT006, CBT007, CBT008 most recent install
  - Probably not critical
    - iPerf network maximum load limited at 50 Gbps
    - NB Comparable to max BG/P output
- NVIDIA driver instability
  - Appeared 10/4 & 15/4
  - Required reboot

Next steps 1

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- Millisecond pulsar observation / absolute time reference
- Commissioning of pulsar observations
  - BF Spectrometer
  - Pulsar Survey
  - Pulsar Gridding
  - Targeted Search
  - Precision pulsar timing and polarimetry

Next steps 2

- Solve network performance issue(s)
  - CEP2 Router PC 3 monitoring during load
- Procedure System rollout/rollback (CIT)
- Procedure post-install (ASTRON)
- Test & validate rollout procedures
- Plan for COBALT system update