Transiting Exoplanet WG Meeting

02/23/2016

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Topics for Today

- General Updates/News
- Update from NIRCam team: CV3 Results
- Other CV3 Updates?
- General Discussion

General Updates/News

- ETC Sprints for NIRISS, NIRCam, and MIRI slitless grism modes completed.
  - Possible beta release of engine (no UI) in May
  - Benchmarks from IDTs welcome
- New builds for APT and pipeline to be released this Spring (April/May).
- While digesting CV3 data, keep an eye on/ document key systematics/performance metrics for Transiting Exoplanet Observations:
  - e.g. Saturation, linearity behavior into full well, persistence, behavior in small group regime, etc.
  - New Instrument Specific Home Spaces on Confluence

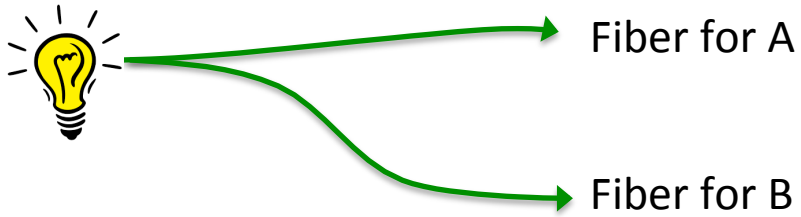
CV3 NIRCam Lessons Learned Detector Stability Tests

ES

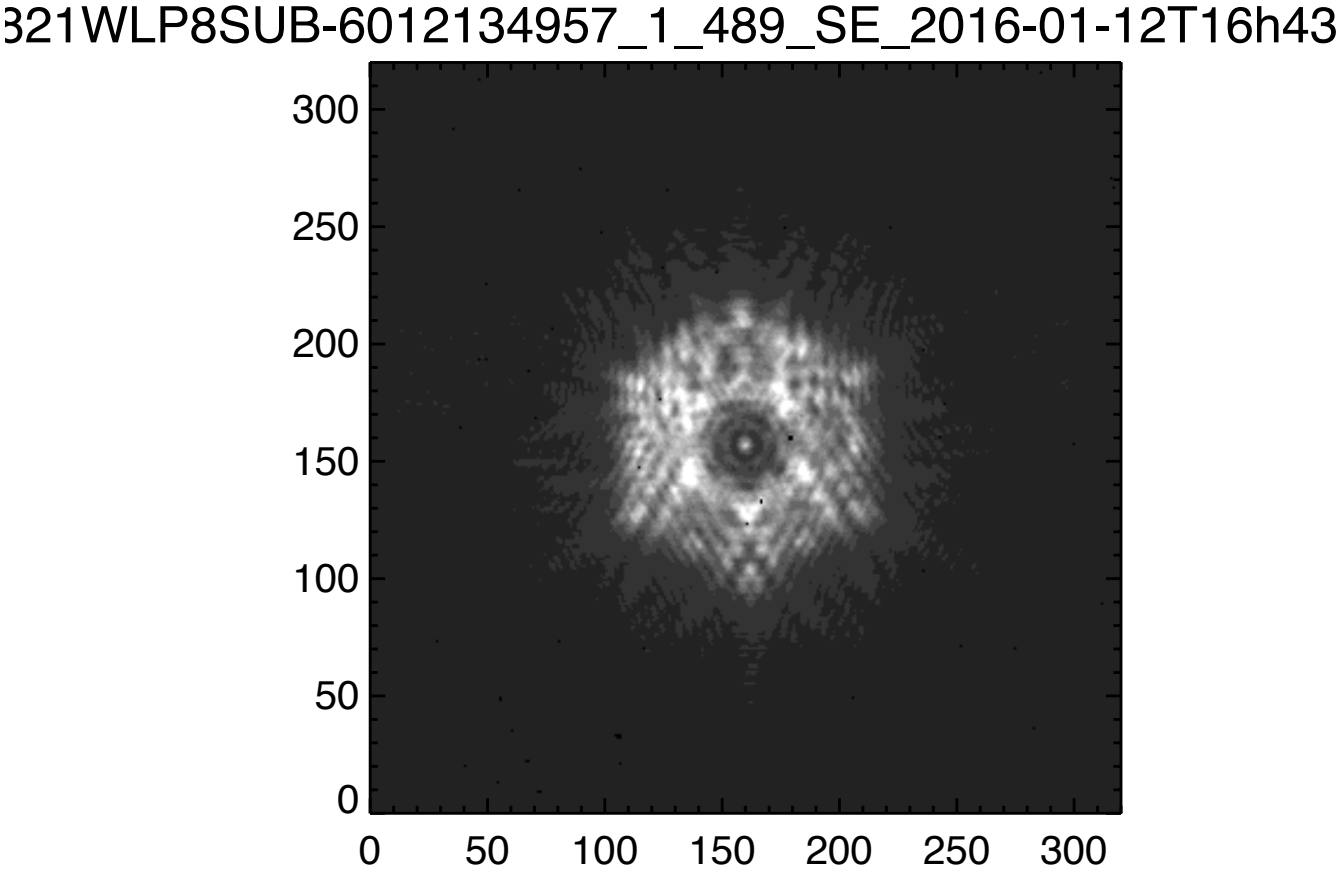
Preliminary Analysis
Lots of more digging through CV3 data still to do

Extensive CV3 Tests

- Point source, full & sub-array
- Weak lens, full & sub-array
- LD 155 (narrowband 1.55um source)
  - Only works on short wave detectors
  - Two detectors illuminated at once (to track source variations)



Weak Lens data – spread over many pixels



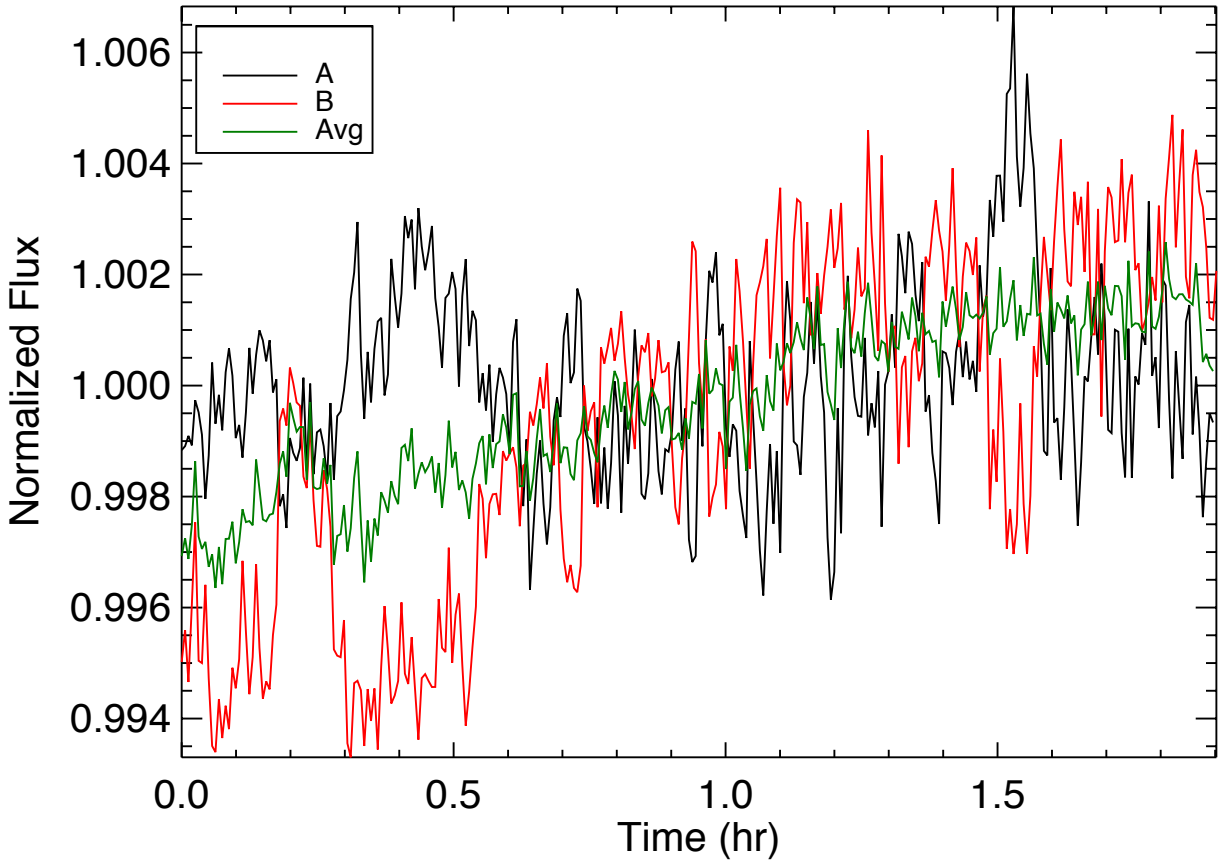
Point source is de-focused by weak lens

Increasing Aperture size above 65 px does not appreciably change results

< ~50ppm

Two detectors A&B are anti-correlated

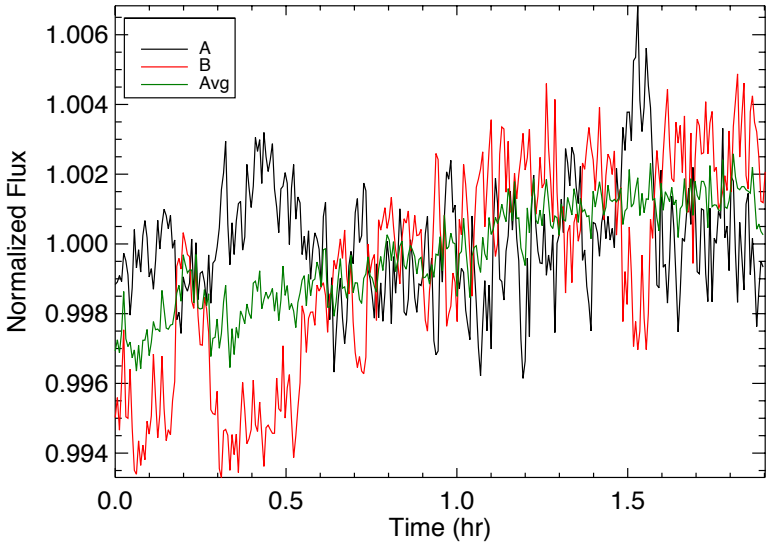
→ Turns out that having 2 fibers fed from the same source may create more problems that it helps correct for



Linearly de-trended standard deviation = 0.062% or 620 ppm (in green curve)

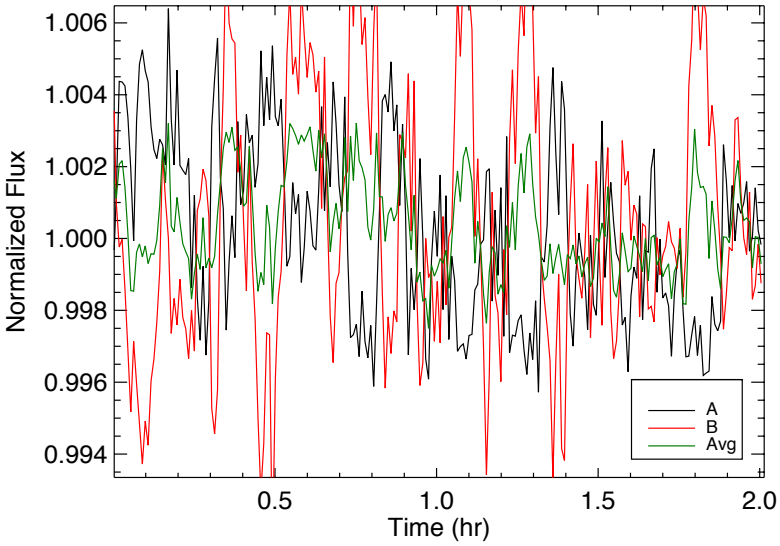
Anti-correlation present in multiple data sets

Subarray Data
20 groups/int
307 ints



Linearly de-trended standard deviation (in green curve) = 0.062% or 620 ppm

Full-Frame Data
2 groups/int (DCS)
225 ints



Linearly de-trended standard deviation (in green curve) = 0.13% or 1300 ppm, but less of a slope

Note about Telemetry

- Only 1 fits file so only 1 temperature for entire exposure
  - Telemetry data is stored for CV3 as binary extension – how about after launch?
    - We may want the TSO pipeline to look up telemetry time series for detector data

Open Discussion

Closing Remarks

- Everyone should be able to edit the confluence site. Feel free to start discussions.

https://confluence.stsci.edu/display/JTEWG/JWST+Transiting+Exoplanet+Working+Group+Home

  - Each instrument has a 'home space' to deposit relevant materials.
- Next meeting
  - Reschedule for March 22nd?
  - Cancel?