

2018-10-01 TSO WG Meeting notes

Date

01 Oct 2018

Attendees

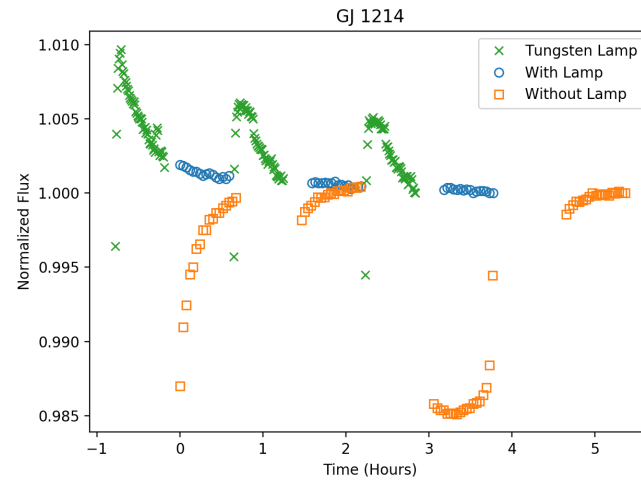
- Kevin Stevenson
- Brian Brooks
- Daniel Dicken
- Everett Schlawin
- Jeroen Bouwman
- Loic Albert
- Pierre-Olivier Lagage
- Sarah Kendrew
- John Stansberry
- Susan Mullally
- Thomas Beatty
- Thomas Greene

Goals

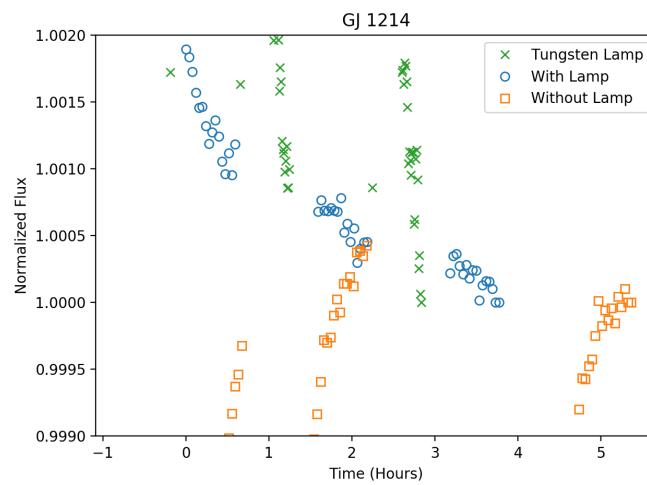
Discussion items

Time	Item	Who	Notes
	New group email list		<ul style="list-style-type: none">• JWST-TSOWG@maillist.stsc.edu
	Detector Settling Times	Tom G.	<ul style="list-style-type: none">• Tom: "I think it would be useful to compare info and to eventually give informed advice to observers about how much time the different instruments need to settle to XX ppm at the start of a TSO exposure."• May not have sufficient info before commissioning<ul style="list-style-type: none">◦ Ramps in NIR instruments are short and are sometimes due to source variations◦ MIRI group at JPL is continuing to test source of ramps (see discussion below)

- HST/WFC3 persistence mitigation using internal Tungsten lamp



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- Can this be applied to NIR instruments with JWST? Could turn on lamp and cycle detector while we wait for the science to start.
 - NIRCam doesn't have an internal lamp
 - NIRISS has a tunable flatfield lamp that shows some structure and hasn't been tested with grism (may not be necessary)
 - MIRI has lamp with non-uniform coverage, could also anneal, fill wells with bright background using long-wavelength filter
 - Dan: MIRI tests show negative slope (similar to blue circles in above figure), may be due to change in read time/pattern
 - Kevin Stevenson : to contact Dan offline to learn more
 - Maria Pena-Guerrero : Does NIRSpec have internal calibration lamp?
- Agreed to create a space on Outerspace to share/discuss persistence results
 - [Persistence / Ramps Discussion Page](#)

TSO Pipeline Status	Kevin	<ul style="list-style-type: none"> • CALWEBB_DETECTOR1 <ul style="list-style-type: none"> ◦ Data quality, saturation check, error initialization, NIR/MIR corrections, slope fitting ◦ Baseline: Complete ◦ Optimal: Build 7.2+ • CALWEBB_SPEC2 <ul style="list-style-type: none"> ◦ WCS info, subwindow extraction, flat field correction, flux calibration, rectified 2D product ◦ Baseline: Complete ◦ Optimal: Build 7.2+ • CALWEBB_TSO3 <ul style="list-style-type: none"> ◦ Baseline (Outlier rejection, no BG subtraction, summation spectral extraction) <ul style="list-style-type: none"> ▪ Build 7.2 (to be delivered Oct 5, 2018) ◦ Optimal (Outlier rejection, col-by-col BG subtraction, optimal spectral extraction) <ul style="list-style-type: none"> ▪ Build 7.3+ (TBD) • ExoCTK <ul style="list-style-type: none"> ◦ Observation planning (G&I, target overlap, PandExo) <ul style="list-style-type: none"> ▪ 80% complete ◦ Light curve fitting (in-house module using BATMAN, MC-Cubed, EMCEE, Dynesty) <ul style="list-style-type: none"> ▪ 25% complete ◦ Retrievals (e.g. CHIMERA, PLATON) <ul style="list-style-type: none"> ▪ 50% complete ◦ Version 0.2 will be released in October
TSO Pipeline Paper		<ul style="list-style-type: none"> • We should write a paper describing the algorithms used in JWST TSO pipeline • Timeline <ul style="list-style-type: none"> ◦ Initial version ready for ERS Simulated Data workshop in Summer 2020, could mostly describe the pipeline itself ◦ Follow-up version after commissioning/ERS data, could describe optimal procedures/parameter values • Priority <ul style="list-style-type: none"> ◦ Low (at this point) • Lead <ul style="list-style-type: none"> ◦ TBD • Be sure to invite calibration pipeline group to participate
Observers Roadmap for JDox	Sarah	<ul style="list-style-type: none"> • Request from JDox to generate an observer roadmap by Oct 4th • Goals: <ul style="list-style-type: none"> ◦ (1) Come up with a series of steps for observers to follow. ◦ (2) Identify pages that already exist to address each step and pages that are missing. ◦ (3) Ensure that the Science Use Cases follow the same steps. • Proposed Observer Roadmap: <ol style="list-style-type: none"> 1. Identify target (EXO.MAST, https://exo.mast.stsci.edu; exoplanets.org) 2. Pick instrument and mode (point to TSO JDox overview page?) 3. Create simulated planet spectrum (PandExo, https://exoctk.stsci.edu/pandexo/calculation/new) 4. Design observation (ExoCTK, https://exoctk.stsci.edu) <ol style="list-style-type: none"> a. Check for transits/eclipses within target visibility window b. Design target acquisition exposure (instrument/mode specific) c. Determine number of groups and integrations for science observation (instrument/mode specific) d. Calculate phase constraints (work in progress) 5. Fill out APT (point to JDox demo?) <ol style="list-style-type: none"> a. Check data volume
Precise Timing with FPE	John S.	<ul style="list-style-type: none"> • Work in progress • IEC = ISIM Electronics Components • Comparing measured IEC panel temperature during heater cycling tests to measured temperature in FPE <ul style="list-style-type: none"> ◦ Both temperature sensors record similar (~30 K) swing in temperature ◦ IEC exhibits a deadzone of ~2 K ◦ FPE has a corresponding deadzone of ~0.2 K • Need to see if any of the instruments were performing calibration programs during this time that could be used to assess flux stability <ul style="list-style-type: none"> ◦ Stansberry to email WG with dates • More results at DMS_TSO meeting
JWST QuickLook	Kevin	<p>What to include in TSO monitor:</p> <ul style="list-style-type: none"> • Spectroscopic flux • Time in BJD_TDB • PSF drift and shape • Instrument (FPE?) temperatures • Precision relative to photon limit • Max target fluence • More???

	MIRI JPL Test Update	Dan D.	<ul style="list-style-type: none"> • Previous tests used a blackbody light source, more recent tests use LED • Previous results showed large ramp, attributed to BB source • Currently conducting tests with LED • Goals: <ul style="list-style-type: none"> ◦ Characterize and mitigate ramp ◦ Provide recommendation on fluence • Will report back at Nov or Dec meeting with new results
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Action items

- ☐ [John Stansberry](#) : Email JD start/end times of IEC heater cycling test to WG