2018-08-06 TSO Meeting notes

Date

06 Aug 2018

Attendees

- Kevin Stevenson
- Sarah Kendrew
- Jonathan Fraine
- Loic Albert
- Brian Brooks
- Thomas Greene
- Maria Pena-Guerrero
- Everett Schlawin
- Others

Goals

Discussion items

Time	Item	Who	Notes
	Target fluence recommendations		• NIRCAM: ◦ Recommend ~35k ADU (~69k electrons) • NIRISS: ◦ Mean bias = 11.6k ADU ◦ Mean soft saturation = 50.5k ADU above bias (range is 43k-59k) ◦ 75% saturation = 37.9 ADU ◦ Recommend ~35k ADU (~56k electrons) • NIRSpec ◦ Mean bias = 9k ADU ◦ Mean soft saturation = 50k ADU above bias (70k electrons, report 65k to be conservative) ◦ 75% saturation = 37.5 ADU (48.5k - 52.5k electrons) ◦ Recommend ~35k ADU (~50k electrons) ☐ Kevin Stevenson : Verify gain with Maria, JDox lists 0.996 & 1.137 • MIRI ◦ Daniel Dicken actively working on this
	MIRI Update	Sarah	• Should we enable number of exposures (NExp) > 1 for TSOs? ◦ Multiple exposures resets instrument systematics (ramp) ◦ Limit on # of integrations? ☑ Thomas Greene: 14.5 hours on Prox Cen b hits # of ints limit (2^16-1) • APT does throw a warning when limit is hit ☐ Sarah Kendrew: which is more efficient, multiple obs chained together or >1 exp? ◦ Limit on duration of exposure? ▪ We chain multiple observations as non-int to extend baseline ☑ Kevin Stevenson: to confirm that APT Phase constraint workaround doesn't require multiple exposures

	JWST QuickLook		• Should we have a TSO monitor for each instrument? What would this look like?
			  ◦ See https://innerspace.stsci.edu/display/JWQLPROJ/TSO+monitor
			• Demonstrate WFC3 TSO QL monitor
			  ◦ See https://wfc3ql.stsci.edu/
			• What to include in TSO monitor:
			  ◦ PSF drift and shape (in data)
			  ◦ temperatures
			  ◦ precision relative to photon limit
			  ◦ Max target fluence
			☑ Kevin Stevenson send email
			• Who will lead the development of TSO monitor?
			☐ Kevin Stevenson : Ask Francesca

	NIRISS Update	Jonathan
		
		Loic
			• F277W removes overlap b/w Orders 1+2
			  ◦ Joe Filippazzo has software that can subtract frames with and without filter to determine effectiveness of removing contamination
			  ◦ Joe needed filter for CV3 testing data
			  ◦ Will have F277W commissioning data to test on sky
			☐ Jonathan Fraine: present findings to JWST MO (Jeff Valenti)
			☑ Kevin Stevenson: Invite Jeff to next meeting re: TSO priorities? Get dates for proposal submission/response

	NIRCam Update	Jonathan	• TA on saturated targets ☑ Everett Schlawin: Check with NIRCam team about enabling high-efficiency ready mode • "The NIRCam team has lukewarm to cold interest in this idea. There are several concerns that make implementation of these new read modes for NIRCam a low priority item, including * The inability to test & characterize these modes while cold and on the ground with the flight hardware & software * Reducing the settling time following reset could adversely affect the bias. It is unknown whether this bias is stable * The difficulty in implementing the new modes - is it too difficult to adjust the flight software, basic microcode, OSS etc? * Properly packaging the data that arrives from these modes - currently it gets garbled by flight software"

	NIRSpec Update?	Maria	• Ran simulated data through calwebb_detector1 pipeline
			• Process time takes half the amount of time (about 7 vs 13 hours) when running calwebb_detector1 pipeline in full (i.e using calwebb_tso1.cfg) vs step-by-step
			  ◦ NGROUPS = 3
			  ◦ NINTS = 3000
			  ◦ Subarray size = SUB2048
			☑ Maria Pena-Guerrero: to determine specifics of test observation

	APT Phase Constraint Error		For very long exposures, the APT visit planner fails to satisfy the phase constraint. • See JWST program 1201 (NEAT), observation 11 (phase curve observation of WASP-121b) • The phase constraint is correctly set, but the calculated visibility periods do not satisfy it. • The problem appears whenever t_exp > P - w -1048, where t_exp is the total exposure time, P is the planet period, and w is the time width of the of the observing start window specified in the phase constraint, all in seconds. • PR 90539 Proposed workarounds: 1. The user doubles the period and recalculates the phase start and end to apply to only one of the two transits in that doubled period. (Downside: loss of half of the scheduling opportunities, but that shouldn't be a big deal since there are so many.) 2. The user could double the period and create two observations - one with the start and end time of the first transit and one with the start and end time of the second transit. The second observation could be put "on hold" in case it is needed for increased scheduling flexibility. 3. Create a short observation that can be correctly constrained and SEQ NON-INT it to the desired long TSO observation. This is a more elegant solution, but has more overheads associated with it. 4. Use a single tight Between to nail down the observation to a single transit. This would be helpful when coordinating the observation with another observatory. **Agreed upon solution:** When APT calculates that the observation is long enough that VSS will not be able to honor the specified Phase requirement (** see note below) then APT will take the following actions: 1. Create two visits 2. First visit will be very short (perhaps only a couple minutes) a. A S/C visit with the same aperture as the science observation b. No GS Acg c. No Target Acq d. Will have a Phase Special Requirement e. This Phase will have the start and end time adjusted so that the requested start and end time are honored for the science 3. The second visit will be the Target Acq and science originally requested 4. Link the two visits with a SEQ NON INT 5. Inform the user via a warning what was done and why

Action items

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