2023-02-08 TSO WG Meeting notes

Date

08 Feb 2023

Attendees

- Sarah Kendrew
- Unknown User (birkmann)
- Brian Brooks
- Nikolay Nikolov
- Michael Regan
- Loic Albert
- Everett Schlawin
- Nestor Espinoza
- Elena Manjavacas

Meeting agenda:

- 1. News & Announcements (all).
- 2. TSO WG work updates:

 - (a) TSO visits/schedule monitor (Nikolov)(b) Non-linearity as measured by TSOs (Espinoza)
 - (c) 1/f noise work updates (Espinoza)
 - (d) Zodiacal background measurements (all)
- 3. WIP: Superstripe and Substripe readout modes (Gennaro)
- 4. Roundtable check-in (all).

Discussion items

Time	ltem	Who	Notes
5 mins	1. News & announcemen ts		 Loic: NIRISS SOSS paper submitted & accepted over Christmas with only minor corrections NN: Alicia collecting input on L3 steps and products, how useful they are for the community etc. perhaps we should discuss this together? BB: NIRCam has a few items that are moving forward in the PPS SOCINT that are relevant for TSOs (in addition to Mario's talk later) NE: restarting discussions with JSOCINT on implementation of high-efficiency modes. (early stage) should test on sky? this actually uses the same code as what Mario will discuss later, which could help
	TSO work tasks updates		
	2. TSO visit /schedule monitor (Nikol ay Nikolov)		want to have a monitor of the upcoming programs with teh instruments for JWST. would give us a clearer view on what's been done, what's coming up. Has a webpage now (TrexoLists) - looks at the public information and idea is to keep updated via a cron job, once a week or every few days (with help from Brooks). pulls in all exoplanet observations - should add other TSOs to the page as well as we should be monitoring this too NE: longer term evil plan is for this to be a community resource EM: how to handle brown dwarfs? NN has looked into this, get complicated. Right now quite well able to search for exoplanet
			programs. Can we use some kind of machine learning method? For future it could be a good idea to ask the community to add something to the APT so we can more easily identify programs.

	3. Non- linearity as measured by	Nestor Espino za	doing analysis on this for several instruments. started this work during commissioning. Started with Everett on NIRCam data; looked at group differences. linearity is imperfect, and we seem to see the same pattern for all NIR instruments. For NIRCam and NIRISS the pattern is in the same direction, for NIRSpec see a similar trend but in the reverse direction.
	(Espinoza)		magnitude is of order ~5% error on N-L solutions. we think it's v stable per instrument. Leonardo is looking into this for different datasets for NIRSpec; Nestor for NIRISS.
			MR: N-L correction coefficients are "wrong" for all instruments. best not to create a correction of a correction; let's fix the problem at the source and we can use these tests to check the fix. Has tried to elevate this issue but didn't get much attention.
			Note that MIRI has the same issue.
			Becomes relevant when working with different cadence data; can work with group differences instead of full ramps. But we need "stable" N-L corrections to do that.
			If have long ramps then for some datasets it may be better to derive a N-L correction from the data.
			MR: we need to create tickets for this to be prioritized
			SK/MR: Jeroen and Achrene are working on this too and finding similar issues - will present this in net meeting.
	3. 1/f noise work updates	Nestor Espino za	Scheduled to finish this work off by the end of March. Analyzing all commissioning darks to study the 1/f noise. Will also show some tests done on simulated data to try and derive an optimal correction strategy (would be good for the community to be able to simulate realistic 1/f noise-affected data so they can test their own strategies).
	4. Zodiacal background measurements	all	deadline for cycle 2 calibration proposal in mid-March. if it's considered important to characterize the zodi background, should design some observations.
			NN: very instrument/mode dependent - not just wavelength range but also how the light is dispersed. (e.g spectral curvature). Eg NIRCan spectra are very straight, so is relatively easy to get a good background subtraction from the data. For NIRISS where we have strong curvature, this is harder. Also have to be careful not to introduce new uncertainties due to lack of precision in a zodiac background reference file
			For WFSS modes (Nor P), takes all the data in the archive, masks all the sources & generates a background that way. we could do a pilot project re-analysing commissioning data & using that for correcting a later observation. NN would be in favor of doing this instead of requesting more calibration data.
			On MIRI's radar. Cycle 2 TSOs have been recommended to add a dedicated background; not sure we will ask for a dedicated cal program for more data, this is to be discussed with Greg Sloan
	5. WIP superstripe and substrate readout modes	Mario Gennaro	Substripe mode: motivated by ability to do science with the dispersed Hartmann sensor (DHS) in NIRCam
	6. Instrument roundtable check-in		
	NIRCam	Nikolay Nikolov	
	NIRISS	Nestor Espino za	
	NIRSpec	Unkno wn User (birkma nn)	
	MIRI	Sarah Kendrew	
2 mins	4. Closing Remarks		meeting again in 2 weeks