2023-01-11 TSO WG Meeting notes

Date

11 Jan 2023

Attendees

- Sarah Kendrew
- Unknown User (birkmann)
- Brian Brooks
- Nikolay Nikolov
- Michael Regan
- Nestor Espinoza

Meeting agenda:

1. News & Announcements.
2. Cycle 2 updates
3. TSO WG work schedule
4. Background TSO observations
5. Instrument round-table check-in

Slides from Nestor

Discussion items

Time	Item	Who	Notes

5 mins	**1. News & announcements**		▪ Nestor Espinoza papers: all apart from NIRCam LW now ready. we should probably phase out this discussion. Tom Beatty is working on it, we should prob just let him get on with it.
			▪ Nestor Espinoza contacted by Jeff Mangum, PASP editor - some decided to go for OA, others not, do we want a common approach?
			  ▪ MIRI: yes. ESA can chip in the extra money
			  ▪ NIRCam: could do it as well.
			  ▪ (maybe check with the lead authors)
			▪ Sarah Kendrew : technical TSO position will close next week.

10min	**2. Cycle 2 updates**		
	ExoCTK	Nestor Espinoza	updates to PandExo following ETC update to v2.0 contamination overlap tool not yet validated, apart from for NIRISS. this will be
	MIRI	Sarah Kendrew	SK explains the story of the MIRI gain Michael Regan extra caveat is that the gain value can't be used to reverse-calculate the number of events; it does allow us to calculate the poisson noise accurately. ERS team will be putting out a short tech note/white paper for the community with the top-level performance findings from the WASP-43b data; this is why we want to close the loop on the gain issue to ensure that the information we provide is consistent across the literature.
	3. TSO Work schedule		

		Nestor Espinoza	presented in October; at that point was quite "mild". from Jan, we have more work lined up for the WG.
			
			1. pipeline enhancements
			  a. cosmic ray detection (Nikolay Nikolov): will start work on this post cycle 2 deadline. note that Michael Regan is also working on the code for this step. should coordinate. don't want to see wasted effort.
			  i. we are seeing CRs that are not getting caught. MR: most likely reason is that the gain and read noise reference files are wrong, or the thresholds aren't optimized.
			  ii. MR's method is using sigma clipping to get a more accurate calculation of noise in a pixel.
			  iii. should work together on this or coordinate to ensure everyone is on the same page
			  b. reset corrections (Leonardo Ubeda & Nestor Espinoza)
			2. TSO program & data monitors
			  a. Nikolay has a system for HST TSOs that can be used for JWST as well. (trexolist) would make sense to incorporate this into ExoMAST?
			  b. Nikolay also has a QL type monitor that can be implemented for JWST TSOs
			  c. NE spoke with Mees on JWQL & they are keen to get this implemented
			  d. NN doing a lot of this work in his science time, not officially budgeted as functional work or a proper task
			3. TSO instrumental systematics investigations - want to identify some small tiger teams to take the lead on these issues
			  a. causes of flux variations over time
			  b. non-linearity correction
			  c. spatial scanning: Peter McCullough would know best what the constraints are as he dis work on this for HST. NE will talk to him.
			  d. MRS TSOs: SK will reach out to the team who put in the calibration proposal in cycle 1 to check on the status of the data & what work needs doing on our side.

5min	**3. TSO Backgrounds discussion**	Nestor Espinoza	• Presented the issue to the cycle 1 calibration working group and they are happy for us to put in more observations for the cycle 2 cal program • Need to define what those programs/observations should look like • SK/MIRI: this is an action item for Greg Sloan on our side, SK will work with him • NN/NIRCam: would use the full frame data, mask stars to remove the spectra, and then derive a full-frame background image & generate subarray background from that. NN studying how much the transit spectra are affected by background subtraction. do see scattered light along the spectra, this may be a bigger issue for transit spectra than the actual background subtraction. the background spectral shape is such that it subtracts out very well with traditional methods. the scattered light varies more with wavelength. Also within the 10hrs we discussed with Greg, we would only be able to get data for 1 grism & subarray - for more detailed investigations we would need a larger dedicated program. so not quite sure what the right approach is. • SB/NIRSpec: not sure, haven't considered yet.
10min	**3. Instrument roundtable check-in**		
	NIRCam	Nikolay Nikolov	
	NIRISS	Nestor Espinoza	
	NIRSpec	Unknown User (birkmann)	some transient MSA shorts. first published phase curve on the arxiv yesterday.
	MIRI	Sarah Kendrew	we have quite a lot going on and interesting findings - let's put us on the agenda next time & SK will present
2 mins	**4. Closing Remarks**		meeting again in 2 weeks