2021-10-06 TSO WG Meeting notes

Date

06 Oct 2021

Attendees

- Sarah Kendrew
- Arpita Roy
- Brian Brooks
- Everett Schlawin
- Leonardo Ubeda
- Loic Albert
- Tony Keyes
- Stephan Birkmann
- Diane Karakla
- Nestor Espinoza
- Elena Manjavacas
- Michael Regan

Apologies:

Meeting agenda:

1. News & Announcements.
2. TSO Commissioning updates (Nestor)
3. Update on non-linearity correction work (Roy, Ubeda, Regan)
4. Update on 1/f noise work (Espinoza)
5. Closing remarks.

Meeting slides

Meeting slides can be found here (available on innerspace; external folks, please contact Nestor Espinoza if interested).

Discussion items

Time	Item	Who	Notes
5 mins	**1. News & announcements**	Everyone	- Nestor Espinoza: Introducing Elena Manjavacas, short intros around the room. - Brian Brooks: pointing out that our next meeting on 20 Oct will coincide with the first day of SI activities in LRE-6. We will assess nearer the time, and cancel if too many people are busy with the rehearsal - Nestor Espinoza : sadly the TSO WG will be losing Nikolay's time, as he will have to focus entirely on HST/WFC3 until JWST commissioning; then completely devoted to NIRCam commissioning. - Sarah Kendrew : update on the TSO Jdocs work. we had a meeting with the JDox team and a few other stakeholders to discuss the "Data" section, notes are here. The proposed title for these pages is "JWST Calibration Pipeline Caveats and Future Enhancements". We should aim to have such a page populated with initial data in 4 weeks (from 30 Sep). Kendrew will notify other team members with content requests.
25min	**2. TSO Commissioning Activity Updates**		
		Nestor Espinoza, Sarah Kendrew	Latest news on HAT-P-14b commissioning observations. - Sarah Kendrewhad an email exchange with Friedman, Golimowski and Kimble regarding the addition of this TSO test observation to MIRI-017 (LRS photometric calibration & sensitivity). With support from Espinoza on the detailed questions, Kendrew obtained approval from them to move forward with this addition. This activity has now been put on the agenda for the Oct 27 CAWG (possibly the last CAWG meeting). - Espinoza showed some updated ephermides numbers for the target based on recent TESS data that are more accurate than what is in current databases and catalogs. (see slides). Kendrew will adopt these for the MIRI proposal. - Discussion with Stephan Birkmann suggests NIRSpec will also request to add this observation to their abs flux cal activity in commissioning. The NIRSpec PI was in favour.
25min	**3. Non-linearity correction work**		

		Arpita Roy, Leonardo Ubeda, Michael Regan	- No major update from Leonardo Ubeda - working on the report - No major update from Arpita Roy - she is working on getting the code to run on the server. - Update from Michael Regan (has not yet been written up). NIRISS and NIRSpec, NIRCam have quite different non-linearity behaviours. In NIRISS observations really shouldn't use the top few 1000 DNs; the amplifiers themselves have a non-linearity change and there is a change in gain in the A-to-D converters above a certain DN value. In NIRCam the detectors are tuned such that saturation occurs before this threshold, but not in NIRISS. So if we integrate above this value with NIRISS then the non-linearity correction will be of poorer quality. This should be better documented; working on a tech report on the right way to do things. It would be better to have a separate N-L correction reference file to use for high DN counts - but that is not currently done. Lower DN counts are much easier to correct and good non-linearity corrections for those are much easier to build. It could also help to modify the saturation reference file so that pixels are flagged as saturated at lower DNs to avoid problems from this issue. But would still not be ideal.
10 mins	**4. 1/f noise discussion**		
		Nestor Espinoza	- Nestor Espinoza is continuing to work on this issue. Working on modelling the observed PSDs mostly done. Currently working on doing more simulations, and improving the ramp modelling using Michael Regan's code - basically to investigate if there is a bias on the slope estimation in the pipeline due to 1/f noise. - Questions being addressed: - Can the pipeline recover the input slope & uncertainties assuming simple white noise? prelim results - There is some bias on the error bars of the slopes which is larger at low fluences. Unclear why. Will touch base with Michael Regan on this offline (see slides for plots on this). - Good news is that there is no bias on the actual slope estimator. Nestor Espinoza will now jump to use this estimator to see how much the slopes fluctuate when 1/f noise is added now.
2 mins	**5. Closing Remarks**	Nestor Espinoza	FY2022 Labor plan is up on the MESA webpages!