

2021-07-28 TSO WG Meeting notes

Date

28 Jul 2021

Attendees

- [Sarah Kendrew](#)
- [Leonardo Ubeda](#)
- [Brian Brooks](#)
- [Diane Karakla](#)
- [Arpita Roy](#)
- [Everett Schlawin](#)
- [Michael Regan](#)
- [Tony Keyes](#)
- [Nestor Espinoza](#)
- [Thomas Beatty](#)
- [Loic Albert](#)

Apologies:

- [Nikolay Nikolov](#) (on vacation)

Meeting agenda:

1. News & Announcements.
2. Linearity step validation updates (Ubeda, all)
3. Discussion & Assignment for JDox TSOs (Kendrew, all).
4. Closing remarks.

Meeting slides

Slides from today can be accessed through [innerspace](#) (external folks, send an e-mail to [Nestor Espinoza](#) if you would like to see them).

Discussion items

Time	Item	Who	Notes
5 mins	1. News & announcements	Everyone	<ul style="list-style-type: none">▪ Sarah Kendrew reminds everyone how TSOs changed a bit on MIRI due to an extra reset added to observations. For some short ramps, the extra reset is a significant percentage — so they have had to make some changes.
25min	2. NIRSpec pipeline validation		

		<p>Leonardo Ubeda</p> <ul style="list-style-type: none"> ▪ Nestor Espinoza introduces where we are at right now. Based on the previous meeting, we decided to go and revisit linearity performance as a function of fluence level on each pixel. ▪ Leonardo Ubeda presents the ratio between $(3-2)/(2-1)$, but now as a function of fluence level. It is evident that after applying the linearity correction higher fluence levels are corrected by linearity — but correction is not perfect. There is also a handful of pixels at lower fluences that are not corrected correctly for non-linearity. So there are two clusters: a set of pixels at higher fluences where the linearity correction is not perfect, and a set of pixels at lower cadences where the linearity is also not perfect, for some reason. ▪ He then plotted the location of those pixels in the detector. It seems the higher fluence ones are in the center of the trace (which makes sense, see previous meeting notes); however, the low-fluence pixels seem to be next to those pixels, not at those pixels. Michael Regan proposes this could be a "brighter fatter" effect — as you go to higher fluences, the effective pixel size gets larger. For spectroscopy, this could impact on the resolution of the instrument, but not on the flux (which is conserved). ▪ Stephan Birkmann mentions to be cautious about variations both in the movement of the trace and on the lamp itself. Michael Regan suggests to check using a subset of the data to see if the results hang (e.g., use only last ~6000 integrations to double check settling effects). Stephan Birkmann also suggests to take the ratio $(3-2)/(2-1)$ first at each integration, and then take the average of those ratios <input type="checkbox"/> Leonardo Ubeda will re-do the plots, but doing the average of the ratio of $(3-2)/(2-1)$ at the end (i.e., compute $(3-2)/(2-1)$ at each integration, then take the average). <input type="checkbox"/> Leonardo Ubeda will also perform sigma-clipping on the ratios for the final plots (scipy.stat.sigmaclip should be enough!). <input type="checkbox"/> Leonardo Ubeda will repeat the analyses for subsets of the data. First leaving the first 3,000 integrations out. Then only the last ~6,000 integrations. ▪ Nestor Espinoza proposes to write all this up in a Technical Report. All agree.
25min	3. Discussion & Assignment for JDOx TSOs	
	<p>Sarah Kendrew</p> <ul style="list-style-type: none"> ▪ Sarah Kendrew introduces what we are going to do: basically update the current Methods & Roadmaps (include 1/f noise discussion, include TSO-specific Special Requirement details; e.g., errors for large exposures), and add new content under "Data" in JDOx (e.g., data products, pipeline information, timing precision, known limitations of the pipeline, work in progress, etc.). This latter is probably going to be a whole new section for all methods, and we are sort of "pioneering" what should be written here. ▪ The suggested breakdown for the writing responsibilities are in the attached slides. ▪ Diane Karakla mentions she would like some help on her writing task on the Special Requirements. Nestor Espinoza will help out with that. 	
5 mins	4. Closing remarks	<ul style="list-style-type: none"> ▪ Loic Albert asks whether better methods for correcting non-linearity have been discussed/made. Michael Regan mentions he's working on this, but hasn't been prioritized due to JWST nearing launch. ▪ He also asks on the status of the high-efficiency mode work. Nestor Espinoza shares that he asked Natasha Batalha to help with the simulations, and she will work on this on the first weeks of August. Need to meet together with Michael Regan and Eddie Bergeron, however, in order to be absolutely clear on how to implement the efficiency into those simulations.