2021-09-22 TSO WG Meeting notes

Date

22 Sep 2021

Attendees

- Sarah Kendrew
- Arpita Roy
- Brian Brooks
- Everett Schlawin
- Leonardo Ubeda
- Loic Albert
- Tony Keyes
- Stephan Birkmann
- Diane Karakla

Apologies:

- Knicole Colon
- Michael Regan

Meeting agenda:

1. News & Announcements.
2. Nonlinearity work updates (Roy, Ubeda)
3. TSO JDox updates progress (Kendrew)
4. FY2022 plan (Espinoza)
5. Closing remarks.

Meeting slides

Slides can be found here (only accessible for internal STScI folks; external ones, please reach out to Nestor Espinoza or Sarah Kendrew for a copy of the slides).

Discussion items

Time	Item	Who	Notes
5 mins	**1. News & announcements**	Everyone	▪ Loic Albert mentions two ongoing activities at UMontereal. Right now one of them is the development of a spectral extraction routine for SOSS to be implemented into JWST/extract1d. Making good progress on that. Also, they are working on a SOSS simulator — they are quite happy right now with the results. The main difference in this latter one is the trace position — which is based on CV3 trace positions. This latter simulator is already in Github, but not advertised. Will do once they final some final iterations with the codebase/algorithms. ▪ Sarah Kendrew shared some of the details about the change on commissioning TSO target to match the one for NIRISS and NIRCam. E-mails have been sent to request the change. ▪ In light of this discussion, this also opened up a discussion onto whether NIRSpec should join the effort as well. Stephan Birkmann mentions that there is no separate CAR for TSOs with NIRSpec, but that of course team would love to have a TSO dataset; main problem is if this fits on the timeline. Sarah Kendrew mentions that main questions back to us might be why was this not proposed before. Nestor Espinoza mentions that there were many discussions in the past, but a TSO test like this was always deemed lower priority. However, a good argument for pushing for this now is that before the Cycle 1 results, it was a bit unclear what proposers were actually going to use ---- but now we know the instrument is the most popular for exoplanet science. Suggestion by Sarah Kendrew is to wait to see what the response is to the NIRcam and MIRI changes, and act then. This would have to be quick, as there are not many meetings left of the CAR-approval committee. All agree.
25min	**2. Nonlinearity work updates**		

		Leonardo Ubeda, Arpita Roy	▪ NIRSpec pipeline validation/non-linearity tests (Leonardo Ubeda)
			  ▪ Recap: using SUB512 CV3, TSO-like data to test the impact of non-linearity correction. Comparing (3-2)/(2-1) versus fluence level. Two things are seen: scatter increases with fluence when applying the non-linearity correction — so the non-linearity solution seems to "add" noise to the data. This scatter depends on the fluence level — scatter is increased more at larger fluence levels.
			  ▪ This and the observed issue that the non-linearity correction does not bring the data back to 1 (with offsets increasing with fluence level), are robust against background substraction.
			  ▪ Diane Karakla asks why the non-linearity is always above 1. Stephan Birkmann suggests it might be brighter fatter effect. Non-linearity correction is calculated with a flat illumination, whereas actual data might have some extra electrons from the brighter fatter effect. Loic Albert complements by noting that the non-linearity correction is indeed larger for larger fluences — hence why (3-2)/(2-1) seems to be above 1.
			▪ Arpita Roy is continuing with the work on estimating impact of non-linearity uncertainties on transit depths, and has been working on diminishing the running time on her experiments with larger apertures.

25min	**3. JDox TSO updates**		

		Sarah Kendrew	▪ Sarah gives an update on the JDox work. As a recap, there are two parts we are trying to write down: proposal preparation and add a section on the "data" section of JDox; the latter aimed so users can understand how to understand TSO datasets and pipeline products, adjusting those to their needs.
			  - Done: new known issues pages, updates existing pages. Also added the maximum groups details, and APT scheduling including the bug on phase-curves.
			  - Not yet done: adding the data section, and proposal preparation.
			  - Right now, the "Data" section is very non-targetted to different modes (e.g., TSOs). Sarah has been talking to Alaina Henry (JDox WG lead), as there are other teams that want to add particular information (e.g., David Law wants to add similar thing on MIRI /MRS). They are going to have a meeting this week, where they want to know our proposed workflow.
			  - Sarah presented the following workflow proposition for the "Data" section:
			  1. Getting started with TSO data (what does the uncal products look, how they are different to non-TSO, segmentation of the files, keywords important for TSOs, etc.).
			  2. TSO pipeline flow. Not going on too much detail, but important to put a table with the different steps. Highlight differences with non-TSO pipeline flow. Link to other pages.
			  3. Data products for TSOs: the *ints.fits format, the white light product, photometry, etc.
			  4. Known issues: caveats, what isn't working yet.
			▪ Everett Schlawin asks whether it would be good to add notebooks perhaps, if they exist. Sarah Kendrew mentions the JDAT team at STScI has been working on this, and there currently are two notebooks on JWST data analysis for transiting exoplanets. Nestor Espinoza mentions these are really notebooks highlighting how the data analysis happens after pipeline calibration, and the JDAT team wanted to add two more notebooks: one with the calibration of the data, and one on how to simulate JWST data; however, priority for that is unknown. He also mentions that was work made directly through the NIRISS branch in his case, not from the TSO WG. Sarah Kendrew is concerned that notebook writing is not a one-time job, but require updating with a certain cadence. Something to have in mind.

10 mins	**4. FY2022 plan**		
		Nestor Espinoza	▪ Nestor Espinoza presents the FY2022 plan for the TSO WG. You can read it in the meeting slides. Main boundaries of this FY: JWST commissioning during Q2-Q3 (although bulk of the work happening on Q3); Q4 focused on documenting lessons learned from commissioning in JDox/reports so we are ready for Cycle 2. ▪ Main new proposed tasks: writing the reports/analysis made during FY2021, support JWebbinars, analyze common commissioning target across different instruments. ▪ Feedback is being requested until next Wednesday, September 29. Delivery date of FY2022 is October 1st (next Friday). Up-to-date FY2022 plan can be found here (only accessible by internal STScI folks).