2020-10-21 TSO WG Meeting notes

Date

21 Oct 2020

Attendees

- Nestor Espinoza
- Brian Brooks
- Nikolay Nikolov
- Tony Keyes
- Sarah Kendrew
- Arpita Roy

Meeting agenda:

1. News & announcements.
2. Activities on each instrument branch.
3. FY2021 work.
4. Closing remarks.

Discussion items

Time	Item	Who	Notes
	1. News & announcements	Everyone	- STScI Spring Symposium on Exoplanets. Might be of relevance for this WG — Emily Rickman is leading this effort so, if you are interested, send her an e-mail! - Nikolay Nikolov 's technical memo on time-stamps needed for exoplanet atmospheric work accepted! Link: (congrats Nikolay!)
20min	**2. Activities on each instrument branch**		
		Nestor Espinoza Arpita Roy	**NIRISS activities**. Nestor Espinoza mentions his work on re-visiting target for NIS-034. Not decided yet, but have some candidates. Sarah Kendrew asks why not use an eclipsing binary (EB); Nestor Espinoza answers that the overall plan is to test the instrument for SOSS's niche, which will be transiting exoplanets. The latter also provide a much simpler analysis of the physical signal (EBs might have extra out-of-transit signals, you have to deal with two limb-darkened stars, etc.). Overall, he mentions that as long as the team does its due diligence (don't ask to observe targets which will be observed by other teams), and select targets with the very worst prospects for transmission spectroscopy, then that's OK. The point is to not sneak any science, but of course one can only do so good (even for EBs). Arpita Roy is set to work on the wavelength calibration for SOSS. Initial calibration with an A star (good for < 2 um), real calibration to be done with an M-star. Taking a look at ground-based data right now in order to understand how good models are.
		Tony Keyes Stephan Birkmann	**NIRSpec activities**. No TSO-related activities so far.
		Sarah Kendrew	**MIRI activities**. We had a meeting with the MIRI ramps-to-slopes group, which goes all around the MIRI consortium (US+Europe); led by Jane Morrison. They have been worried about detector issues at large. MIRI detectors have some important behavior that one has to take care of. One of the examples was first and last frame for MIRI, which is not used in non-TSO observations; but for TSO observations is being used by the pipeline. For relative measurements, this seems okay. But if you want absolute flux calibration, including the last frame impacts on this as this one drops down, so you bias your slopes. The ETC does drop the last frame (so not consistent with the pipeline). Might want to request the ETC to change this (which would increase SNR a bit). Everyone agrees on doing this.

		Nikolay Nikolov Brian Brooks	**NIRCam activities.** Brian Brooks starting to work on task 3.1 of FY2021 plan. There is a WG that actually has information on this; in particular, this WG was tasked with compiling information on the ground testing data and their objective (i.e., popylating the Z_GOAL keyword). This in theory is in MAST, but you need sign-offs from Scott Friedmann + leads of the data in order to retrieve the data — other than that, data is accessible. From the NIRCam side, however, they still have data stored internally, so it is possible to compile TSO-like data. Tony Keyes mentions that NIRSpec has also a lot of data internally, although not sure how much of that was retained. Nikolay Nikolov mentions that, in general, it appears they don't have data from subarrays, but just using the full frame to cut subarrays works for our analyses.
			Nikolay Nikolov mentions on some progress on JP-1478 (
			⚠ JP-1478 - Jira project doesn't exist or you don't have permission to view it.).
			Parameter reference file ready to be included on the pipeline; currently working with Brian Hilbert and Brian Brooks on getting this done. This would solve a significant problem in the pipeline, enabling a full loop on the TSO from the pipeline.
			Nikolay Nikolov also mentions work he has been doing with Nestor Espinoza and Sarah Kendrew on some TSO Helpdesk tickets. All being covered by the team!
30min	**3. FY2021 work**		
		Everyone	▪ Nestor Espinoza shared the final FY2021 plan which was submitted to MESA. The one difference with the previously shared one is task 3.2d. This was triggered by the need of the TSO WG to have all information in relation to possible systematic noise sources within the group, so we can both support users and the institute itself in terms of knowledge available on which sources are being looked into per instrument branch, what analyses need to be done and which ones seem critical to get done. On top of this, the importance of doing this is cross-comparison across instruments; some instruments might have information about effects other instruments are not looking into. Right now, idea is to document all this into a technical report form, but of course, ideas on how to optimally compile all this information are welcome. Big motivator were the recent NIRCam papers on systematic noise sources for TSOs here and here . ▪ Next step: please take a look at this final plan during the day. In the next few days, Nestor Espinoza and Sarah Kendrew will be contacting branch leads to report on this plan, asking for the resources (i.e., your time) and check if that's okay with them. Will communicate results of that.
5min	**5. Closing remarks of the meeting**		▪ Nestor Espinoza mentions that he will be taking a pseudo-science leave until the JWST proposal deadline. November 4th meeting might be cancelled (unless something important is needed to be discussed), November 18 meeting will be led by Sarah Kendrew. This means he will not be actively working on any task, but will be available for critical problems including Helpdesk tickets.