2022-11-30 TSO WG Meeting notes

Date

30 Nov 2022

Attendees

- Sarah Kendrew
- Unknown User (birkmann)
- Jeroen Bouwman
- Brian Brooks
- Everett Schlawin
- Loic Albert
- Knicole Colon
- Leonardo Ubeda
- Nikolay Nikolov
- Elena Manjavacas

Meeting agenda:

1. News & Announcements.
2. Status of TSO Commissioning papers.
3. Backgrounds in TSOs
4. Instrument roundtable
5. Closing remarks

Slides from Nestor

Discussion items

Time	Item	Who	Notes
5 mins	**1. News & announcements**		▪ senior staff scientist positions are being kept open until after the AAS ▪ Maca Garcia Marin is moving to the JWST MO own 16 Dec ▪ New NIRSpec branch manager: no timeline yet ▪ Brian Brooks : ETC release coming soon, should take note for PandExo & ExoCTK. Release dat goal is Dec 2nd but could slip a few days. ▪ WASP-43b phase curve observation happening today!
10min	**2. Status on TSO commissioning papers**		
	NIRCam	Everett Schlawin	▪ SW: accepted! ▪ LW: in progress. need to come up with a schedule to make sure it gets done.

	NIRISS	Loic Albert	• Loic Albert : going forward with publishing the HAT-P-14b data in the NIRISS SOSS overall paper.
			  ○ ES: agree just including a spectrum isn't really "doing science"; if not doing full retrievals analysis then should be fine.
			• NN: what about the ERO TSO data, can we just take that or is it subject to the ERS code of conduct? There is someone in the ERS team already working on it.
			  ○ NE: not necessarily subject to the CoC but the ERS team has contributed a lot to the best practices, so is best to work with them and acknowledge those contributions.
			  ○ Using the EROs to study performance is also entirely under our purview

	NIRSpec	Nestor Espinoza	▪ accepted!
	MIRI	Sarah Kendrew	▪ Submitted! on astro-ph today
	Joint?	Nestor Espinoza	

5min	**3. TSO Backgrounds discussion**	Nestor Espinoza	See paper by Jane Rigby
			• not sure all instruments have studied this in detail yet - hasn't been very high on our radar yet (SK: apart from MIRI!)
			• data from NIRSpec BOTS on Trappist-1c (public data)
			  ◦ running tests on how to remove 1/f noise in small subarray
			  ◦ background subtraction affects the recovered spectrum
			  ◦ would be much easier if we had a dedicated background observation
			• SK MIRI: we have updated our recommendations fro MIRI to include a dedicated background observation, to perform the subtraction more cleanly. analysis done by Achene Dyrek in Paris.
			• NN: should also factor in the SNR of the spectrum in this analysis as this will impact the 1/f noise
			• how dominant is the background at the longer wavelengths? can model it or calculate in ETC?
			  ◦ SB: for BOTS it is clearly visible. there is not a lot of structure in it.
			• EM: when we do TSO for brown dwarfs from the ground. from the ground the background is very high so we always dither. Should dither?
			• NN: when you remove the background, why would you observe a shallower transit?
			  ◦ background comes from 1 px in the smallest subarray. so it's hard to do a proper background subtraction. the PSF also changes in size with wavelength so it's variable with wavelength.
			• NN: are we talking about a time-variable background?
			  ◦ NE: we didn't see it in commissioning data
			• SK: this is something the instrument teams should be studying - what is the best way of getting the measurement and perform the correction? dithering during an exposure is really not advisable for TSOs.
			  ◦ for MIRI we do plan to reach out to PIs to recommend they add a dedicated background exposure to their observation
			• LA: this should be part of the STScI calibration program to gather data at representative zodiacal locations and can provide templates for correction
			• NIRCam (NN): typically are able to get the background from the data itself. have not looked at background-only data to study profile. Scattered light is a bigger problem.
			  ◦ ES: would be good to get some grism data of the zodiacal light. from what we've seen it's smooth and not complicated, but more data would be good.
			• Who should make these recommendations? TSO WG, instrument teams?

10min	**3. Instrument roundtable check-in**		
	NIRCam	Everett Schlawin Nikolay Nikolov	Jdocs updates and vacation!
	NIRISS	Nestor Espinoza , Loic Albert	lots of good science and data 🙂 phase curve for LTT9779
	NIRSpec	Unknown User (birkmann)	OSS 8.5 installed yesterday, few fixes for NIRSpec bu tnot NOTS
	MIRI	Sarah Kendrew , Jeroen Bouwman	show slides from Achene showing the background measurement issue
2 mins	**4. Closing Remarks**		meeting again in 2 weeks