2020-07-15 TSO WG Meeting notes

Date

15 Jul 2020

Attendees

- Nestor Espinoza
- Sarah Kendrew
- Brian Brooks
- Nikolay Nikolov
- David Sing
- Stephan Birkmann

Meeting agenda:

1. News & announcements.
2. Feedback on JWST pipeline testing throughout the summer.
3. Status update on Quicklook tool & JWST time-stamps.
4. TSO activities on each instrument branch.

Discussion items

Time	Item	Who	Notes
	1. News & announcements	Everyone	▪ Sarah Kendrew is going to be on science leave in August. Will not dedicate much of her time to functional tasks. ▪ Sarah Kendrew mentions that ESA is hosting a research fellow in Baltimore (Emily Rickman). She just got her PhD from Geneva on exoplanet atmospheres. Joining in September (probably remotely), would be good to get her involved in exoplanet science in the institute. ▪ NIRCam TSO Challenge meeting happening today.
15min	**2. Feedback on JWST pipeline testing throughout the summer**		
		Everyone	▪ Nestor Espinoza & Sarah Kendrew will have a Pipeline testing sprint next week and the week after. ▪ Please track your pipeline testing in this TSO WG Outerspace page: Pipeline Testing tracking sheet. This sheet is *public*, so consider this when writing your reports. It is good for us to keep track of the state of things, and also to share with outside people when needed. ▪ Nikolay Nikolov brings up the question on how to handle the fact that pipeline testing inevitably falls into testing bugs in JWST simulators. Nestor Espinoza and Sarah Kendrew both mention that, although in theory this should be a purely pipeline testing excercise, in practice this necessarily involves catching simulator bugs and all of this slows the whole process down. Nestor Espinoza notes that it is also good to write comments on simulation bugs on the Pipeline testing tracking sheet, because that allows us to see where step testing is failing and why — this is important at the end of the day to have an account of what slowed us down in testing, so this can be improved in, e.g., future fiscals years. Let's remember that pipeline testing will be a continous excercise, and knowing what we were not able to test and what we were is also an important output of this excercise.
10min	**3. Status update on Quicklook tool & JWST time-stamps.**		

			▪ Nikolay Nikolov gave a presentation updating on these tasks. In particular, he made a presentation on discussion he had together with David Sing on JWST time-stamps. Objective: define JWST time stamp precision requirement for the individual transiting exoplanet science cases. Cases span all the possibilities of atmospheric characterization. ▪ One approach they discussed is to basically compare two transit models, one with an offset and one with a real one. Measure the difference between those, measure the amplitude of the difference and propagate that in terms of flux precision. For example, if you offset in 1500s, residual difference is ~2%. Currently, they are working on individual cases of different planet types (e.g., Super Earths, Mini-Neptune, Hot Jupiter) — then assume some lightcurve precision, and compute precision needed in the time-stamp. ▪ Lightcurve distortion due to finite sampling times? ▪ Nikolay Nikolov also reports on the Quicklook tool discussion. Idea is to define the first steps for this tool. Some people before (e.g., Nikole Lewis, Kevin Stevenson and Jonathan Fraine) defined some steps before, so Nikolay and D. Sing reviewed those steps, and brainstormed on what could be extended. For example, looking at the jitter engineering files would be useful — that could let us know in advance what the quality of the data is. ▪ Sarah Kendrew mentions if it would be useful to check for the background time-series as well — Nikolay mentioned this is part of the plots that wants to be produced.
25min	**4. TSO activities on each instrument branch**		
7min	NIRISS activities/updates	Nestor Espinoza	▪ Nestor Espinoza worked mainly on JDAT notebooks in the past few weeks— they are currently under technical and science review.
7min	NIRCam activities /updates	Brian Brooks Nikolay Nikolov	▪ Nikolay Nikolov attended internal pipeline testing meetings. Defined what tests are wanted to do + approaches. Looking at some particular tests, and heavily working on pipeline testing. ▪ Nikolay Nikolov responded to some other issues (e.g., for NIRSpec; ⚠ JP-1505 - Jira project doesn't exist or you don't have permission to view it.).
7min	NIRSpec activities /updates	Tony Keyes	▪ Tony Keyes couldn't make it to the meeting, but sent some activity updates. He now has a virtual linux machine for pipeline testing. ▪ David Sing did a lot of work on JDAT notebook, and also submitted his. Also under review.
7min	MIRI activities/updates	Sarah Kendrew	▪ Sarah Kendrew was in Californa last week for JWST. Misty did some testing on MIRI TSO imaging, found issues with both simulations and pipeline. She and other MIRI team members are going to be joining the sprint next week.
5min	**4. Closing remarks of the meeting**		