2016-01-26 Meeting notes

Date

26 Jan 2016

Attendees

- Nikole Lewis, Dean Hines, Unknown User (grieke@as.arizona.edu), Unknown User (mrieke@as.arizona.edu), Jeff Valenti, Unknown User (thomas.p.greene@nasa.gov), Unknown User (jdfraine@email.arizona.edu), Pierre-Olivier Lagage

Goals

- Discuss timely and relevant topics concerning JWST modes that will be used for transiting exoplanet observations.

Discussion items

Time	Item	Who	Notes
	Update on DMS concerns for TSOs	Nikole Lewis	• Nikole made a request to construct TSO-like datasets for the relevant modes to exercise the DMS • Datasets are not meant to test the precision/accuracy with which the pipeline can handle TSO data, but ensure that the DMS can handle the size and formatting of TSO data. • Test data sets may simply be a replication of a single integration that is representative of photometric/spectroscopic modes that will be used in TSO. • Nikole has representative simulated NIRISS SOSS datasets. • Nikole will work with Jonathan Fraine, Marcia Rieke, and Tom Greene to construct NIRCam test datasets. • Misty Cracraft (cc Dean Hines) can provide MIRI test datasets. • Nikole and Jeff will work with Stephan Birkmann to construct relevant NIRSpec test data (prism and 1 HR spectrum)

	TSO pipeline topics	Nikole Lewis	• The slope fitting module will set 'save_opt=true' for all TSOs. This will result in additional data products that can be used to identify and de-correlate/correct systematic trends in the collapsed ramps/integrations.
			• Need to consider how to handle single read/group integrations:
			  ◦ The fidelity of dark/biases in the small read/group regime is questionable for many instrument modes.
			  ◦ IDTs will investigate possible issues associated with using the standard darks/biases in the small read/group regime (including single read integrations)
			  ◦ One solution is to advocate that TSOs using a small number of frames/groups obtain contemporaneous reference files that use the same observing cadence. The user would then be required to reprocess their data with the self-constructed reference files. Nikole will construct a memo/document describe this solution in more detail and determine the relative impact on the end user and pipeline.
			• Outlier rejection as part of CALTSO3 was discussed. Current plan is for a relatively simple 3 iteration, 3 sigma clipping algorithm that works on the entire time-series exposure.
			  ◦ The outlier rejection routine will only flag potential outliers.
			  ◦ Need to consider how to incorporate flagged data during photometric and spectral extraction.
			  ◦ The idea of correcting/removing a 3x3 region around any flagged pixels was discussed. Strategies in the sky /background and source regions may differ.
			  ◦ WG members are encouraged to flesh out their ideas concerning outlier rejection and subsequent use in photometric /spectral extraction in ~1 page 'flyers' to be shared on this website.

	ETC/Transiting Exoplanet Simulators	Nikole Lewis	• We discussed both STScI and IDT efforts for ETCs/simulators specific to transiting exoplanet observations. • An exoplanet simulator that is a wrapper for the STScI Webb ETC will be released with a web interface in the spring • Please keep the WG/Nikole apprised of IDT effort for transiting exoplanet observation simulators and any plans to release such tools to the user community.

	Data Challenges	Nikole Lewis	• Plan is to host a community transiting exoplanet data challenge in Fall/Winter 2016. These challenge data would let the community exercise both spectral/photometric extraction methods as well as spectral retrievals.
			  ◦ These challenge datasets could again be simple replications of single frames that include realistic time-varying noise. This would test the users ability to retrieve a flat line (aka GJ1214b) to the same noise floor as what was prescribed.
			  ◦ Noisy planetary spectra in the relevant wavelength range would allow users to exercise their various spectral retrieval tools and think more deeply about what combinations of modes to use when addressing specific science questions.
			• Assignments were made to push this effort along: NIRISS (Nikole), NIRCam (Jonathan Fraine, Marcia, Tom), NIRSpec (Jeff), MIRI (Pierre-Olivier, Tom, and George)

	Community Efforts	Nikole Lewis	• Nikole updated the WG about current efforts in the community to produce white papers spawned from the November workshop. • The efforts are open to anyone in the community, so feel free to contact Nikole if you want to participate. • Nikole will be forming a JWST transiting exoplanet users WG this spring to provide an interface with the user community.

	Quick-Look Guides	Nikole Lewis	• Nikole will begin constructing transiting exoplanet specific quick look guides for each of the instruments. Input from the IDTs is welcome. Approval will be required before release to the user community.

Action items

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