29th August 2014

Attendees: Peter Y., Bryce K., Cathy P., Chris W., Jim C., Kirk G., Michael S., Scott D.,, Kem C., and Simon K.

Bryce Kalmbach gave a description of how his work with fitting spectra to catalog colors is progressing. A major activity for him at the moment is to apply dimensionality reduction techniques (PCA) to the spectral library to see if we can save space on disk and in memory by reducing the amount of spectral information need per object. The progress looks very promising, in general, with more issues in the redder bands than the bluer ones. Next steps are to try to extend the set of eigenspectra to better match the catalog colors from GALFAST and to compare with observational data.

Kirk noted that the spectra we have in the library go far redder than what we need to simulate LSST images. Simon's response was that we intend these spectra to be used with a variety of instruments, so wide spectral coverage is necessary.

Notes on next six months of development.

Opsim -- Strawman mid level plan. Francisco is point of contact between ocs and opsim. New hire will be made shortly. The first priority for the new hire will be to focus on Pub/Sub interface between OpSim and OCS.

Simon: How far out does the planning go?

Cathy: Andy asked for 6 months. High level plans to Summer 2016. 6 months out with epics and shorter term with more fine grained planning.

Catalogs -- Top priority is to go over the SED library and to try to go to a basis set for Spectra and for lightcurves. This will lead to photometry release.

Phosim -- John missed the meeting for some reason. John Peterson commented on the questions that came up.

1. How can we unify the conversation that happens within LSST with the conversation that happens on the DESC Phosim phonecon? Andre has volunteered to put up Confluence pages, but there is no place to put them where everyone has access.

2. There was general agreement that the sensor effects have not been validated, but they are not on the list of activities. Chris and Andre are working on that, but there's no information on the slide John sent about how the PhoSim team plan on interacting with that activity.

3. There is a major problem with phosim in that some parameters are chosen internally and either aren't persisted (e.g. center of tree ring patterns) or are chosen from distributions that don't make any sense (sky brightness distribution). Is there any plan to address these issues in the near term?

Responses from John transcribed from email:

1. How can we unify the conversation that happens within LSST with the conversation that happens on the DESC Phosim phonecon? Andre has volunteered to put up Confluence pages, but there is no place to put them where everyone has access.

That is here: https://confluence.lsstcorp.org/pages/viewpage.action?pageId=4751551

which has identical content to here:

https://confluence.slac.stanford.edu/display/LSSTDESC/PhoSim+Telecons

2. There was general agreement that the sensor effects have not been validated, but they are not on the list of activities. Chris and Andre are working on that, but there's no information on the slide John sent about how the PhoSim team plan on interacting with that activity.

Chris W, Andrei, and Wei and their groups are the key people working on verifying the phosim sensor physics and comparing with measurements. I consider them part of the phosim team. This work gets coordinated on the phosim telecons a lot, and there is quite a bit of interaction with other sensor experts in the project.

3. There is a major problem with phosim in that some parameters are chosen internally and either aren't persisted (e.g. center of tree ring patterns) or are chosen from distributions that don't make any sense (sky brightness distribution). Is there any plan to address these issues in the near term?

Part 1: Tree rings centers are not persisted yet, but what is in dev will just have the option to change the center yourself. making the headers complete is just a key focus of v3.5 which is in progress.

Part 2: yes, Chris S. and Chuck and their students have done extensive site measurements and analysis. a short term goal is for them to get basic histograms of sky brightness & cloud cover averaged over large spatial scales over a long time baseline to phosim.

we should move some of this discussion onto the ticket (phosim-17). i'm not sure what Bryce did exactly, because he seems to be turning off the background entirely if i read it literally. also, keep in mind when you do a random seed its as if you are taking a brand new observation on an entirely different night (including new clouds). if you want to simulate a sequence of observations of one night, then you adjust the exposure time and make more snaps, and just do one seed. if you do that, you will see a very small variation. if you don't do that, then we do expect some significant variation but we can use the actual site measurements later to determine if there is a problem or not.