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Dr. Luiz Da Costa
LIneA

Dear Luiz –

Thank you very much for the presentations from your team at the review last week at Fermilab. It was a good interaction and will lead to productive associations, especially between your group and NCSA, in the months ahead. Here is a quick summary of the review. The panel has seen this draft version and we will work on a more complete version soon.

Best regards,



Richard Kron

Deputy Director, Dark Energy Survey

DRAFT Report

Review of the Science Portal for the Dark Energy Survey

9 July 2013, Fermi National Accelerator Laboratory, Batavia USA

review team:

Richard Kron (Chair, UofChicago), Brian Yanny (FNAL), Scott Dodelson (FNAL), Elizabeth Buckley-Geer (FNAL), Donald Petravick (UIUC/NCSA), and Robert Gruendl (UIUC/NCSA)

The agenda and presentations for the review are posted on docDB event No. 1984.

The presenters were L. da Costa, P Egeland, A. Fausti, R. Ogando, F. Ostrovski, and A. Carnero.

Executive Summary

This review was focused on understanding the opportunities for the Science Portal to contribute to DES operations, including but not limited to the data-processing activities of DES Data Management centered at NCSA. Here "DES operations" means work needed for day-to-day collection, processing, and assessment of data, as opposed to off-line efforts related to scientific analysis.

The presentations covered the current status of the Science Portal, work underway and planned for the future, and topics related to operations. The presentations very helpfully included suggestions for prioritization for which the panel was invited to comment, as well as issues where further discussion was invited. A number of other DES scientists participated in addition to those on the review panel.

The panel thanks the IT team for the very clear and informative presentations on the Science Portal. Its utility for DES operations is easy to establish, and its potential to advance the science analyses of the individual Science Working Groups is now even more apparent, specifically with a focus on the systematic creation of Valued-Added Catalogs.

We were impressed with the amount of work that has been accomplished since the last review. The capabilities of the Science Portal have adapted directly to the requests of users. The system seems much more stable, and the team has addressed the hardware issues that were plaguing them in the past. The system is developing a number of features that make it somewhat like the CAS of the SDSS, and it will clearly be a useful tool for the collaboration. Overall the Science Portal is an extremely impressive system!

The Science Portal has a number of strengths which should continue to be emphasized and advertised (for example at the upcoming DES Collaboration meeting in Barcelona):

1. ability to quickly ingest a coadd objects catalog from DESDM and produce a series of standard plots and tables for verification and validation.
2. ability to incorporate external catalogs and compare astrometry and photometry of DES data sets with them.
3. ability to run and store versioned standard science analysis codes on large subsets of DES data releases and store various versions of results.

The Science Portal provides an ideal way to identify problems found with the data by examining plots and tables, and feeding this information back in a timely way to DESDM for future updates and fixes. Such a role complements the capabilities of the team at

NCSA, so the combination of the two is natural. Further integration of DESDM operations with the Science Portal will be valuable.

The Portal is best suited to ingest a "tagged coadd catalog release." It is more difficult to ingest a release that is less well defined (e.g. a provisional processing run on a small set of data), but doing so would enhance the ability to discover and report back on anomalies, an important need that is not otherwise easy to address. The role (or desirability) of the Science Portal for fast evaluation of the single-epoch releases will need further discussion.

The proposed migration of the package management system to eups is excellent and should proceed as fast as possible. This will give us the opportunity to integrate the portal and the DESDM software into a coherent software distribution system. The team should leverage the work done by the ETH group on the eups distribution infrastructure.

Understanding how to leverage resources from OSG and other remote resources will be important.

The features that were shown on visualizing the coadd tiles footprint and the potential ability to link this to the actual data files at NCSA looks very useful. It will be useful to pursue integrating image cut-out software due to N. Kuropatkin into the Science Portal.

The performance of the Quick Reduce system is especially impressive. The ability of the collaboration to access the results from the Science Portal and avoid the CTIO firewall issues is very useful.