VRO/LSST at FNAL Status Update

Brian Yanny

CPI Projects Meeting

6 August 2020

Vera Rubin Observatory Legacy Survey of Space and Time (formerly LSST) Data Facility

The FOA (funding announcement of opportunity) for the LSST Data Facility has not been put out yet by DOE. Still expected sometime this summer.

We are meeting every other week with NCSA until FOA comes out, then will meet more.

VRO/LSST is interested in a data access model where the data is resident at a central place and then users 'bring their analysis code to the data' by running their code on Jupyter notebooks that have the data accessible there. Main tables may be in the cloud whereas archival images and older catalogs may be in a tape store eventually.

🔷 **Fermilab**

Current FNAL 'pre-ops' involvement in VRO/LSST:

We (FNAL LSST pre-ops group) have been asked to help setup a 'iDF' Interim Data Facility which will be hosted in the cloud (Google or AWS likely hosts), and which will:

 1. Serve a large (500TB?) set of images and 100 M object catalog (1-2TB) of simulated or other-telescope data to the VRO/LSST community. Community will examine data and look for flaws in the processing.
 2. Will (re)process subsets of 1. using the latest VRO/LSST stack pipelines to help debug these pipelines.

We are currently working on bullet 1 together with NCSA. Recent steps: Running scripts to convert simulated and 'other-telescope' test data catalogs into a current/standard VRO format with metadata that can be loaded into an IDF cloud database.

We are also participating in on-going meetings and workshops on using the VRO/LSST code stacks.
This pre-ops effort will continue at an increased level in FY21 (~2-->4FTEs)

🟦 **Fermilab**

Current FNAL involvement in DESC:

DESC (Dark Energy Science Collaboration) is a parallel organization to VRO/LSST which works on simulations and science algorithms ahead of and into the launch of VRO/LSST operations. Alex Drlica-Wagner, Javier Sanchez and others of the astro group are involved here at FNAL.

Funding is limited but we (FNAL) are proud to say that now Marc Paterno has been awarded partial support for helping to enable algorithm and advanced code support and development within DESC.

Welcome to Marc (and yes we need to get your paper work finalized with Jim Annis)!

Fermilab