Cosmobook - An Environment for Panoramic Photometry

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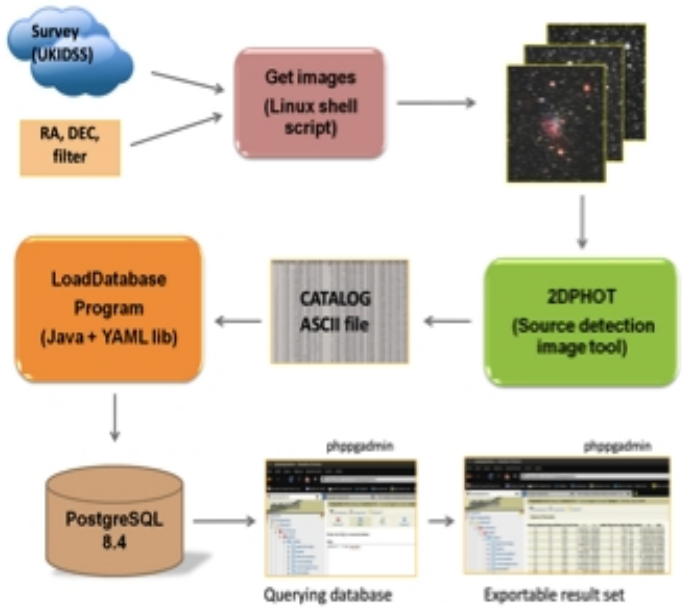
With the avalanche of data coming in the following ten years from LSST (Large Synoptic Survey Telescope), Pan-STARRS (Panoramic Survey Telescope & Rapid Response System), DES (Dark Energy Survey), and VST (VLT Survey Telescope) among the most data gathering systems, the main concern is to manage the explosive growth in data with cloud storage and novel data structures. The question now is how to offer better tools and novel technical solutions that will help us learning more about our universe. Several emerging ideas can lead us to a modern way of exploiting data properly, including crowdsourcing, access to data handling systems via new browsing technologies, and growing computational power.



Cosmobook is an environment designed to do panoramic photometry, allowing the user to extract as much information as possible from the photometric surveys been planned. The first step was to develop a program to do photometry, 2DPHOT - a multi-purpose environment for the two-dimensional analysis of wide-field Images. A database model was designed and implemented using PostgreSQL 8.4 and a Java script written to upload the resulting catalog from 2DPHOT into the dB. The figure below shows the general scheme of Cosmobook. We are currently processing the images of the UKIDSS (UKIRT Infrared Deep Sky Survey) using the cluster facility at LNCC. The following step is to develop the Web interface allowing users to retrieve the catalogs in all four bands, YHJK. Allowing users to process images covering large areas of the sky is challenging and requires the use of grid computing and other new technologies.