Releasing ESO Public Survey Data through the Phase 3 Catalogue Facility

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The ESO archive is the collection point for the survey products and the primary point of publication/availability of these products to the ESO community. For this purpose the Phase 3 process has been devised to manage the reception, validation and publication of data products from the public survey projects and large programmes through the ESO Science Archive Facility. The implementation of the Phase 3 concept for catalogue data includes a dedicated web-based user interface. The new Catalogue Facility complements the existing functionalities of the ESO archive by adding the capability to query the catalogue by content using positional and non-positional constraints and, finally, to download the resulting data set for further scientific analysis.

Catalogue data submission

The Principal Investigators of ESO public surveys are responsible for the delivery of reduced data to the ESO archive. The ESO Data Products standard, which is published on the Phase 3 web pages, defines the required data format. The catalogue data must be characterized by additional information, i.e. meta-data, including a full description for their scientific exploitation. Catalogue data submission relies on the previously established infrastructure consisting of Phase 3 Validator, Release Manager and Phase 3 FTP server. Science catalogues VISTA public survey catalogues generally consist of homogeneous merged multi-band data sets for each survey region including source positions, apparent magnitudes and colours which refer to the survey-wide ("global") astrometric and photometric system established by cross-calibrating the available data using overlapping tiles and across different bands. The final catalogues to be produced by the large survey projects like the VISTA Hemisphere Survey will comprise more than one billion unique sources.

Go to the URL

http://www.eso.org/qi

Load an input file containing the list of target names or tab-separated target coordinate pairs (J2000).

Entry page

Catalogue query form

Query workflow

The typical sequence of steps when using the Catalogue Facility consists of: 1) Choosing the catalogue of interest; 2) Defining the query constraints; 3) Executing the query (search); 4) Reviewing the query result; 5) Refining the query constraints and repeating the search if needed; 6) Downloading the catalogue data set resulting from the query.

Searching catalogue data

The Catalogue Facility allows searching around one single or multiple target positions using either a circular region ("Cone") or a square (Box) of configurable size. The Target field accepts as input a pair of coordinates or a target name. J2000 and galactic coordinates are supported. Target names are automatically resolved employing the Sesame service at the Centre de Données astronomiques de Strasbourg (CDS). It is possible to upload a list of targets to conduct a multi-position search in one single step. A flexible and powerful way for defining subsets of catalogue data according to your science case is provided by constraint qualification per catalogue column. Objects can be selected, for instance, according to their quality parameters, within a certain flux range or colour interval, provided, of course, the given catalogue contains the relevant information.

Current status

The system, as deployed in 2012, serves the Ultra-VISTA Ks-selected matched source catalogue containing 331,077 sources observed in Y, J, H and Ks bands in a 1.8 deg² sub-area of the COSMOS field, and narrow band NB118 data covering the "ultra-deep stripes" area. In July 2013 the first data from the MATISSE/OCA-ESO Project (AMBRE) has been released: stellar radial velocities, atmospheric parameters (effective temperature, surface gravity, mean metallicity [M/H]) and enrichment in alpha-elements ([alpha/Fe]) resulting from the automatic analysis of 21,551 FEROS spectra from the ESO data archive with the MATISSE algorithm. The integration of further band-merged catalogue data from the ESO/VISTA public imaging surveys is currently on-going. It will result in a series of new data releases upcoming soon, namely for the VISTA Kilo-degree Infrared Galaxy Survey (VIKING), the VISTA Variables in the Via Lactea (VVV survey) and the VISTA Magellanic Survey (VMC), and the VISTA Variables in the Via Lactea (VVV survey).

For enquiries about the Phase 3 process, please contact sci-help@eso.org.