

# 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.

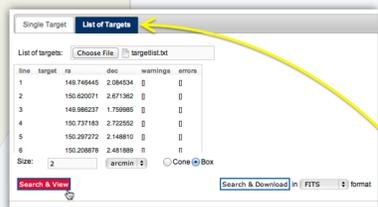
## Science catalogues

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).

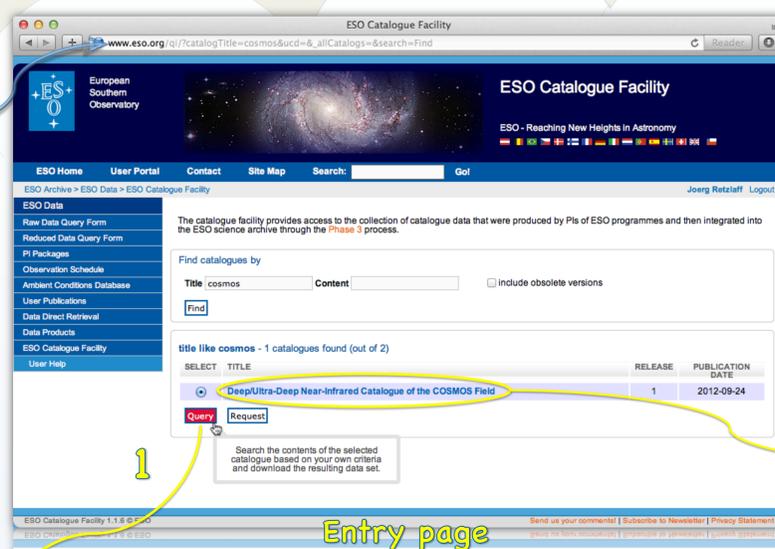


Examples:  
=10  
>99  
<=1.5  
!=5  
10 .. 20  
=abc%

Constraint qualification using the ASU syntax

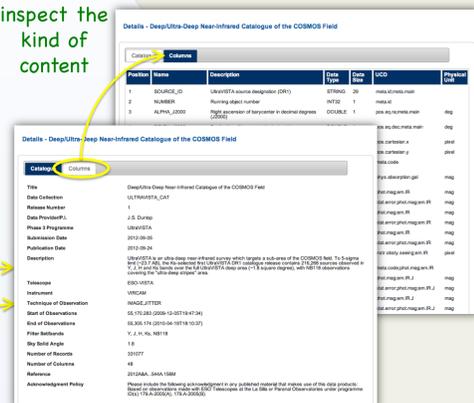
Sort	Column	Constraint	Unit	Description
	Y_FLAG	0		Y Flag (extractor)
	J_FLAG	0		J Flag (extractor)
	H_FLAG	0		H Flag (extractor)
	KS_FLAG	0		Ks Flag (extractor) (detection image)
	KS_AUTO	18..24	mag	Ks auto magnitude (AB) (detection image)
	SOURCE_ID			UltraVISTA source designation (DR1)
	NUMBER			Running object number

Click to sort the result set

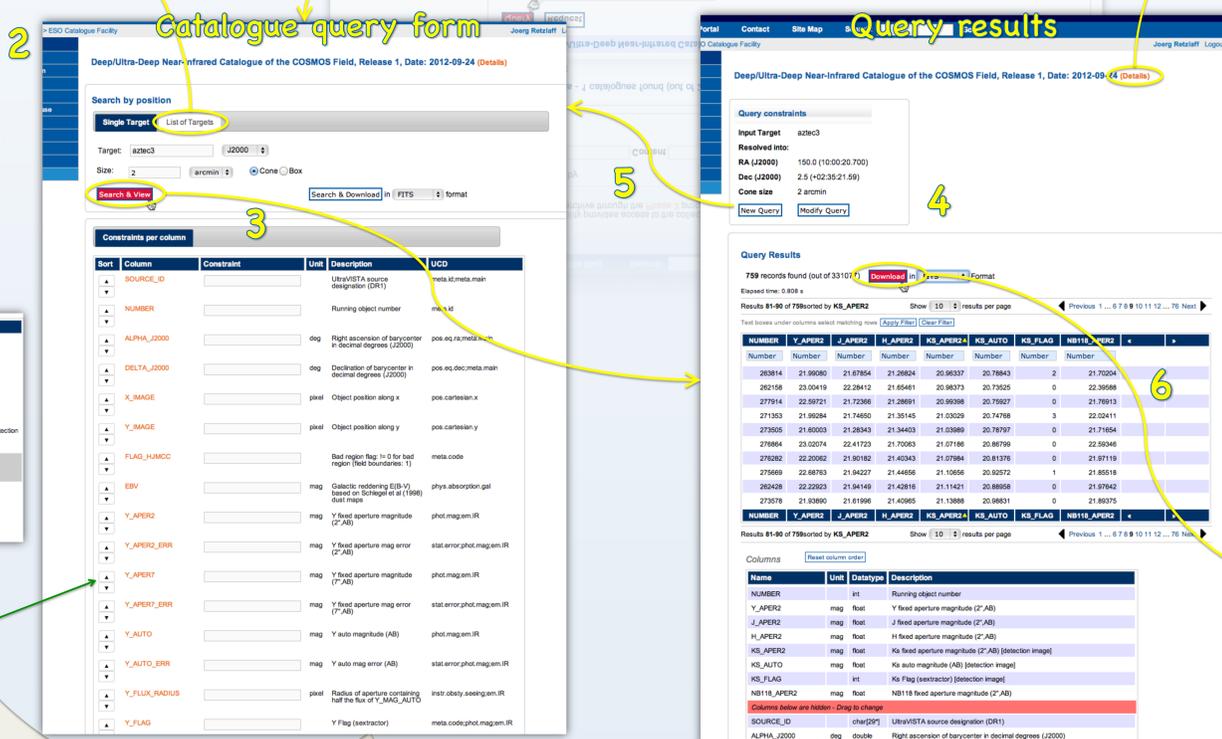


Entry page

Click to inspect the kind of content



Click on the catalogue title to display detailed information



Download for further scientific data analysis on the user's local computer.

## 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 deployment of the catalogue facility took place in two stages, first the components for the reception, validation and archival of catalogue data in May 2012, then the user interface that provides the data search and access capabilities in October 2012. The Deep/ultra-deep near-infrared catalogue of the COSMOS field resulting from the Ultra-VISTA programme represents the first data being ingested. Further Phase 3 catalogue data, which have been submitted by VISTA public survey teams until August 2012, will be ingested and published once the data have been successfully validated.

For enquiries about the Phase 3 process, please contact [usd-help@eso.org](mailto:usd-help@eso.org), quoting Subject: Phase 3.

<http://www.eso.org/sci/observing/phase3.html>

See the demo on Thursday, 18 October 2012, 15:00 h

