



# The new ESO Science Portal and VO interfaces

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# Archive Science Portal

A demo's worth 100 slides:

The screenshot displays the Archive Science Portal interface. At the top, it shows the ESO logo, the text 'Archive Science Portal BETA', and coordinates '04 23 40.002 -29 25 41.20' with a field of view 'FoV: 175.72°'. A search bar contains '2651734' and 'RESULTS'. Below this, there are controls for 'Include proprietary data' and a 'Collapse all' button. The left sidebar contains several filter panels: 'Data Type' with options for SPECTRUM (2053816), CATALOG (300799), IMAGE (289404), CUBE (6203), and VISIBILITY (1512); 'Spectral Range' with a bar chart for UV, opt, NIR, MIR, and mm; and 'Filter/Band' with options for Ks (221604), J (171331), Y (57191), H (46579), and i\_SDSS (22625). The main area shows a star field with a grid overlay and a red selection box. At the bottom, a table displays search results for 'SPECTRUM' data.

Actions	Data Type	Spec.Range	Spec.Res.	SNR	Obs.Date	Collection	Instrum.	T.Exp.T.	#Obs	PI.	Program Id	Object	Pub.Date
<input type="checkbox"/>	SPECTRUM	378.2-691.3 nm	115000	0	2018-05-23 17:	HARPS	HARPS	1 s	single	OBSERVATORY	60.A-9700	Preset-near-Zet	2018-05-25
<input type="checkbox"/>	SPECTRUM	378.2-691.3 nm	115000	0	2018-05-20 17:	HARPS	HARPS	1 s	single	OBSERVATORY	60.A-9700	Preset-near-Zet	2018-05-22
<input type="checkbox"/>	SPECTRUM	378.2-691.3 nm	115000	97.5	2018-05-03 09:	HARPS	HARPS	500 s	single	OBSERVATORY	60.A-9700	HD216770	2018-05-17
<input type="checkbox"/>	SPECTRUM	378.2-691.3 nm	115000	101.5	2018-05-03 09:	HARPS	HARPS	500 s	single	OBSERVATORY	60.A-9700	HD216770	2018-05-17
<input type="checkbox"/>	SPECTRUM	378.2-691.3 nm	115000	103.3	2018-05-03 09:	HARPS	HARPS	500 s	single	OBSERVATORY	60.A-9700	HD216770	2018-05-17
<input type="checkbox"/>	SPECTRUM	378.2-691.3 nm	115000	126.9	2018-05-03 09:	HARPS	HARPS	500 s	single	OBSERVATORY	60.A-9700	HD208487	2018-05-17
<input type="checkbox"/>	SPECTRUM	378.2-691.3 nm	115000	123.5	2018-05-03 09:	HARPS	HARPS	500 s	single	OBSERVATORY	60.A-9700	HD208487	2018-05-17
<input type="checkbox"/>	SPECTRUM	378.2-691.3 nm	115000	124.3	2018-05-03 09:	HARPS	HARPS	500 s	single	OBSERVATORY	60.A-9700	HD208487	2018-05-17

<http://archive.eso.org/scienceportal>



# Archive Science Portal Demo 1

- Page opens showing all available public processed data
  - raw data will be added in second release
- Title: Archive Science Portal Beta
  - opened but not yet widely announced (June)
- Num Results:  $\sim 2.6E6$
  
- 18 facets/properties: statistics on each property
  - computed at query time (think: group by)
  - 17 facets on the left hand side:
    - (Collapse all to see the titles)
    - Quick excursus on facet types: string, numerical, date
      - Data Type (spectrum, image, cube, etc)
      - Spectral range
    - 18th property: spatial coverage shown within sky view
- Tabular representation of results (no aggregation)



# Archive Science Portal Demo 2

- All facets adapts to/change with the user's query constraint(s)
- User's constraints can be placed within the 17 facets or at the top right for the spatial constraint
- Within the 17 facets: selection on the histograms, or using input boxes (from-to)
- Auto-completion for string-valued facets



# Archive Science Portal Demo 3

Example 1:

CDFS (10')

- Images
- NIR
- Ks
- ABmag $\geq$ 24
- Skyres $\leq$ 0.4''
- Show Footprints
- Image multiscale preview



# Archive Science Portal Demo 4

Example 2:

NGC6388 (3') – Globular cluster

- Stick VHS J image to sky
- Spec.
- 850nm
- Spectrum Preview => Ca Triplet



# Archive Science Portal Demo 5

Example 3:

NGC6664 (30') - JKs color mag

- J+Ks catalogs
- Shift click to find all products containing point
- SAMP to topcat



# Archive Science Portal

GUI developed in Angular, Aladin Lite for Sky View

Rich(!) experience requires a lot of attention

Users should not be overwhelmed with information

User experience must be intuitive, self-explanatory, agile, responsive, and useful.

Carefully calibrating all user's actions and responses takes time.





# Archive Science Portal

- **Previews (first time at ESO)**
  - Now: spectra, images;
  - Soon: cubes;
  - Later: source tables, catalogs, visibilities
  - Selected formats for Web and Print
  - Thumbnails (PNG) for all types
  - 1D Spectra: JSON for interactive plot (zoom, pan)
    - Interactive plot with sliders for wavelength range
  - Large-format images (e.g., 9GB) => HiPS
  - Catalogs: HiPS & MOCs



# VO Interfaces

## ESO TAP for observations (tap\_obs)

- Raw data
- Processed data
- Ambient measurements
- MS SQL Server

## ESO TAP for catalog by ESO observers (tap\_cat)

- Sybase IQ

## ESO SSAP

- Software made available on Github

Registered (EUROVO Registry)

Presented at: <http://archive.eso.org/programmatic>



# VO Interfaces

How to present VO interfaces to the user community?

- Usability is king!

Presented at: <http://archive.eso.org/programmatic>

That page can be used either to gain:

- Direct Database Access (new for ESO!)
- Direct Data Access (new for ESO!)

or to learn:

- ADQL queries (modifiable examples, validation)
- URLs to query or access data, previews, services
- Script it all with pyvo



# ESO ARCHIVE COMMUNITY FORUM

## ■ User is king!

The *ESO Archive Community Forum* is a platform for sharing ideas and methods, asking questions and sending feedback and suggestions on how to improve and use the new [ESO Archive Science Portal](#) and on how to gain [Programmatic and tool access](#) to the archive.

➤ <https://esocommunity.userecho.com/>