Publishing astronomical data: an ESO perspective

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Asterics

European Data Provider Forum and Training Event 2018

Heidelberg

ESO Science Archive made better

Project to modernise the access to the ESO science archive

Staged approach

Release 1:

Enough new functionality to have
positive impact on user experience,
though limited, for fast depoloyment

Emphasis on reduced data

Announced next week *(cross your fingers please)*

More releases to come (2019, 2020)

ESO Science Archive made better

Web application (we call it: ***science portal***)

http://archive.eso.org/scienceportal

Programmatic and Tool Access:

http://archive.eso.org/programmatic

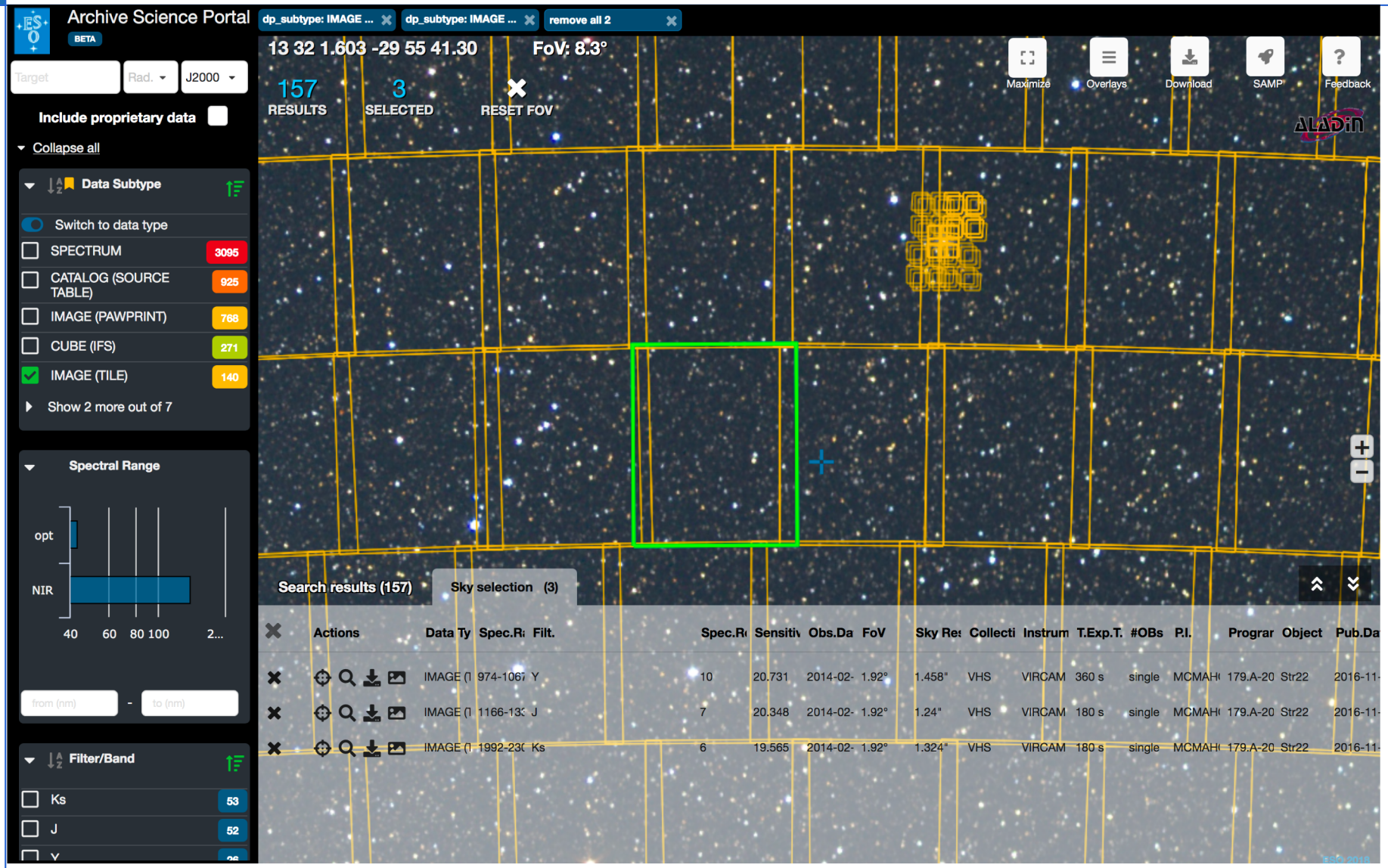
ESO Science Portal

Web application (Angular, Aladin Lite, ElasticSearch):

- full sky view
- searches by scientific parameters
  - resolving power, SNR, spatial resolution, etc.
- aggregations
  - histograms/facets of scientific params
- including sky aggregations
  - Using ESO AstroES Lucene plugin
- previews
  - JPG, PDF, HiPS for each(!) image,
  - smart zoom&pan spectral preview (JSON)
- footprints

Only reduced data in release 1, raw data in a next release

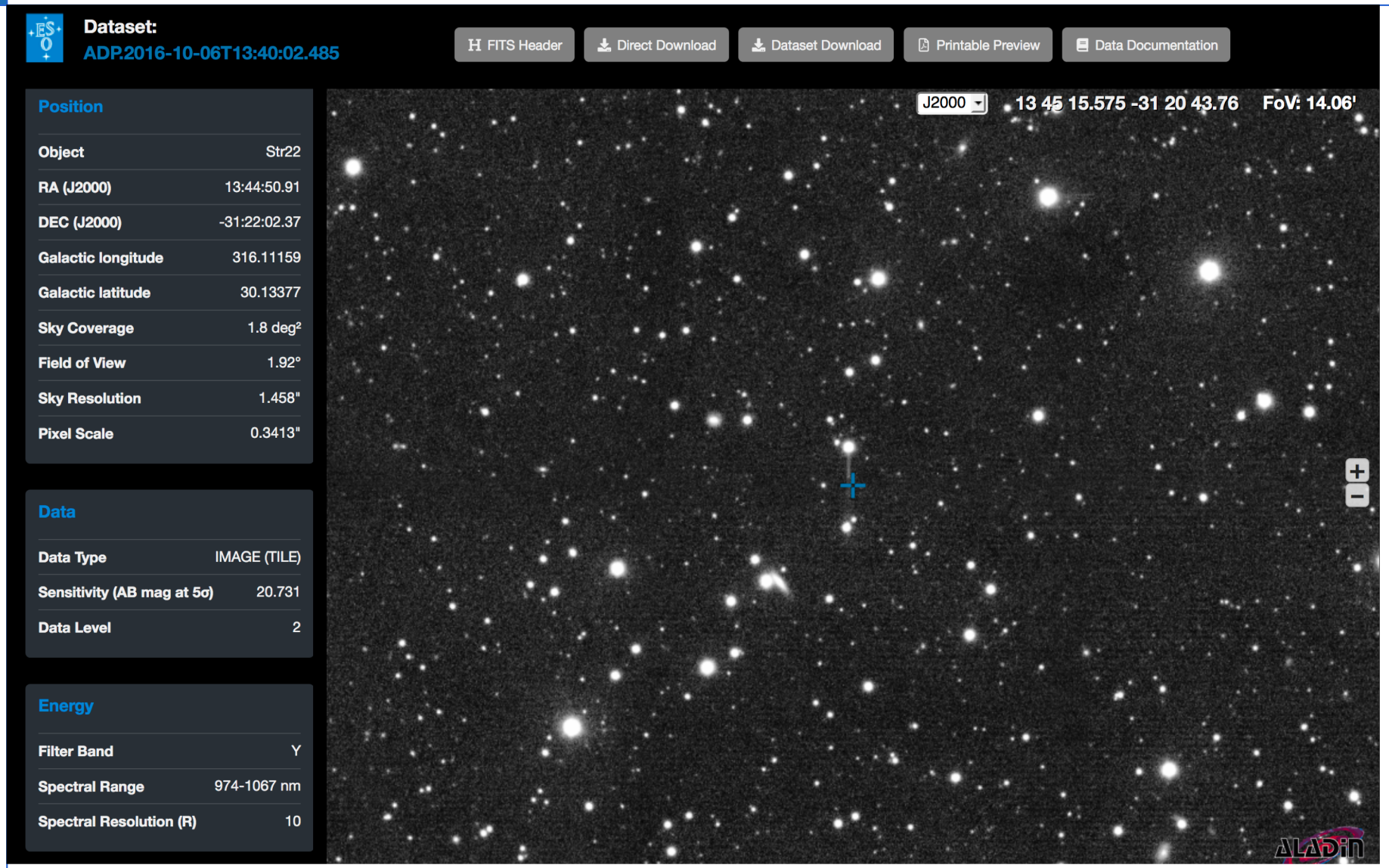
ESO Science Portal: main view



http://archive.eso.org/scienceportal

Alberto Micol, Archive Science Group, Data Management and Operations Division, ESO

ESO Science Portal: dataset details



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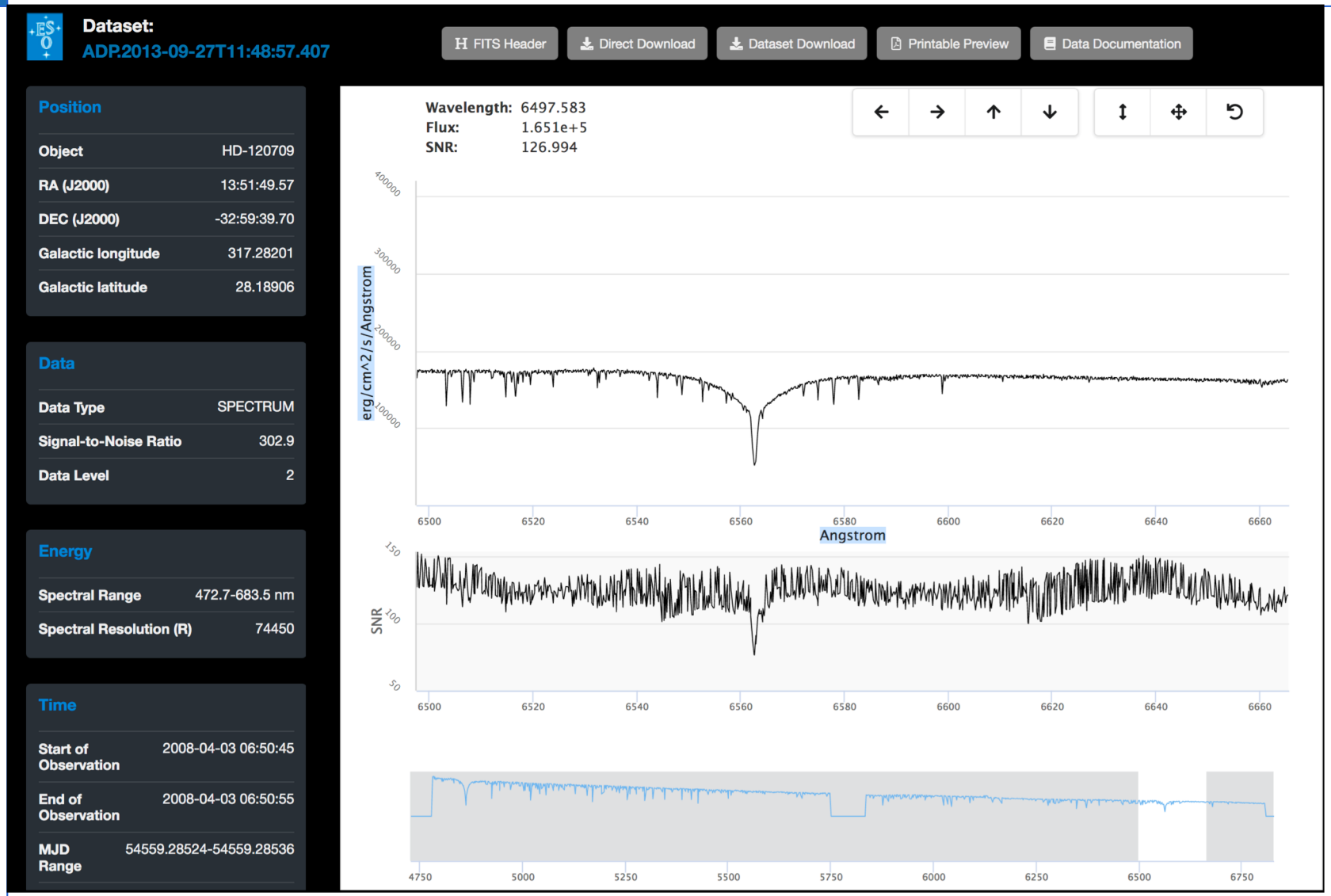

http://archive.eso.org/scienceportal

VO in the Science Portal

NoSQL database (read: Non-ADQL queries)

VO components used:

- **SAMP** (to export **ObsCore** votable)
- **STC-S** footprints
- **HiPS**
- **Datalink** used internally to expand a dataset
  into its components (science file + ancillary files)

- VO-aware tool used as a component:
  - **Aladin Lite / CDS**

Programmatic and Tool access

Release 1: direct database & VO access

Two TAP servers:

- ***tap_obs***: TAP server for observational data

  Powerful spatial queries (ADQL on SQLServer) + ObsCore

- ***tap_cat***: TAP for catalogs provided by ESO observers

  Limited spatial queries (cone searches),

  Tables with more than 4E9 records (ADQL on SYBASE IQ)

- github SOCIAL CODING *taplib* (ADQL, TAP, and UWS) by Grégory Mantelet (ARI)

  ADQL for SQLServer and SYBASE IQ by V.Forchì (ESO)

SSAP server to easily access the 1d spectra

- github SOCIAL CODING https://github.com/vforchi/SSAPServer (ESO)

DataLink to easily find and access: ancillary files, provenance and derived files, previews, etc.

VO Interfaces

How to present VO interfaces to the user community?

- usability!

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 (wish list: astroquery)

Programmatic and Tool access

http://archive.eso.org/programmatic

1. **Query a TAP service**

   aka Direct database access
2. Script your access
3. Configure tools
4. **Learn dataset actions**
5. IVOA standards & Software

Programmatic and Tool access

Next releases: 2019, 2020

- TAP UPLOAD
  - Requires:
    - DB space for users
    - authentication
- SSAP UPLOAD
- Cut-outs (SODA)
- DataLink for calibration files (ESO's calSelector)

ESO ARCHIVE COMMUNITY FORUM

User is king!

We invite for feedback at…

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/

Registration of VO services/protocols

How to register your services

- copy existing similar resource
- edit its parts(1): title, shortName, identifier, curation/, content/
- edit its parts(2): capability/
- edit its parts(3): tableset/
- upload it using "Add new resource"

Next time there are changes:

- either edit it online (error-prone), or
- re-edit the part that has changed,
- upload it using "Create new version from file"