ViaLactea: a Visual Analytic environment to explore our Galaxy

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1. CONTEXT

ViaLactea is a distributed Visual Analytics system being developed within the VisIVO Lab and tailored to the exploitation of multi-wavelength astrophysical surveys of the Galactic Plane.
It consists of two main components:

❏ the ViaLactea Knowledge Base and
❏ the ViaLactea Visual Analytics.

3. VISUAL ANALYTIC TOOL

ViaLactea Visual Analytics:

❏ is an open-source desktop application and the primary way to consume the Knowledge Base content
❏ offers a 2D and 3D visual analytics environment that allows to easily conduct research activities while interacting with the Knowledge Base
❏ The tool also allows to carry out SED analysis using numerical models made available by the VLKB
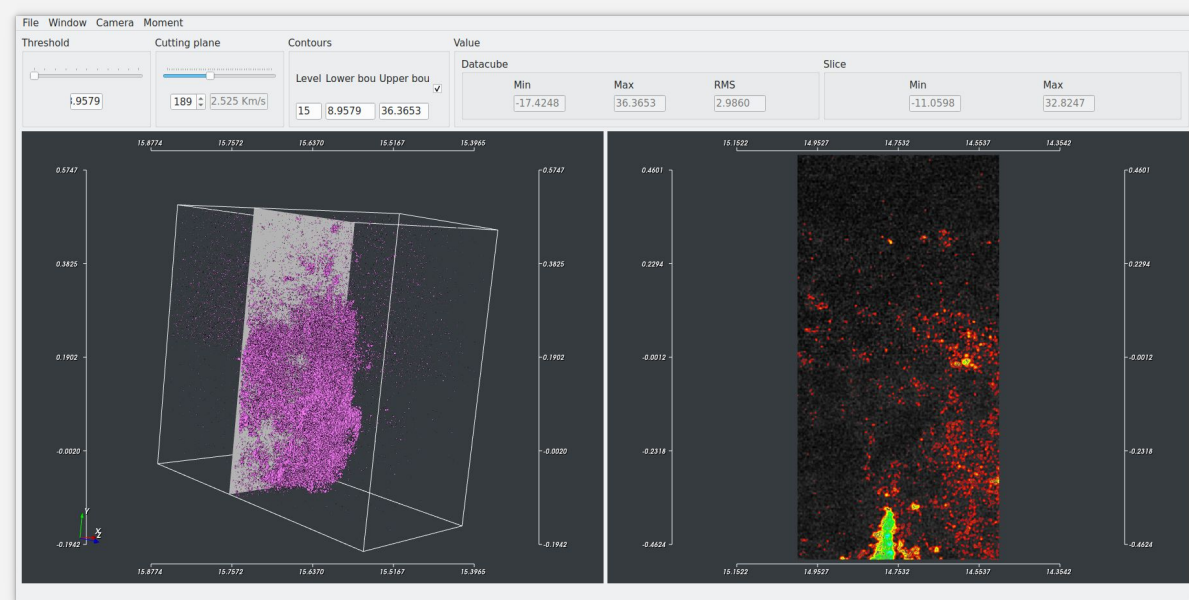

5. SOURCE REFINEMENT
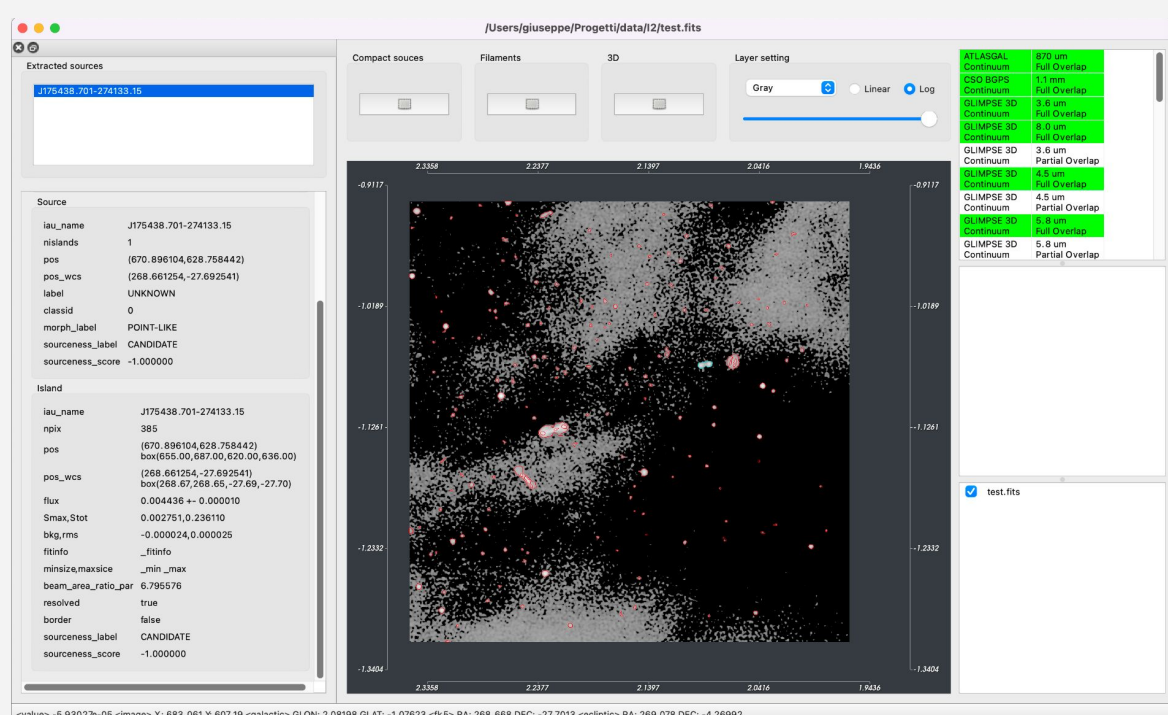
❏ Analysis of source finder results

❏ Contour refinement of extracted sources

❏ Removing false-positive sources detected

2. KNOWLEDGE BASE

The ViaLactea Knowledge Base
❏ Provides discovery services and access to data collections and catalogues of the galactic plane
❏ Data access available through REST-API services: search, cutout and merge
❏ Provides information about compact sources, filament structures and numerical SED models
❏ Accessible through a Virtual Observatory enabled infrastructure by the TAP protocol
❏ Fully exploited by ViaLactea Visual Analytic client tool
❏ Secured under Authentication and Authorization Infrastructure (AAI)
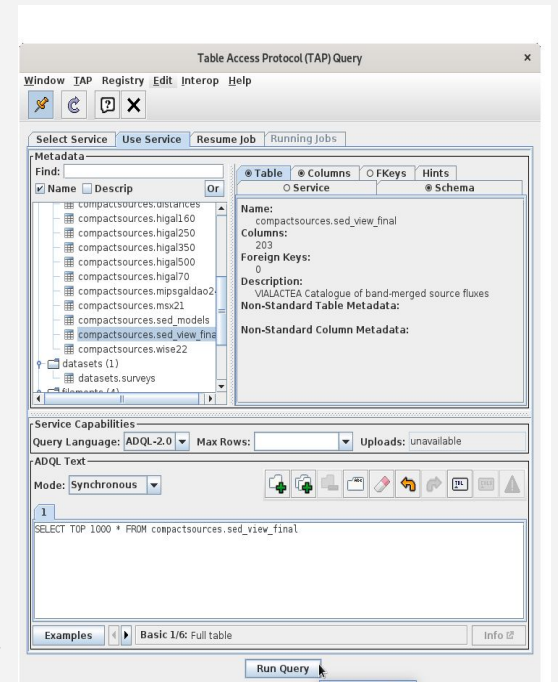
See M. Molinaro's poster

4. SFINDER INTEGRATION
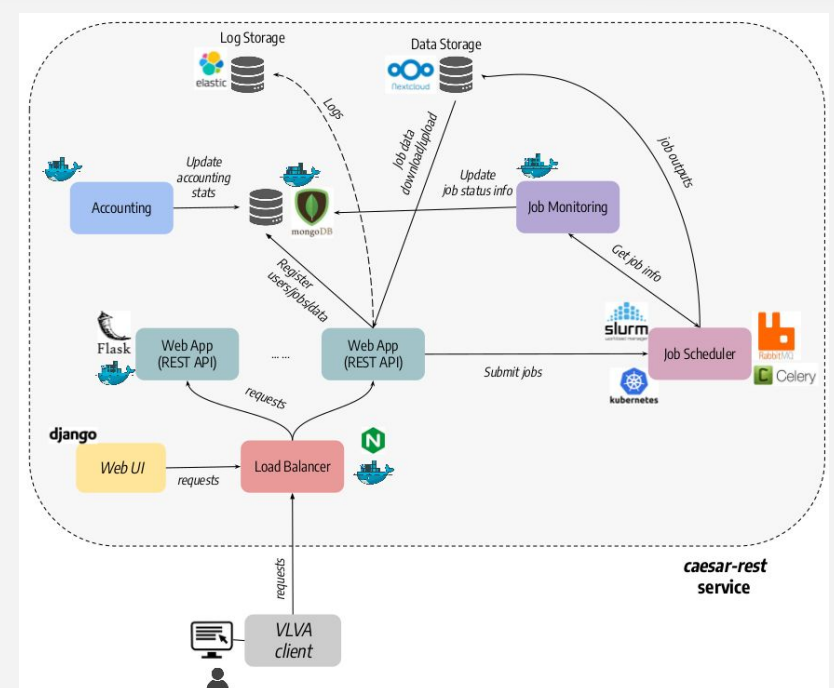
VLVA integrated with CAESAR Source Finder:
❏ A REST-ful web service based on Flask framework for running CAESAR source finding jobs
❏ Deployed and tested on GARR OpenStack Kubernetes cluster + CIRASA dedicated resources
❏ Multiple run strategies

See S. Riggi's poster

6. WORK IN PROGRESS...

❏ Support for simulated data

❏ Source catalogue refinement with dedicated services

❏ Remote visualization based on scalable infrastructures

❏ Parallel and distributed visualization pipelines