Leibniz-Institut für
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Continuous development and maintenance of the Daiquiri framework

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Daiquiri is a framework for web publications of scientific databases

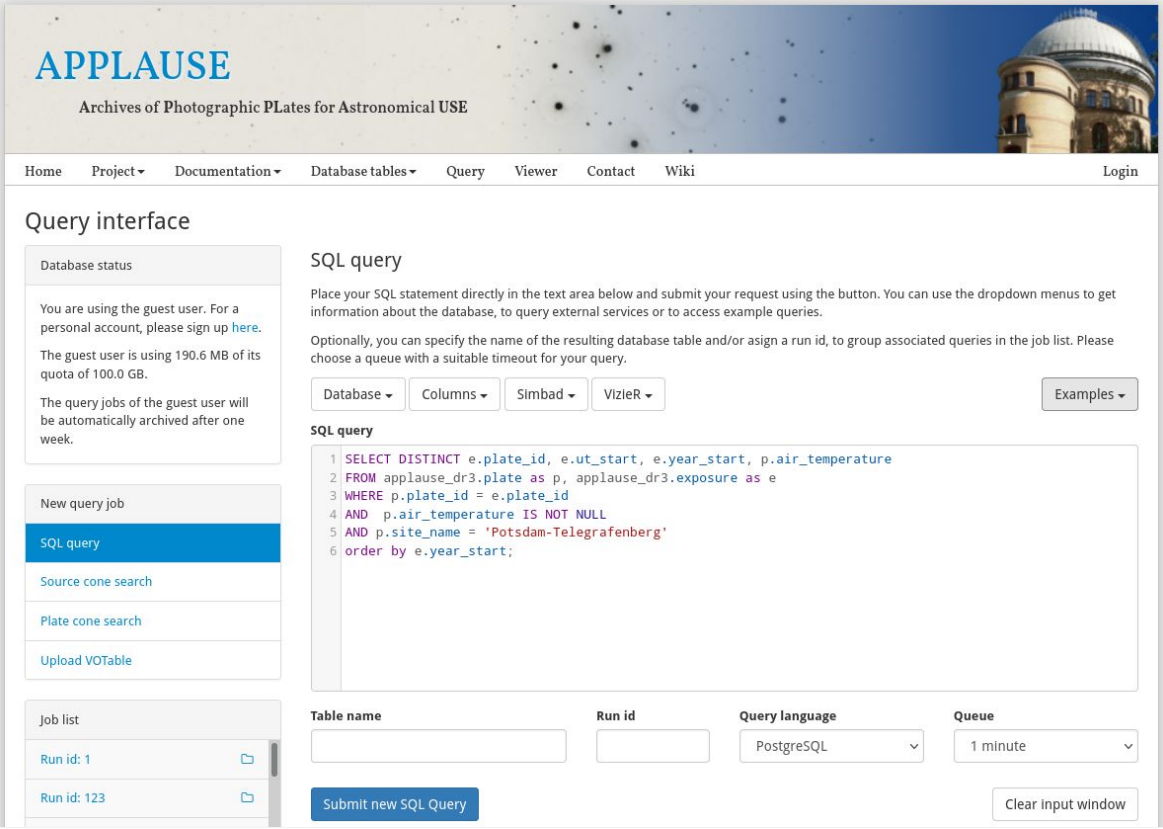
- Based on Django (Python Web framework)
- Intuitive Web-interface for accessing the scientific data
  (e.g., query interface, visualization and download of data)
- Supports a wide range of protocols and standards
  (e.g., IVOA TAP, IVOA Simple Cone Search, etc.)
- Adapts to any type of data: single values, pictures, spectra
- Highly customizable thanks to modular services
- Easy deployment owing to docker containerization
  (next talk by Anastasia Galkin)
- Open Source: https://github.com/django-daiquiri/daiquiri

Scientific data published with Daiquiri at AIP

- CosmoSim:
  https://www.cosmosim.org/
- RAVE:
  https://www.rave-survey.org
- MUSE:
  https://musewide.aip.de
- APPLAUSE:
  https://www.plate-archive.org/
- GAIA@AIP:
  https://gaia.aip.de/
- 4MOST (upcoming):
  https://www.4most.eu

Daiquiri features: interactive query interface

- Supports ADQL and PostgreSQL
- Asynchronous database queries, up-to several hours



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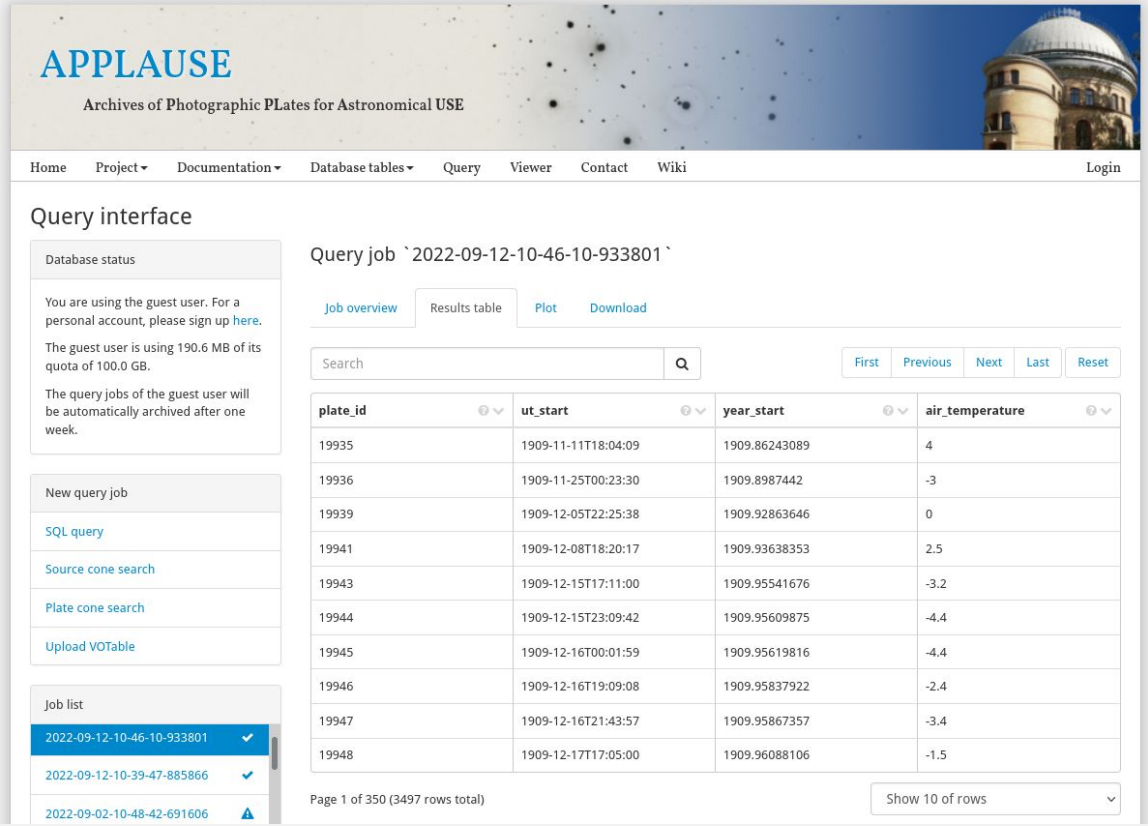

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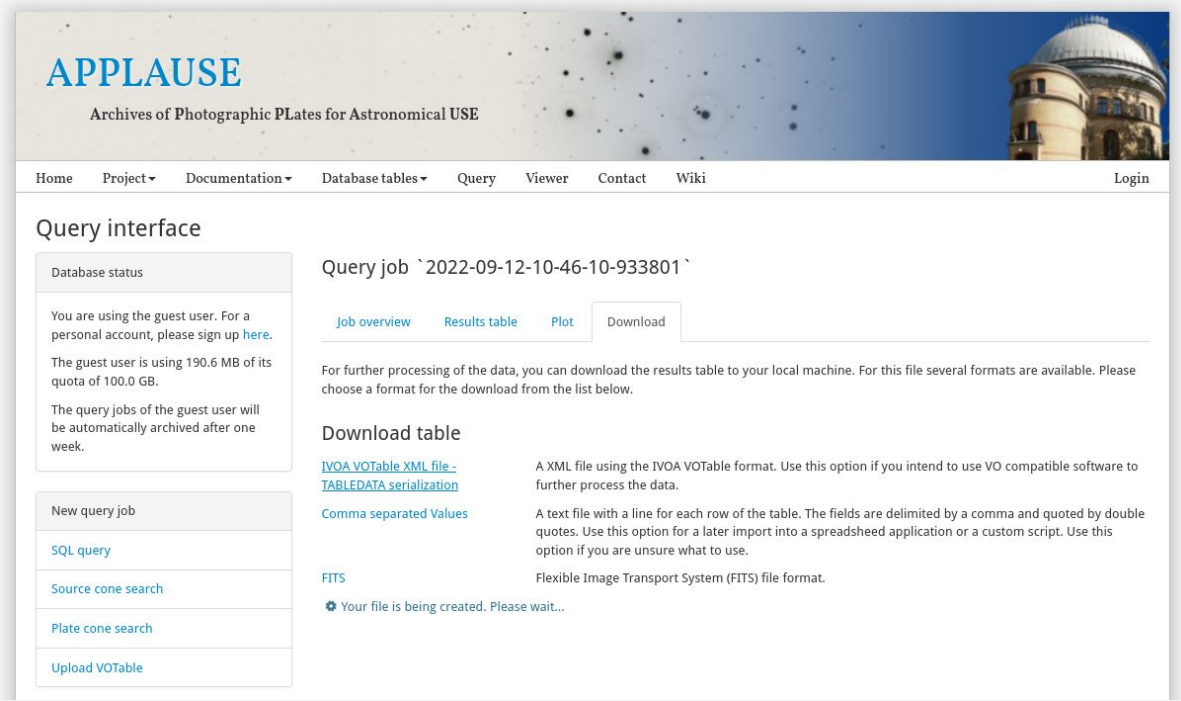
- Simple data visualization
- Download of the data in various formats, e.g., FITS, CSV



More Daiquiri features

- Rich metadata management, e.g., including DOI, UCD, etc.
  Daiquiri provides scripts for management of very large metadata sets
- User management system supporting custom permissions for individual data collections
- Easy to implement custom services (e.g., spectral-viewer for GAIA DR3 or object-viewer for APPLAUSE)

New additions to the Daiquiri features

- IVOA Datalink
- Better data visualization of the query results
- Spectral Viewer (only for GAIA DR3)

IVOA DataLink

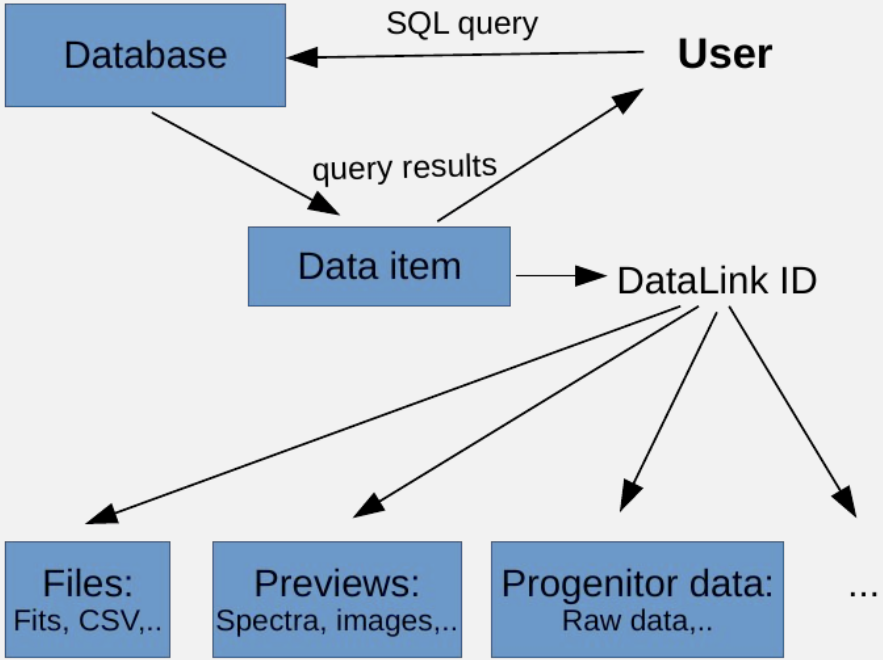
In short, the DataLink protocol allows to get more information on resources belonging to a discovered data item

The resources might include

- various files available for download
- progenitor data sets
- alternate representations, previews
- and others…

DataLink protocol is implemented into Daiquiri according to the IVOA Recommendations

- only the pre-constructed DataLink tables are required



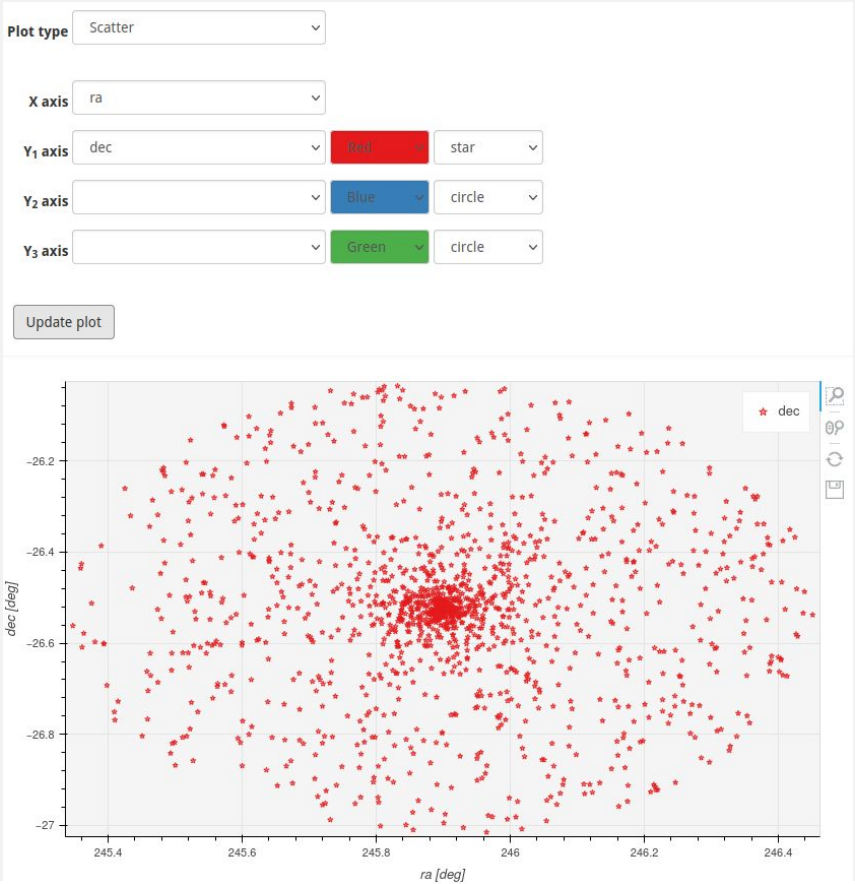
Overhauled visualization of the query results

Previously:

- Daiquiri provided only a simple scatter plot

New implementation (currently in development):

- New plot-types
- Improved customization



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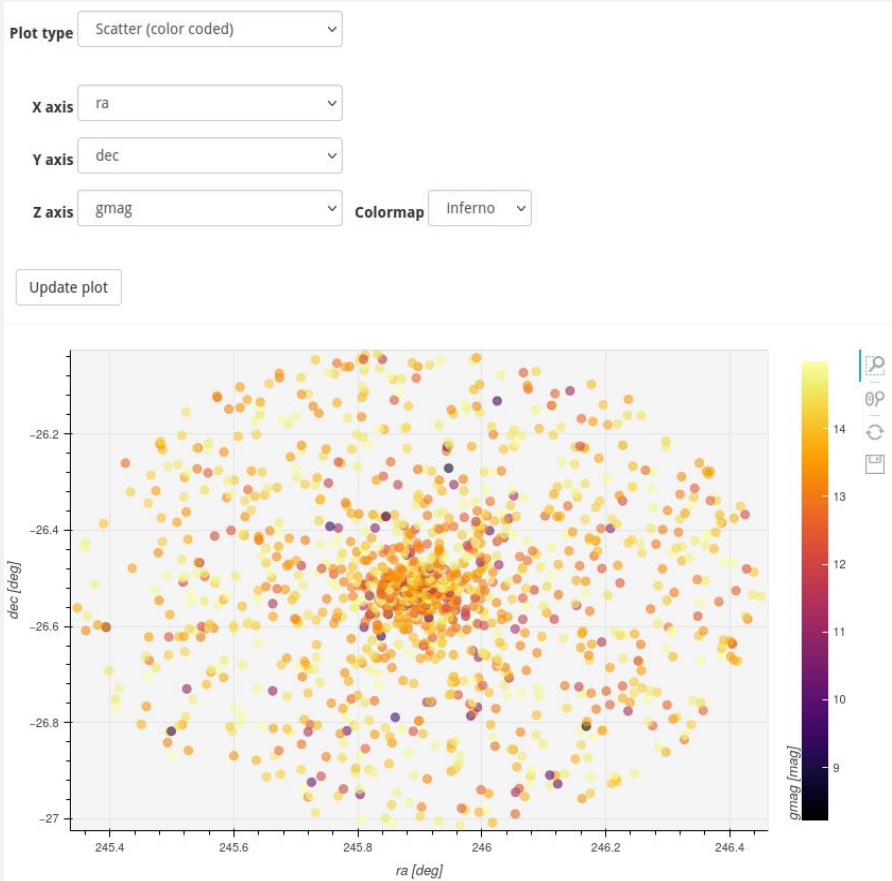

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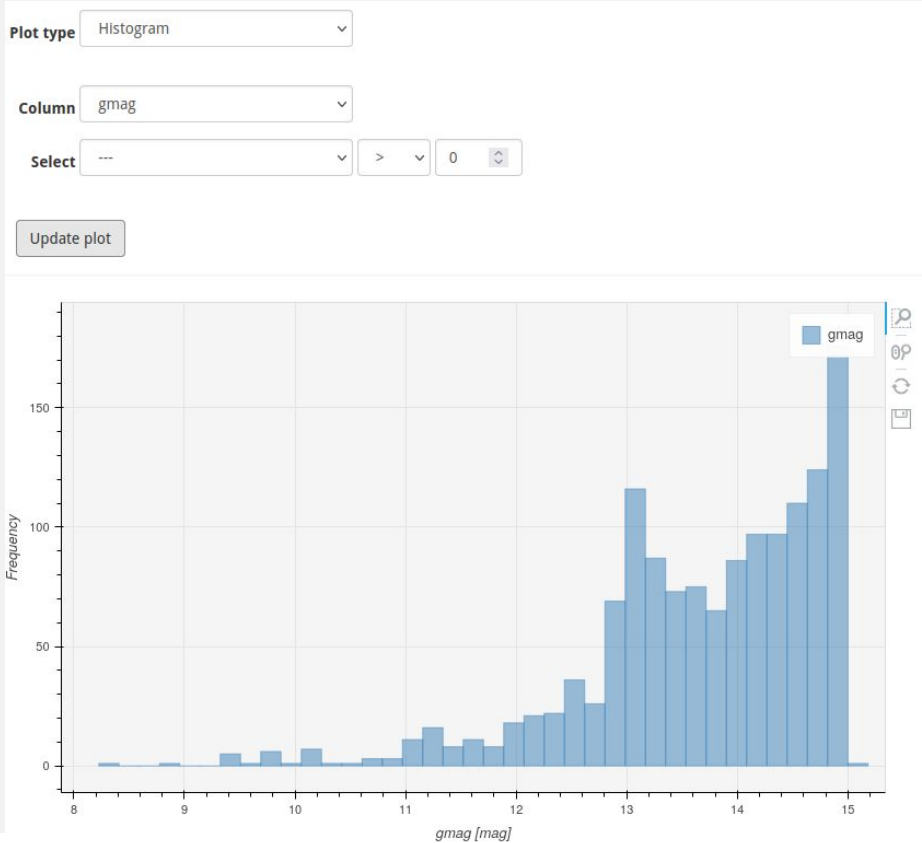

Spectral-Viewer for Gaia DR3 (RVS Mean Spectrum)

- Preview of the RVS Mean Spectra in the web interface
- First attempt of the interactive spectral viewer in Daiquiri
- Solid foundation for the upcoming spectral data releases, e.g, 4MOST

Summary

- **Daiquiri is a powerful web framework for publication of scientific data**
  - Supports a large number of protocols
  - Easy to deploy

- **Large number of data collections of various types are already published using the Daiquiri framework and hosted at AIP**
  - Data collections include simulation data (CosmoSim), astrometrical data (Gaia), scans of photographic plates (APPLAUSE) and others…

- **Daiquiri framework is continuously improved:**
  - more features in the future!
  - e.g., customizable DataLink Viewer