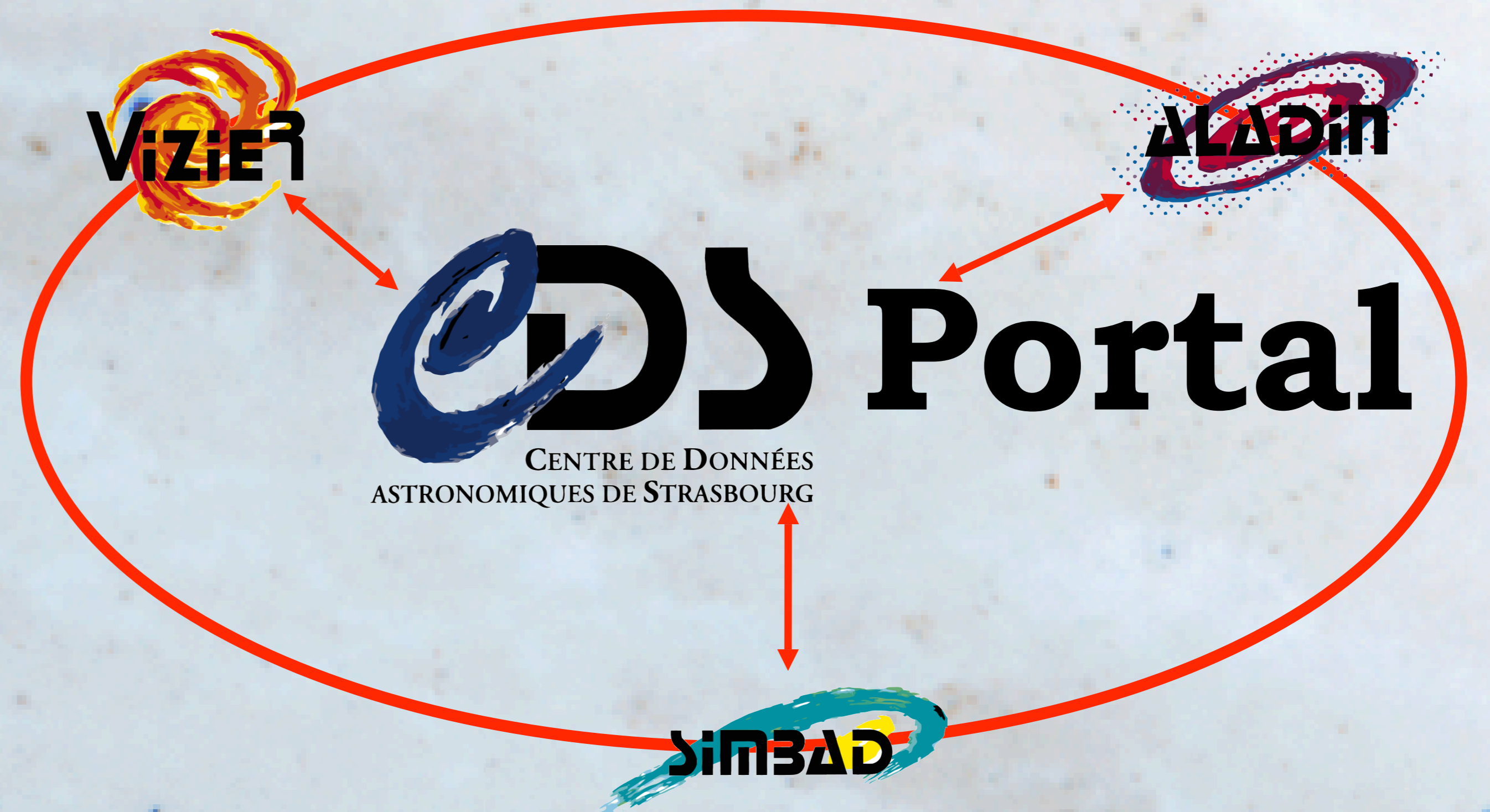


Abstract

The CDS portal is a newly developed Web application, which aims at providing a uniform search interface to CDS services (Simbad, VizieR and Aladin). For a given position or object name, the portal returns a summary of available information and data in the various services. Following the Virtual Observatory (VO) paradigm of "shifting the results, not the data", we also provide each user with a private virtual storage space where one can save results obtained from Simbad or VizieR, or upload one's own local table. Stored data can later be reused as inputs to other services, cross-identified or saved in VO-compatible formats. The portal has been built as a lightweight application able to run in any modern browser without the need to install a dedicated plugin. It relies upon the Google Web Toolkit technology, an open source framework for Web applications, which was helpful in allowing us to reuse or adapt as much as possible existing HTTP services.

One Portal to bind them all

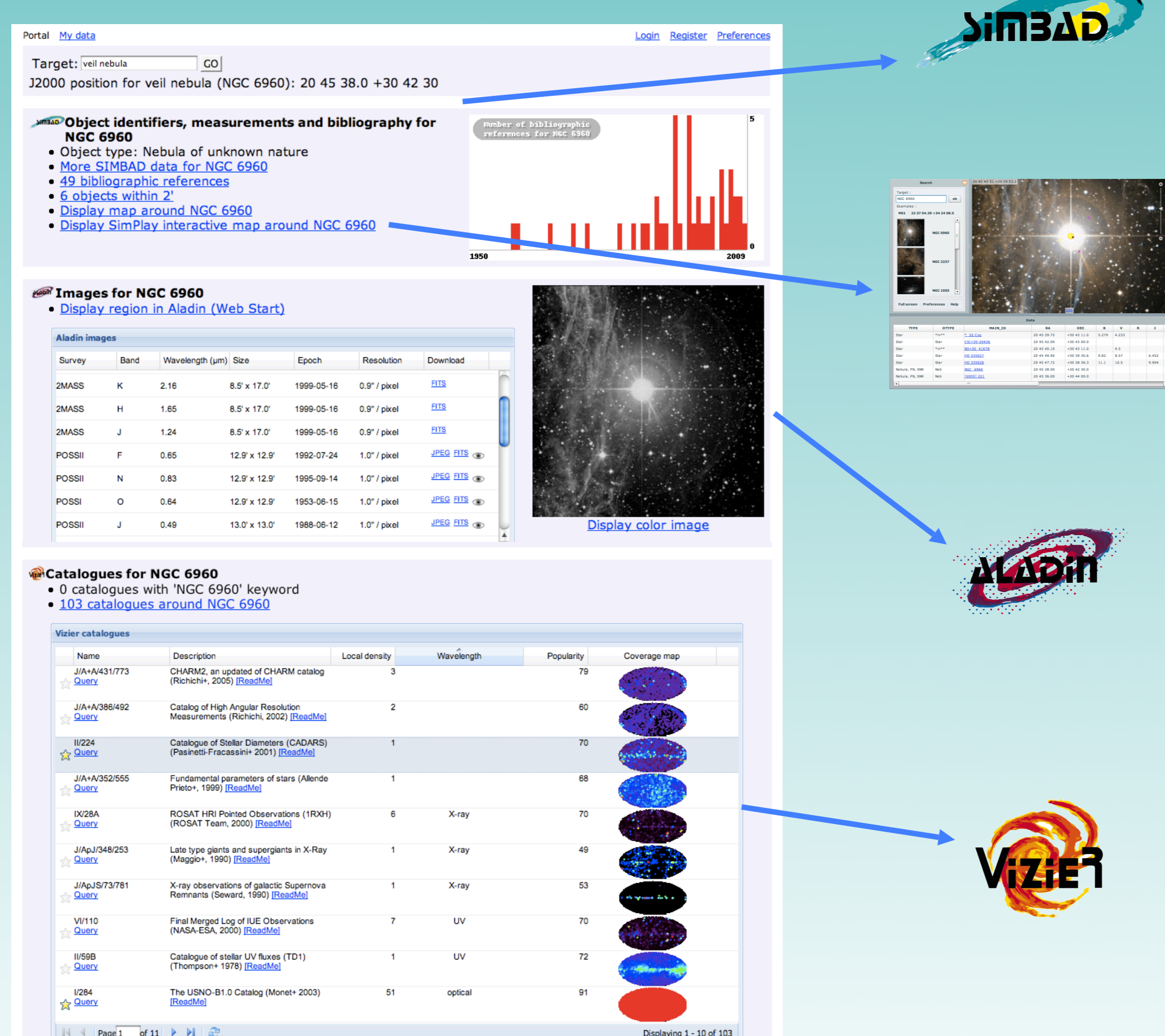


Use case 1 : retrieve available data at CDS for a given object

Target: veil nebula
J2000 position for veil nebula (NGC 6960): 20 45 38.0 +30 42 30

Simultaneous query to all CDS services

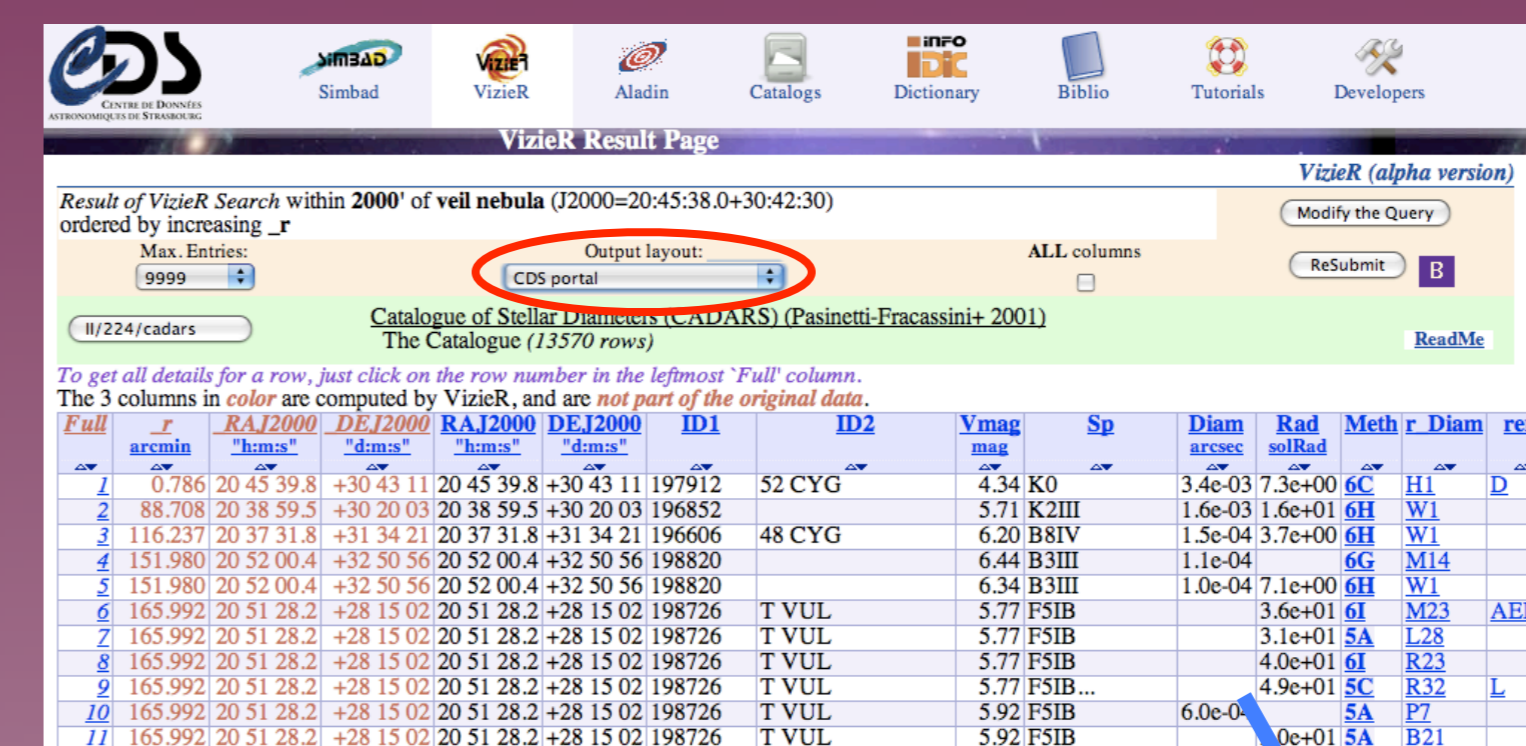
Dynamic name resolution (AJAX for Sesame)



The screenshot shows the CDS Portal interface for the search 'veil nebula CO GO'. It displays a list of object identifiers, measurements, and bibliographies for NGC 6960. Below this, there are sections for 'Images for NGC 6960' and 'Catalogues for NGC 6960'. The 'Images' section shows a list of images with their respective parameters. The 'Catalogues' section shows a list of catalogues with their descriptions and local details. Blue arrows point from the search input to the various sections of the interface.

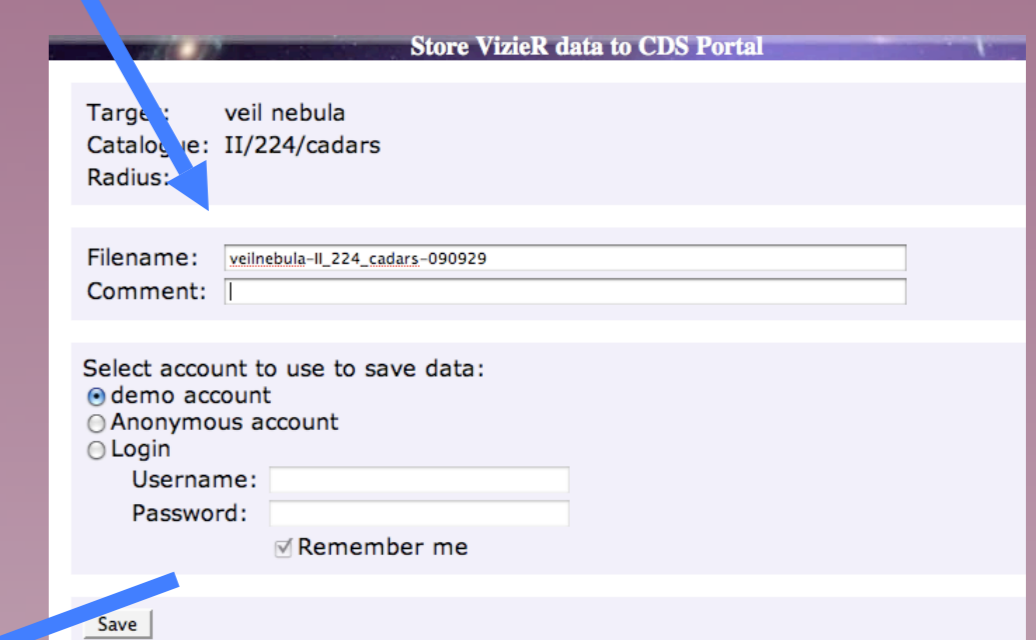
Result page with list of available data, and links to access/query them

Use case 2 : reuse VizieR output as input to query Simbad

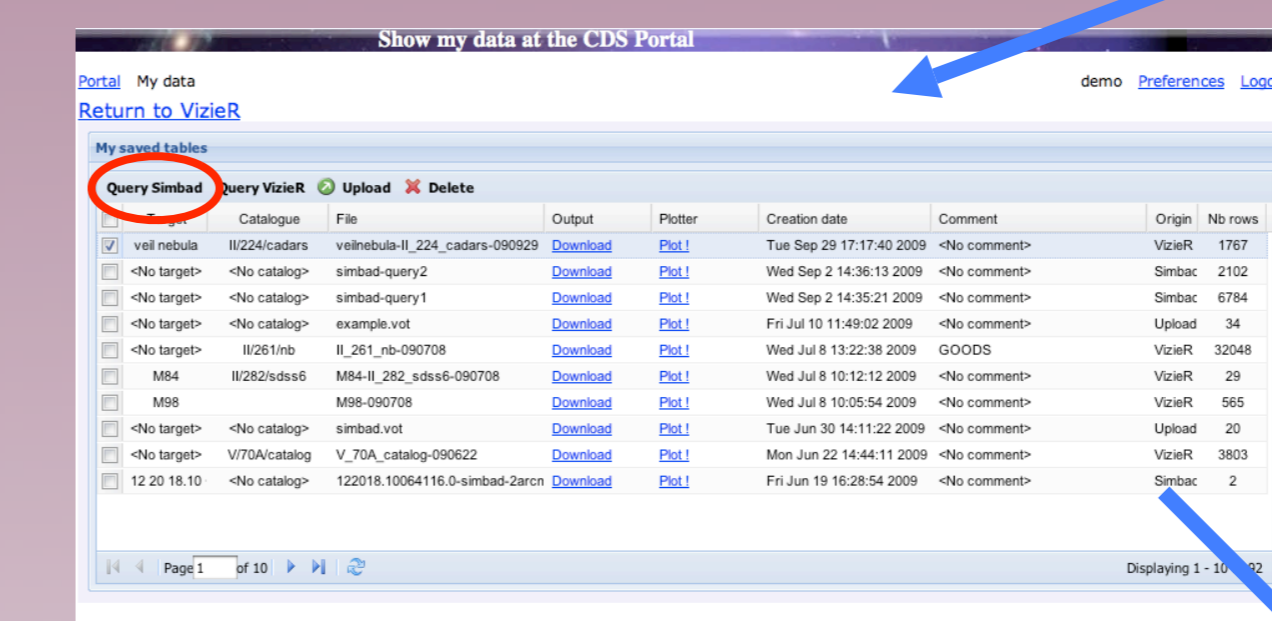


The screenshot shows the VizieR search results page for 'veil nebula (2000-2045:38.0-30:42:30)'. It displays a table of results with columns for 'name', 'RA(J2000)', 'DEC(J2000)', 'ID1', 'ID2', 'Ymag', 'Sp', 'Diam', 'Rad', 'Meth', 'C', 'Diam', 'ra', 'dec'. The table contains several rows of data, including entries from the 'Catalogue of Stellar Parameters (SAAS)' and 'The Catalogue of Stars (CDS)'. A blue arrow points from the 'name' column to the 'Store VizieR data to CDS Portal' dialog box.

From VizieR result page : link to save data in portal

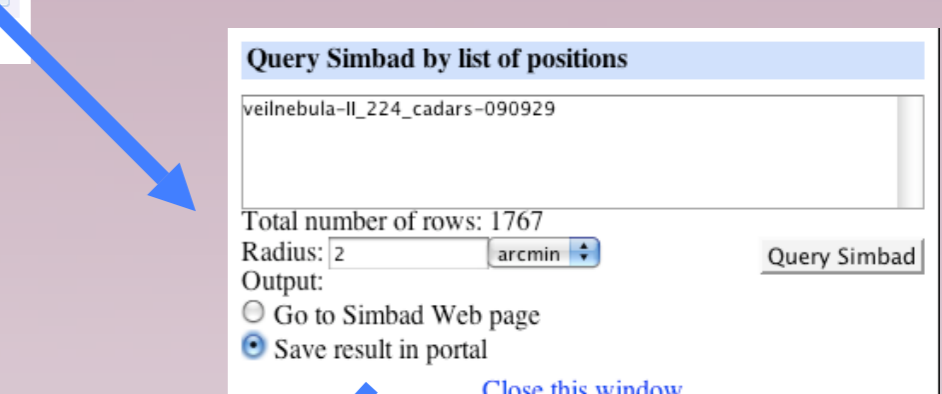


The screenshot shows the 'Store VizieR data to CDS Portal' dialog box. It contains fields for 'Target', 'Catalogue', 'Radius', 'Filename', and 'Comment'. There are also radio buttons for 'Select account to use to save data:' with options for 'demo account', 'Anonymous account', and 'Login'. The 'Login' option is selected, and there are fields for 'Username' and 'Password'. A 'Remember me' checkbox is also present. A 'Save' button is at the bottom right.



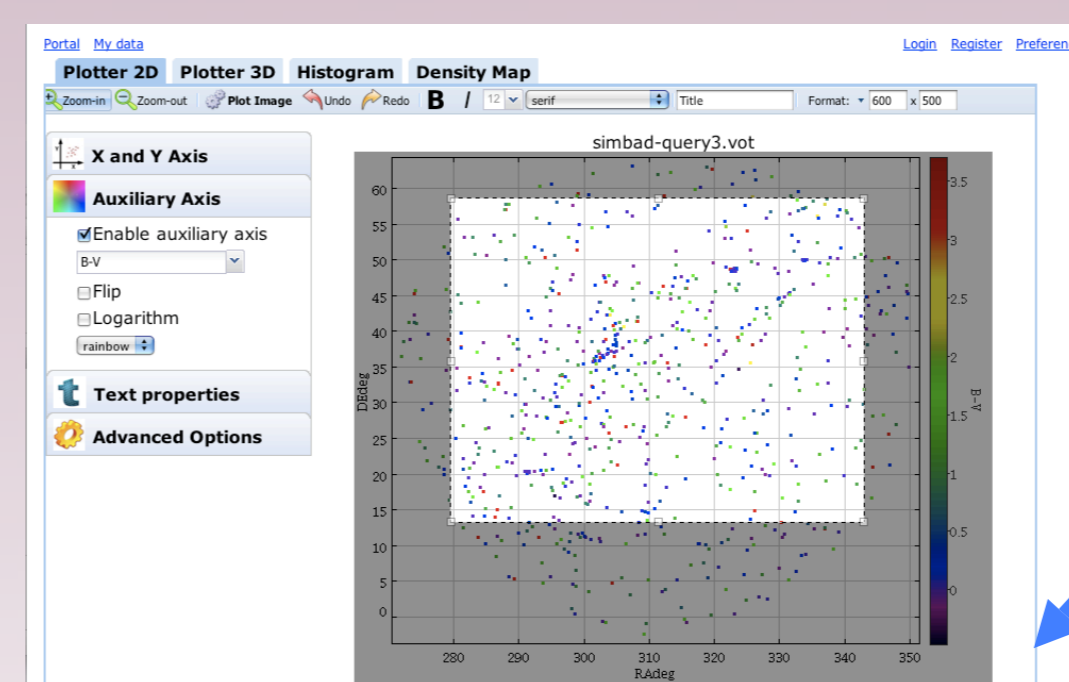
The screenshot shows the 'Show my data in the CDS Portal' page. It displays a table of saved data with columns for 'Catalogue', 'File', 'Output', 'Format', 'Creation date', 'Comment', 'Origin', and 'Notes'. The table contains several rows of data, including entries from 'simbad', 'vizieR', and 'aladin'. A blue arrow points from the 'Return to VizieR' link to the 'Query Simbad by list of positions' dialog box.

List of saved tables in personal storage space



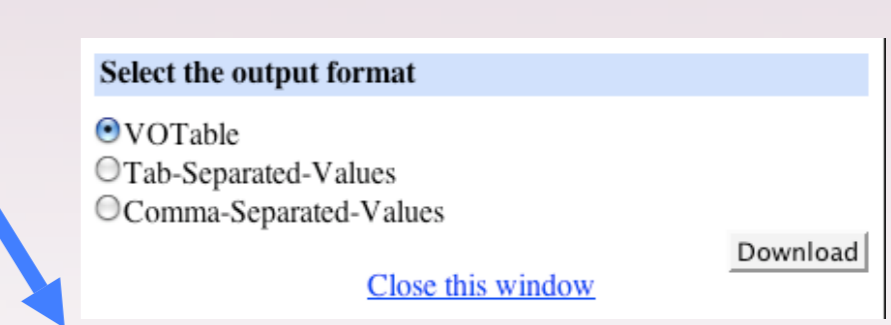
The screenshot shows the 'Query Simbad by list of positions' dialog box. It contains a text area with the input 'veilnebula_4_224_cadars-090929'. Below the text area, there are fields for 'Total number of rows: 1767', 'Radius: 2', and 'Output:'. There are radio buttons for 'Go to Simbad Web page' and 'Save result in portal'. A 'Query Simbad' button is at the bottom right.

Query Simbad with positions of saved table



The screenshot shows the online plotter interface. It displays a 2D plot of the search results with axes for 'X and Y Axis'. There are various controls for the plot, including 'Auxiliary Axis', 'Enable auxiliary axis', 'C/F/P', 'Log/Exp/lin', 'Color/3D', and 'Text properties'. A blue arrow points from the 'Check result with online plotter' text to the plot.

Check result with online plotter (shift the results, not the data)



The screenshot shows the 'Select the output format' dialog box. It contains radio buttons for 'VOTable', 'Tab-Separated-Values', and 'Comma-Separated-Values'. A 'Download' button is at the bottom right.

Retrieve result as VOTable, CSV or TSV file

Technologies and standards used behind the scene

The CDS Portal relies on the following technologies :

- **GWT** (Google Web Toolkit) : an open source toolkit allowing to build and test Web applications in Java, before "compiling" them to Javascript for release
- **iRODS** (Integrated Rule-Oriented Data System) : data grid software system deployed at CDS, and providing users with a personal storage space
- **VOTable** : Virtual Observatory format for tabular data, used internally to store user saved tables (and associated metadata)
- **UCD** (Unified Content Descriptor) : VO format to describe column quantities. Used in the portal to retrieve coordinates information
- **Flex** : 'Flash for developers. Adobe framework to build Rich Internet Applications. Used in the development of SimPlay, the simple visualizer for Simbad data
- **STIL** and **STILTS** : Java library and command line tool allowing the parsing and manipulation of astronomical tabular data

Links

The CDS portal will be released in November 2009

Check out <http://cdsportal.u-strasbg.fr/>

Acknowledgement

This work has been supported by the EU-funded (FP6 and FP7) VOTECH and AIDA projects.