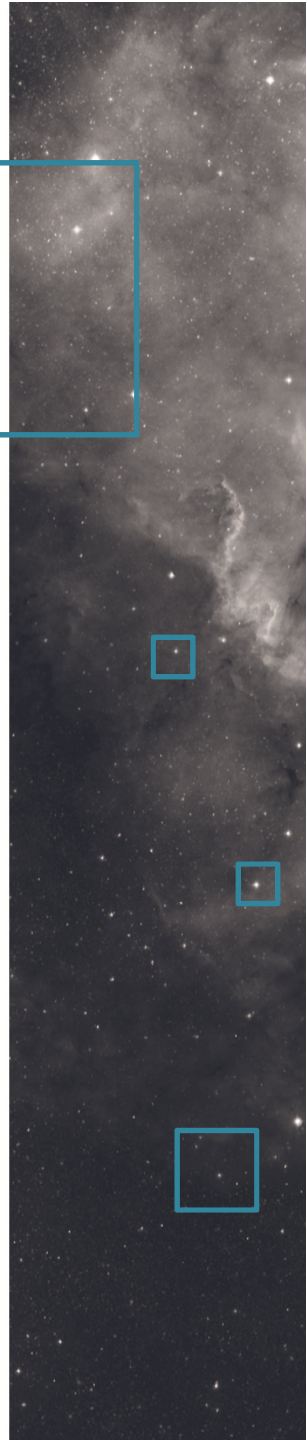
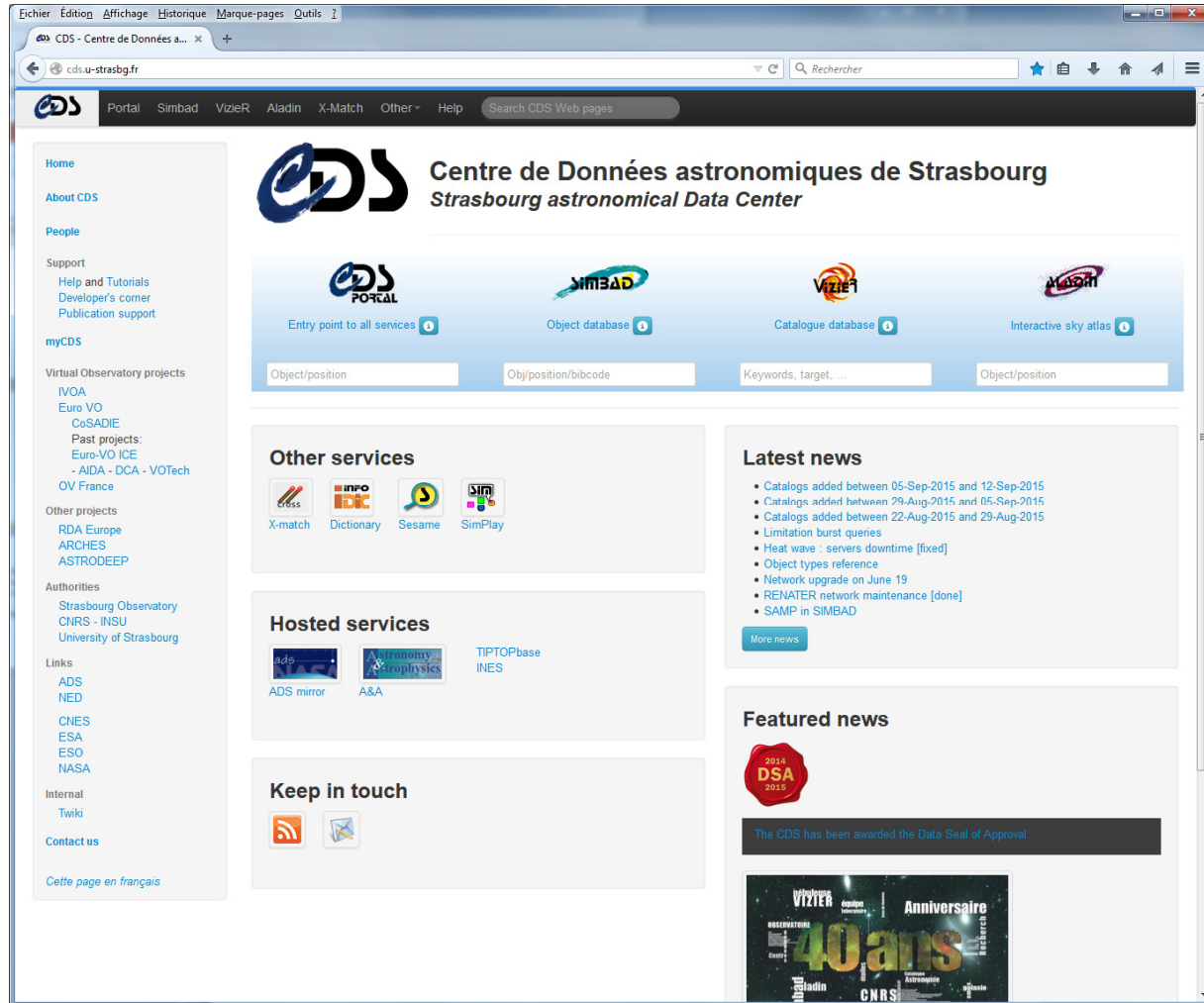


# The CDS and the VO

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Françoise Genova and the CDS Team





The screenshot shows the CDS website in a browser window. The browser's address bar displays 'cds.u-strasbg.fr'. The website's navigation menu includes 'Portal', 'Simbad', 'VizieR', 'Aladin', 'X-Match', 'Other', and 'Help'. The main header features the CDS logo and the text 'Centre de Données astronomiques de Strasbourg' and 'Strasbourg astronomical Data Center'. Below the header, there are four service tiles: 'CDS PORTAL' (Entry point to all services), 'SIMBAD' (Object database), 'VIZIER' (Catalogue database), and 'ALADIN' (Interactive sky atlas). Each tile has a search input field. The left sidebar contains a 'myCDS' section and a 'Virtual Observatory projects' section listing various observatories and past projects. The main content area is divided into 'Other services' (X-match, Dictionary, Sesame, SimPlay), 'Hosted services' (ADS mirror, A&A, TIPTOPbase, INES), and 'Keep in touch' (RSS, Email). The right sidebar features 'Latest news' with a list of recent updates and a 'More news' button, and 'Featured news' with a '2014 DSA 2015' award seal and a banner for '40 ans' (40th anniversary) of the CDS.

# □ The CDS and ASTERICS

- CDS led the 4 last Euro-VO projects (2006-2015)
- ASTERICS WP4 lead
- Participation in all tasks, co-lead of Tasks 4.2 (with INTA) and 4.3 (with UEDIN)
- Relevant CDS activities
  - Provision of value-added services
  - Active participation in the development of the VO framework
  - The staff includes astronomers & software engineers

# □ CDS services and ASTERICS

- CDS services can be used/customized for ASTERICS purposes
  - SIMBAD – astronomical objects (incl. Object names, positions, types, bibliography, and some measurements) (8 000 000 objects)
  - VizieR – catalogues (incl. Very large ones), tables and « other data » (images, spectra, time series, data cubes) attached to publications (14000 « catalogues »)
  - Aladin – interactive visualisation tool for images and cubes & HiPS image database (250 « surveys »)
  - Cross-match – very efficient for large tables
- VO-enabled services
  - TAB-SIMBAD and TAP-VIZIER
  - SAMP
  - ALADIN is the VO portal for images

## □ CDS participation in the development of the VO framework

- Very active participation in the development of the VO standards & tools
- IVOA standards in particular in
  - Applications (MOC, SAMP, VOTable)
  - Data Access Layer (SSA, DataLink)
  - DM (Char, ObsCore, PhotDM, SpectrumDM, SimDM)
  - Grid & Web Services (VOSpace, Web Services Basic profile)
  - Semantics (UCDs, Units, Vocabularies)
  - Standardization process (DocStd)
- Tools
  - ALADIN
  - VO libraries produced by CDS: MOC (java – with M. Reinecke, python, C); SAVOT java (with L. Bourgès); votable.js
  - VO libraries initially produced by CDS, now maintained by GAVO (G. Mantelet) and distributed by CDS: ADQL/UWS/TAB



## □ VO Schools

- Active participation in the VO Schools organised by the previous Euro-VO projects
- Astronomers and s/w engineers
  - Preparation and maintenance of the tutorials
  - Tutors during the schools
- Lessons learnt: an excellent way to get feedback from scientific usage of the VO (and of our services)



□ and...

- Lots of collaborations with observatory archives, journals, the ADS, NED, etc, and participation in projects such as Gaia for data distribution
- R&D on many topics incl. « new user interfaces » and « big data » methods, hierarchical approach