Proposal for an automated and versatile statistical cross-identification tool

- Source identification is needed:
  - In the 'normal' MXT and ECLAIRs pipelines
    - As added value product for the observer
    - To trigger alerts (discover new potentially interesting sources, detect states of known transients) if not done at QLA stage.
  - In 'real time', QLA and in the 'interactive' pipelines
    - To monitor astrometric accuracy
    - To trigger early alerts
    - To help Burst Advocates taking decisions

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- Input data:
  - Based on VO data access tools for archival data (Table Access Protocol)
  - Local catalogues
  - With a pre-defined (but evolving) set of catalogues and services best suited for the identification of X-ray sources (e.g. Rosat, XMM, Chandra, eRosita, GALEX, Simbad, SDSS, 2MASS, ALLWISE, radio, Gamma, radio, etc...)
  - Making use of VT imaging when available (or of the source lists provided by the VT pipeline)
- Providing:
  - Distances to the SVOM source (in terms of sigma) and SEDs
  - Identification probability through Likelihood Ratios (archival cat entry densities)
  - With priors on object type and spectral energy distribution (in addition)

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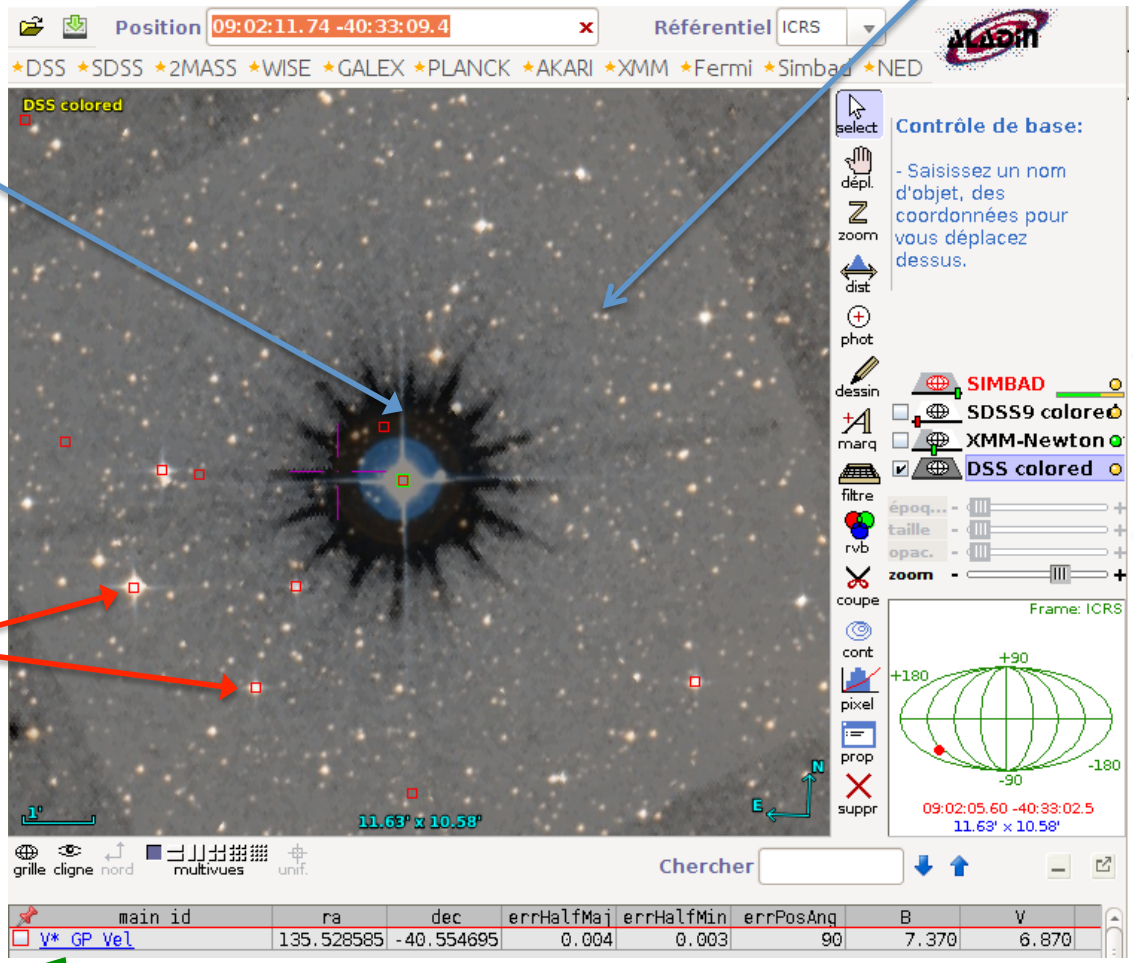
- Implemented as:
  - a WEB service (working on a remote machine)
  - as a stand alone application (e.g. dedicated Aladin extension) on a local machine
  - Interfaced with CDS cross-match services (multi-catalogues statistical by ARCHES)
  - Using multi-wavelength imaging as a graphical identification helping tool

Background optical image

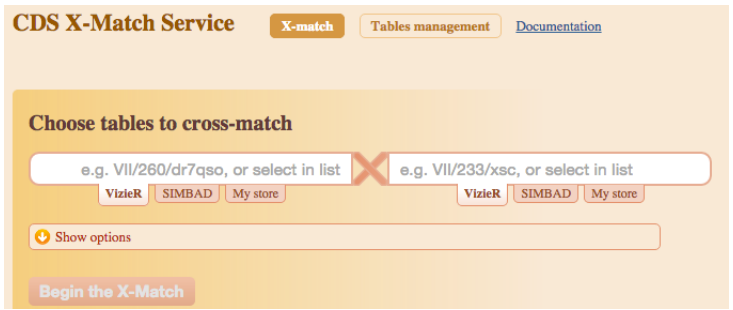
XMM image



VO accessed catalogues

Simbad entries

The identification Vela X-1 !



Proposal for an automated and versatile statistical cross-identification tool

- Many of the VO interfaced elementary tools already exist
- System should also be able to use ‘local’ catalogues
- Most important is to get the requirements right
- User friendly with simple interface
- Avoid building a complex Christmas tree !