SIMBAD improvements

CDS Council
October 2018

AUTEUR A.
CO-AUTEUR B.

CENTRE DE DONNÉES
ASTRONOMIQUES DE STRASBOURG

SIMBAD content growth

- +4% last year:
  - +48 acronymes /month
  - +1,100 papers /month
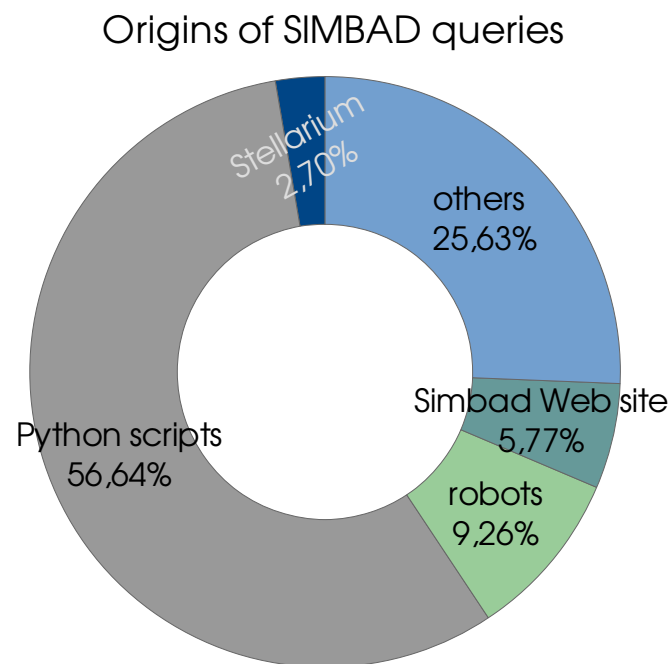 - +28,600 objects /month
- +5.7 millions of identifiers (Gaia)

Gaia in SIMBAD

- The criteria used for the cross-identification: objects must have had sub-arcsecond coordinates already, corresponding to quality A, B, and C in SIMBAD. Objects with insufficient astrometry, quality D or E, have been completely ignored.

- There were 6.5 million potential targets for the cross-identification.

  - Coordinates of Gaia objects were calculated at epoch 2000.0 taking into account the proper motions in order to be compared to the positions in SIMBAD.

  - **310,000 objects have been discarded** because they have a **neighbour in SIMBAD closer than 3''**. This value corresponds to the resolution of 2MASS. As there are many 2MASS identifiers in SIMBAD, we did not risk to add Gaia identifiers on 2MASS sources which would actually be a blend of two or more objects in Gaia.

  - **273,000 objects have been discarded** because they have a **neighbour at less than 3'' in Gaia DR2**, with a difference of magnitude smaller than 3 mag, the brighter source being at less than 1'' from SIMBAD position.

  - Finally **4.5 million objects have been cross-identified** with a Gaia DR2 source with a positional difference smaller than 1.0''.

  - About 1.4 million objects had no counterpart in Gaia DR2 at less than 1''. They are mostly (very) faint objects.
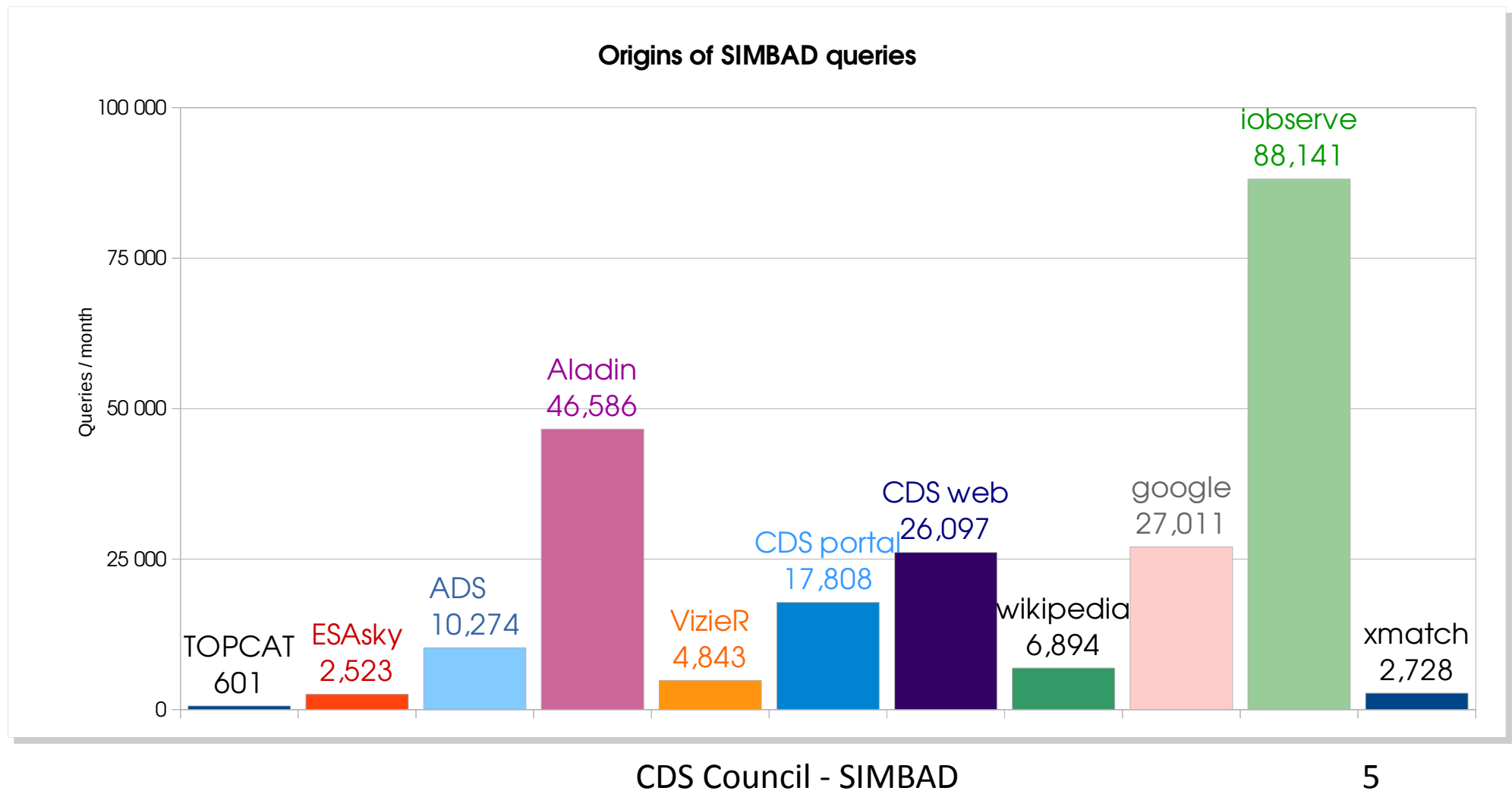
SIMBAD Usage (12 last monthes)

- ± 500,000 queries and 5GB per day
- ± 160,000 monthly unique visitors
- 2.3% blacklisted
- 6% of human users

  (against scripts/automated)

Origins of SIMBAD queries

- Stellarium 2,70%
- others 25,63%
- Simbad Web site 5,77%
- robots 9,26%
- Python scripts 56,64%

SIMBAD Usage

- Queries nor python nor robots are coming from: (note that Xmatch/TOPCAT are mainly for long list)

Origins of SIMBAD queries

DJIN2

CDS Council - SIMBAD
6

DJIN2

- Not enought efficient to be used in production

  → new feature in development: add known SIMBAD
  nomenclature to improve results

  → To be done: more tests and improvements to get
  responsive behaviour under many browsers

COSIM

- New graphical interface in development