SIMBAD

CDS council
2016/11/07

LOUP C.
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CENTRE DE DONNÉES
ASTRONOMIQUES DE STRASBOURG

From 1972 to now

SIMBAD started in 1972, first devoted to stars

All astronomical objects included in 1982
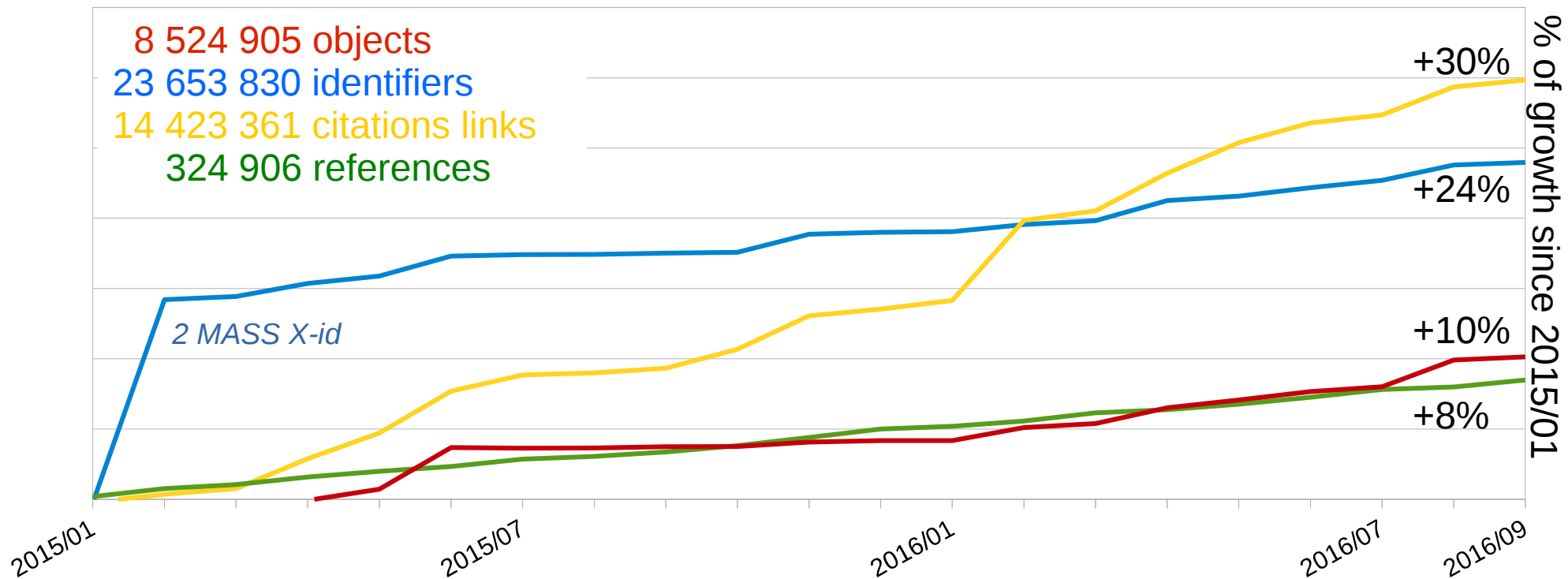
Contains currently

- 8.5 million objects
- 23.5 million names (identifiers)
- 324000 references

- SIMBAD is a meta-compilation based on scientific publications

Purposes of SIMBAD

- Provide the bibliography on objects of interest studied in the literature
- Provide « basic » or « fundamental » data on these objects
- Perform cross-identifications
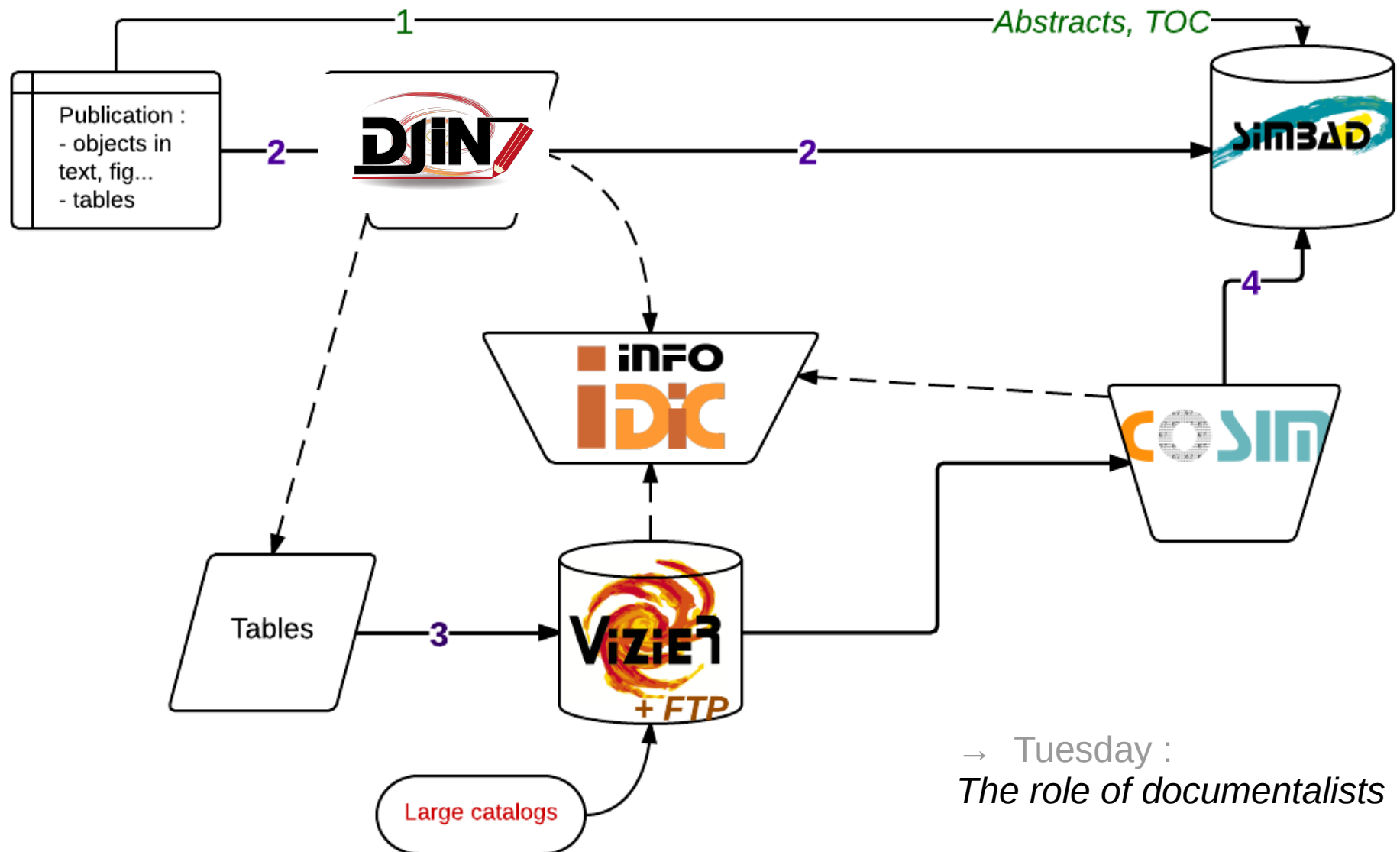- Help researchers to find out what is known, unknown, still debated

Content Evolution

SIMBAD content evolution

8 524 905 objects
23 653 830 identifiers
14 423 361 citations links
324 906 references

2 MASS X-id

+30%

+24%

+10%

+8%

% of growth since 2015/01

2015/01   2015/07   2016/01   2016/07   2016/09

+ 1200 references / month
+ 37200 objects / month

Pipeline entry

→ Tuesday :
The role of documentalists

Bibliographical Team
Soizick Lesteven / Cécile Loup

References
Year, journal, volume, pages, title, authors, abtract, keyword, bibcode, copyright, DOI

From publishers to SIMBAD

Soizick Lesteven
Magali Neuville

Dictionary of Nomenclature
Creation of new acronyms
Dictionary update
Links to NED

Marianne Brouty
Fabienne Woelfel

DJIN

SIMBAD update
Extraction of information from articles
Objects, identifiers, fundamental data, measurements, references, …..

Aline Eisele : A&A, PASJ, PASP, ...
Magali Neuville : ApJ, ApJS, Sci, Natur, ...
Evelyne Son : AJ, MNRAS
PhilippeVonflie : MNRAS

Tables

VizieR
Standardization and description of tables.
VizieR update

Marianne Brouty : ApJ
Sylvain Guéhénneux : AJ, ApJ
Emmanuelle Perret: ApJS, ApJ
Patricia Vannier: A&A, MNRAS,…

COSIM
=g=
Ingestion of most important tables in SIMBAD
(selections, extractions, scripts, cross-identifications)

Catherine Brunet
Mihaela Buga
Emmanuelle Perret
Fabienne Woelfel

Scientific Expertise
SIMBAD : C. Loup, C. Bot , L. Cambrésy, A. Nebot, P. Ocvirk, A. Siebert, B. Vollmer

Dictionary : B. Vollmer
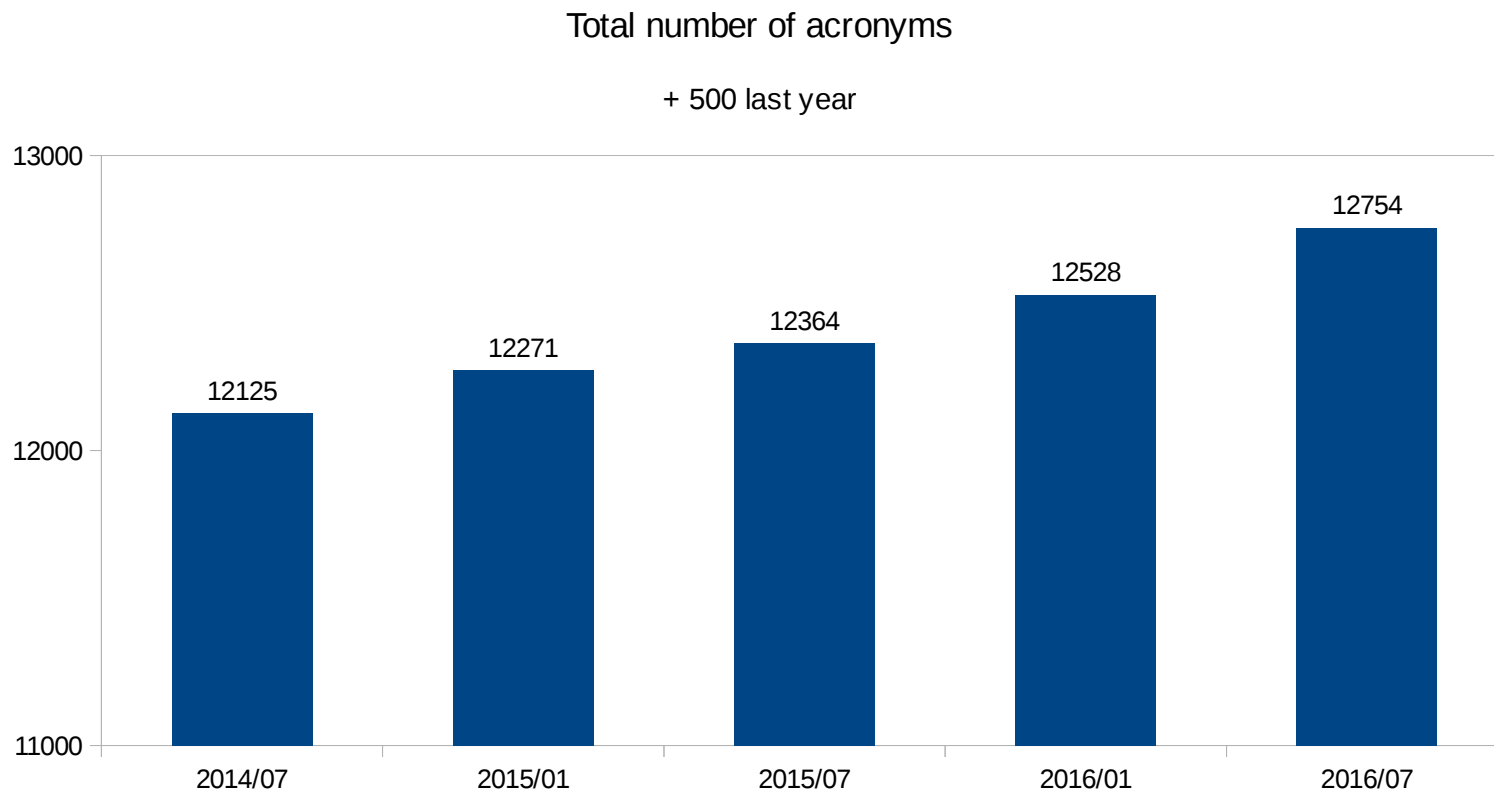
VizieR : P. Ocvirk, C. Bot

IT Development
SIMBAD : A. Oberto, S. Lesteven, T. Delacour, V. Kaestle
Dictionary : A. Oberto

VizieR : G. Landais, T. Boch, F.-X. Pineau

Acronyms

- ## 12888 acronyms available in SIMBAD

Total number of acronyms

+ 500 last year


22756 definitions in the dictionary from literature

- SIMBAD should be devoted to objects of interest
- SIMBAD and VizieR are complementary
- Approved by the Scientific Council in 2012
- Apraisal procedure : weekly meetings (2x1h)
  - Documentalists : M. Brouty, C. Brunet, M. Buga, E. Perret, F. Woelfel.
  - Astronomers : C. Bot, L. Cambrésy, C. Loup, A. Nebot, P. Ocvirk, A. Siebert, B. Vollmer.
- Detailed instructions for processing in SIMBAD

Scientific and technical criteria

- **High priority : 70 %**
  spectroscopy, characterization, cross-identifications, membership, ...

- **Low priority : 15 %**
  nature unclear, poor coordinates, incorrect or truncated names, ...

- **Not processed : 15 %**
  no coordinates, uncharacterized in crowded regions, very large photometric surveys

Tables in SIMBAD
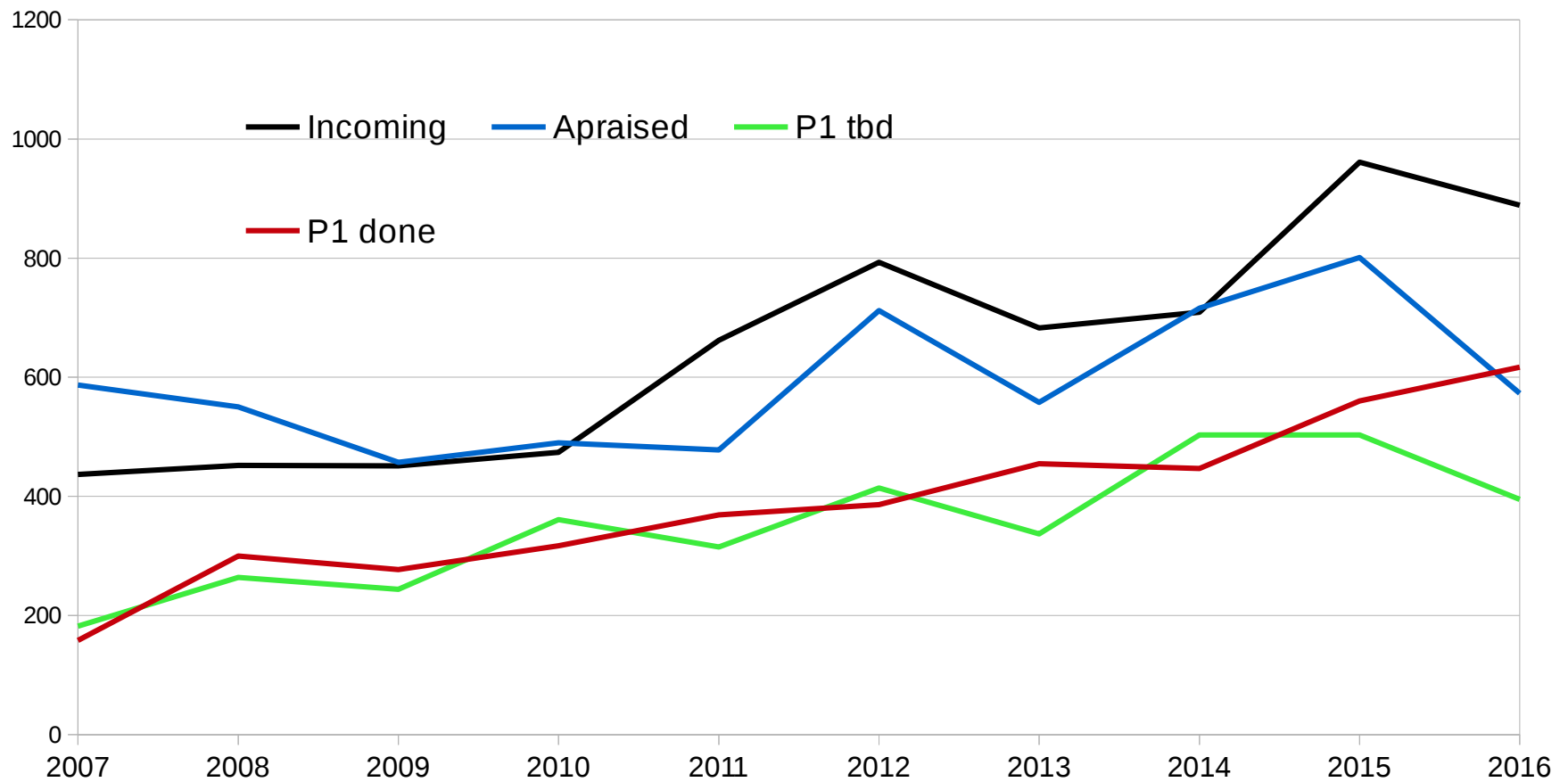
Improving quality

- Improving astrometry and magnitudes : joint effort from the SIMBAD and Xmatch teams

  - New iteration of the Xid SIMBAD-2MASS
  - Coming soon : Xid SIMBAD-UCAC4

- Historical burden : identification of objects with no coordinates or poor astrometry, especially rare types or many citations

  - Full cleaning of the white dwarfs and hot subdwarfs, required with the SDSS & LAMOST pipelines (23700 spectroscopically confirmed WD* in SIMBAD)

- Coming soon : update of astrometry from GAIA-TGASS + new magnitude G

Total ~ 510 000 queries / day

Usage of SIMBAD

SIMBAD usage

Number of queries per day

CDS Council
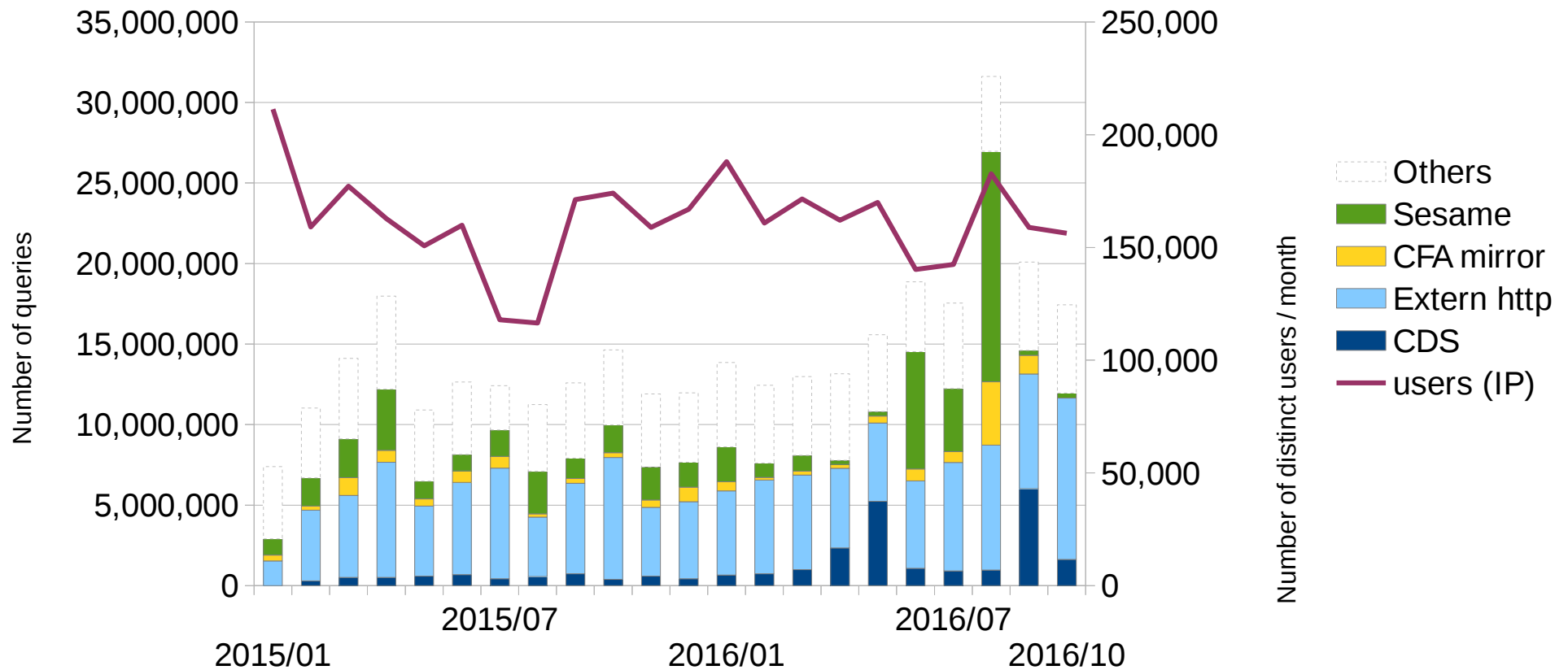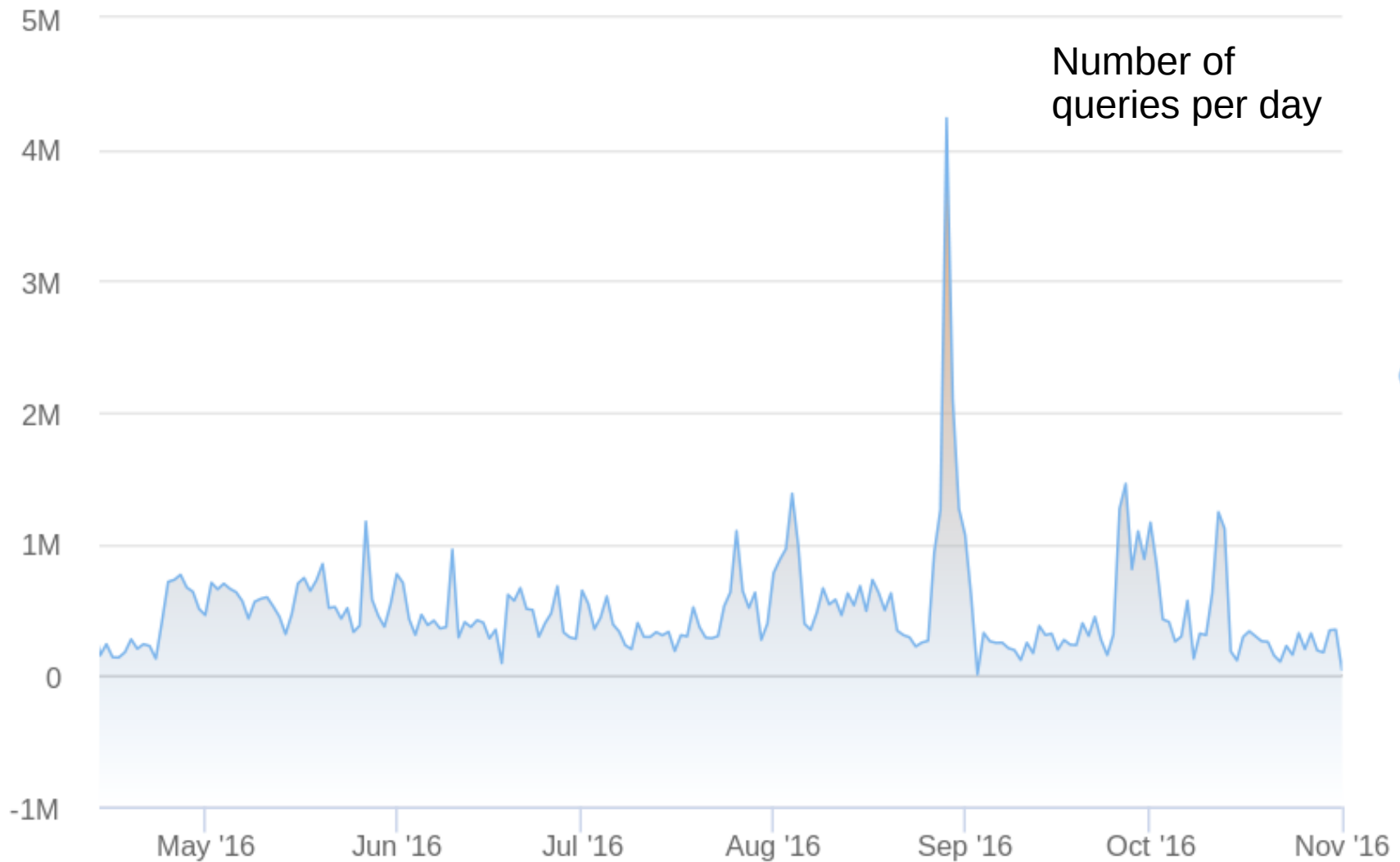
Querying SIMBAD

- Several interfaces, several output formats (HTML, VOtable, ASCII-tsv)

- Lists of objects/coordinates :
  - Identifier query, Coordinates query, Script query, Xmatch service

- Data mining :
  - Criteria query, TAP (SQL-like) query

Method used

Simbad

sim-fid: 0.2 %
null: 0.2 %
sim-coo: 0.8 %
sim-ref: 1.6 %
sim-tap/tables: 1.8 %
sim-basic: 2.3 %
sim-tap/sync: 8.3 %
sim-nameresolver: 8.4 %
sim-id: 16.8 %
sim-script: 59.8 %

+ 4000 lines / script

2016/11
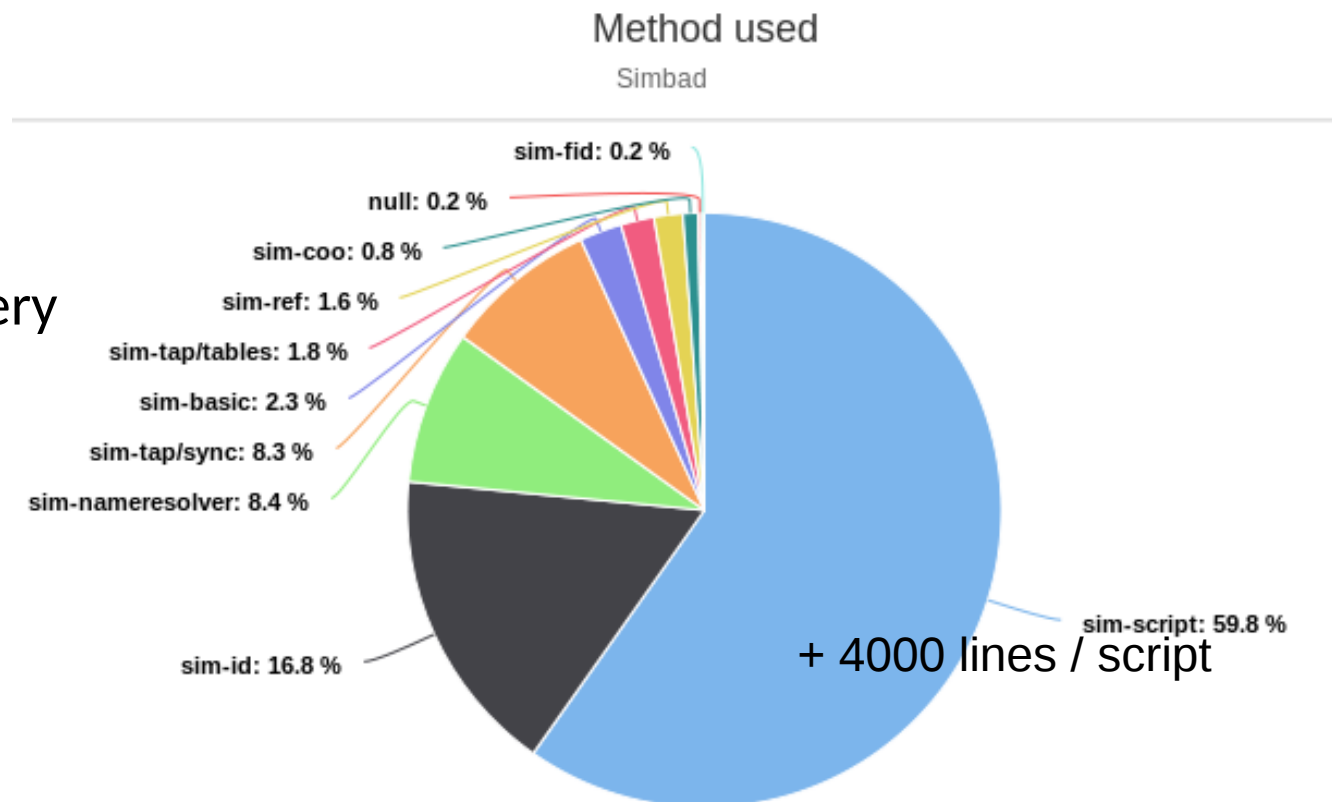
Software evolutions

- SimWatch : 115 followers on 412 objects

  → 2 emails notifications / day

  → + 4 objects followed / day

with T. Boch

Improving ingestion of the bibliography

- Evolution of the ingestion of the bibliography *with S. Lesteven & T. Delacour (contractor)* :

  - Resumption of the proceedings for the bibliographic data entry in SIMBAD

  - Extraction of bibliographical data collected from the different publishers in XML in a unique format.

  - Integration of all these data into SIMBAD (data migration from the bibliographical server to the SIMBAD database).

  - Improvement of the different tests to assure the consistency of these data

→ lead to new user facilities on papers in SIMBAD

Improving data quality

- Homogenisation of common NAMEs identifiers
- Homogenisation of authors' names
- Homogenisation of old measurements
- New validations and inspections in place

Improving process quality

- ## Internal versions of SIMBAD

    (with T. Boch & F.X. Pineau):

    – Main database server

    – Duplication streamed database

    – Daily exported data for X-match service & Aladin (+HiPS)

    – Historical stored versions daily & montly

    – Work on duplication for new fast Sesame access

Software evolutions

- Improve new links to Vizier for web user :
  - Suggestions of VizieR search
  - Direct links

Identifiers (58) :

M 51	IRAS 13277+4727
APG 85A	ISOSS J13299+4714
APG 85	KHG 1-C 5
B3 1327+474C	KPG 379a
BD+47 2063	LEDA 47404
BWE 1327+4727	2MASX J13295269+4711429
4C 47.36A	MCG+08-25-012
6C 132748+472801	NAME Whirlpool Galaxy
7C 132753.10+473032.00	NAME Whirlpool
7C 132746.79+472722.00	NAME Question Mark Galaxy

- Preparation of new magnitude for Gaia

- New field for LSR velocities

- More links to Vizier

- New name resolver version for Sesame

- ADS links to improve

- DJIN : new version in development *by V. Kaestle (contractor)*