The Toulouse catalogue database$^{\beta}$

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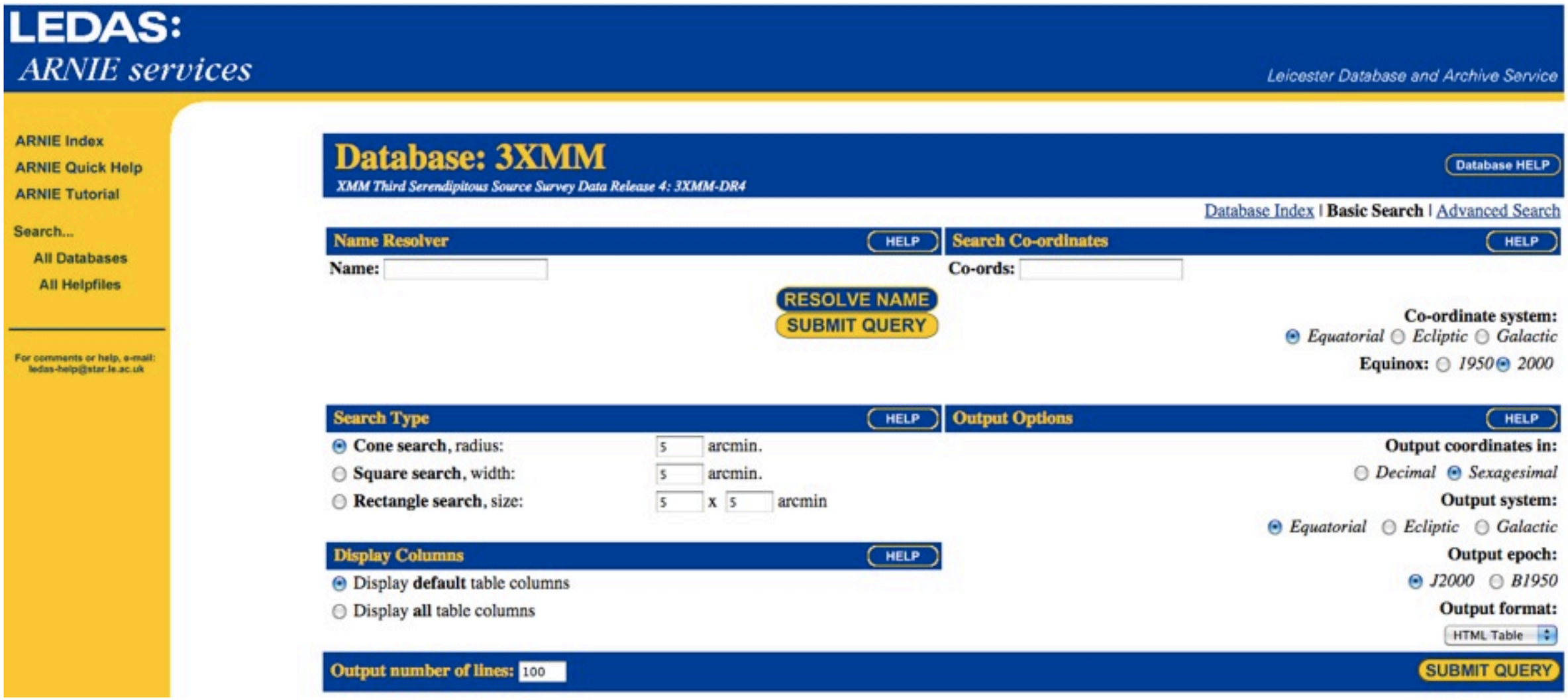
Talk outline

- Motivation
- Website: what batteries inside?
- New development model (citizen science)
- Demo

Motivation

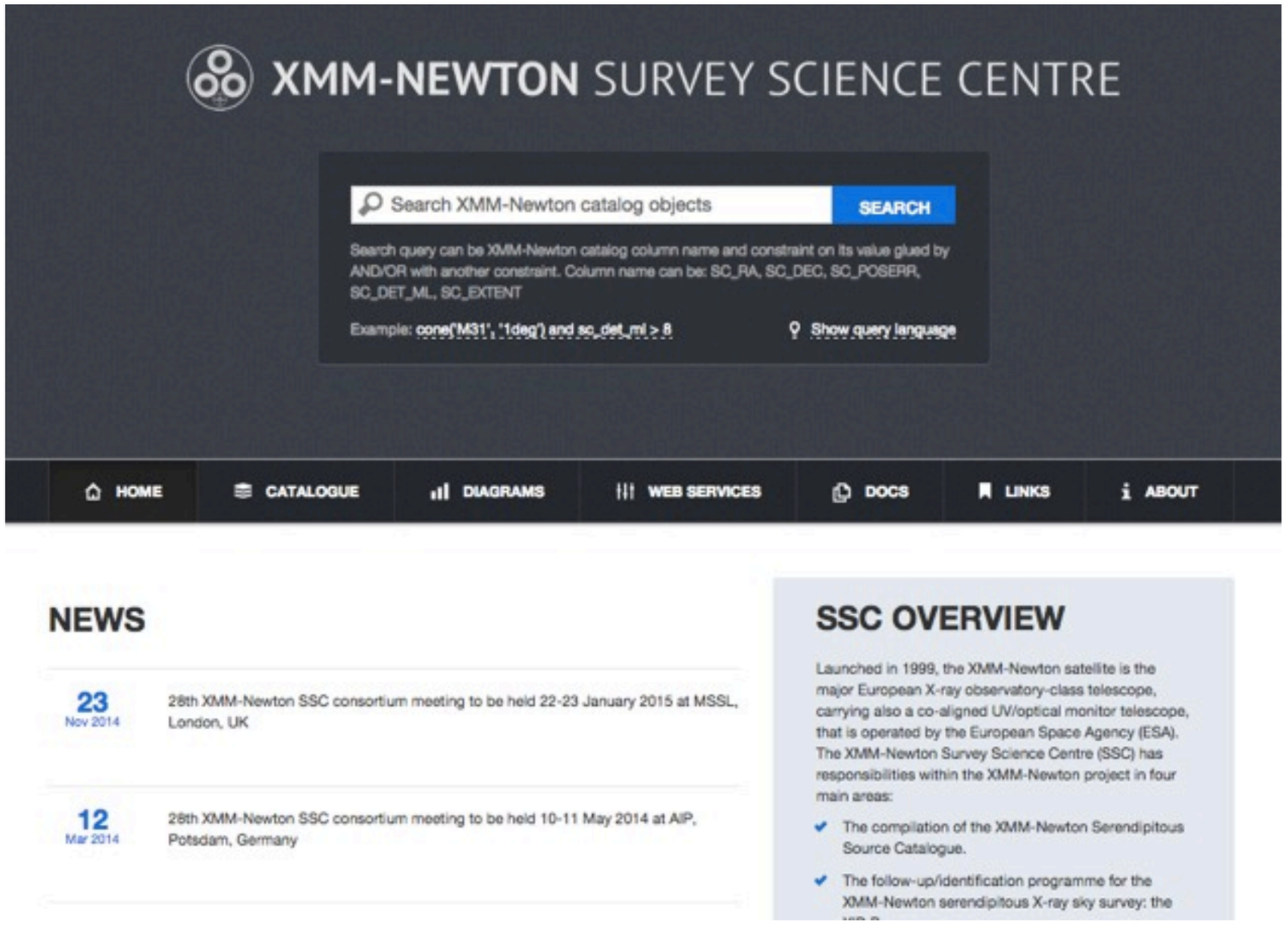
- Old LEDAS *XMM-Newton* webpages: expensive to take over
- Time cost comparable to reimplementing improved version from scratch
- Unlimited source of a manpower as an experiment: why not trying it?

XMM-Newton catalog



before

XMM-Newton catalog



after

Legacy

Reincarnation of the world reference exoplanet database, http://exoplanet.eu

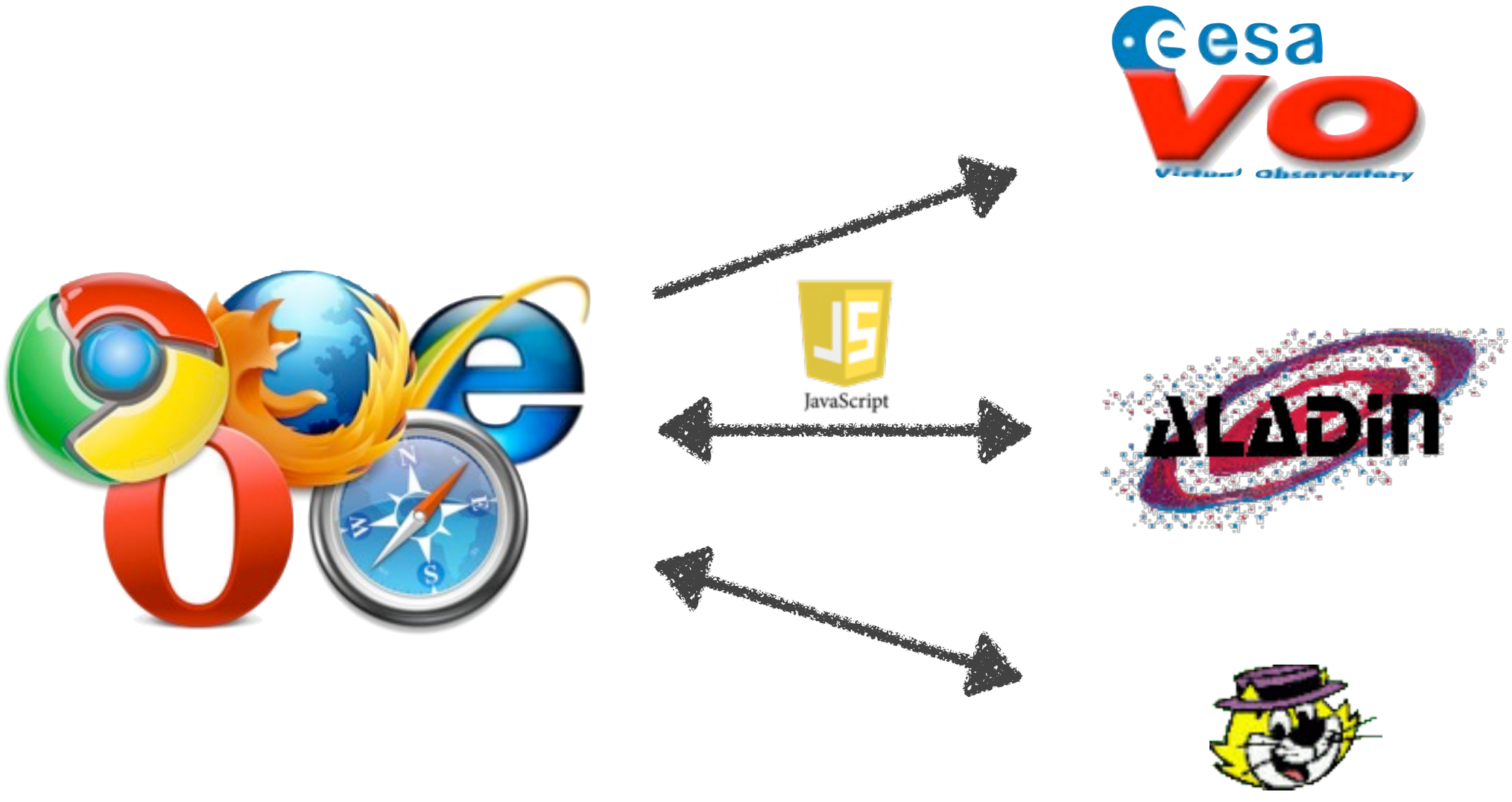
Technology stack

- RDMBS: **PostgreSQL**

- Application language: **Python**

- Web framework: **Django**

SAMP in a browser



AstroTools library: http://goo.gl/zyF0id

X-ray spectral fitting

- Web implementation of a complex thing: source, background, RMF, ARF
- Wrapper over Sherpa
- Powered by Xspec

Query language

Boolean expressions instead of endless forms (think Google)

Query examples

- `M82` – select sources in 10 arcmin vicinity of M82 center
- `cone('M31', '1deg') AND sc_det_ml < 100` – select faint X-ray sources not
- `is_ulx = true AND n_detections > 2` – select ULXs which were detected r
- `iauname IN {"3XMM J053406.7+220337", "3XMM J053406.6+220438"}` – select
- `srcid IN {3, 4}` – select specific sources by their source IDs (useful for la

More batteries

- Web sessions (personalization)
- Name resolver
- JavaScript diagrams (jQuery, Angular)
- Java WebStart of Aladin and TOPCAT

New development model

- High-level full-time employed IT engineers a.k.a. volunteers

- Coordination through Bitbucket (git)
- New type of **citizen science**? Unlimited source of free manpower?

New development model

- **Alexey Sergeev**, Moscow, 10+ years of experience – design
- **Maxim Chernyshov**, Vladivostok, 10+ years of experience but 1st Django project – backend
- **Askar Timirgazin**, Moscow, 5 years of experience – frontend

New development model

- Project duration: ~1 yr
- My time: 5% FTE
- Volunteers time: up to 3 months FTE
- This team is so far unique, but there are much more citizen science enthusiasts!

Demo

What's next

- Currently proposal to SSC, open to comments / suggestions / critics
- If approved, official release in 1-2 months
- A&A Research Note
- *XMM-Newton* photon database – database of all photons ever registered by the *XMM-Newton* (~100 billion)
- I'm leaving SSC in May but should be around