Unveiling ISLA - The INTEGRAL Science Legacy Archive

First public beta release of version 0.15

Guillaume Belanger
Archive Scientist and ISOC Coordinator (SCI-SOG)

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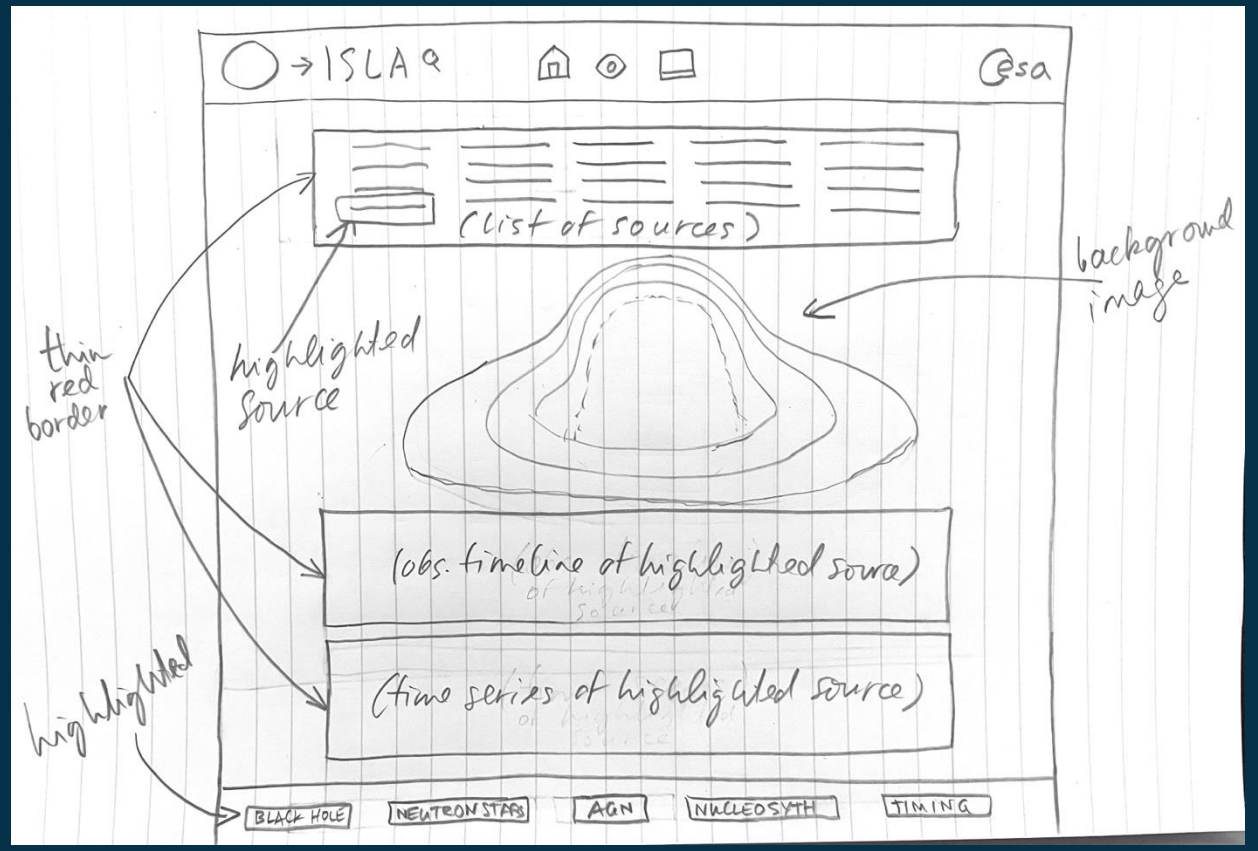
Overview

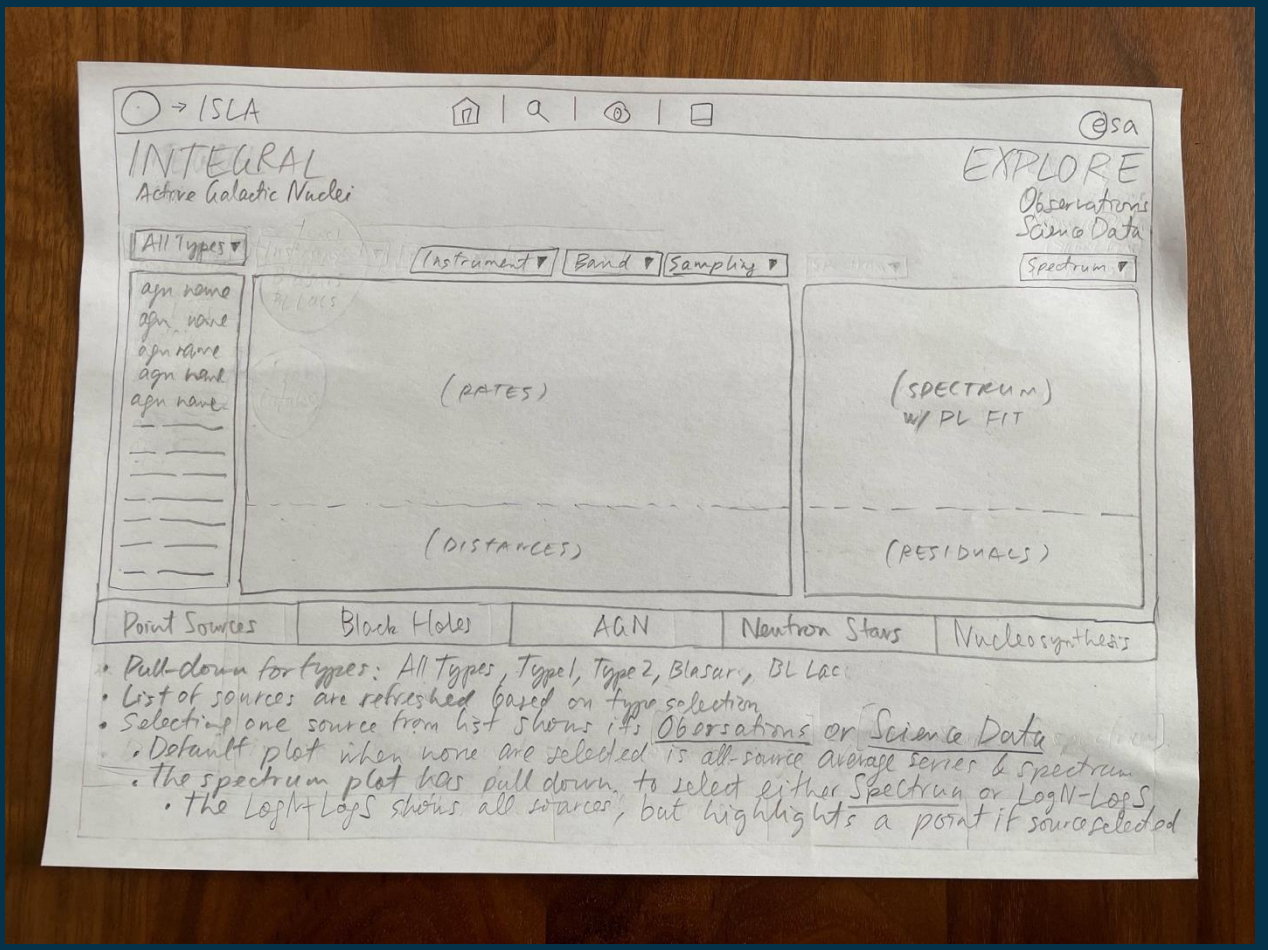
- Short (pre) history
- A new vision
- Products
- Sprint to the finish
- Welcome to ISLA
- Community products

Short (pre) history

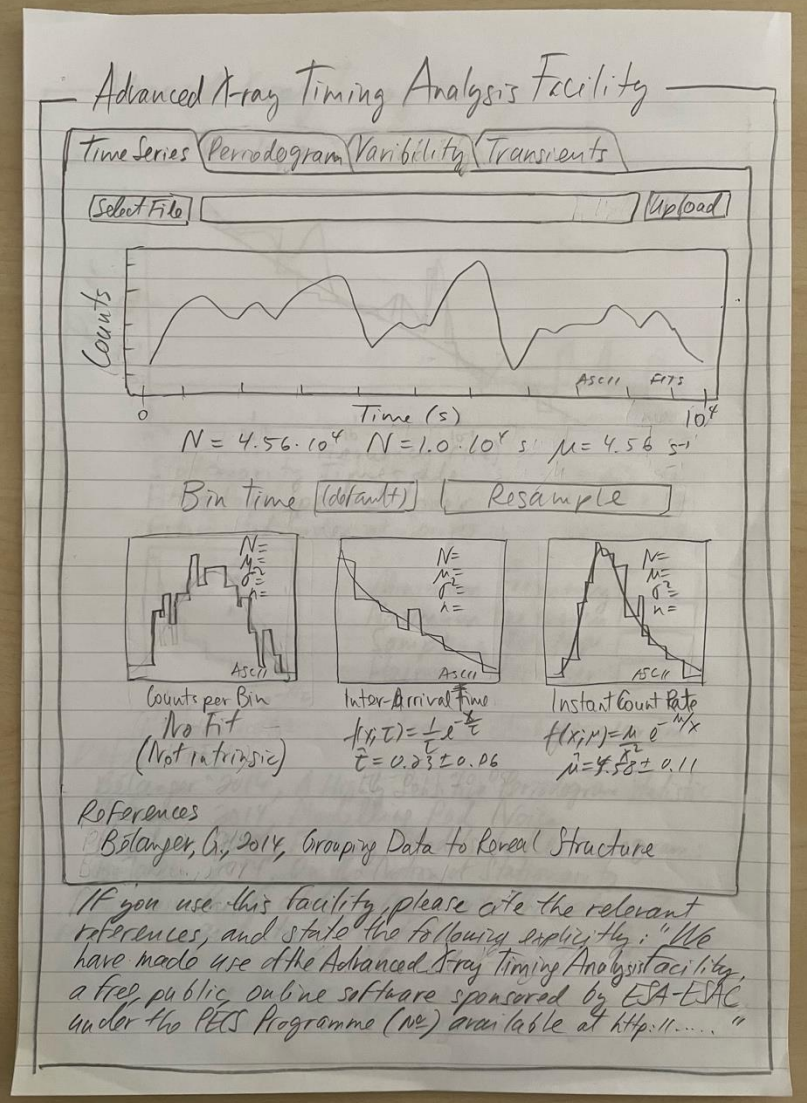
- First version was modelled from first XSA
- Dropped with first major budget cuts
- Plans for legacy archive revived in 2018
- Work has been continuous since
- Pre: Rees Williams and Marion Cadolle Bel

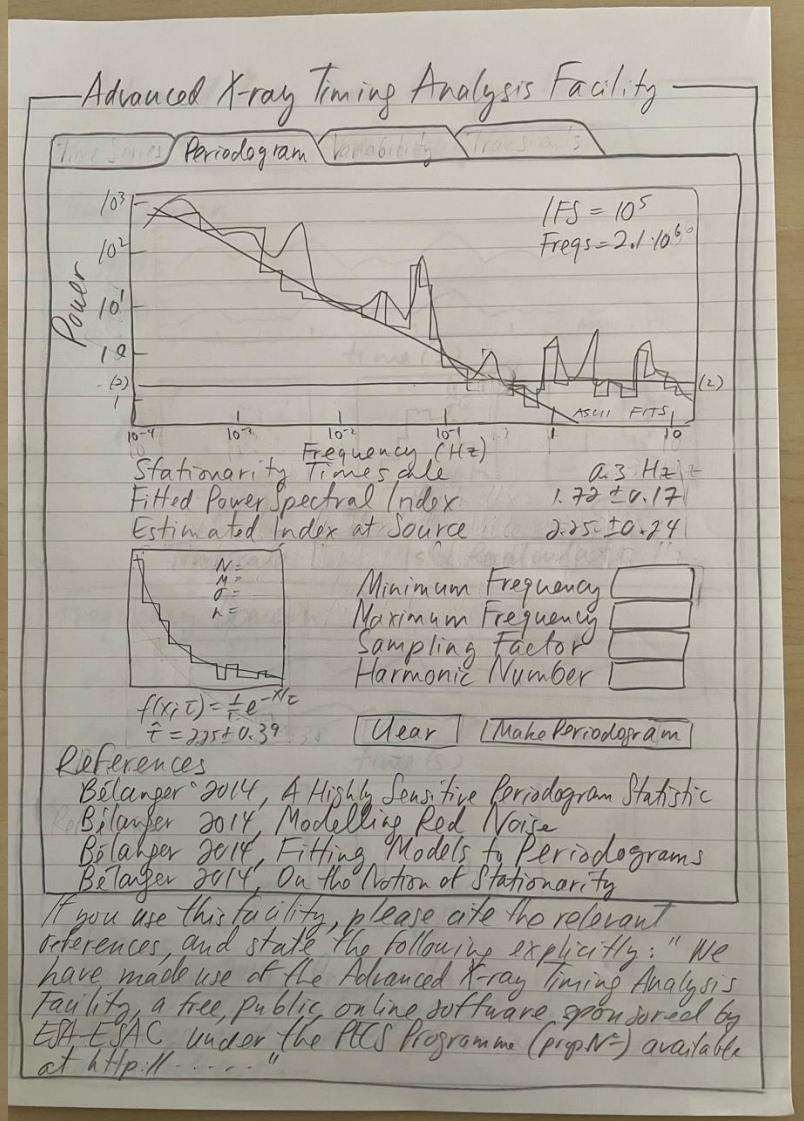
A new vision

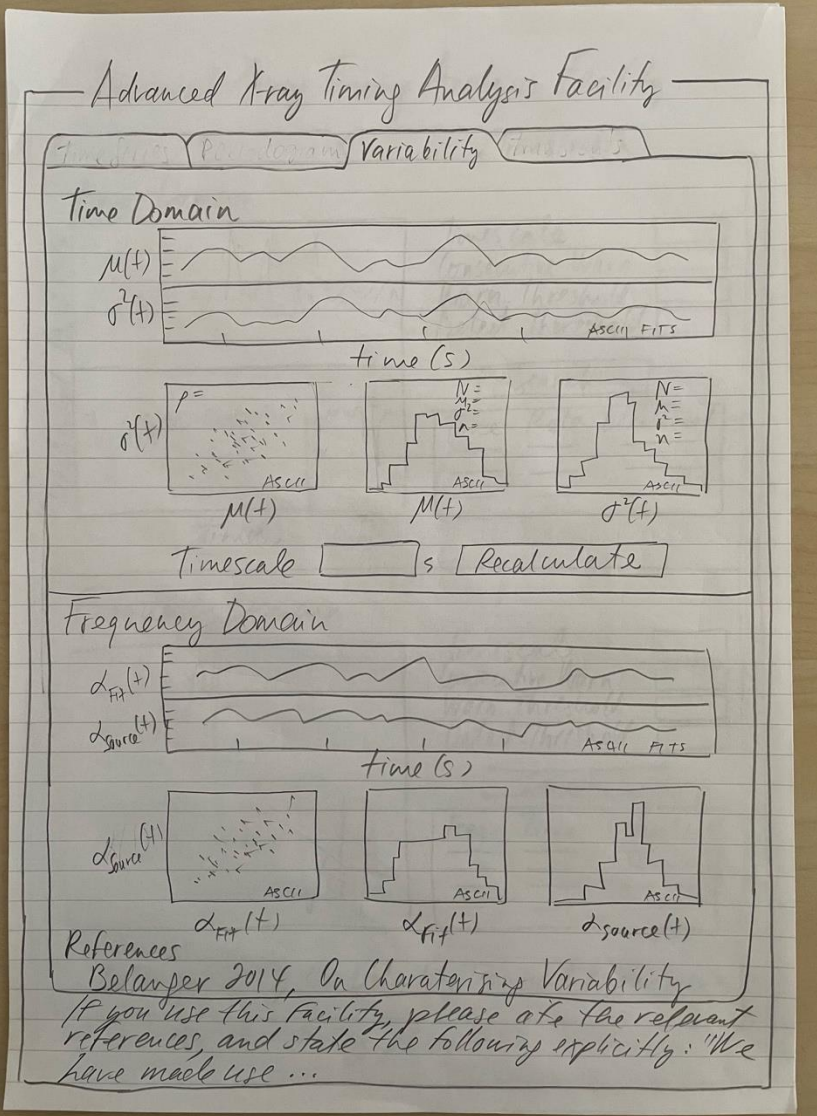

→ ISLA
esa
(list of sources)
background image
highlighted source
thin red border
(obs. timeline of highlighted sourc)
(time series of highlighted source)
highlighted
BLACK HOLE
NEUTRON STARS
AGN
NUCLEOSYTH
TIMING


→ ISLA
esa
INTEGRAL
Active Galactic Nuclei
EXPLORE
Observations
Science Data
All Types
Instrument
Band
Sampling
Spectrum
agn name
(RATES)
(SPECTRUM) w/ PL FIT
(DISTANCES)
(RESIDUALS)
Point Sources
Black Holes
AGN
Neutron Stars
Nucleosynthesis
• Pull-down for types: All Types, Type1, Type2, Blasar, BL Lac
• List of sources are refreshed based on type selection
• Selecting one source from list shows its Observations or Science Data
• Default plot when none are selected is all-source average series & spectrum
• the spectrum plot has pull down to select either Spectrum or LogN-LogS
• the LogN-LogS shows all sources, but highlights a point if source selected

A new vision


Advanced X-ray Timing Analysis Facility
Time Series
Periodogram
Variability
Transients
Select File
Upload
Counts
Time (s)
ASCII
FITS
N = 4.56·10^4
N = 1.0·10^4 s
μ = 4.56 s^-1
Bin time
(default)
Resample
Counts per Bin
No Fit
(Not intrinsic)
Inter-Arrival Time
τ̂ = 0.23 ± 0.06
Instant Count Rate
μ̂ = 4.58 ± 0.11
References
Bélanger, G., 2014, Grouping Data to Reveal Structure
If you use this facility, please cite the relevant references, and state the following explicitly: "We have made use of the Advanced X-ray Timing Analysis facility, a free public online software sponsored by ESA-ESAC under the PECS Programme (no.) available at http://..."


Advanced X-ray Timing Analysis Facility
Periodogram
Power
Frequency (Hz)
IFS = 10^5
Freqs = 2.1·10^6
Stationarity Timescale
0.3 Hz
Fitted Power Spectral Index
1.72 ± 0.17
Estimated Index at Source
2.25 ± 0.24
Minimum Frequency
Maximum Frequency
Sampling Factor
Harmonic Number
Clear
Make Periodogram
References
Bélanger 2014, A Highly Sensitive Periodogram Statistic
Bélanger 2014, Modelling Red Noise
Bélanger 2014, Fitting Models to Periodograms
Bélanger 2014, On the Notion of Stationarity
If you use this facility, please cite the relevant references, and state the following explicitly: "We have made use of the Advanced X-ray Timing Analysis Facility, a free, public online software sponsored by ESA-ESAC under the PECS Programme (prog.N°) available at http://..."


Advanced X-ray Timing Analysis Facility
Variability
Time Domain
μ(t)
σ²(t)
time (s)
ASCII
FITS
Timescale
s
Recalculate
Frequency Domain
References
Bélanger 2014, On Characterising Variability
If you use this facility, please cite the relevant references, and state the following explicitly: "We have made use ...

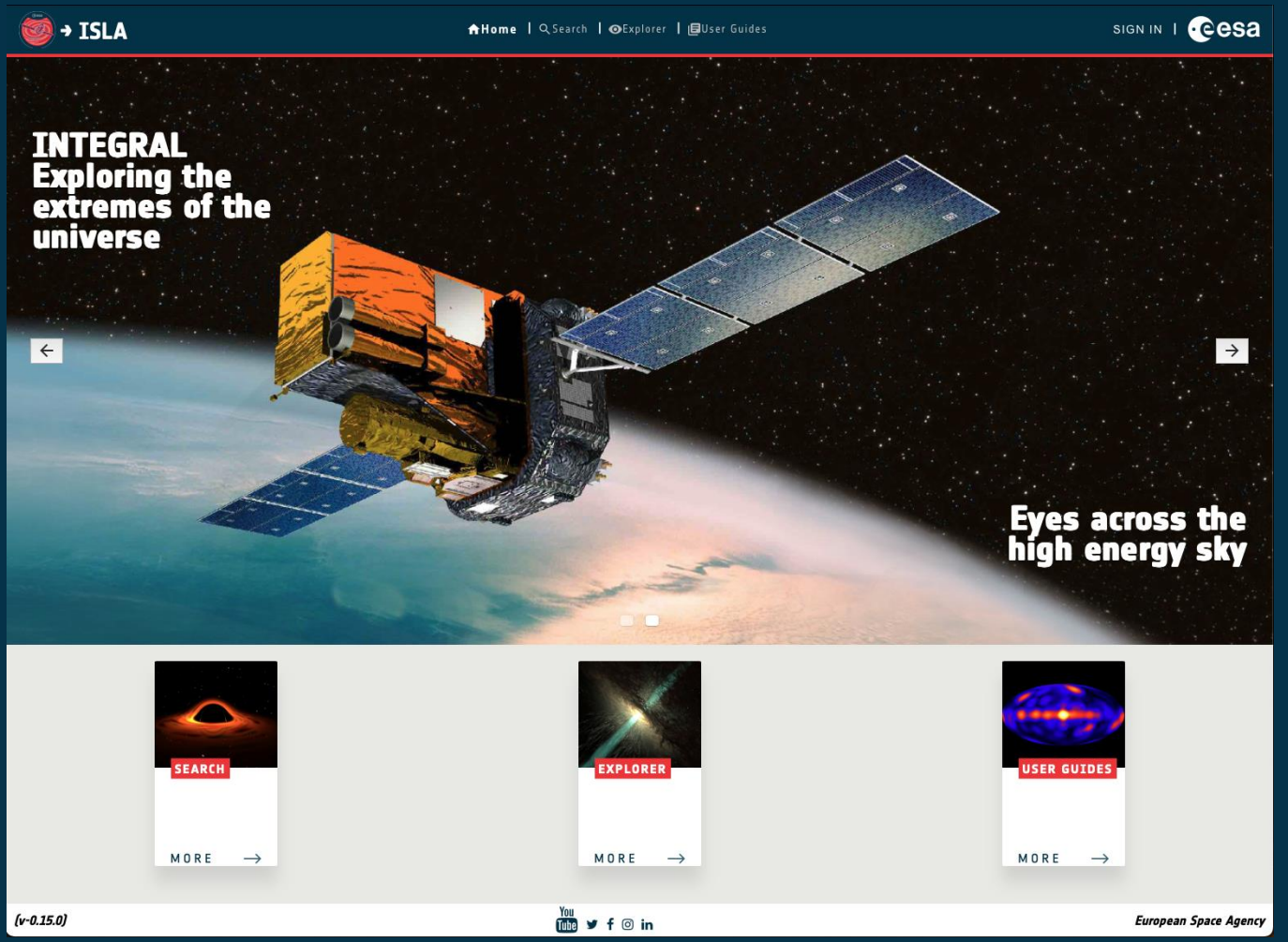
Products

- In-house for first five years
- Finally went with MMODA for consistency and reproducibility
- IBIS and JEM-X mosaics, lightcurves, and spectra per observations
- All current products are from ISDC MMODA Gallery

Sprint to the finish

- Final sprint started on 2024 March 1
- Downloading, organizing, ingesting products – Apr-Jun ☑
- Refactoring Search and Explorer Portals – Jun-Sep ☑
- Preparing first public release – Sep-Oct ☑
- Work continued until end of last week! For you!

Welcome to the INTEGRAL Science Legacy Archive



https://isla.esac.esa.int/isla

Community Products

- Planned for a future release
  - Special analyses with unique products ☑
  - Selected all-sky maps ☑
  - Standard pipeline products ☒
- We need your help to make ISLA the best it can be

Thank you

Gratitude and shoutout to those who helped with this work:

- Jari Kavaja from SCO-04
- Pere Blay from SCO-09
- Monica Fernandez from SCO-08
- Antonio Siles from SCO-08
- Carlo Ferrigno from ISDC
- Volodymyr Savchenko from ISDC