ISDC for the INTEGRAL USER GROUP

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ESA, 22-23 January 2013

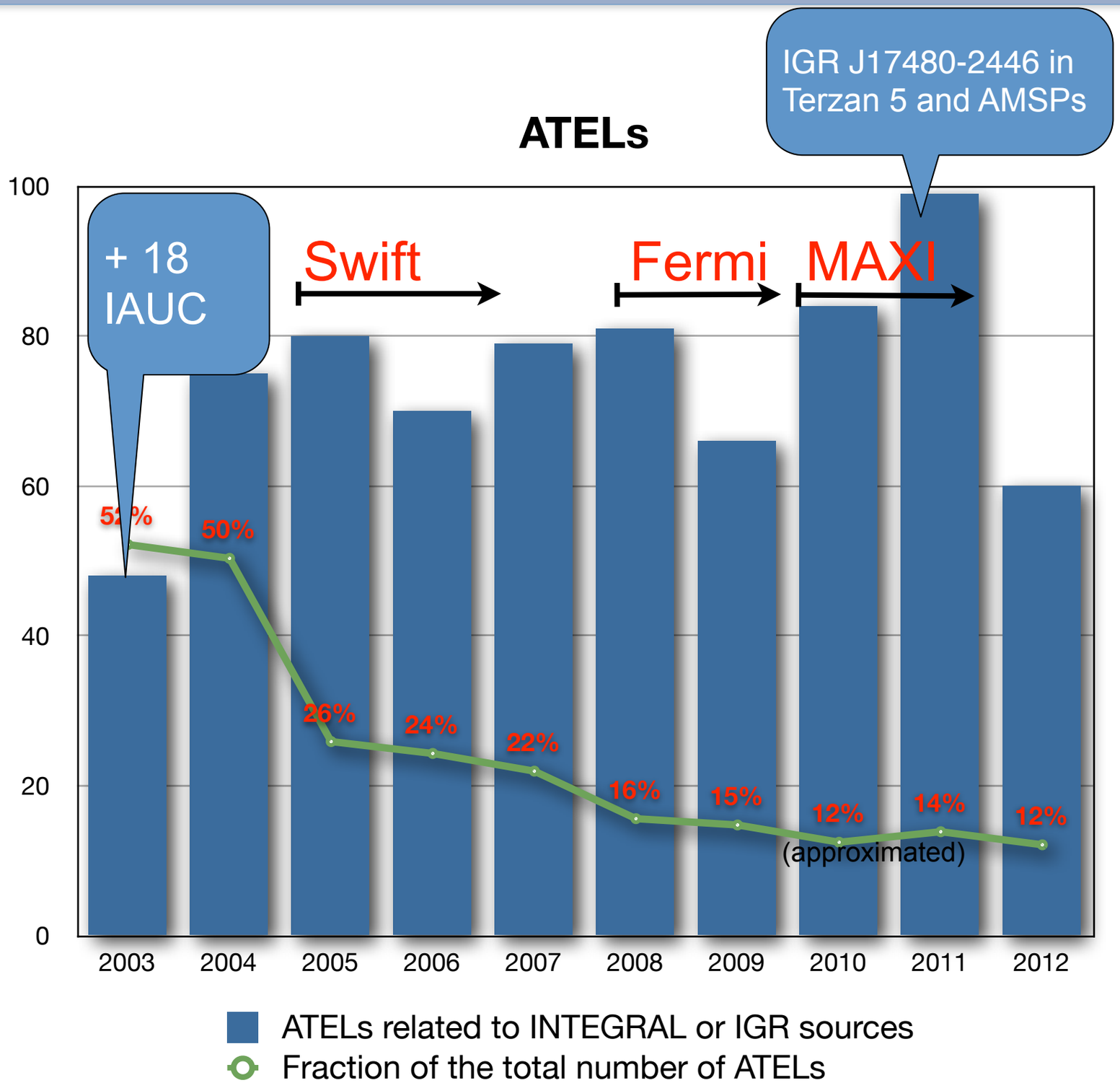
ISDC Status

- Swiss funding for 2013 approved. Operations guaranteed.
- Funding for 2014-2016 are linked to ESA's decisions.
- Some changes in manpower allocation has been done at ISDC (share with other projects).
- The level of support for INTEGRAL is satisfactory.
- Re-organization of the Operation hardware and software to ease maintenance and increase performance is completed. H/W upgrades.

Quick look analysis of INTEGRAL data

- 7 GRB in the IBIS Fov (one was a weak alert, 6.5<S/N<8)
- ~200 GRB/year in SPI ACS. Used for IPN triangulation.
- Inform PI of Open programs of the observation status (not for public data).
- Inform all PIs of data rights in case of problems or relevant serendipitous sources (no data rights).
- 63 ATeLs related to INTEGRAL discoveries
- We inform the PI of public programs before using the observations.

INTEGRAL and ATELs

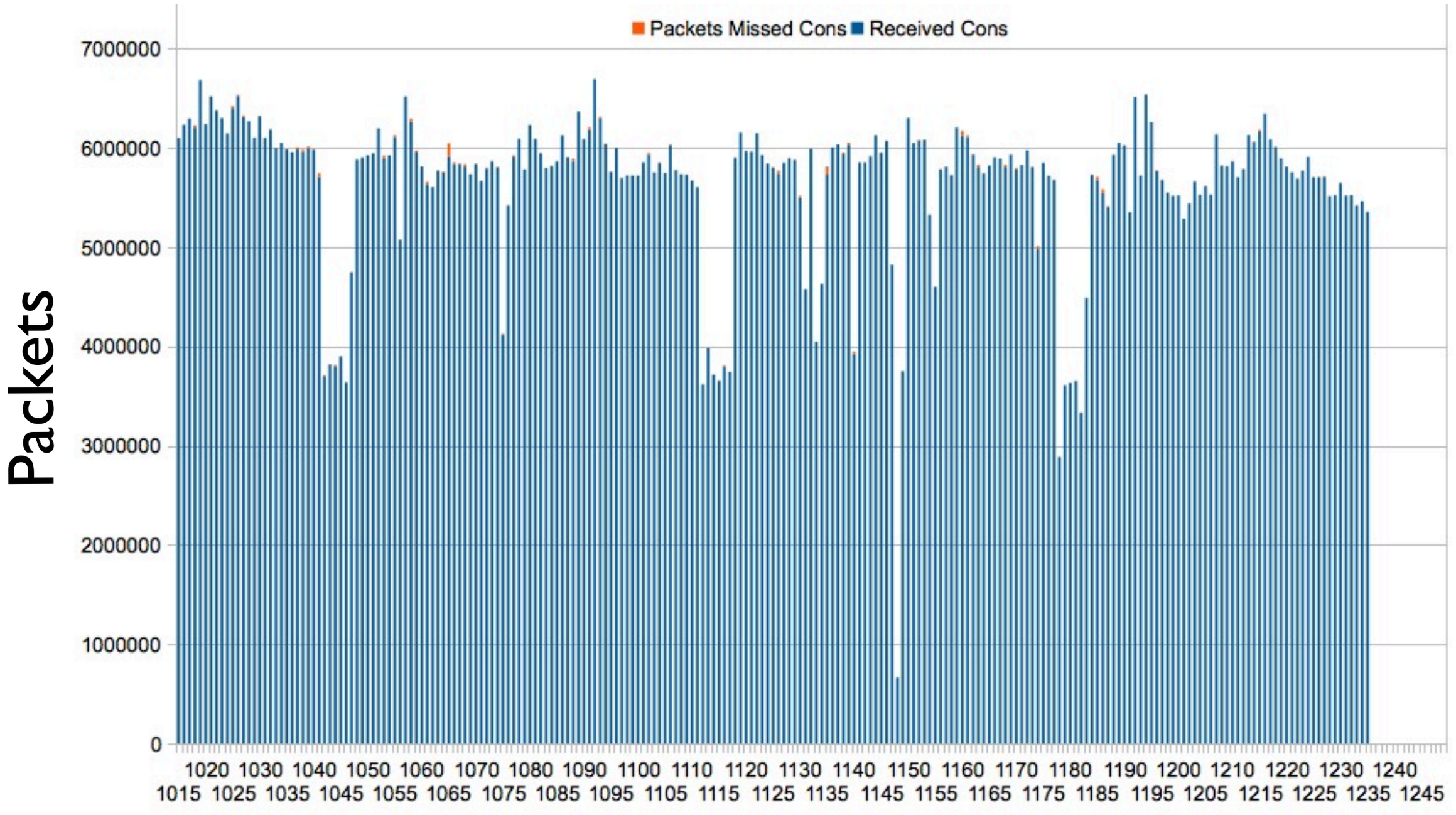


- ATELs related to INTEGRAL or IGR sources are steadily published over the mission lifetime.
- INTEGRAL results occupied half of ATELs during the first two years and possibly boosted the attention to transient X-ray sources
- Other missions and ground based experiments increased the total number of ATELs

ISDC Operations/data distribution

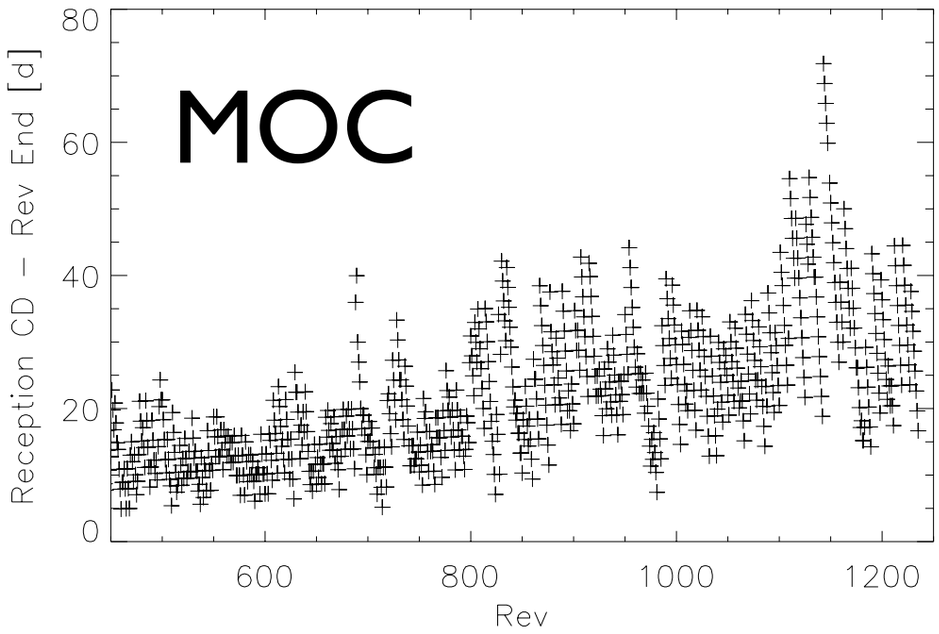
- NRT data are available within 3 hours. Smooth processing.
- The operational archive is now revision 3
- Rev_3 reprocessing: completed and available.
- JEM-X off-line energy calibration not always used the due to variable delivery time: need of OSA energy reconstruction step

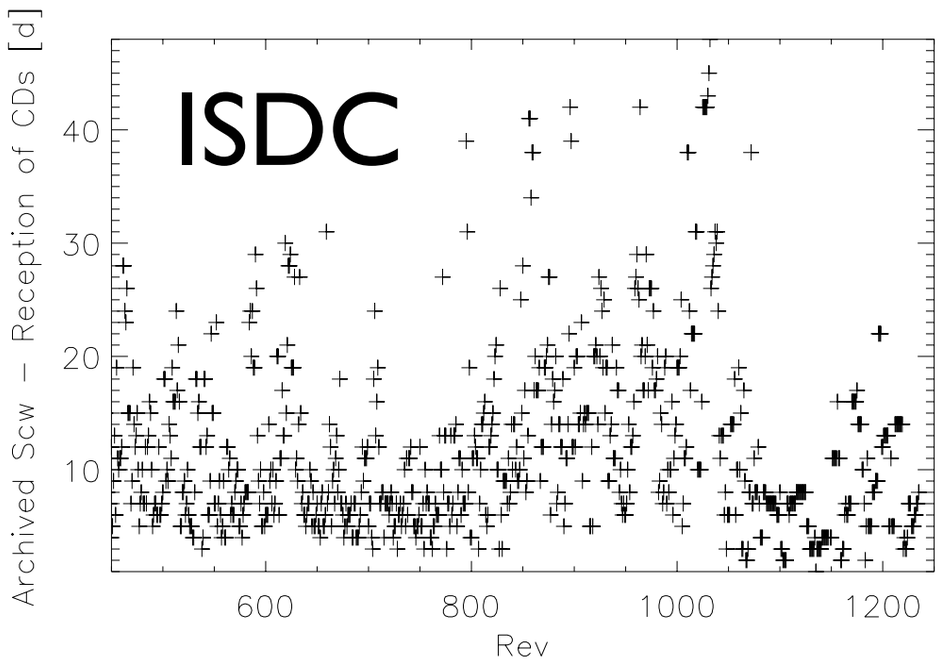
CONS telemetry

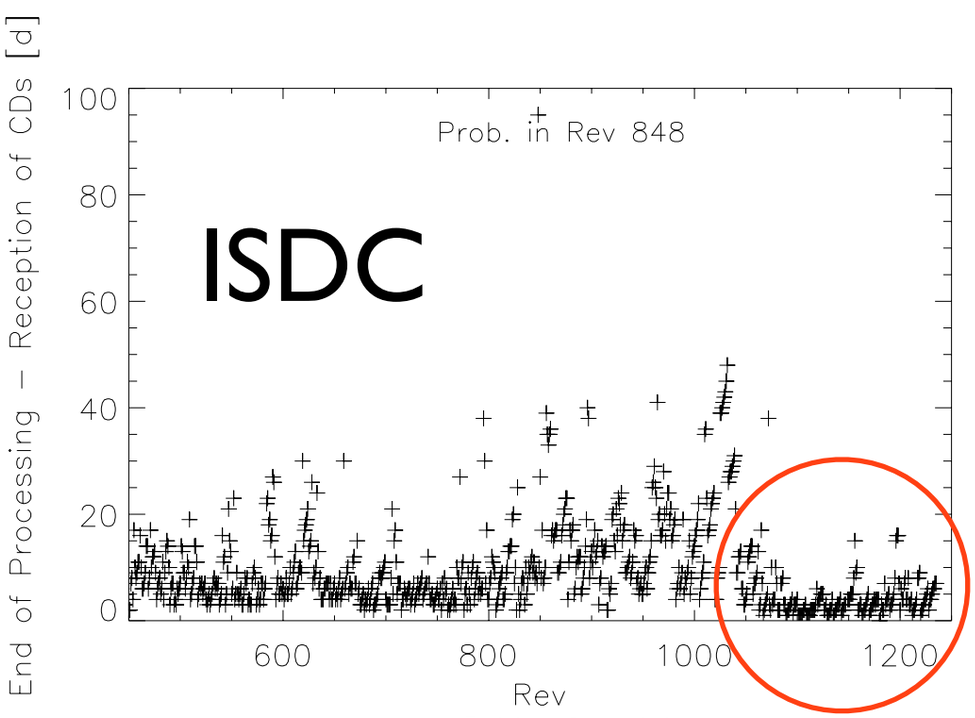


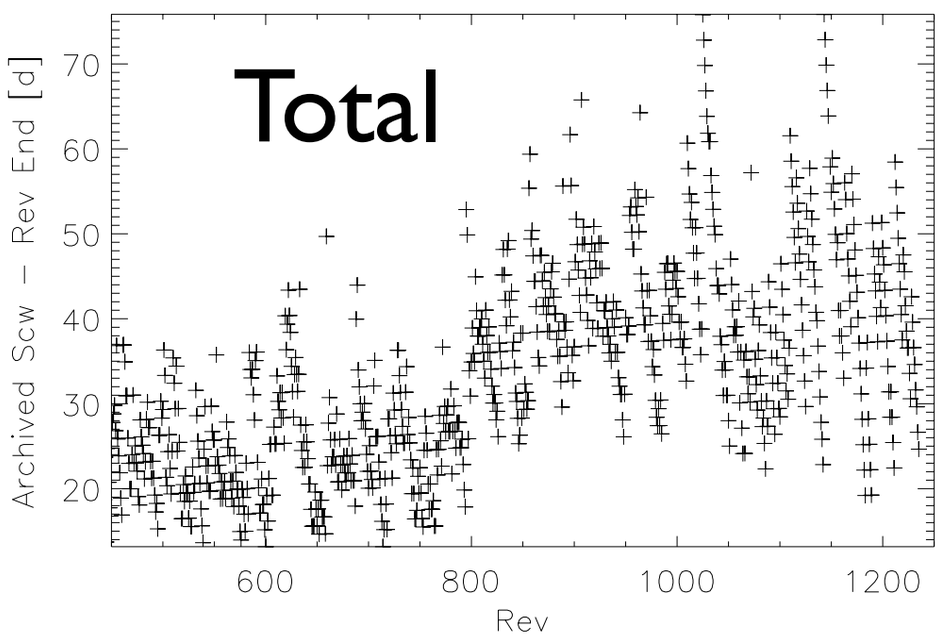
Cons distribution delay

Last processed revolution is 1235 (23-24 Nov 2012)



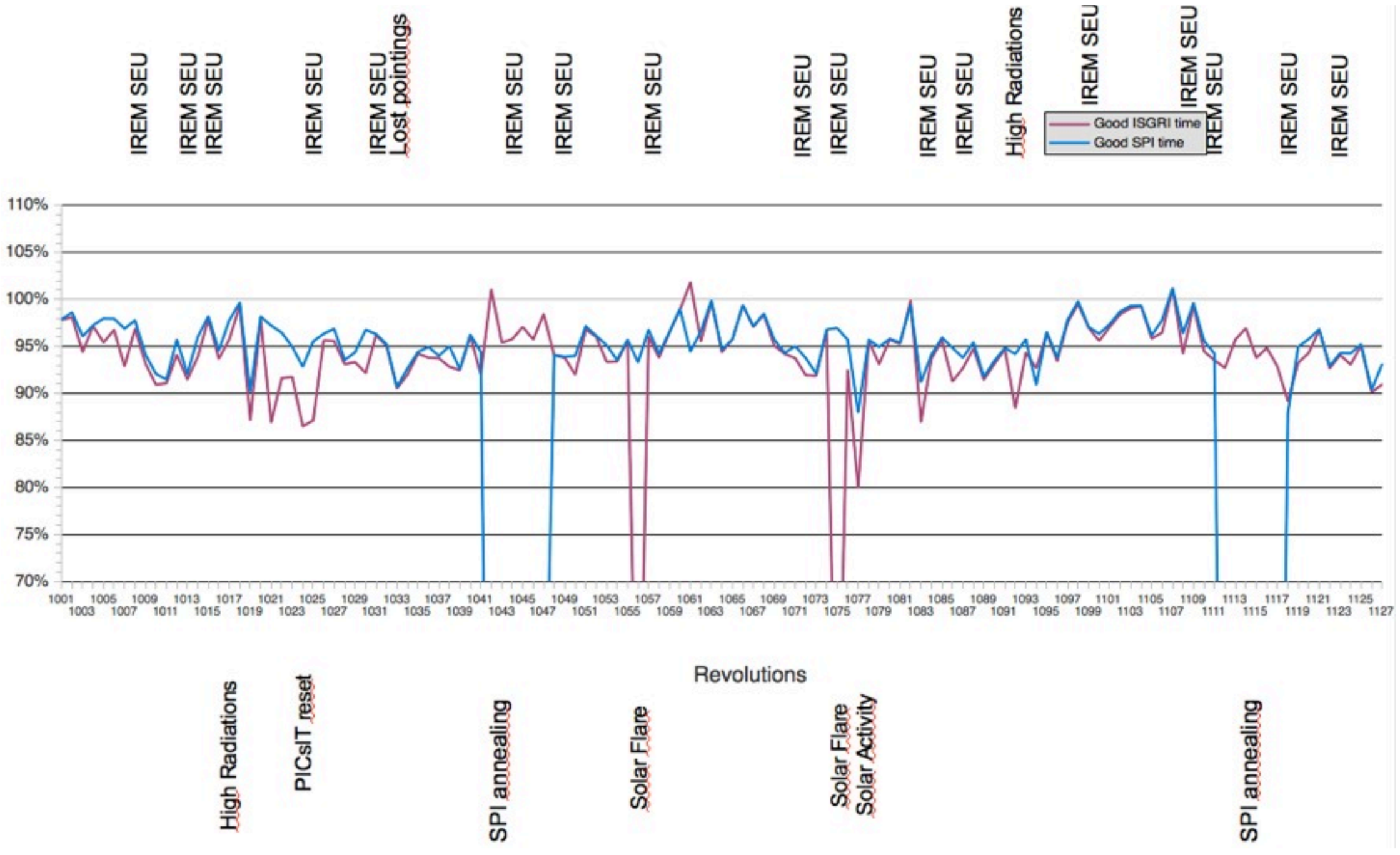






ISDC processes in <10 days

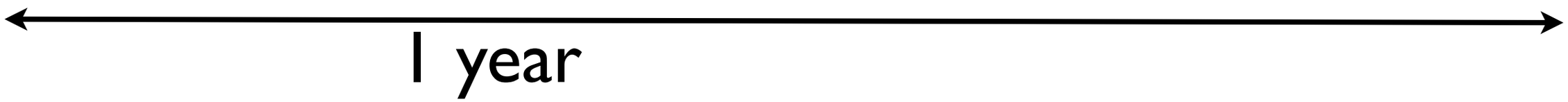
Sum of Good time intervals wrt to planned time



Sum of Good time intervals wrt to planned time

Values are computed from sum of GTIs for ISGRI and SPI in file
scw/%04d/rev.001/osm/exposure_report.fits (only pointings)

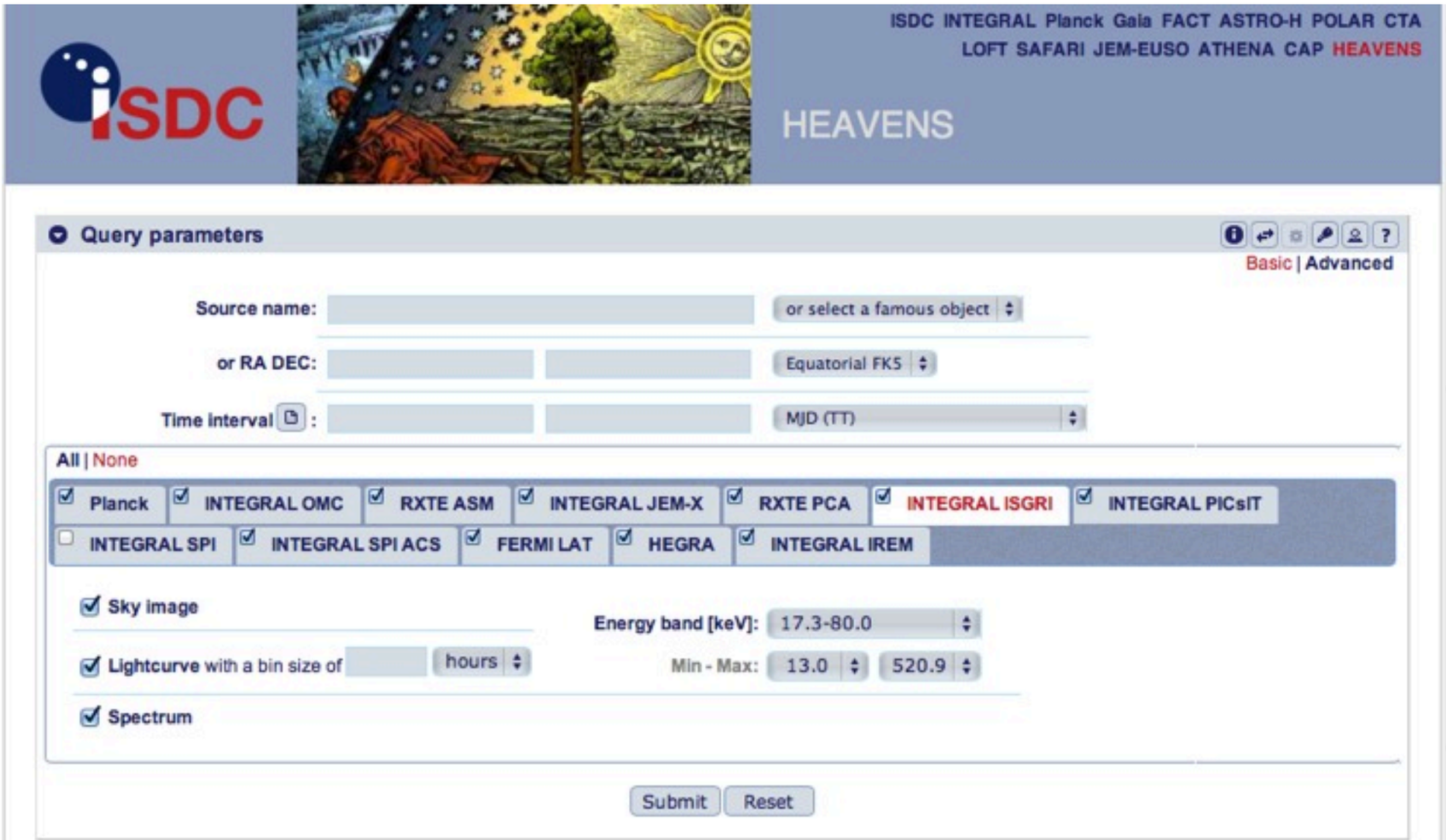
divided by the sum of predicted exposures+slews in the file
aux/adp/%04d.000/pointing_definition_predicted_%04d.fits



OSA downloads

- OSA 10 software was downloaded 101 since its delivery (excluded ISDC downloads).
  - 35 linux 64, 25 linux 32, 22 Mac, 16 source
  - 46 testdata downloads
- Renovated interest.

High level archive, HEAVENS



- Included FERMI/LAT, Planck, SPI, and RXTE.
- Inclusion of XMM-Newton is almost there.
- Development on hold for funding shortage

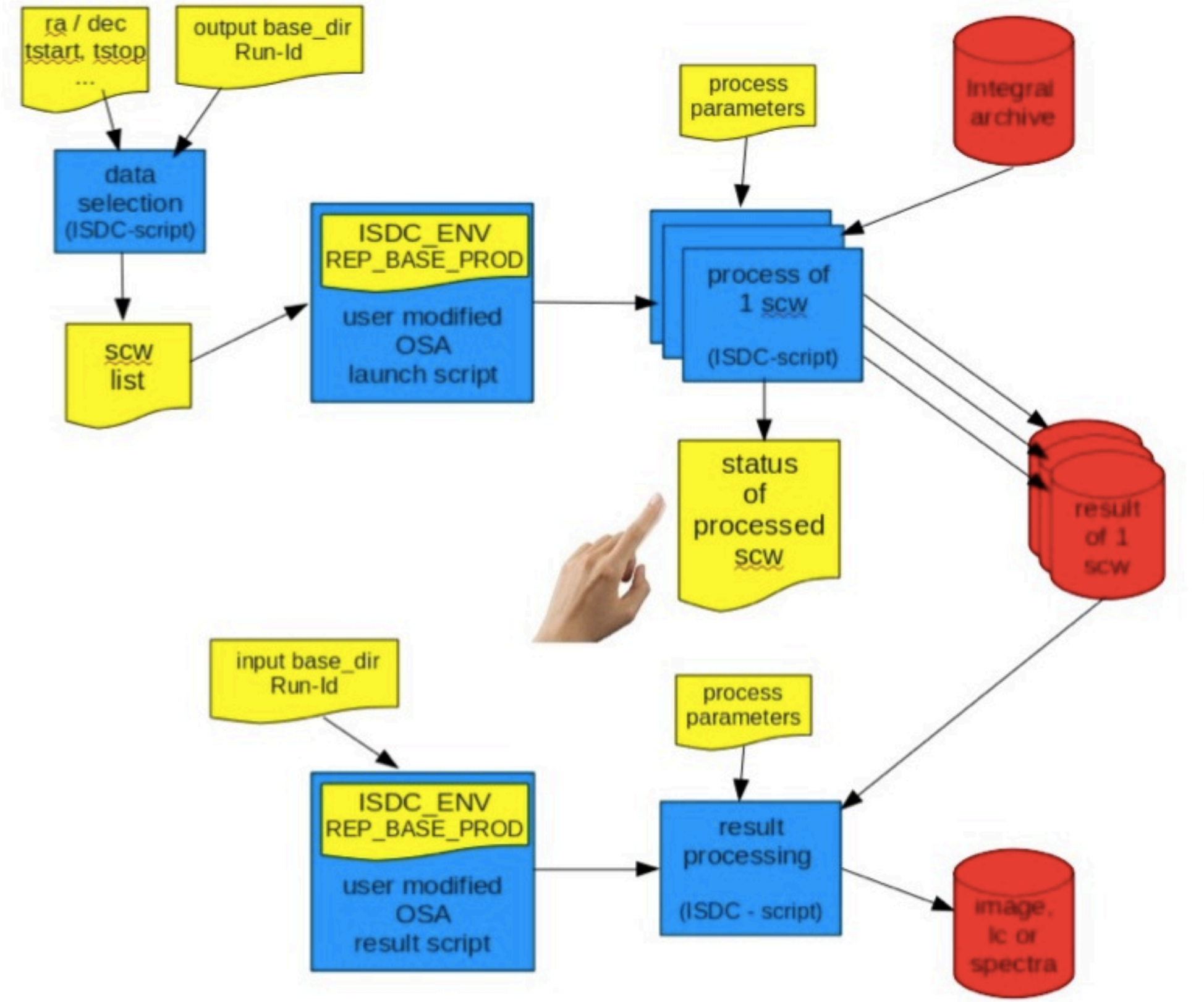
130 single accesses per month !!

Simplified OSA?

- Guarantee archive usability of INTEGRAL data, two possible ways
  - high level products from HEAVENS, limited choice of energy ranges and time bins
  - user friendly and maintainable OSA to exploit archive data and retain some flexibility

Technical requirements and open issues

- reduce dependency on external S/W: eliminate GUI inherited from CERN root?
- simplify building process to reduce need of maintenance: migrate to heasoft-like configure and make file (under investigation)?
- distribute OSA with heasoft?
- reduce number of input parameters
- allow for trivial parallelization with grid engine (separate scw processing) ?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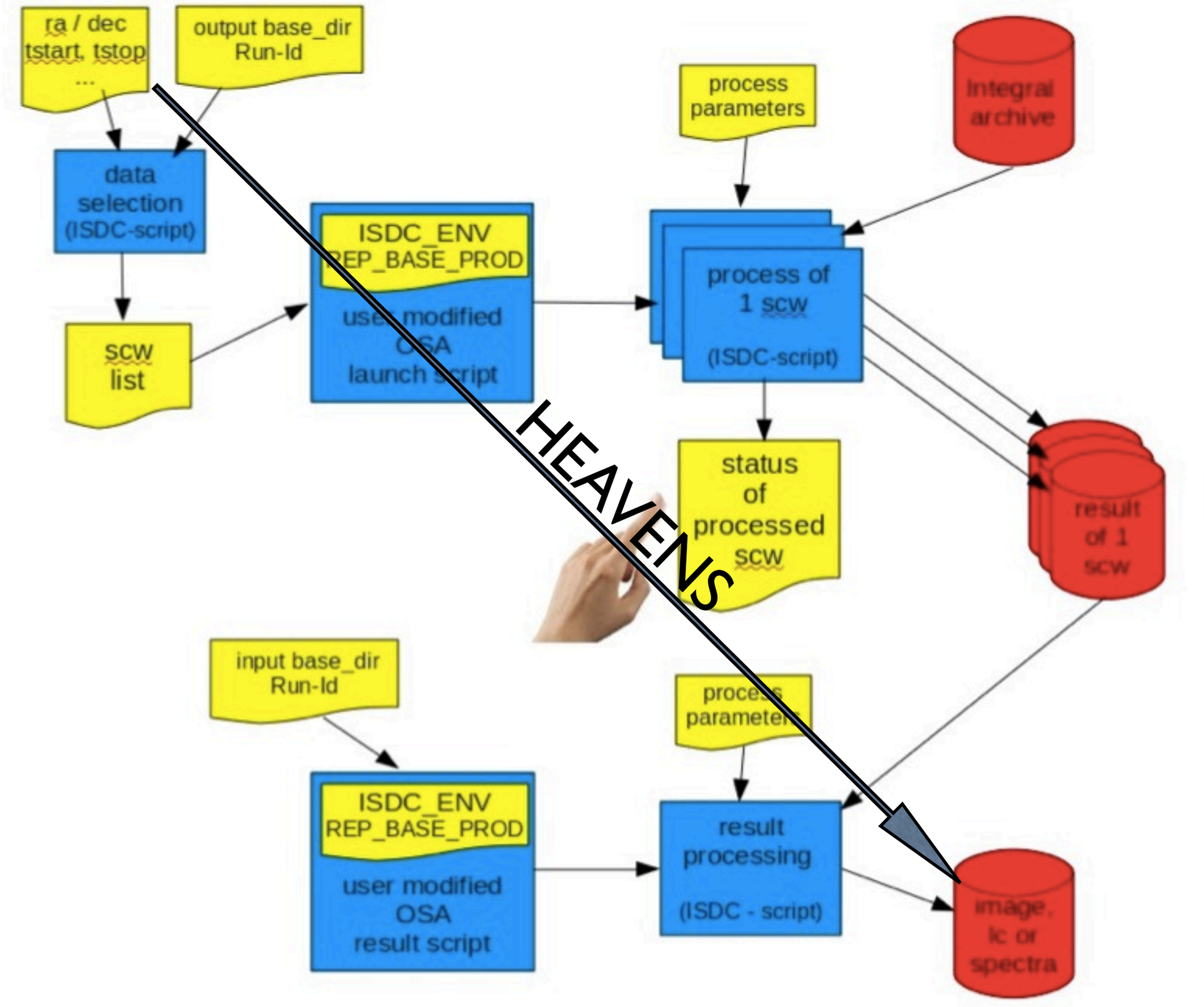
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image,
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spectra

Scientific requirements

- No need for large user manuals, reduced number of options
- Define energy bins separately for imaging spectra and light curves: SPI like fashion
- Define user GTI (allow for phase or time resolved analysis: pulsars, BH)
- Discard unreliable data (short noisy scw, difficult for SPI)
- ... IUG??

Ways to achieve the goals (with limited man-power)

- Simplify the science analysis scripts
- Rewrite some executables (need support from consortium !)

Future activity

- Routine update of IC files
- Guarantee smooth operations
- Update of OSA for JEM-X (and PicSIT ?)
- Prepare for long term operational phase: archive calibration and final OSA distribution