

INTEGRAL USER GROUP

Carlo Ferrigno (ISDC representative)

ESA, 16-17 June 2011

ISDC Status

- Swiss funding for 2012 approved/requested. Operations guaranteed.
- Funding for 2013-2016 will be requested in due time.
- Some changes in manpower allocation is on-going at ISDC (among missions).
- The level of support for INTEGRAL is not changed.
- Re-organization of the Operation hardware and software to ease maintenance and increase performance.

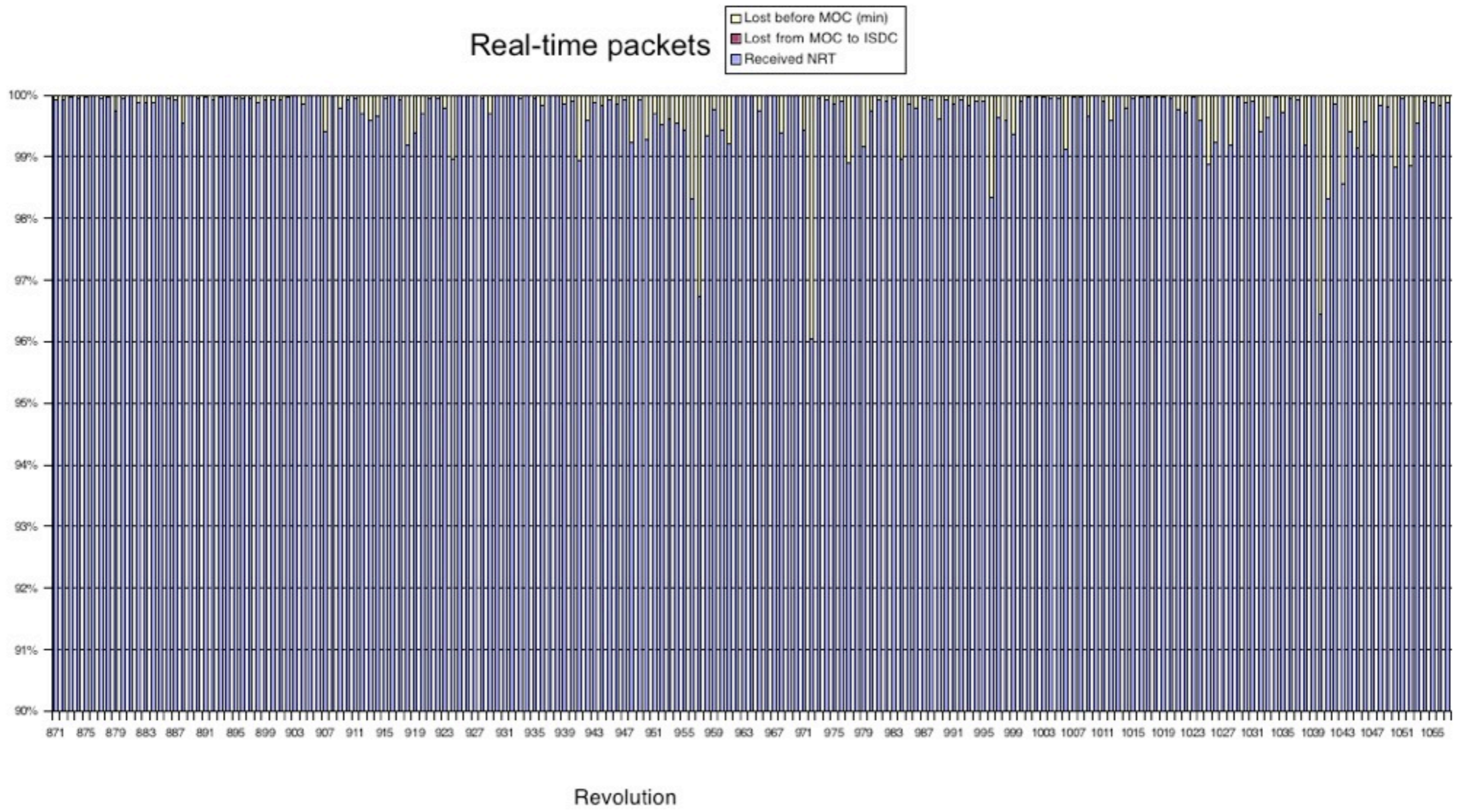
Quick look analysis of INTEGRAL data

- 3 GRB Dec 2010 - June 2011 in the IBIS Fov ($15 < S/N < 8$ since February 22, 2011).
- ~200 GRB/year in SPI ACS.
- 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).
- 15 ATeLs in 2011 related to INTEGRAL discoveries about half triggered and/or supported from ISDC staff (one new BH candidate).
- IUG recommendation 32 implemented successfully.
- We inform the PI of public programs before using the observations.

ISDC Operations/data distribution

- NRT data are available **within 3 hours. Smooth processing.**
- NRT related operations had some problems in May 2011, due to SW/HW migration and a bug in data receipt, but now problems are solved. Migration is not complete.
- Archive revision 2 is frozen up to rev 1009.
- The operational archive is now revision 3, including the new time correlation (NRT & CONS from rev. 1010).
- **Rev_3** reprocessing: complete up to revolution 931 (all public data + some private). SPI event files missing from rev. 0932 to 1009, to be reprocessed in the next weeks.
- Guest observer has **rev_2** data to be used for rev. 932-1009.

Cons NRT telemetry

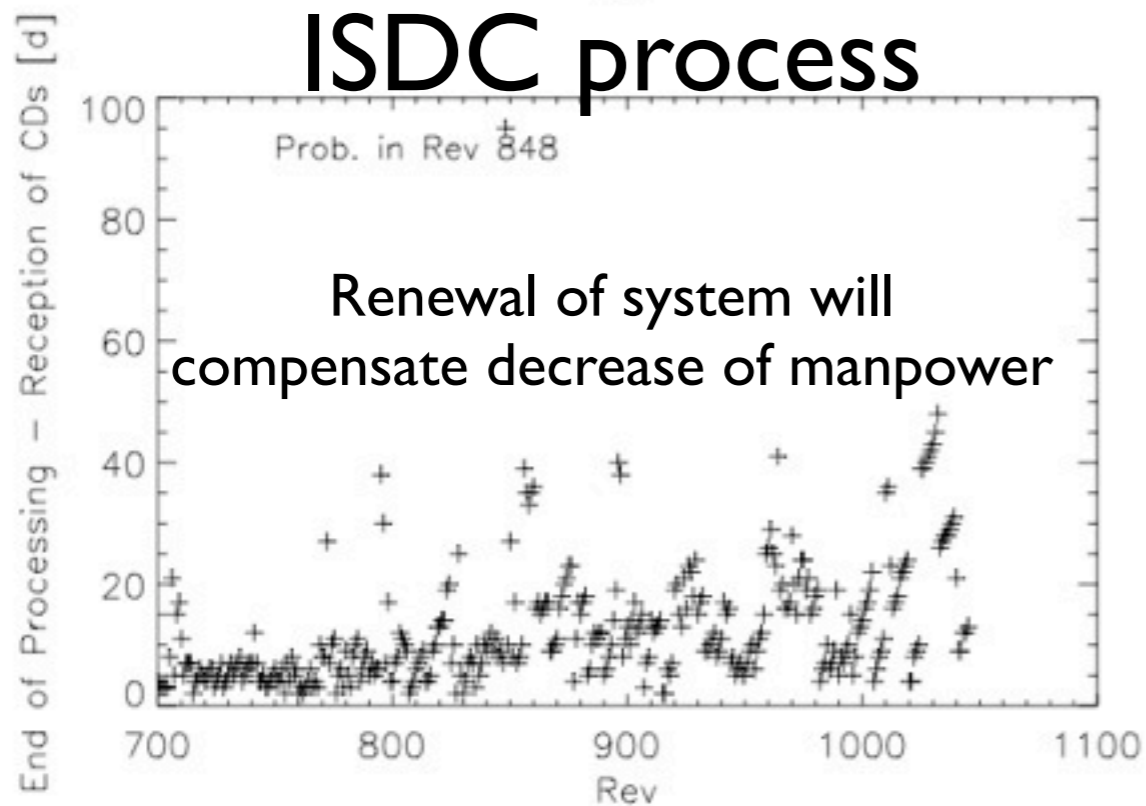
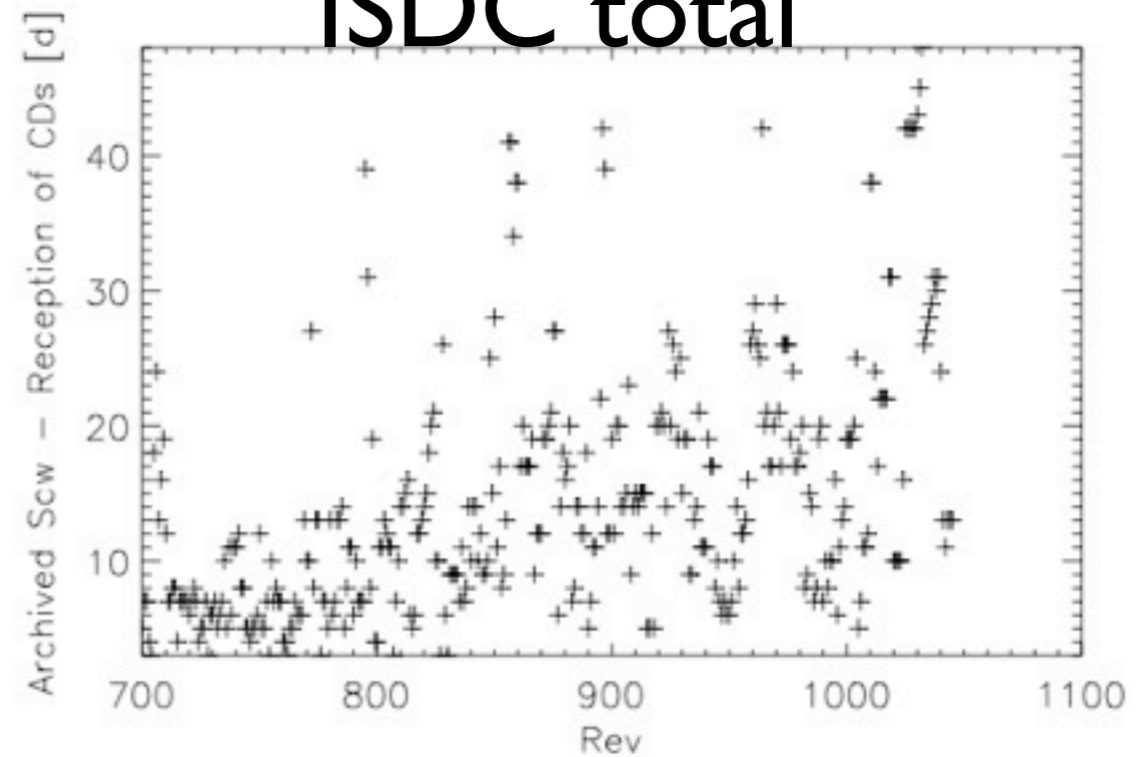
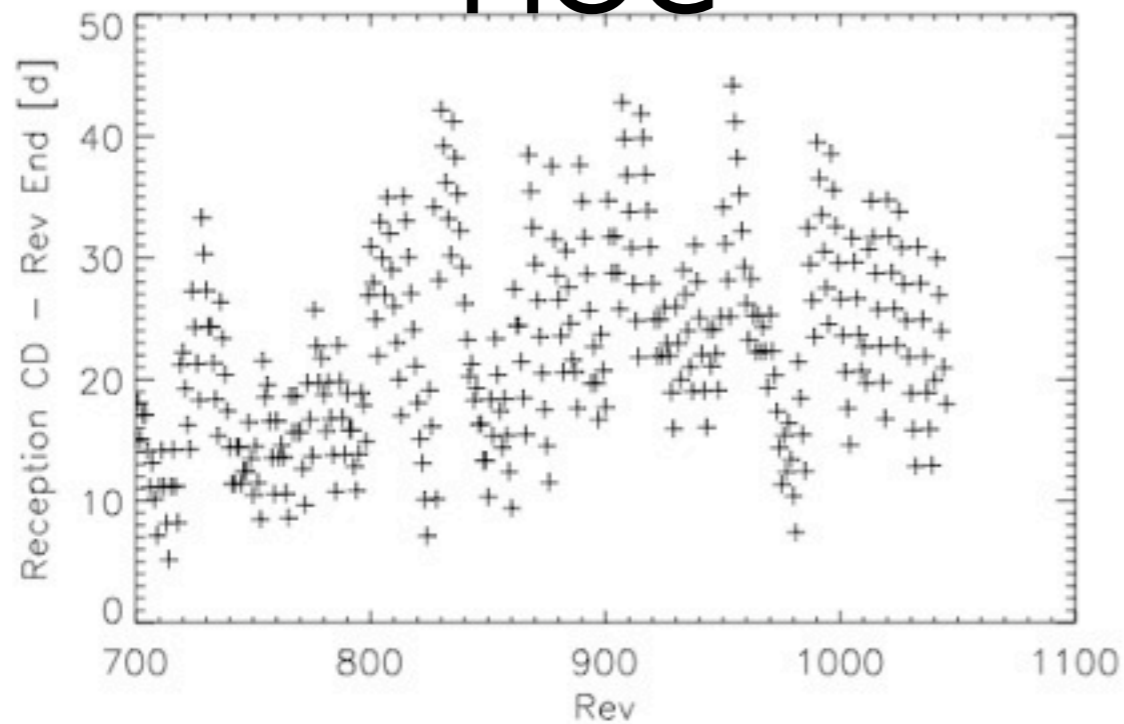


Cons distribution delay

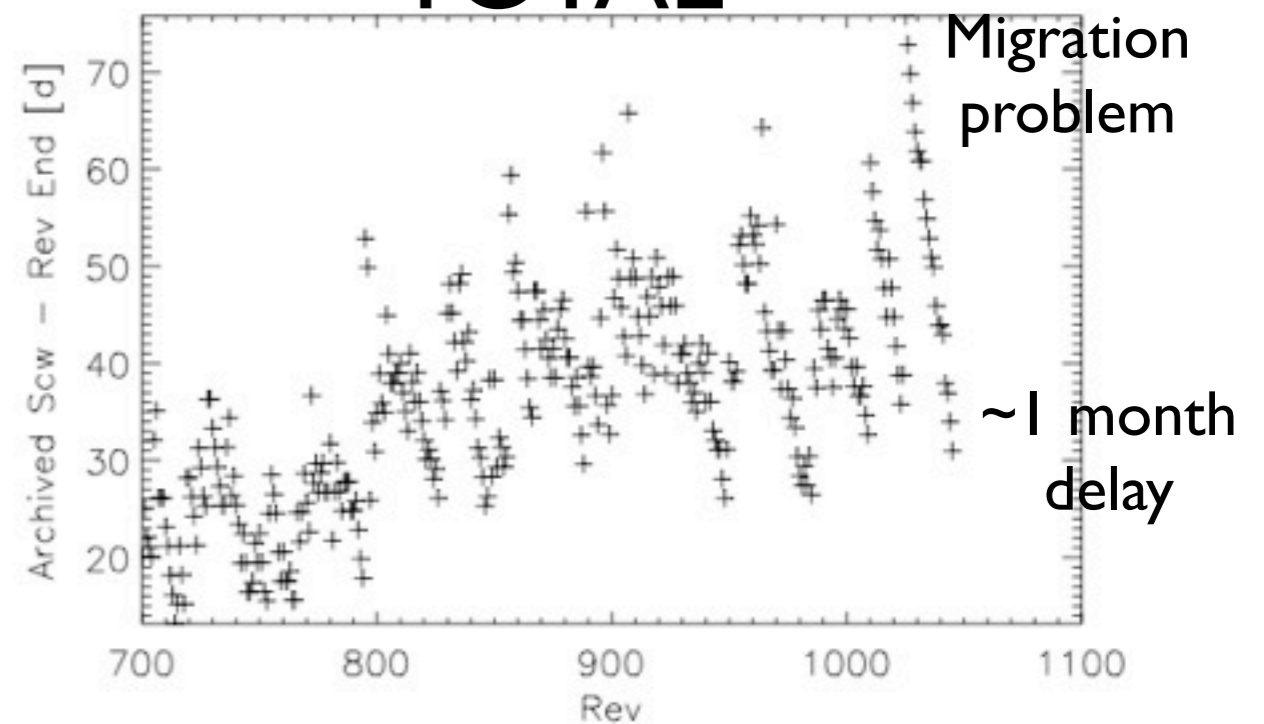
Last processed revolution is 1045 (5-8 May 2011)

MOC

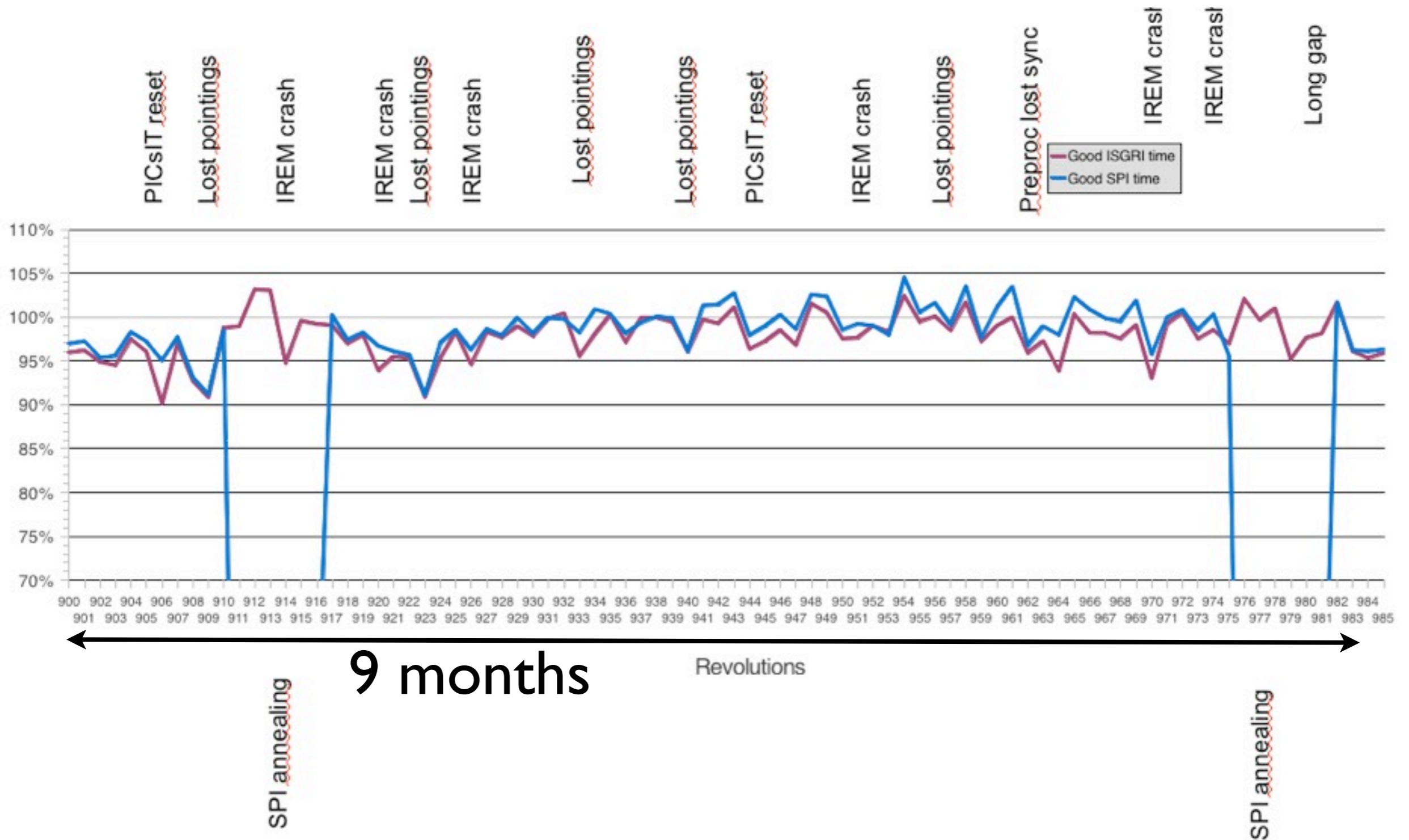
ISDC total



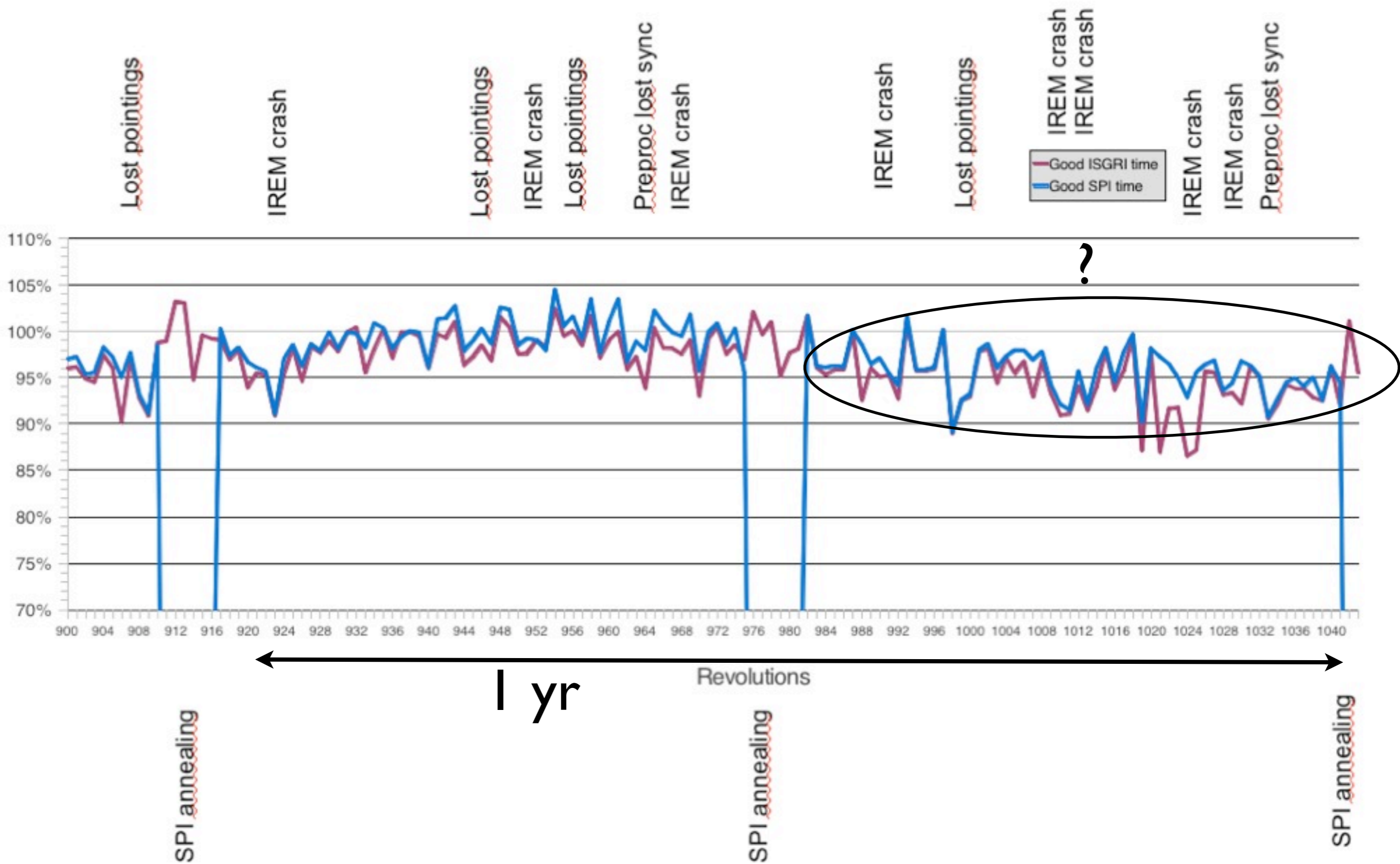
TOTAL



Sum of Good time intervals wrt to planned time



Sum of Good time intervals wrt to planned time



ISDC download statistics -Browse

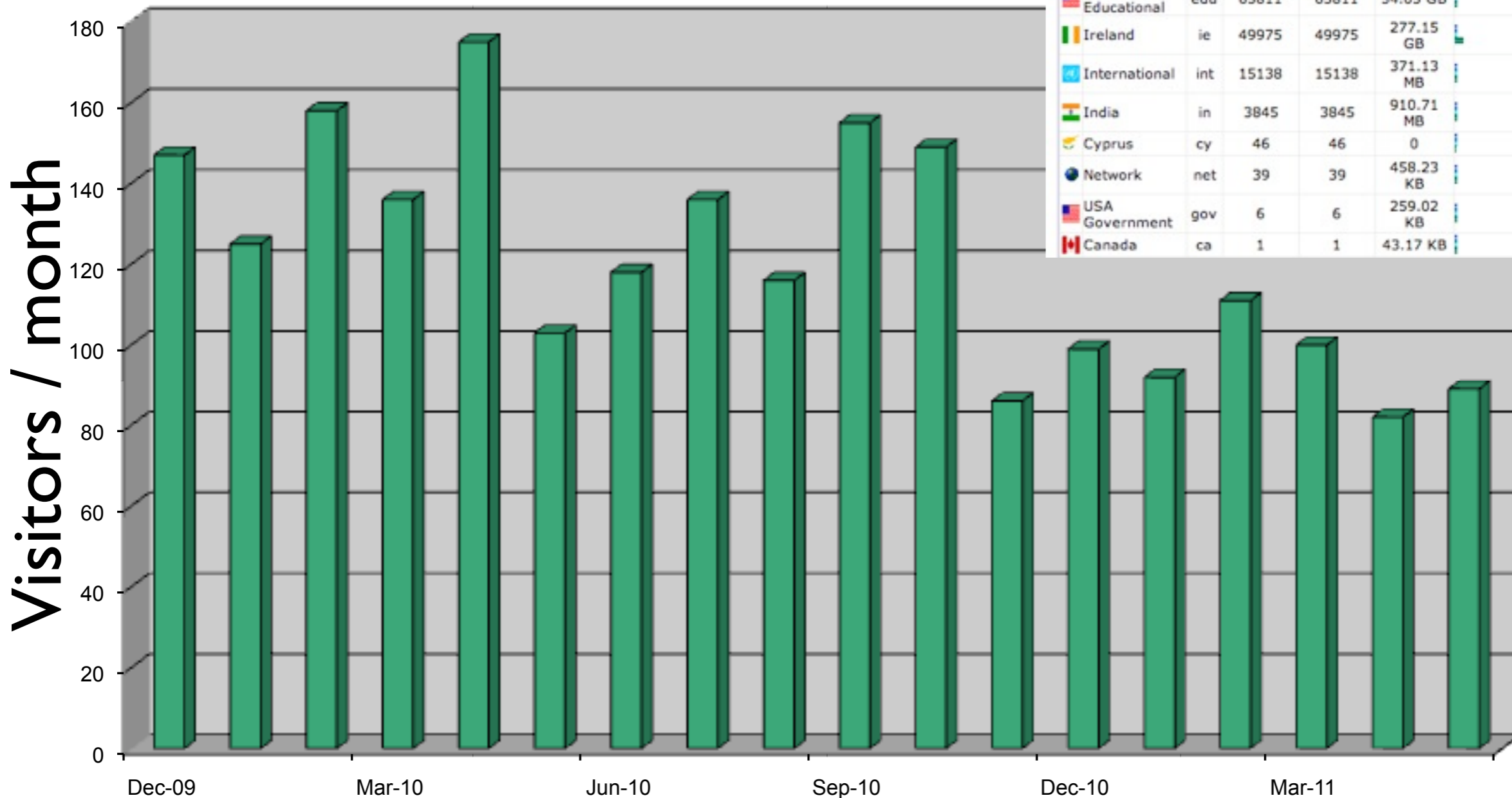
2011

** .iasf-roma.inaf.it
 ** .dynamic.ucsd.edu
 rsdcrssi.ru
 radix.am.ub.es
 ** .uni-tuebingen.de

Visitors domains/countries			
Domains/Countries	Pages	Hits	Bandwidth
France	fr 10445142	10445142	10476.29 GB
Italy	it 2740634	2740634	2167.84 GB
Netherlands	nl 1310517	1310517	493.54 GB
Poland	pl 704131	704131	148.78 GB
Spain	es 327583	327583	98.50 GB
Czech Republic	cz 192315	192315	36.99 GB
Russian Federation	ru 189512	189512	34.23 GB
Germany	de 145866	145866	246.72 MB
Commercial	com 76914	76914	4.53 GB
Unknown	ip 68525	68525	380.88 GB
USA Educational	edu 65811	65811	34.05 GB
Ireland	ie 49975	49975	277.15 GB
International	int 15138	15138	371.13 MB
India	in 3845	3845	910.71 MB
Cyprus	cy 46	46	0
Network	net 39	39	458.23 KB
USA Government	gov 6	6	259.02 KB
Canada	ca 1	1	43.17 KB

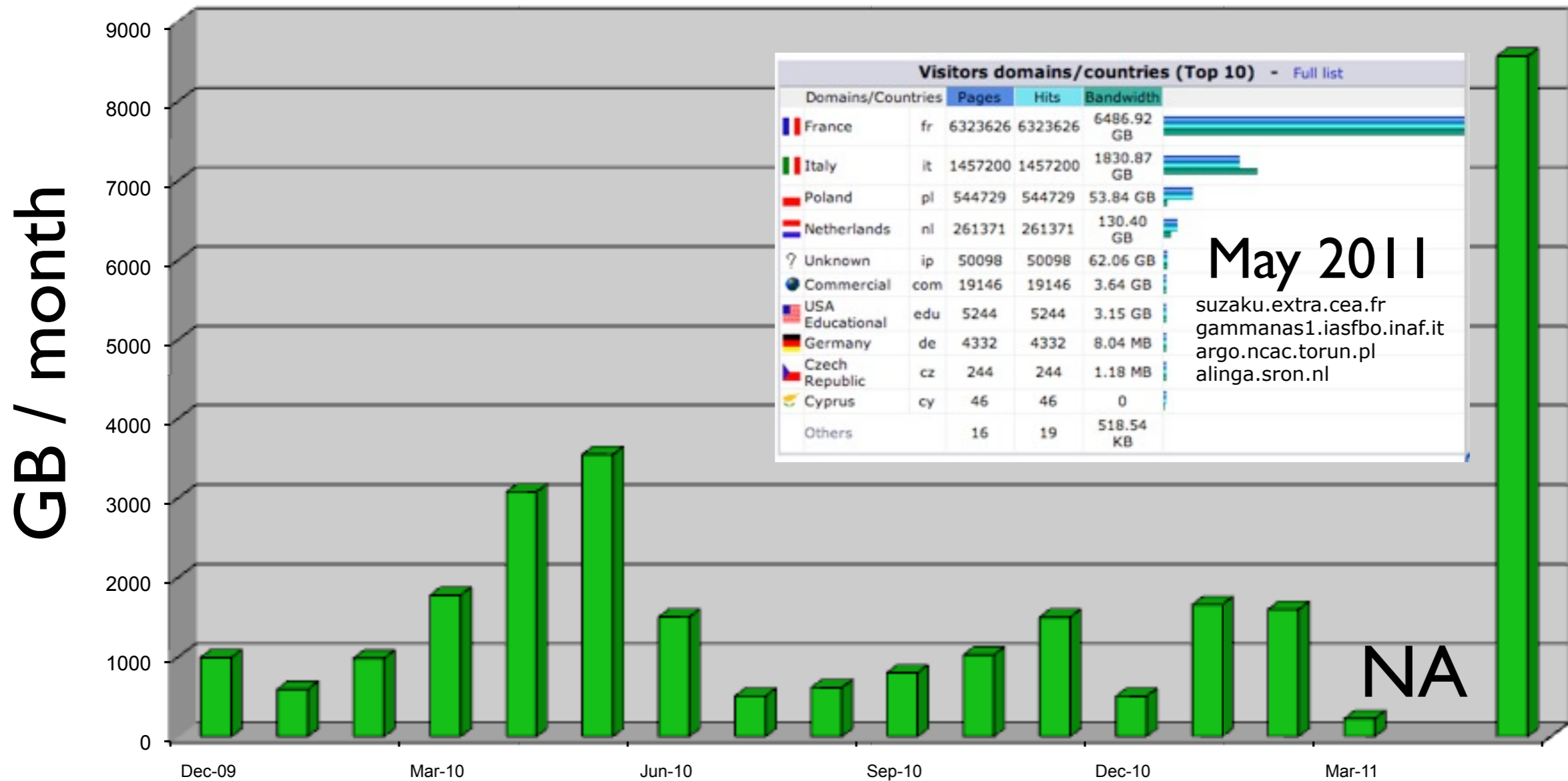
2.5 Gb/visit

■ Browse Unique Visitors (per month)



ISDC download statistics - FTP

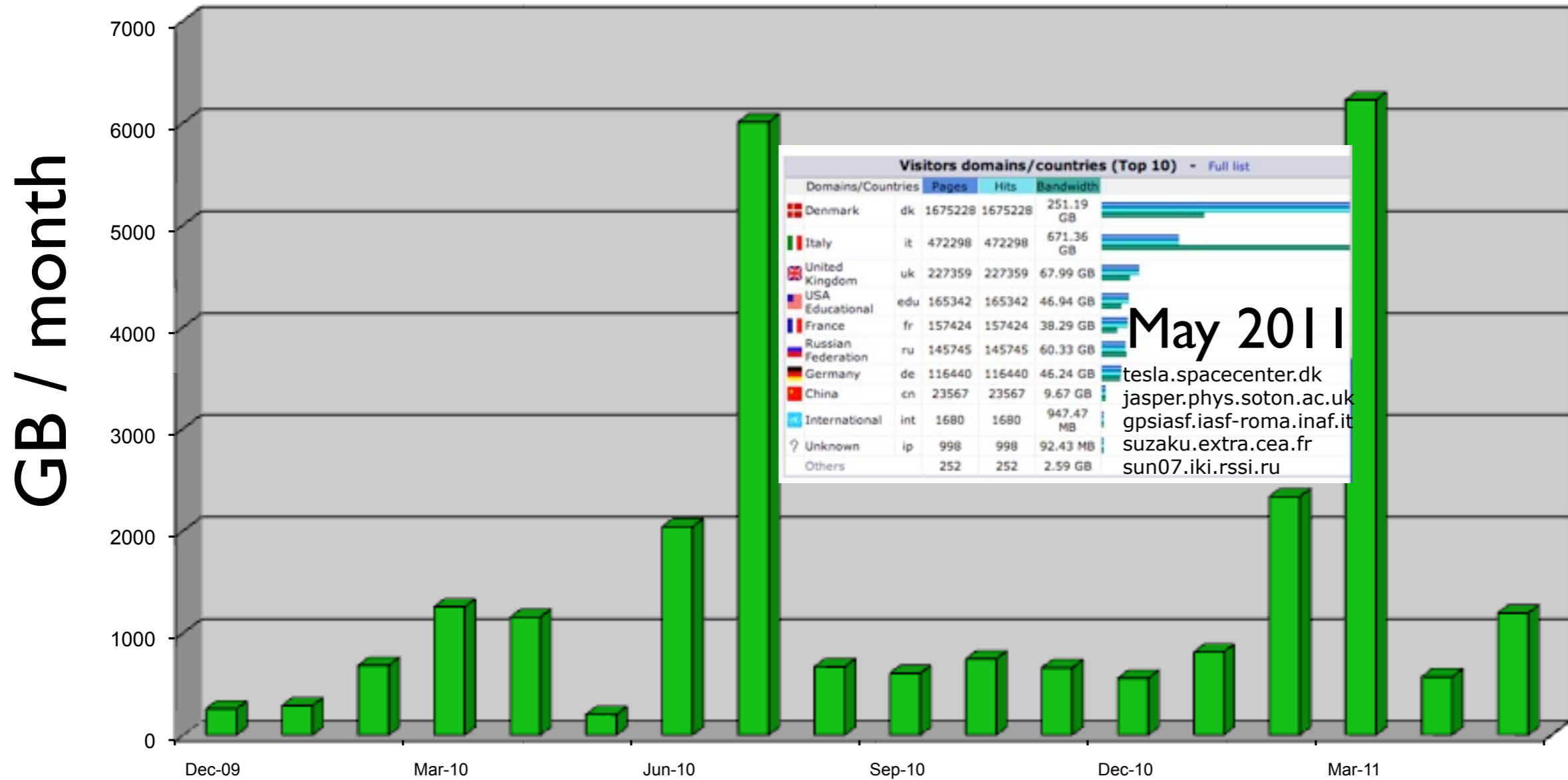
■ FTP Bandwidth in (GB/month)



ISDC download statistics - RSYNC

28-240 unique visits
per month in 2011

■ RSYNC Bandwidth (GB/month)



OSA downloads

- OSA 9 software was downloaded 65 times in 2011 (included internal downloads).

High level archive, HEAVENS



ISDC INTEGRAL Planck Gaia POLAR ASTRO-H CTA LOFT SAFARI
HEAVENS AHEAD SF 2010 HTRS 2011

HEAVENS

Query parameters [About](#) [Help](#)

News

- Fermi-LAT images and lightcurves are available, spectra and flexible parametrisation will soon follow.
- Average Planck spectra for point sources are now available.

Source name:

or RA DEC: Equatorial FK5

Time interval : MJD (TT)

Planck INTEGRAL OMC INTEGRAL JEM-X **INTEGRAL ISGRI** INTEGRAL PICsIT

INTEGRAL SPI INTEGRAL SPI ACS FERMILAT HEGRA INTEGRAL IREM

Sky image Energy band [keV]:

Lightcurve with a bin size of hours Min - Max:

Spectrum

- Included **FERMI/LAT** and **Planck**.
- Extension of SPI spectra (P. Bordas, ISDC/IAAT).
- Inclusion of other instruments is in progress.

ISDC download statistics

HEAVENS

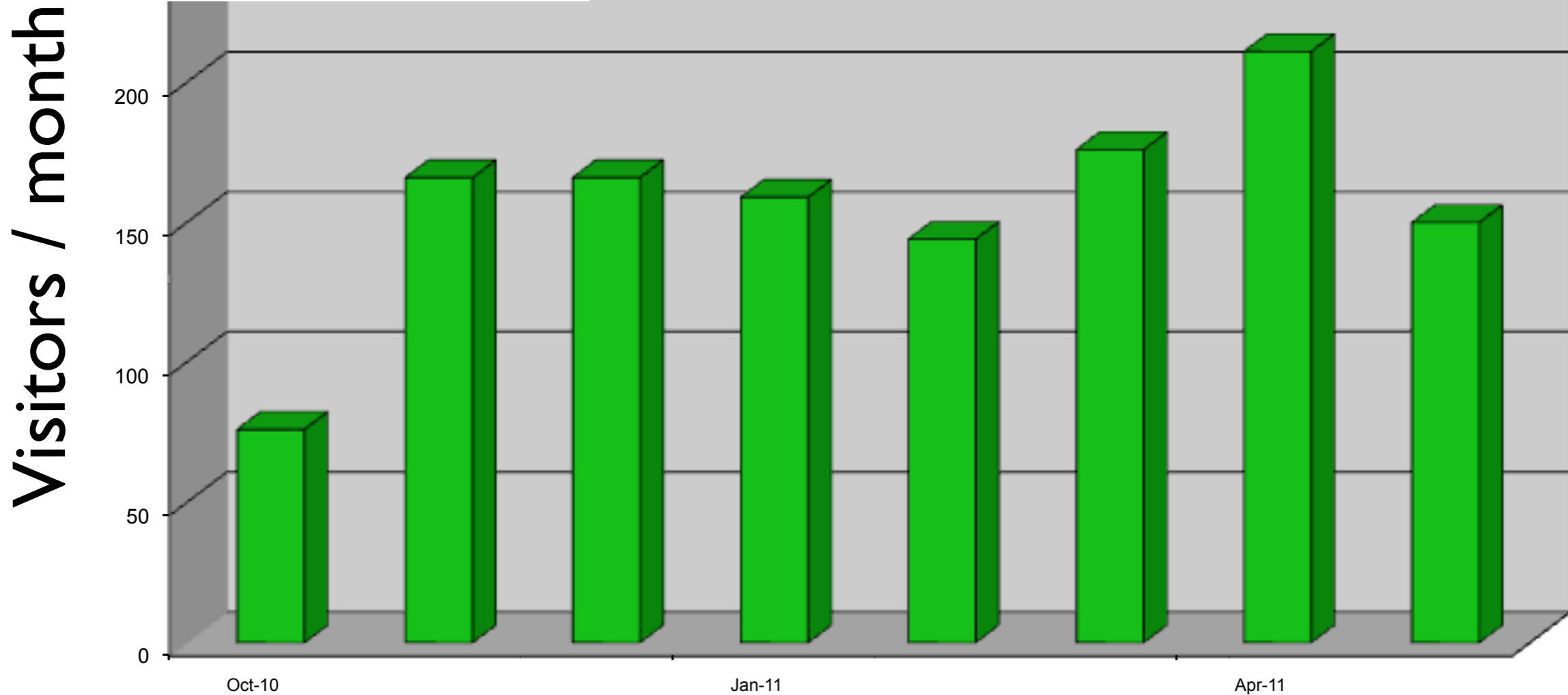
Visitors domains/countries (Top 10) - Full list

Domains/Countries	Pages	Hits	Bandwidth
Switzerland ch	8796	18873	460.15 MB
France fr	2899	6411	166.20 MB
Italy it	2840	9262	147.65 MB
Unknown ip	2712	9940	228.56 MB
Network net	1204	4020	96.99 MB
Germany de	1137	4180	99.12 MB
Commercial com	1017	1527	36.24 MB
USA Government gov	557	1746	31.22 MB
USA Educational edu	324	1533	28.56 MB
Russian Federation ru	253	1800	28.11 MB
Others	1706	8015	161.09 MB

2011
private adsl !

HEAVENS Unique Visitors (per month)

1.45 Gb of processed data

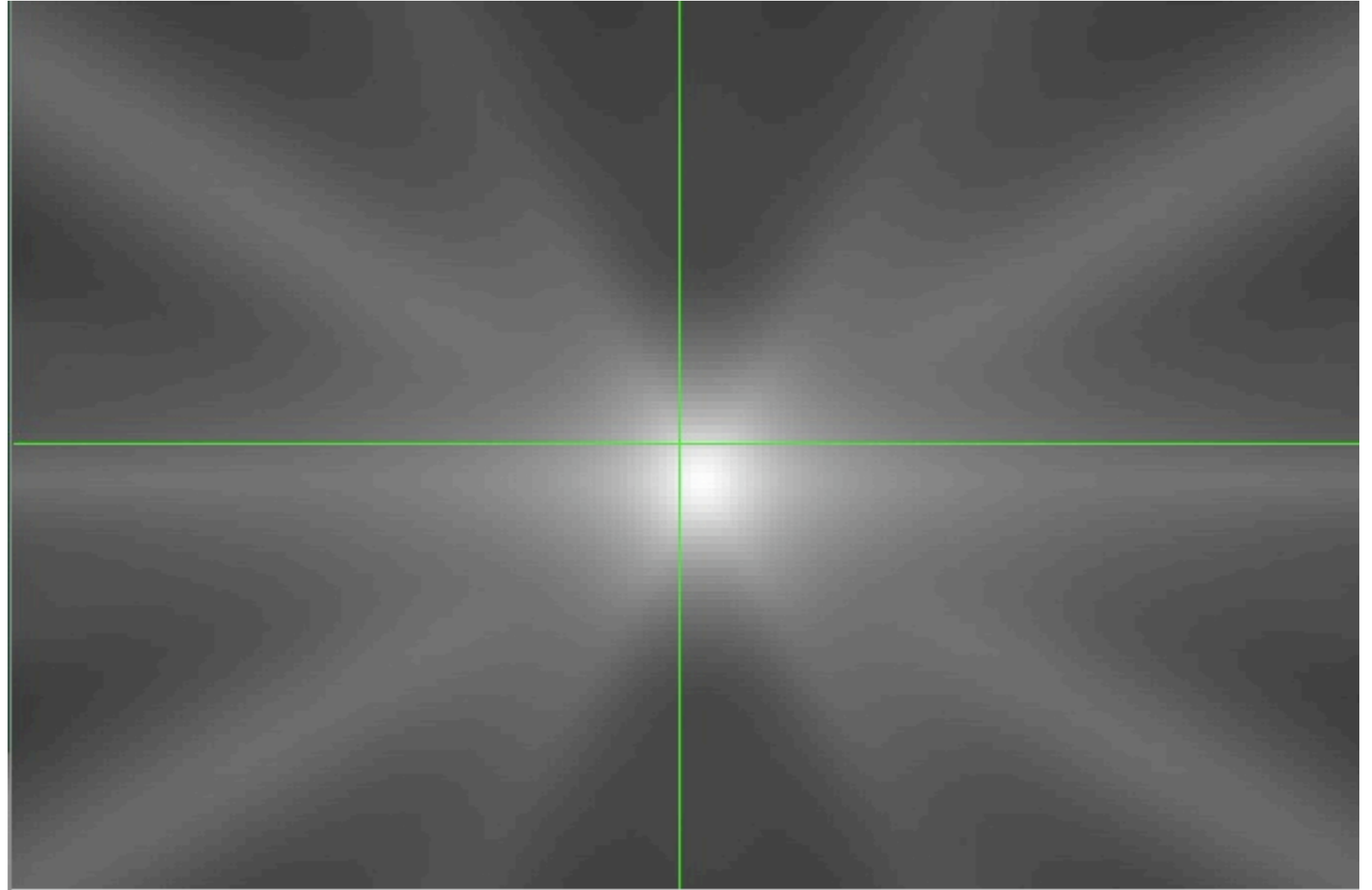


Future activity

- Routine update of IC files.
- Next OSA release will be triggered by an ameliorated ISGRI energy calibration. Upgrade of killed pixels in “ghost busters”?
- Mask model also in OSA 10 ?
- Testing of NOMEX and ARFs.
- Minor bug fixes in rest of SW (e.g., JEM-X mosaics, DAL libraries).
- Extend HEAVENS to other missions.

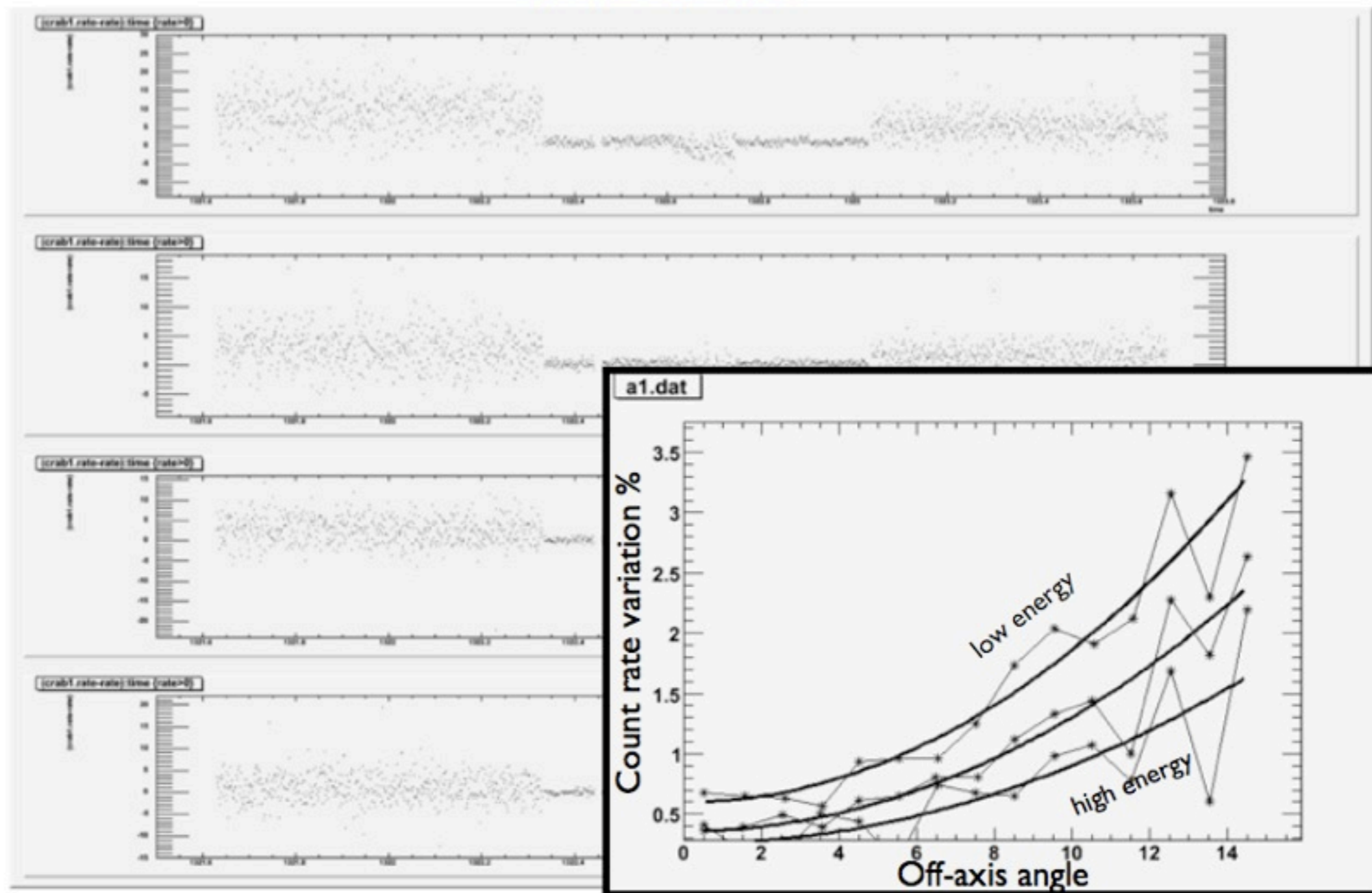
Nomex correction

- Off-axis
(2,-5) pixels
- Staring on-axis pointings are at (0,0)



IUG 12,2009 - Introduction of “Ghost-busters”

Side effects

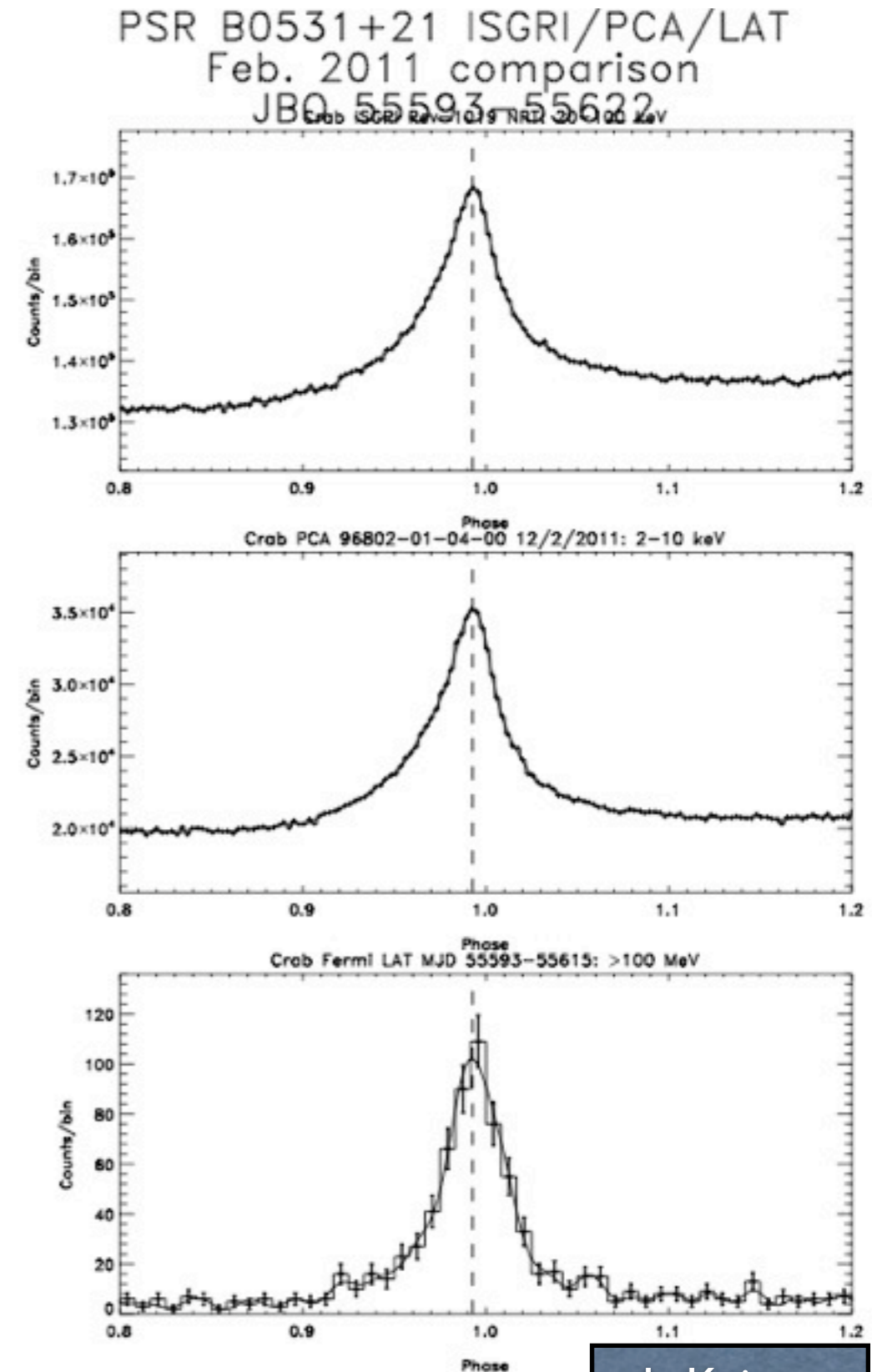


NOMEX was mis-calibrated off-axis because of the dirty mask holes

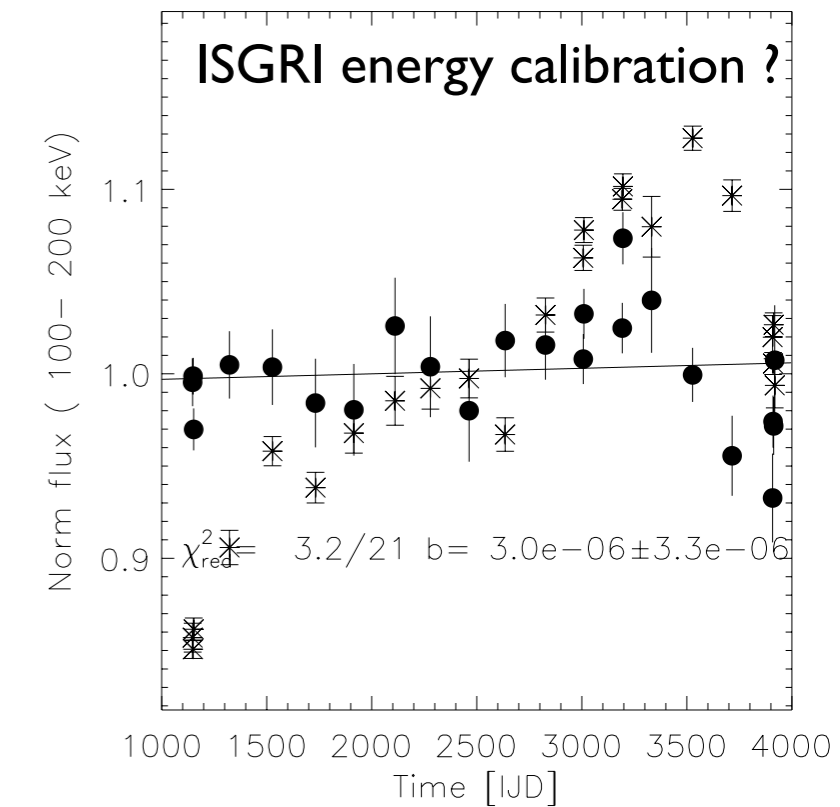
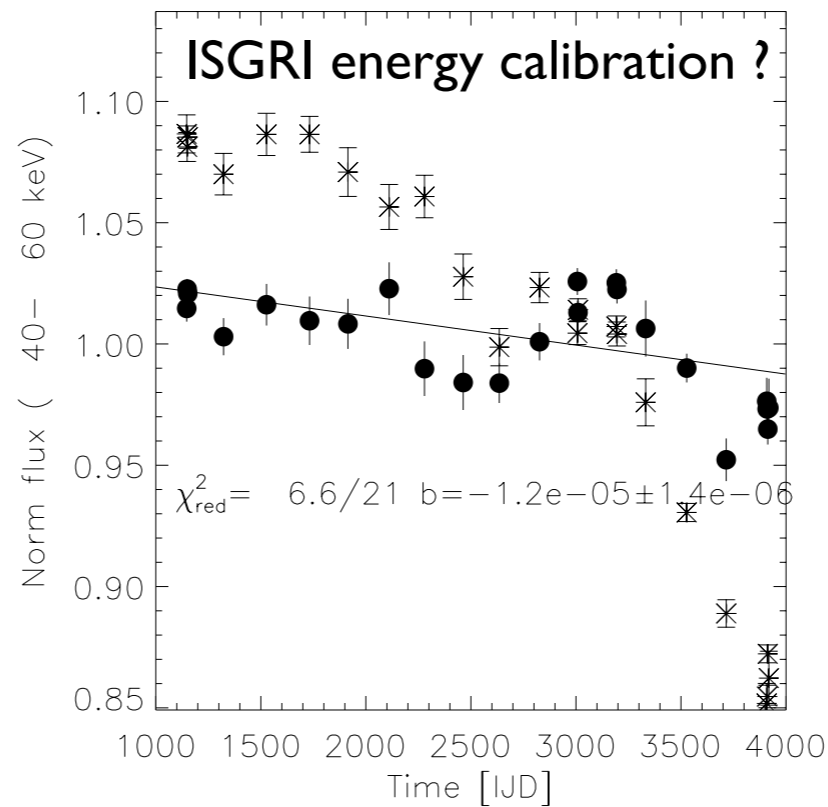
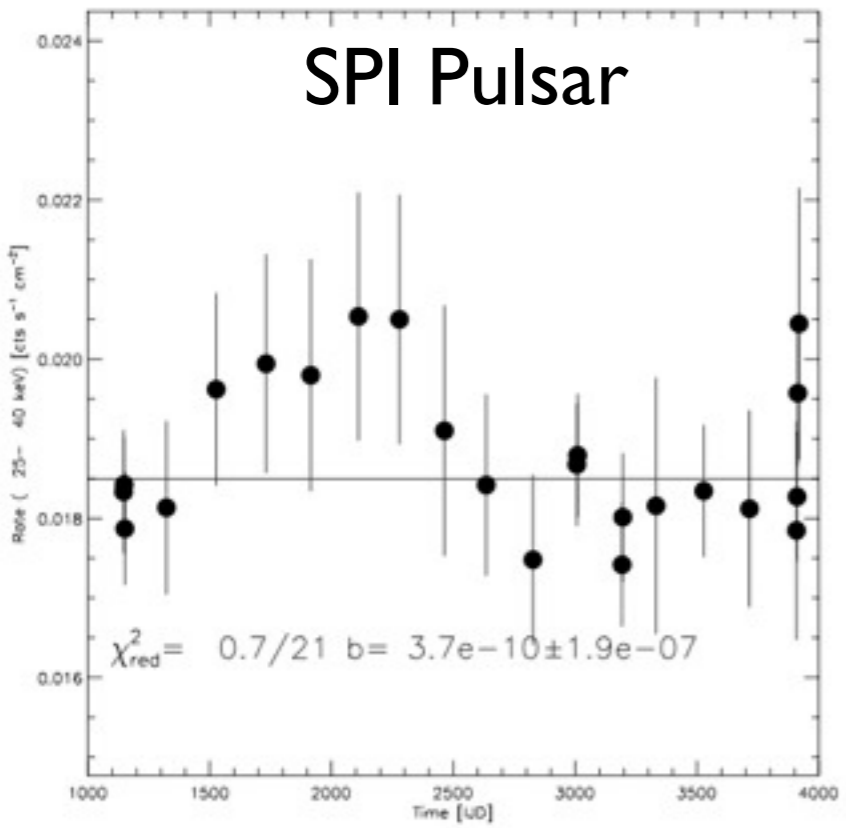
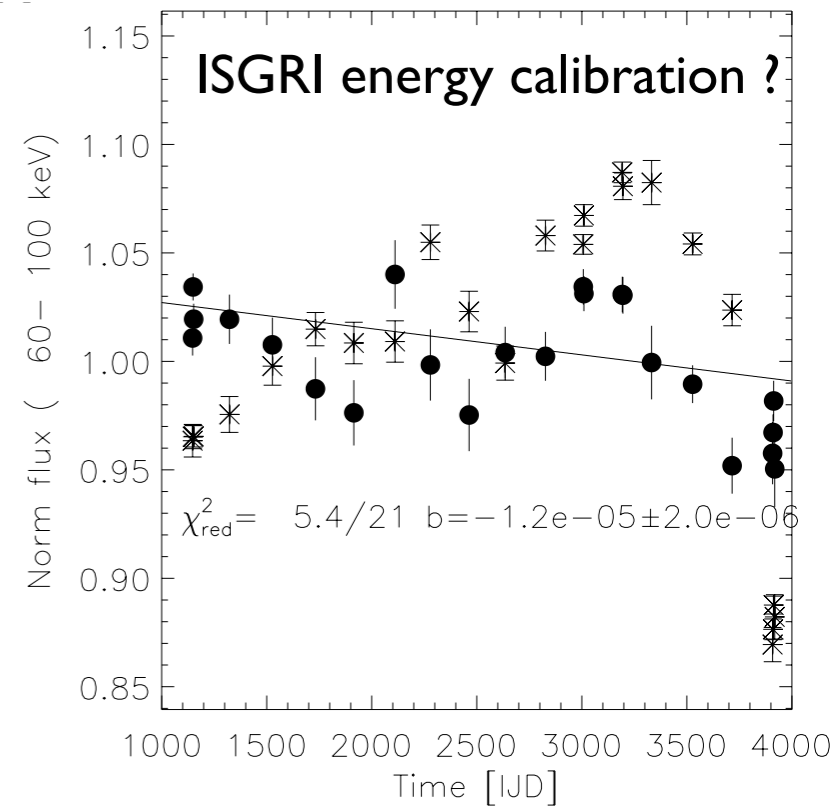
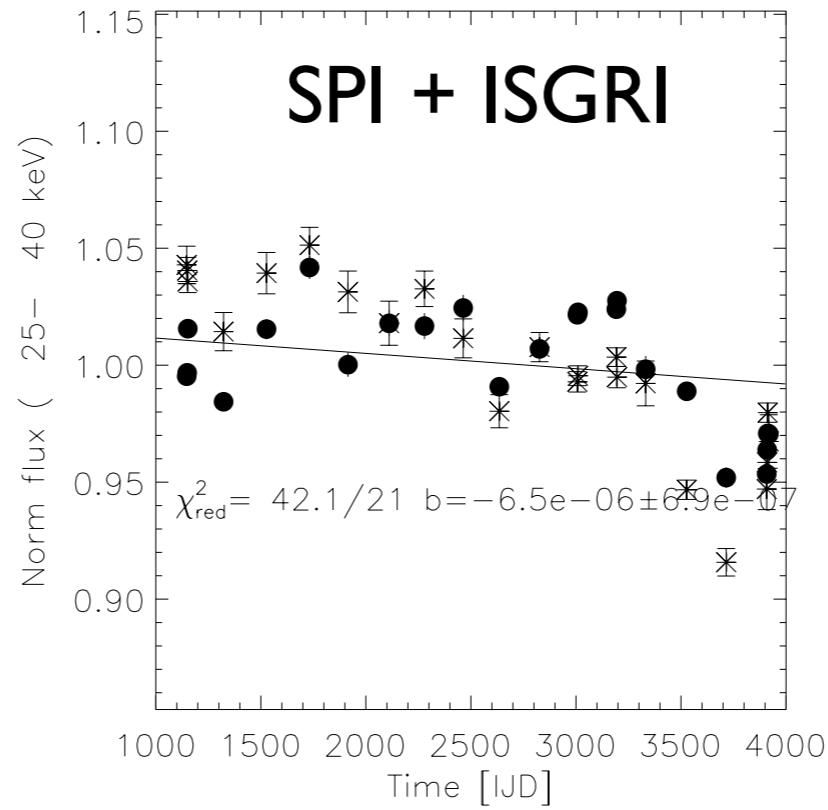
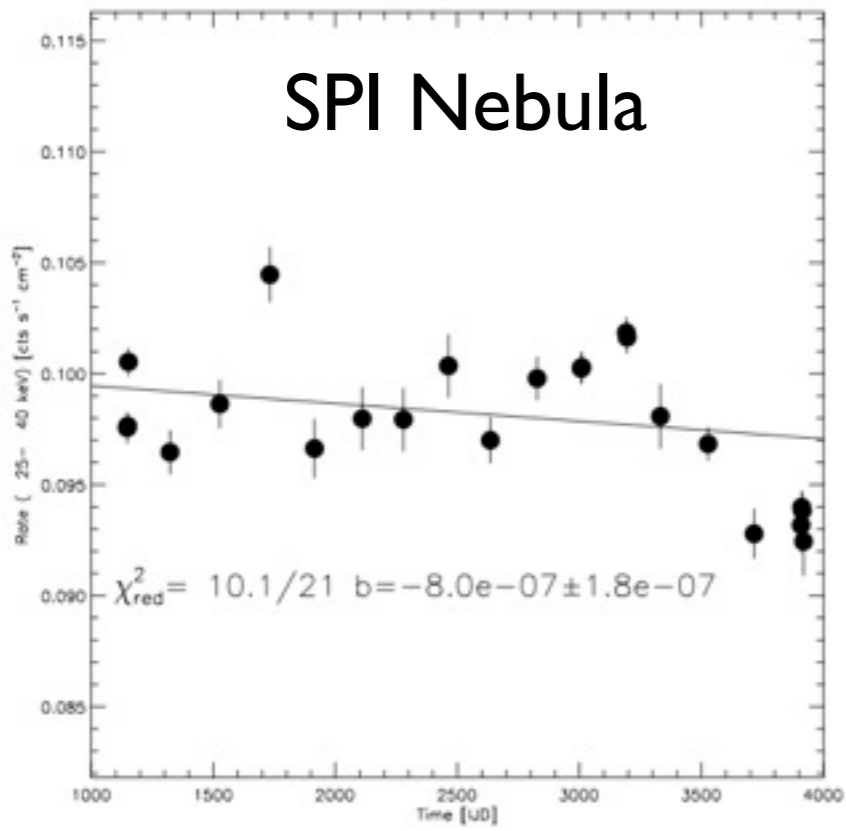
**Contribution to
Scientific validation
of data and SW.**

Time correlation

- In the rev pipeline, we have a tool that checks the goodness of TCOR entries by comparing:
 - the time of an entry with the time predicted from the former entry,
 - the gradient.
- We reject entries above a nominal tolerance.
- Only a few entries per revolution affected, we issue an error if too many rejections.
- Absolute calibration of TCOR using the Crab pulsar is as expected (check by L. Kuiper).



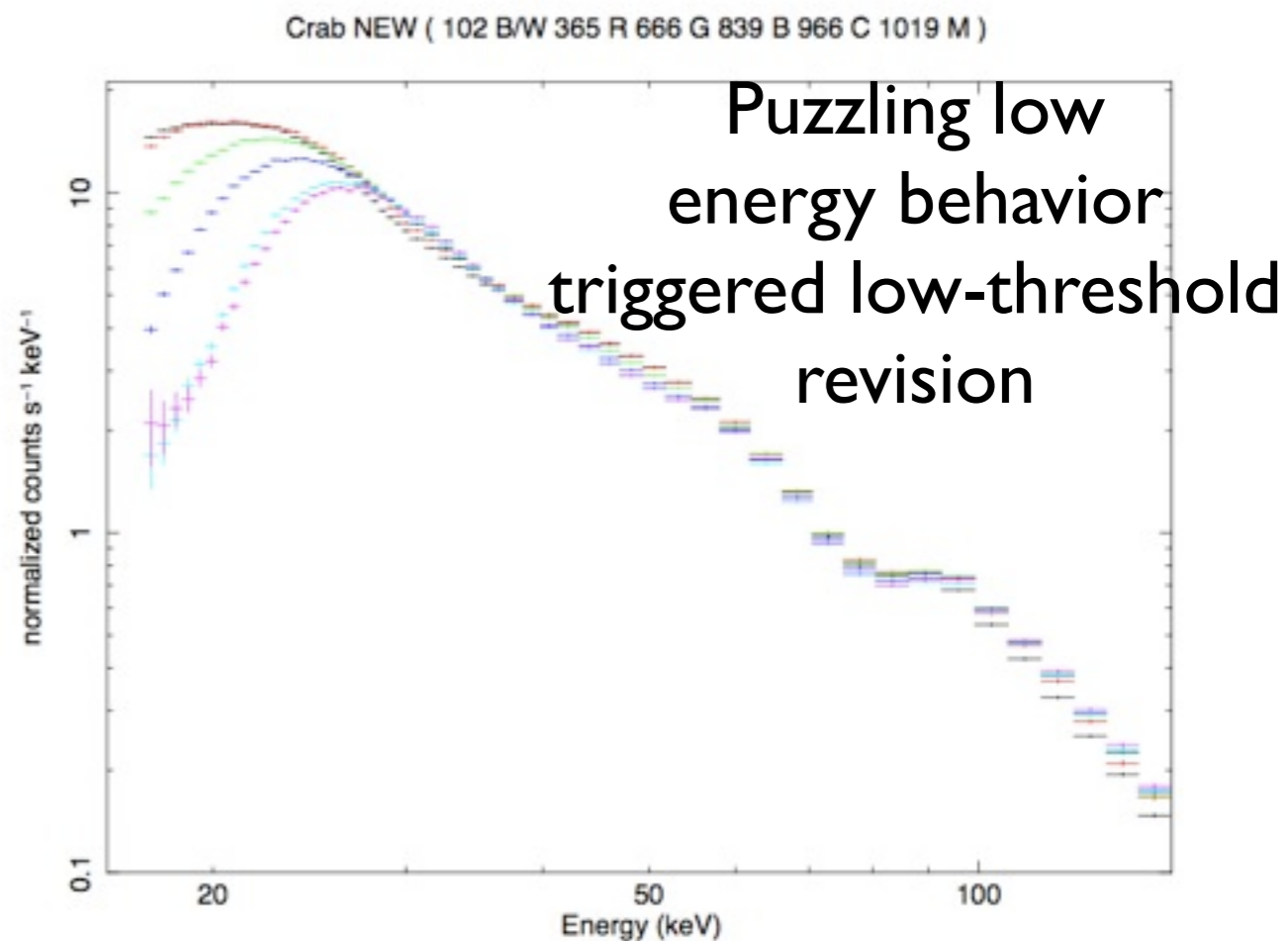
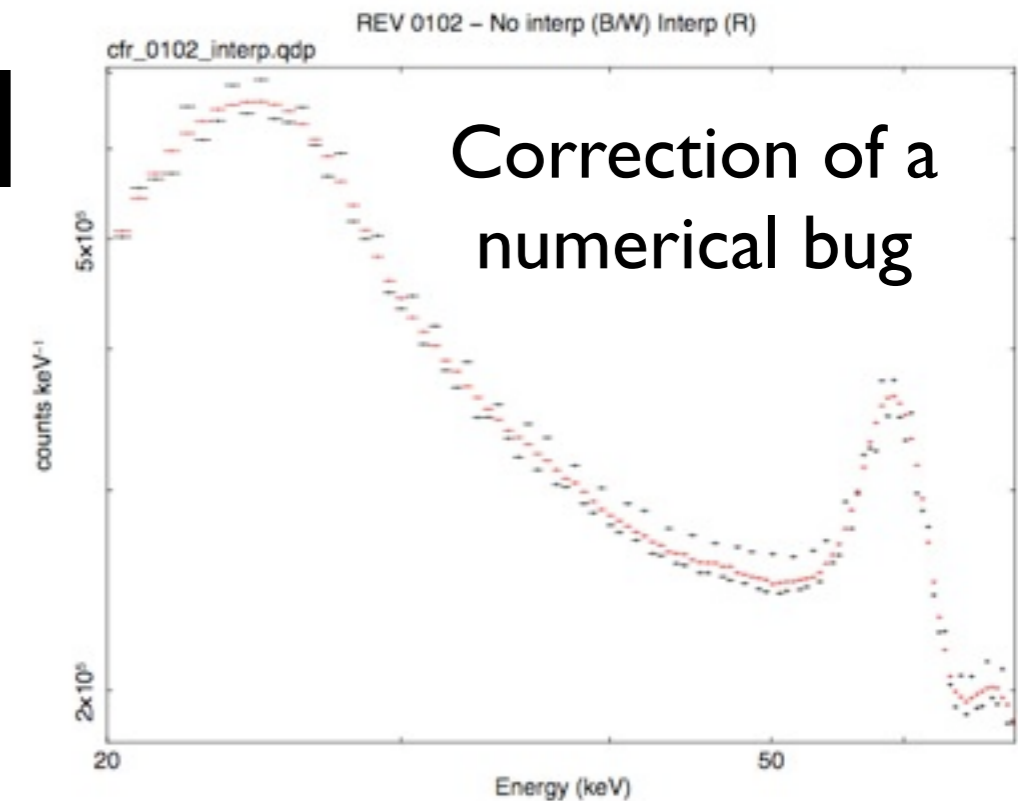
Crab calibration



ISDC tests of new ISGRI energy correction

- A tight collaboration with IBIS group in Saclay guarantees a prompt testing of new energy calibration.
- Unfortunately, some problems were found and are being solved.

3 May 2011



SPI/ACS timing

- Reported discrepancy of SPI/ACS triggers with respect to triangulation measurements.
- Bug in DAL library, corrected (rounding error caused shift of 1s in particular cases for off-line triggers).
- Archived triggers, also available through HEAVENS, have correct time.
- On-line triggers do not account for reception station and therefore they have a spread of 20 ms.

