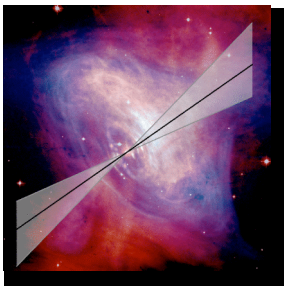
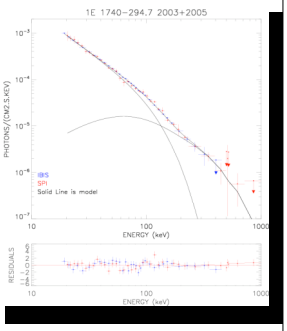
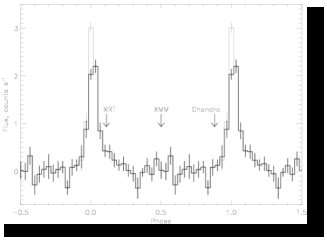
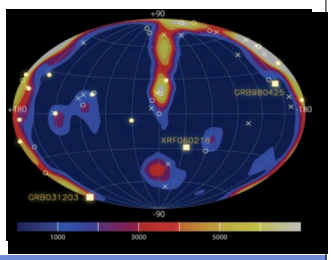
PS Status Report



- Observatory status
- Community interfaces
- Science highlights
- Outreach



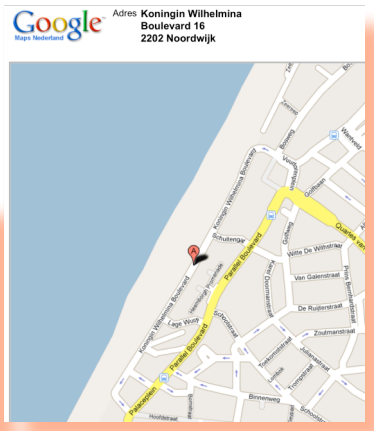




TONIGHT, 21 April 2009, 19:30

IUG Dinner @ "Trattoria Mimmo",

Noordwijk aan Zee, Koningin Wilhelmina Boulevard 16, 071 – 362 44 77



Executed observations

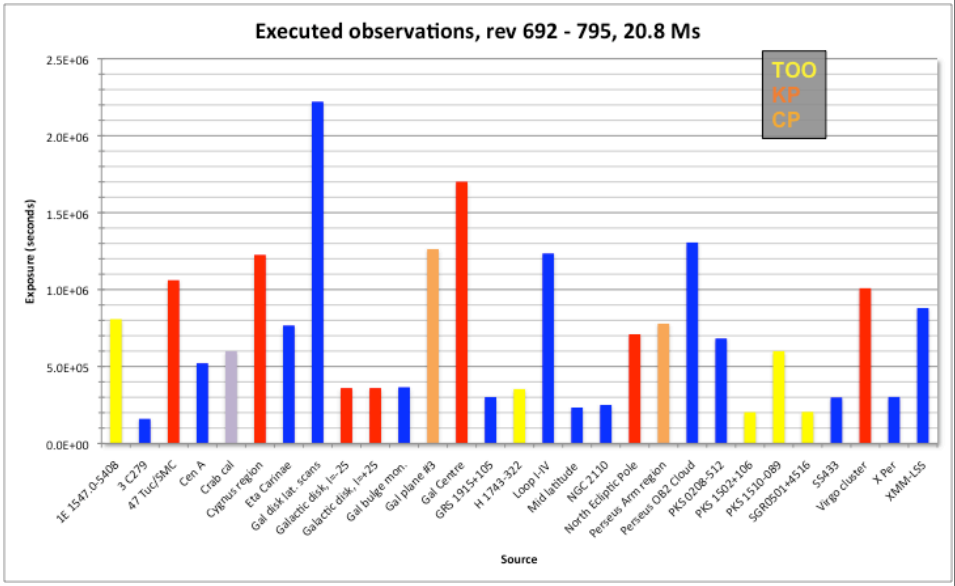
From rev 692 (13 June 2008) until rev 795 (19 April 2009)	
Target	**PI**
1E 1547.0-5408/TOO	Götz, den Hartog, public
3C 279	Collmar
47 Tuc and SMC/KP	Maccarone
Cen A	Rothschild
Cygnus Region/KP	Knödlseder
η Car	Leyder
Crab calibration	Public data
Galactic disk latitude scans	Sunyaev
Galactic bulge monitoring	Kuulkers
Galactic plane #3/CP	CP/ISWT
Galactic Centre/KP	Bélanger
Galactic disk, l = ± 25 /KP	Weidenspointner
GRS 1915+105	Rodriguez
H 1734-322/TOO	Miller, public
Loop I-IV	Iyudin
Mid latitude 1 & 2	Weidenspointner

Observatory status
Community interfaces
Science highlights
Outreach

Executed observations

From rev 692 (13 June 2008) until rev 795 (19 April 2009)	
Target	**PI**
NGC 2110	Beckmann
North Ecliptic Pole/KP	Ajello
Perseus arm region/CP	CP/ISWT
Perseus OB-2 Cloud	(Terrier/von Kienlin) amalgamated
PKS 0208-512	Zhang
PKS 1502+106/TOO	Pian
PKS 1510-089/TOO	Pian
SGR 0501+4516/TOO	Hurley
SS 433	Cherpashchuk
Virgo Cluster/KP	Stella
X Per	Kreykenbohm
XMM-LSS	Virani

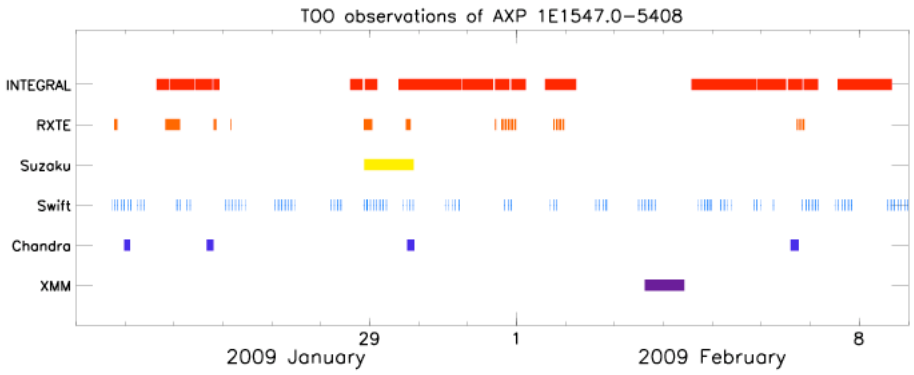
Executed observations



TOO follow-up observations and GRB

Date	Source	PI, Comment
August 2008	PKS 1502+106	Pian
August 2008	SGR 0501+4516	Hurley
October 2008	1E 1547.0-5408	Götz
October 2008	H 1734-322	Miller (public data)
January 2009	PKS 1510-089	Pian
January 2009	1 E1547.0-5408	Den Hartog, and separate public observation
August 2008	IGR J00291+5934	Falanga, did not meet trigger criteria
September 2008	IGR J17464-3213	Wilms, can only trigger on new BHT, not on known BHT
October 2008	J0910-5041	Castro-Tirado, (unsollic.) technically unfeasible
December 2008	3C 279	Pian, did not meet trigger criteria
January 2009	1A 1118-616	Santangelo, schedule conflict (TOO, co-ord. obs.)
March 2009	Aql X-1	Campana, schedule conflict (KP) and soure (late, fading)
March 2009	GRO J1008-57	Santangelo, schedule conflict (KP), late short exp? (fading)
GRB 090107B, 081226B	GRB inside FOV	Hanlon, Wunderer, Götz
GRB 081204, 081003B, 080613	GRB inside FOV	Sazonov, Wunderer
GRB 0810016, 081003, 080922	GRB inside FOV	Hanlon, Wunderer

Jan/Feb 09: 1E 1547-5408



Response to AO-7

AO-7 for obs time proposals Release: 12 Jan, deadline: 20 Feb 2009

76 proposals received :

- All proposals requesting observing time:
  - < 1 Ms: 10 proposals, 3.7 Ms total
  - ≥ 1 Ms (KP): 35 proposals, 84.1 Ms total
  - TOO: 31 proposals, 190.0 Ms total

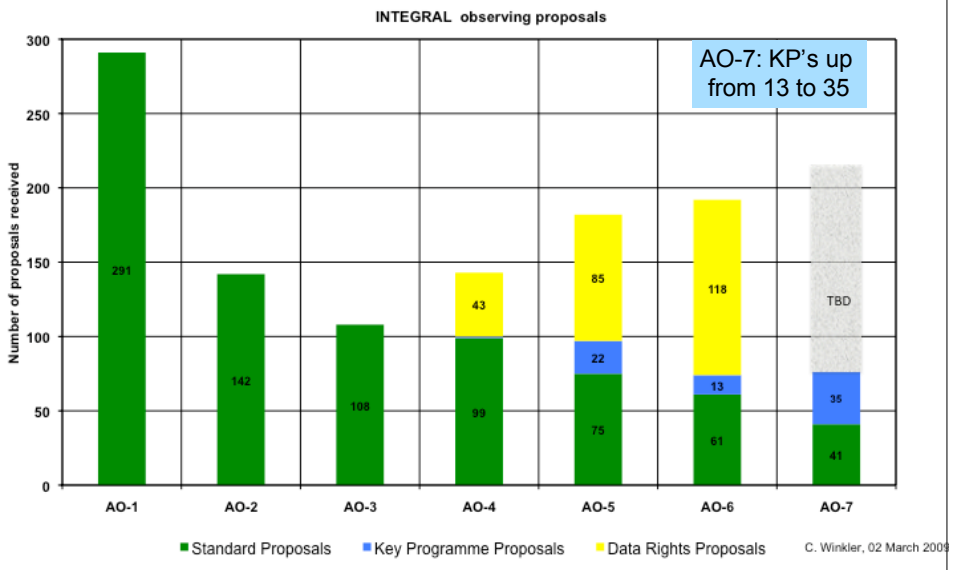
Total requested observing time: 107 Ms (TOO x 10% included)

Available observing time:

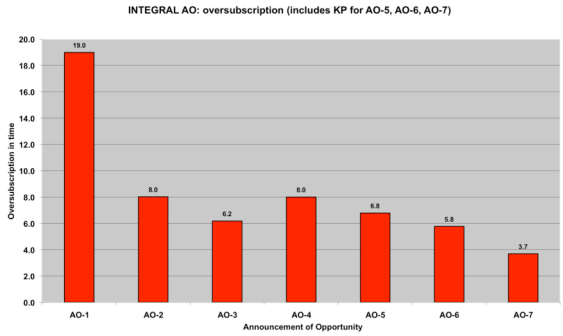
29 Ms (14.5 months) – 2.6 Ms (TOO earmark) = 26.4 Ms
Carry-over (0 Ms) , SPI annealing

Target allocation for TAC: 26.4 x 1.2 = 31.7 Ms

Number of proposals



Response to AO-7

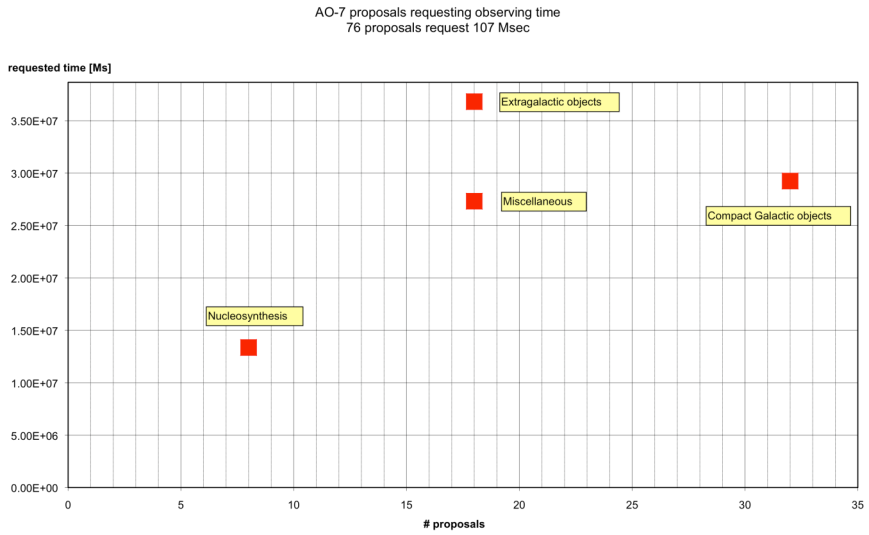


AO-7 oversubscription (3.7) is *lower* than before, but :

- AO-5 and AO-6 had 25% or 50% of total time available for KP, to which data rights proposal could be associated
- AO-7 has all available time (exc. TOO) open for associations (KP and standard)

✓ Reduces pressure in community to compete for individual sources, which are likely to be covered in the FOV of accepted programmes

AO-7: Proposals versus time



TAC AO-7 Meeting

TAC Meeting 23-25 March 2009, recommended programme approval: 15 April

- Non-TOO time available for distribution: 26.4x1.2 = 31.7 Ms (target)
- Selected 50 out of 76 open time proposals (incl 19 TOO, 5 GRB)
- Total non-TOO time awarded: 35.5 Ms (A/B/C: 21.6/7.6/6.2 Ms) [133 %]

Non-TOO observations by science category, all grades

Science category	Time requested		Time accepted		Proposals submitted		Proposals accepted	
	(Ms)	(%)	(Ms)	%	(#)	(%)	(#)	(%)
Compact Objects	20.1	22.9	8.1	22.7	16	35.6	9	34.6
Extragalactic Objects	28.0	31.9	8.9	25.1	12	26.7	6	23.1
Nucleosynthesis	12.4	14.1	8.5	24.0	5	11.1	5	19.2
GRB & others	27.3	31.1	10.0	28.2	12	26.7	6	23.1
Total	**87.8**	**100.0**	**35.5**	**100.0**	**45**	**100.0**	**26**	**100.0**

Time for TOO observations by science category, all grades

Science category	Time requested		Time accepted		Proposals submitted		Proposals accepted	
	(Ms)	(%)	(Ms)	(%)	(#)	(%)	(#)	(%)
Compact Objects	91.2	48.1	3.8	28.6	16	51.6	11	45.8
Extragalactic Objects	88.7	46.8	2.8	21.3	6	19.4	5	20.8
Nucleosynthesis	9.6	5.1	6.6	50.2	3	9.7	3	12.5
GRB & others	0.2	0.1	0.0	0.0	6	19.4	5	20.8
Total	**189.7**	**100.0**	**13.2**	**100.0**	**31**	**100.0**	**24**	**100.0**

Note: Requested TOO time = # proposed sources x exposure per source.Trigger probability is typically a few% (depending source type) or less.

TAC AO-7 Meeting

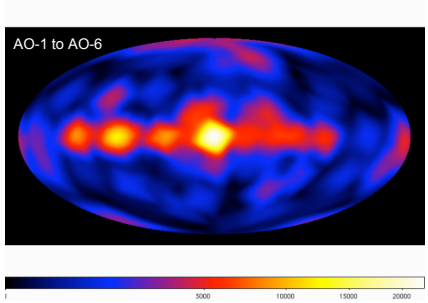
- Return to Russian scientific community:
  - 25% of available time = 0.25 x 29 Ms = 7.25 Ms
  - 2.2 Ms compensation of under-return AO-1 … AO-5
  - Total: 9.45 Ms (target)
  - ❖ 11 observations selected with 11.2 Ms (incl. 0.8 Ms TOO) > 9.45 Ms

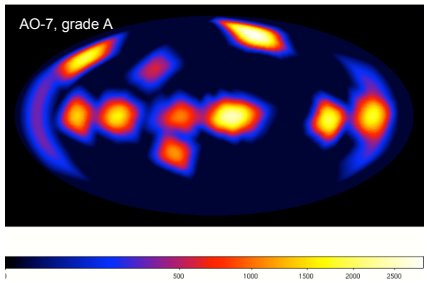
- Share long/short exposures: IUG (June 08): 80% / 20% AO-7: 92 % / 8%

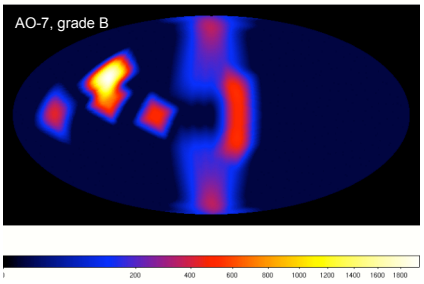
- Proposals generally of good to excellent quality, however, some proposers convincingly continue to demonstrate to both, to TAC and to ESA, that the submission of a proposal does not necessarily require reading the documentation in detail nor reading the TAC comments from previous round. In particular the latter are meant to help improving the proposal !

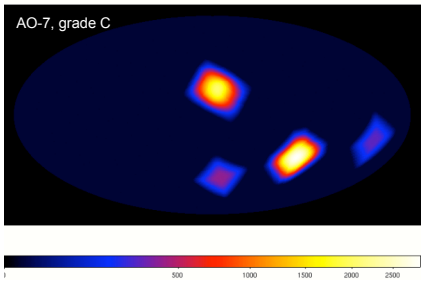
- Next steps:
  - ISOC: update DB, inform PIs, publish programme on WWW, amalgamation (?), LTP, TOO strategies…
  - Selection of data rights proposals: summer 2009 (release AO 25 May, deadline 03 July)
  - AO-7: start on 16 October 2009, duration 14.5 months

Total exposure up to end AO-6 and AO-7 targets

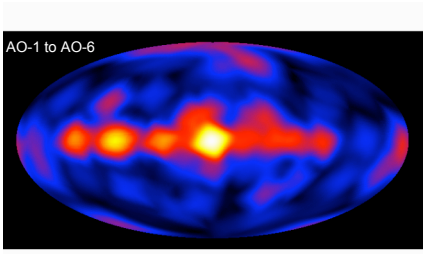


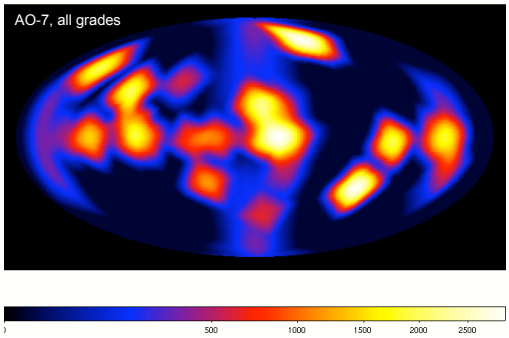




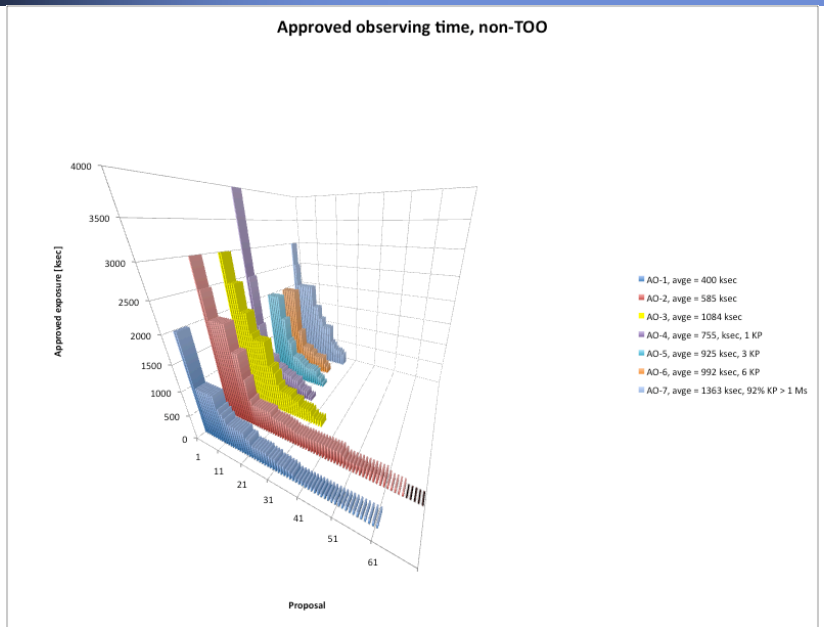


Total exposure up to end AO-6 and AO-7 targets





INTEGRAL AOs, non-TOO observations

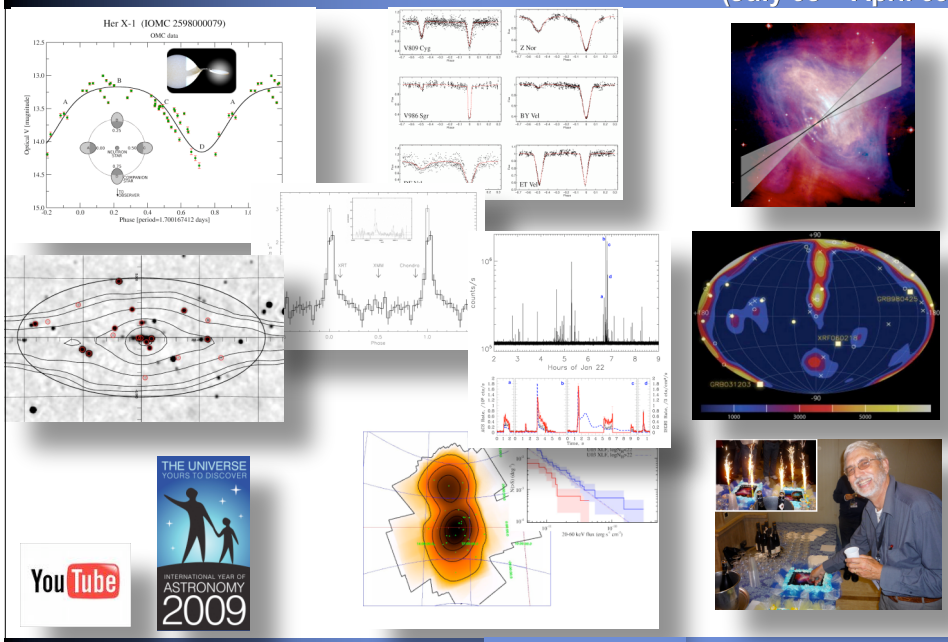


Selected science highlights since last meeting

A deep INTEGRAL hard X-ray survey of the 3C 273/Coma region	S.Paltani et al. A&A 485, 707, 2008
Polarized Gamma-Ray Emission from the Crab	A. Dean et al., Science 321, 1183, 2008
Polarization of the Crab pulsar and nebula as observed by the Integral/IBIS telescope	M. Forot et al., ApJ, 688, L29, 2008
Properties of the Galactic population of cataclysmic variables in hard X-rays	M. Revnivtsev et al., A&A 489, 1121, 2008
Global characteristics of GRBs observed with INTEGRAL and the inferred large population of low luminosity GRBs	S. Foley et al., A&A 484, 143, 2008
Discovery of a 30-d period in the supergiant fast X-ray transient SAX J1818.6−1703	A.Bird et al., MNRAS, 393, L11, 2008
High energy emission from 1E 1740-2942	L. Bouchet et al., arXiv:0811.3381
Multi-wavelength observations of 3C 454.3	S. Vercellone et al., arXiv:0809.1737
Variable polarization in the prompt emission of GRB 041219A	D. Götz et al., ApJ 695, L208, 2009
The space density of Compton thick AGN and the X-ray background	E. Treister et al., arXiv:0902.0608v1

Outreach

INTEGRAL picture of the month (July 08 – April 09)



ESA press/web news releases

Published since June 2008 (on ESA Space Science and/or Sci-Tech web)

• Polarization in prompt emission of GRB 041219A	03 April 2009
• Magnetar observed during outburst thanks to rapid response of INTEGRAL	27 Jan 2009
• First light curve analysis of 20 eclipsing binaries with INTEGRAL's OMC	19 Jan 2009
• XMM-Newton and INTEGRAL clues on magnetic powerhouses	14 November 2008
• Faint gamma-ray bursts do actually exist	13 October 2008
• INTEGRAL locates origin of high-energy emission from Crab Nebula	29 August 2008
• Astronomers may have glimpsed tiny star's surface	17 June 2008

Total: 43 ESA press/web news releases since launch
Archive: http://integral.esac.esa.int/press/press.html

In preparation

- The evolution of the first outburst from the new magnetar candidate SGR 0501+4516 (N. Rea et al., MNRAS, 2009, in press) – 15 May
- PSR J1846-0258: a young rotation-powered pulsar with high magnetic field, which underwent, unexpectedly, a strong magnetar-like outburst (L. Kuiper et al.,A&A subm., 2009) – date TBD

Requests/ideas for new press releases to CW, please.

IYA 2009 – 100 hrs astronomy

INTEGRAL participates in IYA – 100 hrs of astronomy campaign

Competition for secondary school and undergraduate students

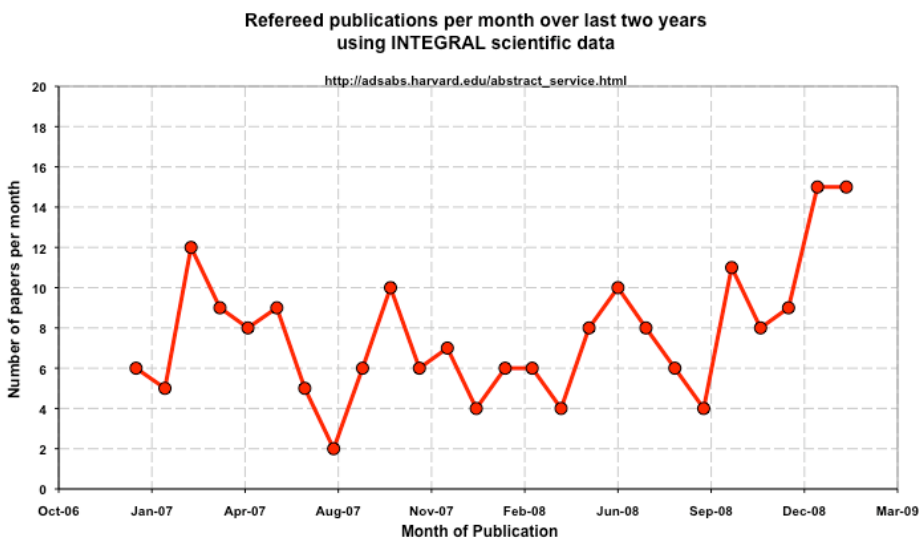
" Be an INTEGRAL Astronomer"

Deadline 14 August 2009

Tasks: Use public ISGRI 18-40 keV data from GB monitoring programme and analyse various light curves.

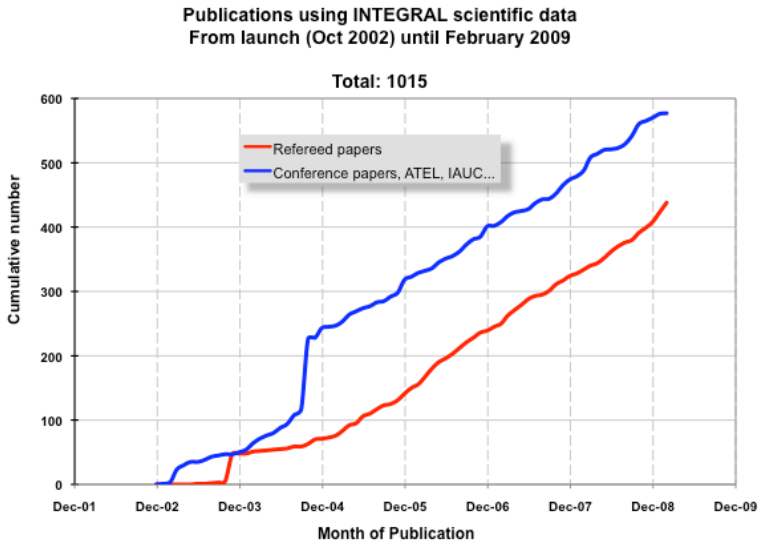
1st Prize: Trip to ESAC, Celestron sky scout, books etc

Monthly publication rate



Average = (8 ± 3) ref. papers/month

Publications



Top 10 citations to science papers, as of Feb 2009

Reference	Topic	Citations to paper
C. Böhm et al. *Phys. RevL 92, 101301, 2004*	MeV dark matter: has it been detected ?	145
P. Jean et al. *A&A 407, 55, 2003*	511 keV line emission from 4th quadrant	117
A. Bird et al. *ApJS 170, 175, 2007*	The third IBIS source catalogue	113
J. Knödlseder et al. *A&A 411, 457, 2003*	Constraints on the 511 keV line morphology	105
N. Arkani-Hamed et al. *Phys. Rev D 79, 015014, 2009*	A theory of dark matter	100
J. Knödlseder et al. *A&A 441, 513, 2005*	511 keV all-sky distribution	98
A. Bird et al. *ApJ 607, 33, 2004*	The first IBIS source catalogue	80
S. Sazonov et al. *Nature 430, 646, 2004*	An apparently normal γ -ray burst with an unusually low luminosity	72
J. F. Beacom & H. Yüksel *Phys. RevL 97, 071102, 2006*	Stringent constraints on Galactic positron production	71
R. Diehl et al. *Nature 439, 45, 2006*	Radioactive ^{26}Al from massive stars in the Galaxy	70

From INTEGRAL #7 to INTEGRAL #8

Dublin, Sep 2010

Copenhagen, Sep 2008