Newsletter of the
INTEGRAL Science Operations Centre

No. 10 November 2003

Foreword

Christoph Winkler - Project Scientist

Several important INTEGRAL events took place during the last two months.

We celebrated the first launch anniversary, on 17 October, with the spacecraft in excellent shape. Unfortunately, recent high solar activity substantially interrupted the observing programme, for the first time (see below for details).

On 6 November, ESA's Science Programme Committee approved an extension of the mission by 4 years, i.e. from 17 December 2004 until 16 December 2008.

Astronomy & Astrophysics have just published a thick, 460-page special volume on INTEGRAL (A&A Letters, Vol. 411, No.1, November 2003). About one year after its successful launch, this series of 75 publications describe the mission, the various instruments and their performance, as well as first scientific results, ranging from gamma-ray bursts to Galactic sources. In order to produce this issue in time, all parties involved have worked under great time pressure. We would like to express our thanks to the A&A Letter Editor, Dr. Peter Schneider and his team for the dedicated support.

And, finally, ESA has approved the AO-2 open time observing programme as recommended by the TAC. The AO-2 cycle will start on 17 December 2003. We are looking ahead for more great science results to come.

2nd Announcement of Opportunity (AO-2)

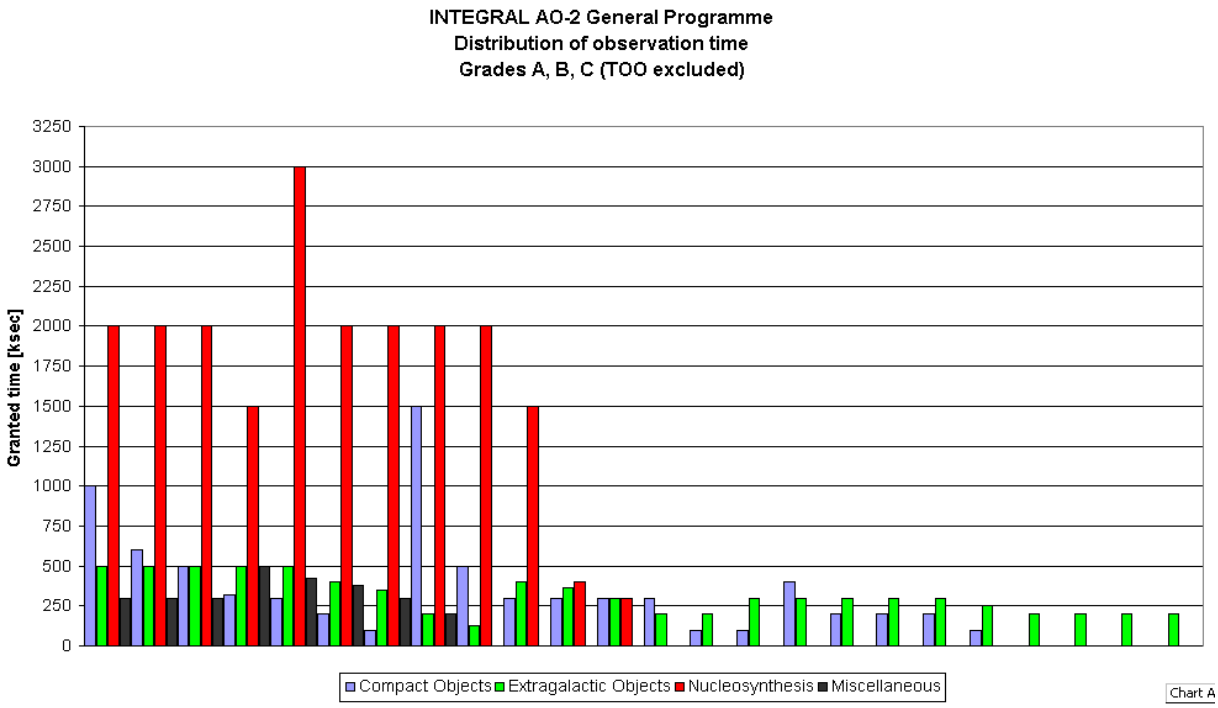
Christoph Winkler - Project Scientist

The INTEGRAL Time Allocation Committee (TAC), chaired by Prof. E.P.J. van den Heuvel (Amsterdam) completed the peer review process of AO-2 observing proposals in October as scheduled, and recommended the AO-2 observing programme to ESA. The General Observer (open time) Programme has been endorsed by ESA's Director of Science. It is well-balanced and comprises the best and most exciting new science that can be achieved by INTEGRAL. The observing programme for AO-2 will allow a great variety of innovative studies of objects and phenomena. The full list of approved open time AO-2 observations and a sky map showing the AO-2 target pointings are shown in the attachment to this Newsletter (see also http://www.rssd.esa.int/Integral/).

The total granted observing time for grades A (highest scientific grade) to C (lowest grade) amounts to 38.5 Ms resulting in an over-subscription of the available observing time (assuming 17.5 Ms for 12 months) of 2.2. The total granted observing time for Targets of Opportunities (ToO) is 17.2 Ms. However, taking estimated probabilities of these events into account (1% to 33% depending on the source type), the total effective time for ToO amounts to 2.3 Ms. Gamma-ray burst observations do not require dedicated observation time.

Taking into account that about 2.8 Ms of unscheduled grade A observations from AO-1 have to be carried over to AO-2, the TAC recommends to expand the duration of the AO-2 cycle from 12 to 14 months, i.e. AO-2 will last

The ISOC Newsletter is published by the INTEGRAL Science Operations Centre, Research and Science Support Department of ESA, ESTEC, Noordwijk, The Netherlands. See also http://www.rssd.esa.int/integral/



from 17 December 2003 until 16 February 2005. This recommendation has been endorsed by ESA.

Scientific grades: The INTEGRAL TAC approved individual observations of a proposal by assigning a grade, A, B, C or TOO (for Target of Opportunity observations) to each observation. A special sub-group of proposals, using serendipituous data on gamma-ray bursts (GRB), has been identified as GRB. The characteristics of a specific grade are as follows:
A: Excellent proposal. High scheduling priority. **B**: Very good proposal. Normal scheduling priority. **C**: Good proposal. Low scheduling priority. **TOO**: Accepted TOO proposals always have grade A for scheduling priority. TOO observations will only be executed if certain trigger criteria are fulfilled. **GRB**: No scheduling impact as serendipituous data are being used.

General note on scheduling: The scheduling on INTEGRAL will be optimized in such a way that greatest scientific return is ensured within the time available. Consequently the allocated priorities do not reflect the sequence of the observations within the AO-2 cycle. However, it is emphasised that - for operational and technical reasons - no guarantee can be given that any particular observation will in fact be executed.

Transfer of uncompleted observations:
Following TAC recommendation and ESA's endorsement, any observation commenced in AO-2 cycle, but uncompleted, will be carried over into the next AO for completion, irrespective of its grade. In this context "commenced" is understood as execution of at least 25% of the approved time. This does not apply for grade A observations which have been carried over into AO-2 from AO-1. Any observation which has not been started in AO-2 will not be carried over to the next AO.

Mission Status

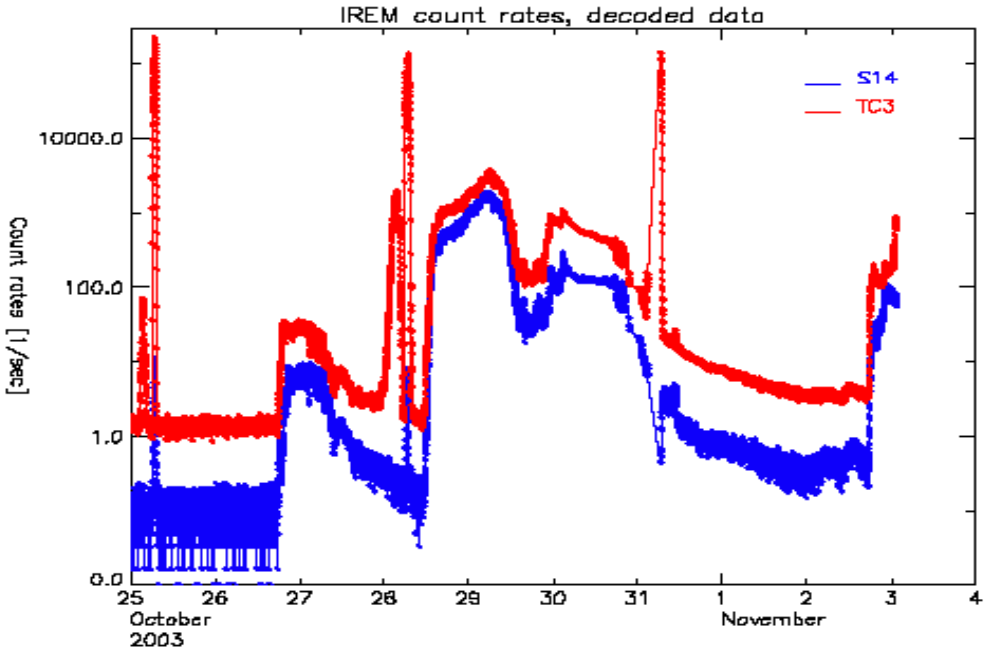
Rudolf Much - Deputy Project Scientist

In the recent weeks the INTEGRAL operations were severely affected by the high solar activity. On Sunday, October 26 around 18:00 UTC, the first increase in the radiation environment was measured by the INTEGRAL instruments and JEM-X and OMC went into safe mode. IBIS was commanded into safe mode later in the evening (22:32 UTC).
The instruments were brought back to science mode in the course of the afternoon of October 27 around 16:00 UTC and remained operational until the end of the revolution 126. As another solar flare hit INTEGRAL at the start of revolution 127 the time-line was stopped at 13:52 UTC on October 28, as further science operations were not possible due to the high radiation. As the radiation remained high also during the following two days the spacecraft was commanded into a safe attitude for the next perigee passage.

On Friday October 31, the SPI detectors were reactivated. OMC was activated in the evening of November 1 and JEM-X2 was fully operational again on November 2 at 00:02 UTC. After several successful health checks the IBIS re-activation was completed at 10:15 UTC the same day. Unfortunately another solar flare hit the spacecraft at around 18:00 UTC and all instruments were switched off again. SPI was reactivated in the afternoon of the following day (Monday, November 3). The radiation stayed at a level too high for the other instruments and the final re-activation of IBIS took place on November 6, and on November 7 for OMC and JEM-X.

As the high background level reduces the quality of the scientific data it was decided to dedicate revolution 130 to calibration purposes. An empty field was observed and the instruments and the satellite were closely monitored.

The radiation environment as measured by INTEGRAL's radiation monitor IREM covering the period from October 25 to November 3 is shown below. The "electron counter" TC3 (red) and the "proton counter" S14 (blue) are shown. The perigee passages on October 25, 28 and 31 are visible as narrow double peaks. While the radiation environment was at its nor-



mal level on October 25 and begin of October 26, it increased in the 2nd half of October 26 and remained at a level higher than normal up to the end of the time period shown. (Courtesy: Paul Buehler/PSI and the IREM team).

The first assessment of the space segment after the solar flares in the period from 26 October to 6 November does not indicate a significant degradation of the functions of the satellite. A preliminary assessment of the solar arrays indicated a decrease of the solar array output current by ~ 0.2 A. (As a comparison the output current decreased by 0.5 A during the first year of operation). Beside the background issue described below, the instruments behave nominally and no degradation of the payload has been seen.

The presence of strong activation lines in the measured SPI spectrum indicates that the activation level of the spacecraft platform is high. This is confirmed by high background counting rates measured by IBIS and JEM-X. A slow decrease of these counting rates with time is seen. As an example, the ISGRI counting rate (normally around 550 cts/sec) decreased from ~1800 cts/sec (November 1) to ~900 cts/sec (November 11). The counting rates are further monitored.

The start time of the SPI annealing (planned for November 2) was delayed by 9 days to November 11 in order to acquire sufficient data to assess the effects of the solar flares on the performance of the SPI Ge detectors. The preliminary data analysis shows no or only little degradation of the energy resolution of the SPI detectors after the solar flares: the SPI energy resolution is compatible with the energy resolution measured before the solar flare. This indicates that the proton spectrum of the solar flare was relatively soft. Only high energetic protons can penetrate the heavy SPI anticoincidence shield and can cause radiation damage in the SPI Ge detectors.

The SPI annealing cycle has commenced with the switch off of the cryo-coolers and the switch-on of the heaters on November 12, early in the morning. The whole annealing cycle (warming up - baking - cooling down) will last for 15 days. First results of the SPI post-annealing performance will be available early December.

Science Highlights

Astrid Orr - Operations Scientist
Tim Oosterbroek - Operations Scientist

During most of September and until October 18, INTEGRAL was pointing at the Galactic Centre for deep Open Time and Core Programme observations (GCDE). At the end of October a long observation of the supernova remnant IC443 was scheduled and at the beginning of November INTEGRAL pointed at the micro-quasar GRS 1915+105. However, exceptional solar activity accompanied by flares and coronal mass ejections starting in the last week of October caused levels of high radiation which affected the on-going observations. The INTEGRAL instruments were switched off part of the time. Solar activity continued (see above), disrupting several observations.

During the long observations of the Galactic Centre a new source, IGR J17544-2619, was discovered with IBIS/ISGRI on September 17, 2003. The source was bright (160 mCrab, 18-25 keV) for about 2 hours and then faded below the detection threshold only to re-appear again for 8 hours with a lower flux, averaging ~45 mCrab, between 18-25 keV, with peaks at 60 and 80 mCrab (see ATEL #190 & #192).

The Anti-Coincidence Shield (ACS) of SPI is detecting Gamma-Ray Bursts (GRBs) on a regular basis and positions are distributed through the IBAS. The SPI-ACS is part of the Interplanetary Network (IPN). At the beginning of October GRB 031004B was detected by the SPI-ACS and its position was triangu-

lated thanks to the IPN. The other IPN missions and instruments involved in this triangulation were Mars Odyssey (HEND) and Konus (Wind), (see GCN GRB Observation Report # 2411).

Since May 1, 2003, however, no GRBs have been seen in the FOV of the SPI and IBIS instruments.

Any Other Business

Christoph Winkler - Project Scientist

227 abstracts have been received in the response for the "Call for Papers" for the 5th INTEGRAL workshop "The INTEGRAL Universe", 16-20 February 2004, Munich. The scientific programme is being assembled and will be published in December 2003. Please consult http://www.mpe.mpg.de/gamma/instruments/integral/workshop/www/workshop.html

Please note the **registration deadline of 15 December 2003**.

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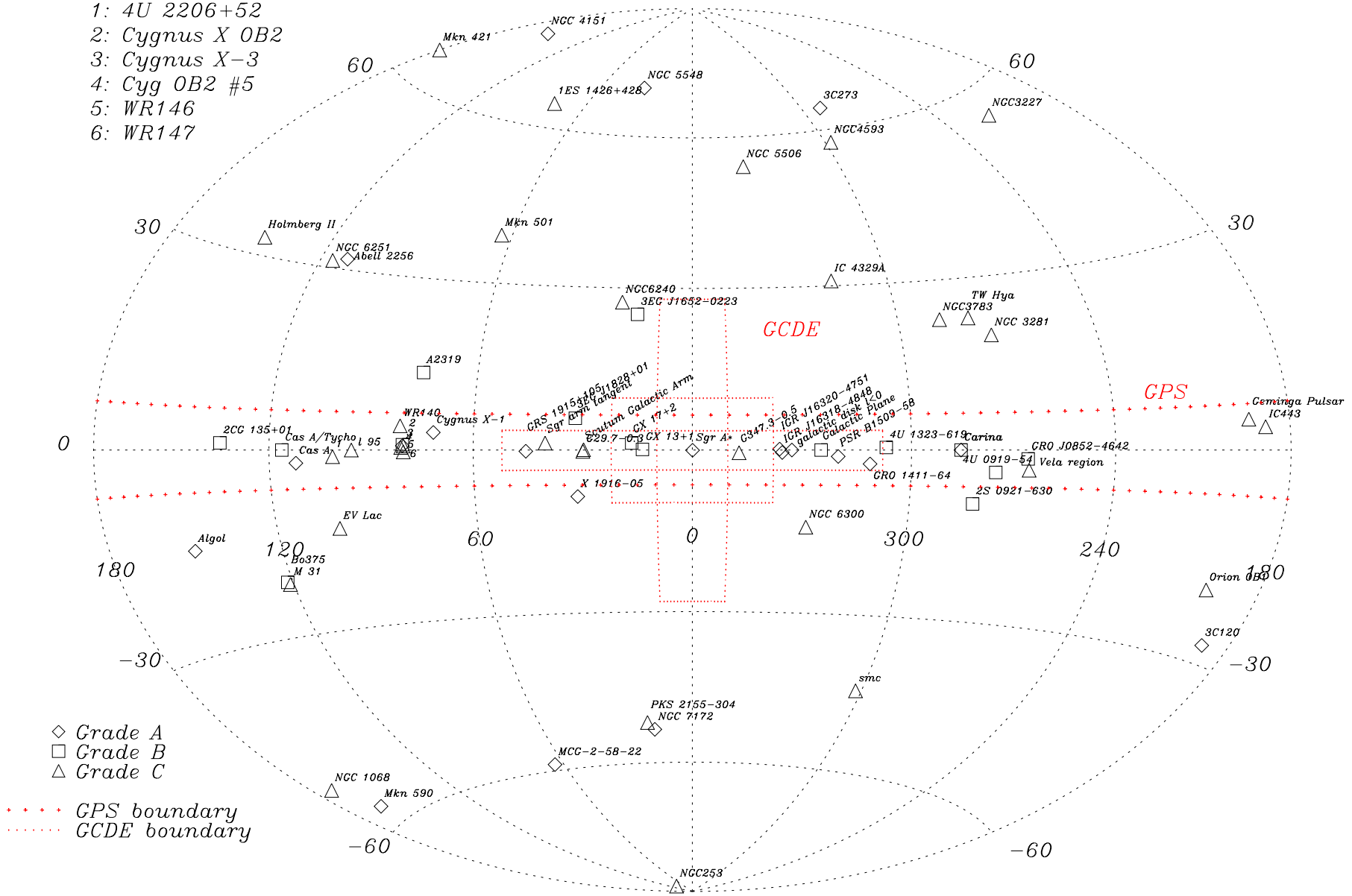
Approved INTEGRAL AO-2 observations
1: 4U 2206+52
2: Cygnus X OB2
3: Cygnus X-3
4: Cyg OB2 #5
5: WR146
6: WR147
NGC 4151
Mkn 421
NGC 5548
1ES 1426+428
3C273
NGC3227
NGC4593
NGC 5506
60
30
0
-30
-60
180
120
60
0
300
240
180
Holmberg II
Mkn 501
NGC 6251
Abell 2256
IC 4329A
NGC6240
3EC J1652-0223
TW Hya
NGC3783
NGC 3281
GCDE
GPS
A2319
WR140
Cygnus X-1
2CG 135+01
Cas A/Tycho
Cas A
l 95
CRS 1915+105
1828+01
Sgr arm tangent
Scutum Galactic Arm
CX 17+2
G29.7-0.3
CX 13+1
Sgr A*
G347.3-0.5
IGR J16320-4751
IGR J16318-4848
Galactic disk L.O.
Galactic Plane
PSR B1509-58
4U 1323-619
Carina
CRO J0852-4642
4U 0919-54
Vela region
CRO 1411-64
2S 0921-630
Ceminga Pulsar
IC443
X 1916-05
NGC 6300
EV Lac
Algol
Bo375
M 31
Orion OB1
3C120
smc
PKS 2155-304
NGC 7172
MCC-2-58-22
NGC 1068
Mkn 590
NGC253
◇ Grade A
□ Grade B
△ Grade C
GPS boundary
GCDE boundary
sky_map_mirror.pro, ISOC, 7 November 2003

Proposal ID	Title	PI	Country	Category	Approved Target	Approved Time [ksec]	Grade	Comments
220007	INTEGRAL monitoring of the hard X-ray properties of IGR J16318-4848 simultaneously with XMM-Newton	Kuulkers	Netherlands	Compact Object	IGR J16318-4848	200	A	Split into 4 observations, coordinated with XMM-Newton
220008	Identifying the COMPTEL source GRO 1411-64 at hard X-rays	Torres	USA	Miscellaneous	GRO 1411-64	300	A	
220008	Identifying the COMPTEL source GRO 1411-64 at hard X-rays	Torres	USA	Miscellaneous	GRO 1411-64	300	A or C	Grade of this 2nd, conditional, observation depends on the success of the first observation
220014	Hunting the nature of IGR J16320-4751 = AX J1631.9-4752	Foschini	Italy	Compact Object	IGR J16320-4751	100	A	Coordinated with XMM-Newton
220015	Examining the High-Energy Spectra of Compton-Thick AGN: NGC 6240 and NGC 1068	Turner	USA	Extragalactic	NGC 6240	350	A	
220020	Non-Thermal X-ray Radiation from the Clusters Abell 754 & A2256: Diffuse or Point Source Emission ?	Fusco-Femiano	Italy	Extragalactic	A2256	500	A	
220021	Identification and study of nucleosynthesis sources in the Carina region	Knoedelseder	France	Nucleosynthesis	Carina region	2000	A	
220027	A deep exposure of the Cygnus X region	Knoedelseder	France	Nucleosynthesis	Cygnus X region	2000	A	
220028	New facets of GRS 1915+105	Rodriguez	Switzerland	Compact Object	GRS 1915+105	500	A	Split into 5 observations
220030	Positron annihilation in the galactic disk	Jean	France	Nucleosynthesis	Galactic Plane at l = --27 degree	2000	A	
220031	X to gamma-ray deep observation of X1916-053	Bazzano	Italy	Compact Object	X1916-053	300	A	Approved max 300 ksec, from which any AO-1 executed time (300 ksec already scheduled) should be subtracted
220032	Understanding the Seyfert 1 Nucleus and its Local Environment	Dean	United Kingdom	Extragalactic	MCG 2-58-22	200	A	
220081	Positrons in AGN Jets: Search for Annihilation Line Radiation in the Radio Galaxy 3C 120	Marscher	USA	Extragalactic	3C120	500	A	
220082	Broad-Band Spectral and Temporal Studies of Seyfert-1 AGN with INTEGRAL and Swift	Tueller	USA	Extragalactic	NGC 4151	125	A	Not to be co-ordinated with SWIFT
220105	Simultaneous INTEGRAL and XMM-Newton Observations of Cyg X-1	Wilms	Germany	Compact Object	Cyg X-1	320	A	Split into 4 observations, coordinated with XMM-Newton
220114	Understanding the High Energy Activity of the Galactic Nucleus with INTEGRAL and XMM-Newton	Goldwurm	France	Compact Object	Sgr A*	600	A	Split into 4 observations, coordinated with XMM-Newton
220140	Non-Thermal Hard X-Rays from Magnetically Active Stars	Guedel	Switzerland	Miscellaneous	Algol	300	A	
220141	The soft gamma-ray timing and spectral characteristics of PSR B1509-58	Hermsen	Netherlands	Compact Object	PSR B1509-58	1000	A	
220142	Ti-44 and hard X-ray continuum diagnostics of Cas A: unravelling the physics of core collapse supernovae	Vink	Netherlands	Nucleosynthesis	Cas A	1500	A	Tycho data rights go to proposal 220126
220145	Simulraneous INTEGRAL and XMM-Newton onservations of Seyfert Galaxies	Barr	Netherlands	Extragalactic	Mkn 590	500	A	Coordinated with XMM-Newton
220145	Simultaneous INTEGRAL and XMM-Newton observations of Seyfert Galaxies	Barr	Netherlands	Extragalactic	NGC 7172	500	A	Coordinated with XMM-Newton
220146	High Energy Variability and Particle Acceleration in the Quasar 3C273	McHardy	United Kingdom	Extragalactic	3C273	500	A	Split into 5 observations
220151	Spectral variability of NGC 5548 - pivoting or two components?	McHardy	United Kingdom	Extragalactic	NGC 5548	400	A	Split into 2 observations
220004	An INTEGRAL investigation of non-thermal phenomena in the stellar winds of early-type stars	Rauw	Belgium	Miscellaneous	Cyg OB2 #5	420	B	
220015	Examining the High-Energy Spectra of Compton-Thick AGN: NGC 6240 and NGC 1068	Turner	USA	Extragalactic	NGC 1068	360	B	
220018	Investigating the connection between radio galaxies and EGRET sources	Foschini	Italy	Extragalactic	3EGJ 1631+8203	400	B	
220022	High Energy X-ray Emission in A2163 and A2319	Rephaeli	USA	Extragalactic	A2319	300	B	
220023	Deep exposure on GRO J0852-4642 "Vela Junior"	von Kienlin	Germany	Nucleosynthesis	Vela Junior	2000	B	

Proposal ID	Title	PI	Country	Category	Approved Target	Approved Time [ksec]	Grade	Comments
220033	INTEGRAL Studies of borderline Compton thick Seyfert 2 Galaxies	Dean	United Kingdom	Extragalactic	NGC 3281	200	B	
220033	INTEGRAL Studies of borderline Compton thick Seyfert 2 Galaxies	Dean	United Kingdom	Extragalactic	NGC 6300	200	B	
220057	Study of the Role of Jet Emission in the Origin of Hard X-ray Components in Bright Low Mass X-ray Binaries	Di Salvo	Netherlands	Compact Object	GX17+2 and GX13+1	300	B	
220061	Revealing Hard X-ray Emission from M31 Globular Cluster Bo 375	Kong	USA	Compact Object	BO 375	1	B	To be amalgamated to proposal 220077, data rights limited to BO 375, *no dedicated observation time required*
220063	Deep multiwavelenght survey of the Scutum galactic arm	Fabregat	Spain	Compact Object	Scutum Galactic Arm	500	B	No data rights on EGRET error circle of 3EG J1828+01 (see 220107)
220077	Imaging our sister galaxy M31 in hard X rays	Trinchieri	Italy	Compact Object	M31	300	B	No data rights for BO 375 (see 220061)
220084	Identification of EGRET sources in the halo	Grenier	France	Compact Object	3EG J1652-0223	300	B	
220092	The origin of the diffuse hard- X-ray emission on the galactic plane at l=95	Piro	Italy	Miscellaneous	Galactic Plane at l=95 degree	500	B	
220103	Hidden supernovae in the Carina arm	Ballet	France	Nucleosynthesis	Carina region	2000	B	
220104	Deep observations of the Sagittarius Arm tangent (l ~40, b~0)	Cherepashchuk	Russian Federation	Compact Object	Sgr arm tangent	1500	B	
220107	Study of variable non-blazar unidentified gamma-ray sources in the Galactic plane	Tavani	Italy	Compact Object	3EG J1828+01	1	B	To be amalgamated with 220063. Data rights limited to error circle of 3EG J1828+01 (see 220063) *no dedicated observation time required*
220108	Monitoring the gamma-ray/radio-star 2CG135+01/LSI 61 303	Tavani	Italy	Compact Object	2CG 135+01	300	B	
220112	Observations of IC 443 with INTEGRAL: a Supernova Remnant in a Molecular Cloud	Bykov	Russian Federation	Nucleosynthesis	IC 443	400	B	
220116	Massive Stars of Orion OB1 and the ISM	Diehl	Germany	Nucleosynthesis	Orion	3000	B	
220119	Multiwavelength observations of galactic low-mass X-ray binaries: The high-energy tail - radio jet connection	Mendez	Netherlands	Compact Object	4U 0919-54 and 2S 0921-630	100	B	
220119	Multiwavelength observations of galactic low-mass X-ray binaries: The high-energy tail - radio jet connection	Mendez	Netherlands	Compact Object	4U 1323-619	100	B	
220122	Locating 26Al Sources in the Galaxy	Kretschmer	Germany	Nucleosynthesis	Galactic Plane at l = --35 degree	2000	B	
220126	Gamma-ray observations of Cas A and Tycho supernova remnants: 44Ti and high energy continuum	Decourchelle	France	Nucleosynthesis	Cas A and Tycho	1500	B	to be amalgamated to proposal 220142, data rights limited to Tycho
220150	Deep survey of the Vela region for nucleosynthesis studies through 26Al, 60Fe and e+e- annihilation lines	Schanne	France	Nucleosynthesis	Vela region	2000	B	
220006	Gamma-ray Emission from Long-Period Wolf-Rayet Binary Systems	Stevens	United Kingdom	Miscellaneous	WR140	1	C	to be amalgamated to proposal 220004, *no dedicated observation time required*
220006	Gamma-ray Emission from Long-Period Wolf-Rayet Binary Systems	Stevens	United Kingdom	Miscellaneous	WR146	1	C	to be amalgamated to proposal 220004, *no dedicated observation time required*
220006	Gamma-ray Emission from Long-Period Wolf-Rayet Binary Systems	Stevens	United Kingdom	Miscellaneous	WR147	1	C	to be amalgamated to proposal 220004, *no dedicated observation time required*
220011	Challenge for the first detection of gamma-ray flare from nearest young stellar objects	Kokubun	Japan	Miscellaneous	TW Hya	200	C	
220012	INTEGRAL observations of the Small Magellanic Cloud	Coe	United Kingdom	Compact Object	SMC	100	C	
220029	Investigating Celestial Shock Acceleration Processes in the Soft-gamma Window	Butt	USA	Miscellaneous	SNR G347.3-0.5	380	C	

Proposal ID	Title	PI	Country	Category	Approved Target	Approved Time [ksec]	Grade	Comments
220036	INTEGRAL Observation of Seyfert 1 Galaxies in the Piccinotti Sample	Malizia	Italy	Extragalactic	NGC 3227	200	C	
220036	INTEGRAL Observation of Seyfert 1 Galaxies in the Piccinotti Sample	Malizia	Italy	Extragalactic	NGC 3783	200	C	
220036	INTEGRAL Observation of Seyfert 1 Galaxies in the Piccinotti Sample	Malizia	Italy	Extragalactic	NGC 4593	200	C	
220044	INTEGRAL identifies the Hard X-ray excess in Blazars' fields	Wolter	Italy	Extragalactic	1ES 1426+428	200	C	
220075	The Spectral Energy Distribution of the Ultraluminous X-Ray Sources	Bregman	USA	Compact Object	Holmberg II	200	C	
220080	INTEGRAL Observations of Quiescent and Flaring States of TeV Blazars	Georganopoulos	USA	Extragalactic	Mkn 421	300	C	
220080	INTEGRAL Observations of Quiescent and Flaring States of TeV Blazars	Georganopoulos	USA	Extragalactic	Mkn 501	300	C	
220080	INTEGRAL Observations of Quiescent and Flaring States of TeV Blazars	Georganopoulos	USA	Extragalactic	PKS 2155-304	300	C	
220082	Broad-Band Spectral and Temporal Studies of Seyfert-1 AGN with INTEGRAL and Swift	Tueller	USA	Extragalactic	IC 4329A	250	C	Not to be co-ordinated with SWIFT
220082	Broad-Band Spectral and Temporal Studies of Seyfert-1 AGN with INTEGRAL and Swift	Tueller	USA	Extragalactic	NGC 5506	300	C	Not to be co-ordinated with SWIFT
220109	A cyclotron line in a non-pulsating massive X-ray binary?	Negueruela	Spain	Compact Object	4U 2206+54	200	C	
220117	Search for young supernovae from their 44Ti emission lines	Mowlavi	Switzerland	Nucleosynthesis	G29.7-0.3	300	C	
220129	Search for a redshifted 511 keV annihilation line from closeby neutron stars with INTEGRAL	Sizun	France	Compact Object	Geminga	200	C	
220138	Probing the hard X-ray and gamma-ray emission of Cyg X-3 with INTEGRAL	Hjalmarsdotter	Finland	Compact Object	Cyg X-3	400	C	
220140	Non-Thermal Hard X-Rays from Magnetically Active Stars	Guedel	Switzerland	Miscellaneous	EV Lac	300	C	
220144	Origin of the Galactic MeV Halo of NGC 253	Tsuru	Japan	Extragalactic	NGC 253	300	C	
220016	Maintaining INTEGRAL in the 3rd Interplanetary Network of Gamma Ray Burst Detectors	Hurley	USA	Miscellaneous	GRB	1	GRB	usage of public data for IPN, *no dedicated observation time required*
220024	Using Gamma-Ray Bursts to Test Lorentz Invariance and Quantum Gravity	Wunderer	USA	Miscellaneous	GRB	1	GRB	*no dedicated observation time required*
220038	INTEGRAL studies of Gamma-Ray Bursts	Mereghetti	Italy	Miscellaneous	GRB	1	GRB	*no dedicated observation time required*
220041	Broad-band spectroscopy of GRB prompt and early afterglow emission	Sazonov	Russian Federation	Miscellaneous	GRB	1	GRB	two GRBs, *no dedicated observation time required*
220043	Searching for spectral features in the prompt emission of a GRB using SPI	Beckmann	USA	Miscellaneous	GRB	1	GRB	*no dedicated observation time required*
220090	Polarization Measurements of Prompt Gamma-Ray and X-Ray Emission in Gamma-Ray Bursts (and SGR Flares) with INTEGRAL	Kouveliotou	USA	Miscellaneous	GRB	1	GRB	*no dedicated observation time required*
220137	Spectral and Polarisation Studies of GRBs detected by SPI	Hanlon	Ireland	Miscellaneous	GRB	1	GRB	*no dedicated observation time required*
220001	Known Black Hole Transients in Outburst	Parmar	Netherlands	Compact Object	Up to two sources out of list	400	ToO	Split into 4 observations. Granted time per target
220010	Target of Opportunity Observations of Active Soft Gamma Repeaters	Hurley	USA	Compact Object	one target out of list	240	ToO	
220019	ToO observations of the "Bursting Pulsar" during outburst with INTEGRAL	Masetti	Italy	Compact Object	GRO J1744-28	280	ToO	Split into 3 observations
220025	Target of Opportunity Observations of an Outburst in A 0535+26	Heindl	USA	Compact Object	A 0535+26	400	ToO	Split into 2 observations
220035	The disk/jet coupling in the black holes GX 339-4 and XTE J1550-564 during the low-hard X-ray state	Corbel	France	Compact Object	only one target out of list	500	ToO	Split into 4 observations
220037	MeV-TeV blazars	Ghisellini	Italy	Extragalactic	only one source from list	500	ToO	

Proposal ID	Title	PI	Country	Category	Approved Target	Approved Time [ksec]	Grade	Comments
220039	Type Ia supernovae	Isern	Spain	Nucleosynthesis	SN Ia	2000	ToO	Split into several observations
220049	INTEGRAL and XMM-Newton observations of blazars in outburst	Pian	Italy	Extragalactic	only one source from list	500	ToO	
220053	Early Rise Phase of X-Ray Nova Outbursts	Swank	USA	Compact Object	one source only	100	ToO	
220055	ToO Observations of Centaurus A in a Bright State	Weidenspointner	France	Extragalactic	Cen A	500	ToO	
220056	Connections between Spectral States, Line Emission, and Radio Jets in the Black Hole X-Ray Transient 4U 1630-47	Tomsick	USA	Compact Object	4U 1630-47	500	ToO	Split into 2 observations
220059	INTEGRAL observations of classical novae	Hernanz	Spain	Nucleosynthesis	classical Nova	1200	ToO	
220065	High Energy Emission of Faint Galactic Bulge Black Hole X-ray Novae in Outburst	Goldoni	France	Compact Object	up to two targets	320	ToO	Split into 2 observations. Granted time per target.
220070	Studying known soft X-ray transients during the rising phase of the outbursts	Castro-Tirado	Spain	Compact Object	only one target out of list	200	ToO	Split into 2 observations
220078	Measuring the high-energy spectrum in the Very High State of GX 339-4	Belloni	Italy	Compact Object	GX 339-4	100	ToO	
220079	Testing Relativistic Jet Models with INTEGRAL Observations of Spectral Variability in PKS 0528+134	Dermer	USA	Extragalactic	PKS 0528+134	200	ToO	
220087	Hard X-Ray Emission During the Onset of an Outburst from Aql X-1	Kaaret	USA	Compact Object	Aql X-1	160	ToO	Split into 2 observations
220088	Target of Opportunity Observations of a Major Radio/Hard X-Ray Flare in the Relativistic Jet Source Cygnus X-3	McCollough	USA	Compact Object	Cygnus X-3	300	ToO	Split into 3 observations
220089	Still More Integral Observations of Supernovae	Leising	USA	Nucleosynthesis	SN	4400	ToO	Split into several observations
220091	Connecting Black Hole States and Accretion Flow Geometry	Miller	USA	Compact Object	up to three targets	400	ToO	Split into 4 observations. Granted time per target.
220093	Observations of Known and Unknown Soft Gamma Repeaters in Active State Serendipitously Detected by INTEGRAL	Feroci	Italy	Compact Object	SGRs in list	1	ToO	Only serendipitous data on already known SGRs listed in proposal, *no dedicated observation time required*
220094	Target of Opportunity Observation(s) of an Outburst in X0115+63	Santangelo	Italy	Compact Object	X0115+63	400	ToO	Split into 2 observations
220097	Observations of Mrk 421 in its active state with INTEGRAL	Lichti	Germany	Extragalactic	Mkn 421	500	ToO	
220100	New Black Hole X-ray Novae in the Galactic Halo	Mirabel	France	Compact Object	up to two targets	352	ToO	Split into 2 observations. Granted time per target.
220123	Measuring the High Energy Emission of Millisecond X-Ray Pulsars in Outburst	Falanga	France	Compact Object	one target out of list	260	ToO	
220130	Timing the 56Ni formation in GRB associated hypernovae	Barbiellini	Italy	Miscellaneous	Hypernova/GRB	2000	ToO	Split into 2 observations
220132	Monitoring the latest stage of neutron star soft X-ray transients with INTEGRAL	Campana	Italy	Compact Object	Cen X-4	300	ToO	Split into 4 observations
220136	Multiwavelength Study of Known and New Transien X-/Gamma-ray sources	Lutovinov	Russian Federation	Compact Object	up to two targets	200	ToO	Split into 2 observations. Granted time per target.