European Commission
Research Directorate General
Human Resources and Mobility

MARIE CURIE

EUROPEAN AND INTERNATIONAL REINTEGRATION FELLOWSHIPS

Reporting Guidance Notes

MARIECURIEACHONS

04/08/2005 Draft
Version

This document is available on our web-site:
http://europa.eu.int/comm/research/fp6/mariecurie-actions/action/courses_en.htm

2 Periodic reports activity & management report

In the case of International Reintegration Fellowships Periodic Reports will be required as indicated in Article 4 and 5 of the contract. For European Reintegration Fellowships only the Final Report will be required as specified in the relevant section of the contract.

The activity & management report (where applicable) allows the Commission to monitor the contract, to compare the achievements of the project with its stated objectives and to justify the release of the pre-financing. To this end progress should be compared as far as possible with Annex I of the contract.

The report contains the following information and must be prepared in accordance with the template provided in Annex 2:

- Front page (example available in Annex 1)
- a description of the general progress of the project compared to the original work programme
- a description of the scientific and technological highlights and milestones;
- a description of training activities;
- a summary of research results (publications, patents etc)
- a management report

The management report includes the following sections:

Section 1 - Justification of costs

- Claimed cost breakdown (Form C)
- Management report (Origin and motivations for the costs, and in particular any deviations or modifications to the initial financial planning). Note that most costs relate to the requirements of the contract
- Update of proj ect deliverables

The justification of the costs claimed should possess the following qualities that render the information useful to any reader, including the external auditor and the auditors of the Commission. Therefore, they must be:

Understandable: Excessive detail and overly complex reporting formats should be avoided. Information should be presented fully, but clearly and precisely.

Relevant: Relevant information is timely and covers the full nature and extent of the financial activities presented. Information is relevant if it helps those who use it to carry out their activities.

Reliable: Reliable information represents what it purports to represent. It is accurate, free from bias, complete and verifiable.

Timely: Information should reflect the most recent information available and cover the period in question.

Consistent: Financial reporting should be presented on the same accounting basis, to the extent possible.

Comparable: The basis for accounting and presentation, and the effect of any changes from one period to the next, should be highlighted and clearly explained.

Material: Insignificant events may be disregarded, but there must be full disclosure of all important information. Therefore an item is material if its disclosure is likely to lead the user of accounting.

For International and European Re-integration activities the costs are claimed on a real cost basis. In such cases the contractor should obtain and keep all the relevant supporting documents. Supporting documents could be contracts, invoices, bank statements and the like. These documents should in principle not be sent to the Commission. Instead they should be kept for up to 5 years from the end of the project and be made available to the Commission upon request (Annex II Article 26.3).

Section 2 - Financial statement by activity for the contractual reporting period (Form C) (see Annex 3)
Provide the Form C Financial statement as set out in Annex IV to the contract.

Please note that:

The eligible costs in Form C must be declared in €. Therefore, costs incurred[4] in currencies other than € shall be reported in € on the basis of:

- the conversion rate that would have applied on the date that the actual costs were incurred

or

- the rate applicable on the first day of the month following the end of reporting period.

The relevant basis for the conversion rate used must be indicated by the contractor in Form C when submitting costs claims. The choice of one basis must be applied for the whole duration of the project. The conversation rates may be obtained at the following internet address: http://www.ecb.int/stats/eurofxref/ or in the relevant OJ of the European Union.

For instructions to contractors on the correct completion of the Form C see the Guide to financial issues.
(internet: http://dbs.cordis.lu/fep-cgi/srchidadb?ACTION=D&SESSION=&DOC=l&TBL=EN_DOCS&RCN=EN_RCN:2034005&CALLER=FP6_LIB)

Audit certificates are to be submitted with the Form C if required for this period in Article 5 of the contract. Audit certificates must cover the costs incurred during all precedent periods for which audit certificates have not been provided. An example of model audit certificate is provided in Annex 9.

For Reintegration Fellowships the items Living Costs, Travel, Mobility, Career Exploratory Award, Participation of the Eligible Researchers and Research Training and Transfer of Knowledge do not apply and should be left blank.
The Management and Audit Certification column should be completed with the real cost associated with it (supported by an invoice or similar) up to a maximum of 3% of the Community Contribution, and the other eligible types of expenses (on a real cost basis) should be entered under the column heading "Other Types of Eligible Expenses" (supported by the audit certificate where appropriate)

Section 3 - Summary financial report (see Annex 4)
Include a summary report of total (direct + indirect) costs in Euros for the reporting period (i.e. a summary of the individual contractor's Form C information).

For Reintegration Fellowships the items Living Costs, Travel, Mobility, Career Exploratory Award, Participation of the Eligible Researchers and Research Training and Transfer of Knowledge do not apply and should be left blank.

[4] As well as receipts.

The Management and Audit Certification column should be completed with the real cost associated with it (supported by an invoice or similar) up to a maximum of 3% of the Community Contribution, and the other eligible types of expenses (on a real cost basis) should be entered under the column heading "Other Types of Eligible Expenses" (supported by the audit certificate where appropriate)

2.1 Supplementary periodic reports

Any Supplementary reports which have been specified in any annex of the contract to be prepared at each periodic reporting period will also now be submitted.

All periodic reports described in Sub-sections 2.1-2.5 shall be submitted *at the same time* and within 45 days following the end of the reporting period in question.

7 Annexes

Annex 1 - Front Page for Periodic activity & management report (IRG Only)

MARIECURIEACTIONS

EUROPEAN COMMISSION

RESEARCH **DG**

MARIE CURIE MOBILITY ACTIONS

REINTEGRATION ACTIONS

PERIODIC SCIENTIFIC/MANAGEMENT REPORT

PERIODIC ACTIVITY AND MANAGEMENT REPORT

To be completed by researchers who are currently:

-Fellows benefiting from a Marie Curie International Reintegration Grant

To include as annexes:

- list of participation in conferences;
- list of publications;
- list of patents.
- list of other outcomes considered useful to assess the work done during the fellowship.

This report is to be completed and signed together by the fellow and the scientist in charge.

Type of Marie Curie action:	**Marie Curie International Reintegration Grant**
Contract No.:	**MIRG-CT-2005-017203**
Title of the Project[13]:	DATA MINING USING THE INTERNATIONAL GAMMA-RAY ASTROPHYSICS LABORATORY (INTEGRAL) OBSERVATORY (INDAM)
Duration of fellowship/appointment/training period (Start Date - End Date[1]):	**01/09/2005 - 31/08/2007**

13 Pre filled when applicable

Annex 2 - Model for Periodic activity & management report

1. GENERAL PROGRESS OF THE PROJECT

Feasibility of the overall project	
a) It is running as originally planned	o
b) Some minor modifications are needed	**x**
c) Major modifications are needed	o

If you answered b) or c) please include a detailed description of the research problems encountered, deviations and/or modifications to the project during the reporting period.

In general, the project is running as originally planned. There had been some problems, both in terms of research and management, but these do not alter the outcomes of the project significantly. Three publications (two of them as E. Kalemci main author) were published in peer reviewed journals, and one (with E. Kalemci main author) has been submitted to a peer reviewed journal. In addition, another peer reviewed publication about applications of the techniques learned in this project to another instrument was also published. Three peer reviewed conference proceedings (all at the VI. Integral Workshop) are also about to be published, with two having E. Kalemci and one having Ş. Çalışkan (student paid through this project) as main authors. E. Kalemci attended one SPI Team meeting at CESR, Toulouse, France and a polarization workshop at MPE, Garching, Germany and made presentations. Ş. Çalışkan and E. Kalemci attended the VI Integral Workshop and shared their research results with poster presentations, and also through private conversations. E. Kalemci organized a workshop at Sabancı University and invited speakers which are experts in Integral data analysis and also in theory (although in the original proposal, this workshop was intended for year one, postponed to early year two because of the Integral Workshop in July. The details will be given in the final report). These are achieved compared to the original work plan in the proposal:

1. Installment of computer and software by March 2006: The computer was up and ready with software by March 2006. The initial purchase was delayed as the funding arrived late. It took approximately one month to complete the purchase and install unix and obtain a problem free system. During this time little actual research could be done.

2. Student selection in Fall 2005: First student Şirin Çalışkan was hired in November 2005. Second student Burcu Beygu was hired on January 2006. Unfortunately Ms. Beygu failed her qualification exam and replaced by Işıl Erdeve in March 2006. This caused a delay in research.

3. Milestone 1, workshop at Sabancı University: The workshop was done in September 2006, and it will be discussed in more detail in the final report. The preparations for the workshop were done during the first year.

4. Milestone 2, the second workshop: It will be done at the end of the second year as planned.

5. The main deliverable, scientific papers: Projected 6 papers for this project and 4 peer reviewed papers are published or submitted for publication in the first year.

6. Final report: It will be submitted at the end of the project.

7. Career development: E. Kalemci thought Statistical Physics in Fall 2005 and popular Astronomy and Cosmology classes in Spring 2006. Advised one student through his senior thesis, published several papers (six published and two submitted) and organized a workshop at Sabancı University. He applied for and obtained observing time with Integral and other observatories as PI or co-I. He attended several meetings and workshops.

Minor modifications to some of the research sub-projects were needed. Integral data analysis is a very rapidly evolving field, and in the case of one aspect of this project , searching for high energy emission from anomalous X-ray pulsars (AXPs) and soft gamma-ray repeaters (SGRs), the scientific community already analyzed the vast majority of the data and published results. When this project was written, the field was ripe, but by the time the project started and the researcher settled at the host, most of the analysis was completed by other groups. Therefore it was decided to change the approach to the problem, and instead of searching for high energy emission from AXPs and SGRs, the researcher and his student (Ms. Işıl Erdeve) have currently being searching for pulsed or non-pulsed high energy emission from isolated neutron stars that are not AXPs and SGRs, namely central compact objects (CCO's), dim thermal neutron stars (DTNs, or XDINs), and other X-ray emitting isolated pulsars. This project is very interesting as CCOs and DTNs are claimed to have similar origins, and some of them are claimed to have very high (magnetar, $>10^{13}$ Gauss) magnetic fields. Even though the origin of the high energy component in the AXPs and SGRs is still in question, it is claimed that the origin is related to the high magnetic fields. In this case it would not be surprising to expect high energy tails from other isolated neutron stars that are linked to AXPs and SGRs. The difficulty is that they are not as frequently observed as AXPs and SGRs. Nonetheless, even meaningful upper limits will be useful for models linking the high energy tails to the high magnetic fields. The discovery of fallback accretion disk in one of the AXPs, a very recent development, also makes this project interesting as researchers at Sabanci University (Dr. Ali Alpar and Dr. Ünal Ertan) had previously claimed the existence of such disks and how they would tie the different types of isolated neutron stars into one evolutionary track. Now, the project allows stronger collaboration with the collagues at Sabanci University, and the student has access to more theoretical framework about her thesis.

There was also a minor problem with the implementation of the project, as the original student hired to work on the high energy emission from isolated neutron stars, Ms. Burcu Beygu, unfortunately failed her qualification exams and is no longer a student. This required searching for and hiring a new student and teaching the data analysis techniques again. At the end of the deadline, there is some change that this part of the project will not be completed entirely.

For the part of the project on polarization, the analysis for the search for polarization from a bright and long gamma-ray burst has been finished and submitted for publication. But it was realized during this process that it may be very difficult to detect polarization from the Crab nebula and the pulsar. The sensitivity is lower than expected and in order to model the polarization response of the detectors, simulations much longer than anticipated are required. There will be an attempt to measure polarization from Crab, but the priority will be given to areas for which robust scientific results are expected.

2. BRIEF SUMMARY OF WORK PERFORMED AND RESULTS

The project included five sub-projects. Here is the summary of results for each sub-project:

1. Searching for red-shifted 2.2 MeV line to constrain M/R ratio of neutron stars: Student Ms. Şirin Çalışkan and the researcher has been analyzing SPI/INTEGRAL data of 4U 1820-30 for this project. Due to the loss of detectors 2 and 17 of SPI, the dataset is divided into three, before the loss of detector 2, between losses of detectors 2 and 17, and after the loss of detector 17. Due to the proximity of the source to the Galactic plane, very good coverage (1.7 Ms before the loss of detector 2) is present. Ms. Çalışkan has analyzed the singles data from the first part, both spectrally and also using imaging. No detection of the line was obtained, though the region between 1.4 MeV and 1.6 MeV was problematic due to poor background subtraction. Unfortunately this is the region in which the redshifted line is most likely to be found. We continue to work on different background subtraction methods, and have some success when using Germanium saturation rates. The results of the analysis were presented as a poster by Ms. Çalışkan at the VI. Integral Workshop in July 2006. In the meantime, for the INTEGRAL AO4, Dr. Steve Boggs at UC Berkeley, USA, Dr. Emrah Kalemci and Ms. Şirin Çalışkan at Sabancı University wrote a successful proposal to analyze the 1 Ms Key Programme 4U1820-30 data to search for redshifted 2.2 MeV line (PI is Dr. Boggs to obtain maximum NASA funding). At the end of the project there will be 8 Ms of Integral data to either find or place a very tight upper limit to the line. Moreover, during the Integral Workshop we started a collaboration with Dr. Peter Kretscmar to analyze the data of the transient neutron star AO535+26 in outburst. We are currently working on this data set as the data is not public yet.

2. a Imaging SN 1006 with JEM-X above 10 keV and ISGRI above 20 keV to determine the hard X-ray emission mechanism of SN 1006: Using the 1Ms Integral data we were able to image the source with JEM-X up to 8 keV, and also got a less significant detection up to 12 keV. We were only able to get upper limits for ISGRI, therefore the source has not been detected above 20 keV yet. The results are published in Astrophysical Journal as Kalemci et al., 2006, 644, 274. The non-detections of SN 1006 with H.E.S.S. and CANGOROO II in TeV rays placed strong limits on the hard X-rays from bremsstrahlung emission. We do not expect to detect bremsstrahlung emission after the Tev non-detections (the original AO1 proposal was based on the CANGOROO detection of the South-West limb). However we can still constrain synchrotron models with detections above 20 keV. In AO3, a proposal was written to search for 511 keV annihilation line emission and also to image the source in hard X-rays (PI P. Milne, E. Kalemci co-I) and granted 2.5 Ms on the source. However, the observations were amalgamated with Cen X-4 observations to increase the efficiency of the large field of view instrument SPI. The side effect was loss of significant efficiency in JEM-X and substantial efficiency in ISGRI, especially for energies close to 20 keV. The first part of the amalgamated AO3 data was analyzed, but the pointing was away, therefore no JEM-X coverage was present, and with ISGRI the source is not detected. The results are presented as a poster by Emrah Kalemci at the 6. Integral Workshop in July. We expect to have more results once the part of the amalgamated data with SN 1006 pointings are ready (the consolidated data have not been received from the Integral Science Data Center).

b. Searching for 511 keV line with SPI from SN 1006: 511 keV positron annihilation line from SN 1006 was searched using the 750 ks AO1 observations of SN 1006. Type 1A supernovae are good candidates for the positron content of the Galaxy, and SN 1006 is a good source to search for annihilation line. The AO1 data only yielded upper limits, and the results were published at Astrophysical Journal Letters, Kalemci et al., 2006, 640, L55. We have not started working on the AO3 data, and once all the consolidated data are obtained we will do the analysis. The analysis should be completed by the end of the project deadline.

3. a. Measuring polarization fraction and angle of a GRB in the field of view of SPI: A hard and long gamma-ray burst (GRB) in the field of view of SPI (3 degrees off axis) happened in March 2004 and we obtained the propriety data for the burst. The azimuthal scattering angle distribution was obtained and compared to the polarized and non-polarized distributions which were obtained through MGEANT simulations. Even though the burst was one of the strongest bursts ever observed with modern gamma-ray instruments, the rate of double scatter events that can be used for the analysis were low, and several other systematic effects resulted in only non-constraining upper and lower limits for the polarization fraction of GRB 041219A. The result of the comprehensive analysis has been submitted to the Astrophysical Journal (Kalemci et al.) and is currently under review.

b. Measuring polarization fraction of the Crab nebula: Based of the non-conclusive results from the source dominated GRB, the prospect of measuring polarization became slim. The GRB has the advantage of being able to use the rest of the pointing for background distribution, whereas the background azimuthal scattering angle distribution of Crab will be very hard to model, or estimate. It will also be very hard to estimate the polarized signal from the source as each pointing will require long simulations for different axis angles compared to the source position. The comprehensive work on GRB analysis showed that one needs very long simulations (8-10 hours per pointing) to be able to model the azimuthal scattering angle distribution. Combined with the worse sensitivity estimates, measuring polarization fraction is no longer a priority for this project. If other sub-projects finish in time, an attempt will be made in the second year.

4. **Characterizing the effects of radiation damage on SPI detectors between annealings**: Since this sub-project is not time sensitive at this point, it was decided to do it in the second year. This allowed one more annealing and increased the sample for annealings.

5. Characterizing the hard X-ray emission of isolated neutron stars: The original sub-project name was characterizing the hard X-ray emission of AXPs and SGRs, however as indicated in the feasibility section, it was decided to search for hard X-ray emission from isolated neutron stars other than AXPs and SGRs. Student Ms. Işıl Erdeve has been carrying out the data analysis. Up to now, she concentrated on the PCA and HEXTE data from CCOs, and obtained barycenter corrected light curves and power spectra and found pulse frequency candidates. This project requires the knowledge of 4 very different detectors on 2 satellites and data reduction and timing analysis techniques. Most of her time, she learned these techniques and how to apply them. She still needs to learn folding techniques. The preliminary results were presented by a poster by Ms. Erdeve at the Turkish Astronomical Society Meeting in Istanbul. All of the RXTE data have been collected, and a more than half of the INTEGRAL data have been accumulated for this work.

3. ASSESSMENT BY THE SCIENTIST IN CHARGE ON THE FELLOW'S WORK DURING THE FELLOWSHIP

I am very pleased with Dr. Kalemci's contributions to this University and to our research Group in High Energy Astrophysics. He adopted quickly, and well, and has been contributing significantly.

As Faculty member, Dr. Kalemci has been teaching two new courses ("Statistical Physics" and "What is There in the Universe: Beyond the Milky Way") and contributing to our mass course for first year students, the Science of Nature I. In addition he is involved with undergraduate student projects.

In terms of research, Dr. Kalemci is clearly productive, keeping up his existing collaborations, publishing new results and integrating to the group here. With his active participation we are launching investigations on Compact Central Objects, Dim Isolated Neutron Stars in comparison with other new classes of young neutron stars, like AXPs and SGRs, in the hard X-ray spectral range.

He has also been attracting and engaging new research students, with very good and quick results in one case especially (Ş. Çalışkan), and promising developments with a new student (I. Erdeve). There has been academic problems with a former student, regarding the course work, but this does happen occasionally with some graduate students, as we all know.

Dr. Kalemci is active in applying for research funding in Turkey. He has been instrumental in the development of our group's successful application for a Marie Curie Transfer of Knowledge Grant. Further, Dr. Kalemci has already taken leadership in organizing this year's Sabancı University Astrophysics and Space Forum Workshop, in which we host the Turkish High Energy astrophysics community and invite European colleagues to lecture. Dr. Kalemci invited one of his research collaborators, Dr. Ingo Kreykenbohm as a lecturer this year.

In all this activity and his smooth and enriching integration to this university and to the Turkish research community, the Marie Curie Reintegration Grant has been very useful, and has been used effectively and diligently by him. On my part, and on behalf of the research group here I would like to thank the EC and commend the Marie Curie Re-integration Grant program for helping us recruit this excellent young scientist.

M. Ali Alpar, Professor of Physics, Sabancı University

RESEARCH RESULTS (Summarise the results obtained by the contractor since the beginning of the project):

Panticipation in conferences and other scientific events:
Please indicate the number of participation to scientific events by the beneficiary of the contract. List the participation on a separate sheet following the classification used below.

	Number			
	Active participation			Passive participation
	Oral	Poster	Of which were invited presentations (oral + poster)	
Conferences	2	5	0	0
Workshops	2	0	0	0
Other Scientific Meetings	1	0	0	0

Patents:
Please indicate the number and status of patents which have been the direct results of the research project. List the patents on a separate sheet giving their complete reference number and briefly stating the applicability of each patent.

	Number of Patents		
	Application filed	Pending	Granted
National Patents:			
- Member States and/or Associated States			
- Third Countries:			
-US			
-Japan			
- Other			
European Patents (EP number):			
International Patents (WO number):			

Participation in conferences and other scientific events:

Directly related to this project:

ORAL PRESENTATIONS:

1. *"Polarization measurement of GRB 041219a with SPI"*, presented at the SPI Science Team Meeting, October 2005, CESR, Toulouse, France.

2. . *"Polarization measurement of GRB 041219a with SPI"*, presented at the Gamma-ray polarization mini-workshop, December 2005, MPE, Garching, Germany.

3. *"Background in the multiple events of SPI/INTEGRAL",* presented at the Gamma-ray polarization mini-workshop, December 2005, MPE, Garching, Germany.

POSTERS:

1. E. Kalemci**,** S. P. Reynolds, S. E. Boggs, N. Lund, J. Chenevez, M. Renaud, *"SN 1006 with INTEGRAL"*, poster at the 6th INTEGRAL Workshop, July 2006, Moscow, Russia.

2. E. Kalemci**,** S. E. Boggs, C. Kouveliotou, M. Finger, M. G. Baring, *"Polarization measurement of GRB 041219a with SPI"*, poster at the 6th INTEGRAL Workshop, July 2006, Moscow, Russia.

3. S. Caliskan, E. Kalemci, S. E. Boggs, *"Search for redshifted 2.2 MeV line from 4U1820-30"* , poster at the 6th INTEGRAL Workshop, July 2006, Moscow, Russia.

4. I. Erdeve, E. Kalemci, "Search for high energy emission from Central Compact Objects", poster (Turkish) at the XV. National Astronomy Society Meeting, August 2006, İstanbul, Turkey.

Related to the continuation of previous research projects:

ORAL PRESENTATIONS:

1. "Strong correlation between the spectral index and the QPO frequency in black hole transients, an observational approach", presented at the 11th Grossman Meeting, July 2006, Berlin, Germany.

2. "Multi-wavelength observations of Galactic black hole transients", presented at the XV. National Astronomy Society Meeting, August 2006, İstanbul, Turkey.

POSTER:

1. A. Joinet, E. Jourdain, J. Malzac, J. P. Roques, S. Corbel, J. Rodriguez, E. Kalemci, "Study of the high energy emission of GX 339-4 and H1743-322 during state transitions with INTEGRAL and RXTE", poster at the 6th INTEGRAL Workshop, July 2006, Moscow, Russia.

Publications:

Please indicate the number of publications resulting directly from the project. List the publications on a separate sheet following the classification used below, indicating any invited contributions. In publications resulting from collaboration with other institutions, indicate name and country of institution.

	Number of Publications	
	As main author	Of which were Total co-authored with researchers from other institutions
A. Peer Reviewed *(ind. in press)*		
- Articles in Journals	2	2
- Chapters in Books		
- Articles in Conference Proceedings	3	3
- Books and Monographs		
B. Non-Peer Reviewed *(inch in press)*		
C. Submitted	1	1
D. Manuscripts in preparation		

Teaching and Transfer of Knowledge:

Please indicate the number of hours of lectures, vhich have been delivered by the beneficiaries of the project and training courses, which have been organised by the contractor on the research carried out in the project. List on a separate sheet the lectures and/or training courses delivered.

		Number of participants	
	Number of Hours	Early stage researchers	Other
Lectures			
Training Courses			

Other outcomes:

Please list other outcomes of the project than those mentioned above. Such outcomes may be further academic qualifications, spin-off companies, prizes, awards, media coverage, etc.

	Number	Type
Academic qualifications		
Prizes and Awards		
Spin-off companies		

Publications:

Directly related to the project:

E. Kalemci main author in published peer reviewed journal articles:

1. **E. Kalemci**, S. P. Reynolds, S. E. Boggs, N. Lund, J. Chenevez, M. Renaud, J. Rho, *"X-Ray Observations of SN 1006 with Integral"*, 2006, ApJ, 644, 274.

2. **E. Kalemci**, S. E. Boggs, P. A. Milne, S. P. Reynolds, *"Searching for annihilation radiation from SN 1006 with SPI on INTEGRAL"*, 2006, ApJL, 640, L55.

E. Kalemci co-author in published peer reviewed journal articles:

1. S. E. Boggs, W. Coburn, **E. Kalemci**, *"Gamma-Ray Polarimetry of Two X-Class Solar Flares"*, 2006, ApJ, 638, p1129.

2. Renaud, M.; Gros, A.; Lebrun, F.; Terrier, R.; Goldwurm, A.; Reynolds, S.; **Kalemci, E.,** "Imaging extended sources with coded mask telescopes: application to the INTEGRAL IBIS/ISGRI instrument", 2006, A & A, 465, 389.

E. Kalemci main author in submitted peer reviewed journal articles:

1. E. Kalemci**,** S. E. Boggs, C. Kouveliotou, M. Finger, M. G. Baring, *"Polarization measurement of GRB 041219a with SPI on Integral"*, 2006, submitted to ApJ.

E. Kalemci (and student Ş. Çalışkan) main author in peer reviewed conference proceedings:

1. E. Kalemci**,** S. P. Reynolds, S. E. Boggs, N. Lund, J. Chenevez, M. Renaud, *"SN 1006 with INTEGRAL"*, proccedings of the 6th INTEGRAL Workshop, July 2006, Moscow, Russia.

2. E. Kalemci**,** S. E. Boggs, C. Kouveliotou, M. Finger, M. G. Baring, *"Polarization measurement of GRB 041219a with SPI"*, prooceedings of the 6th INTEGRAL Workshop, July 2006, Moscow, Russia.

3. S. Caliskan, E. Kalemci, S. E. Boggs, *"Search for redshifted 2.2 MeV line from 4U1820-30"* , proceesings of the 6th INTEGRAL Workshop, July 2006, Moscow, Russia.

Related to the continuation of previous research projects:

E. Kalemci main or co-author in published and submitted peer reviewed journal articles and proceedings:

1.**E. Kalemci**, J.A. Tomsick, R.E. Rothschild, K. Pottschmidt, S. Corbel, P. Kaaret, *"The Galactic black hole transient H1743-322 during outburst decay: connections between timing noise, state transitions and radio emission"* ,2006, ApJ, 639, 340.

2. D. M. Gelino, S. Balman, U. Kizilouglu, A. Yilmaz, **E. Kalemci**, J.A. Tomsick, *"The Inclination Angle of and Mass of the Black Hole in XTE J1118+480"*, 2006, ApJ, 642, 438.

3. A. Joinet, E. Jourdain, J. Malzac, J. P. Roques, S. Corbel, J. Rodriguez, **E. Kalemci**, "Hard X-ray emission of the microquasar GX 339-4 in the low-hard state", 2006, submitted to A & A.

4. A. Joinet, E. Jourdain, J. Malzac, J. P. Roques, S. Corbel, J. Rodriguez, **E. Kalemci**, "Study of the high energy emission of GX 339-4 and H1743-322 during state transitions with INTEGRAL and RXTE", proceedings of the 6th INTEGRAL Workshop, July 2006, Moscow, Russia.

List of co-author affiliations directly related to this project:

S. P. Reynolds : North Carolina State University, North Carolina, USA.
S. E. Boggs, W. Coburn: Space Sciences Laboratory, UC Berkeley, Berkeley, CA, USA.
N. Lund, J. Chenevez : Danish National Space Center, Copenhagen, Denmark.
M. Renaud, Gros, A.; Lebrun, F.; Terrier, R.; Goldwurm: Service d'Astrophysique, CEA-Saclay, Gif-sur-Yvette, France.
J. Rho : SPITZER Science Center, Caltech, Pasadena, CA, USA.
P. A. Milne : University of Arizona, Arizona, USA.
C. Kouveliotou, M. Finger: Marshall Space Flight Center, Huntsville, Alabama, USA.
M. G. Baring: Rice University, Houston, Texas, USA.

List of researchers whom E. Kalemci collaborated during his visits to European Institutes:
These researchers are often acknowledged in scientific journal articles but are not co-authors.

Jurgen Knödlseder, Georg Weidenspointtner, Jean Pierre Roques, Pierre Jean: CESR, Toulouse, France.
Pierre Dubath, Ingo Kreykenbohm, David Willis : Integral Science Data Center, Versoix, Switzerland.
Roland Diehl: MPE, Garching, Germany.
Stephane Schanne : CEA-Saclay, France.
Volker Beckman: Goddard Space Flight Center, Baltimore, USA.

Signatures:

Name of fellow:	Name of scientist in charge:
Date:	Date:
Signature of fellow: _____	Signature of scientist in charge:

MANAGEMENT REPORT

Please explain, when necessary, the origin and motivations for the costs claimed during the reporting period.

Here is the list of major costs claimed under this project for the first reporting period:

1. Personnel:

Ms. Burcu Beygu, Ms. Şirin Çalışkan and Ms. Işıl Erdeve student salaries: 11,390 € (out of 12,000 € allocated)

2. Durable:

The analysis and storage raid system bought from SNC systems (Dual Xeon 3 GHz processor, 4 Gb memory, 3Tb raid array with Intel controller, 1 spare hard disk) : 5,953 €

Monitor for the computer : 305 €

External 500 Gb hard disk : 373 €

Important note: Especially early in the project there were serious problems with the internet connection to Europe and the US. The INTEGRAL data analysis requires hundreds of Gbytes of data to be downloaded and analyzed. It would have taken months to just download the data. Instead, an external hard disk was bought, and Ms. Şirin Çalışkan at her personal visit to an US university downloaded 500 Gb of INTEGRAL data in a few days. This was used as seed data to start the projects. Later, during the researcher's personal visit to an US university, additional 400 Gb of data downloaded in a few days. 6,631 € out of 12,000 € are spent for hardware. 1,964 € are transferred to consumable to get more IDL licenses, see the explanation below. 3405 € are still unused.

3. Consumable:

IDL 10 user floating laboratory license : 6,264 €

Important note: The original proposal had 4,300 € for a single IDL floating license. At the time of the proposal writing stage it was not clear that there were other education license options to get more licenses. After contacting the company that sells IDL licenses, it was learned that special 10 user laboratory license for Turkey can be bought for the price of less than 2 regular floating licenses. Since the raid system was bought much cheaper than planned, the excess money was used to get 10 IDL licenses. This had numerous advantages, as a single floating license can only be used for one user, one session. Now all the students and the researcher can use multiple sessions at the same time, significantly decreasing the time of calculations and research.

4. Travel and workshop:

E. Kalemci to SPI Team Meeting in Toulouse, France, : 1,383 €

E. Kalemci to Gamma-ray polarization Mini-workshop at MPE, Garching, Germany, : 998 €

E. Kalemci and Şirin Çalışkan to VI Integral Workshop at Moscow, Russian Federation, : 2,855 €

Workshop visitors travel charges : 735 €

Important note: The original proposal had funding for three SPI Science Meetings, E. Kalemci's Integral Workshop attendance, and 10 days visit to CESR. Last year two SPI science meetings took place, and one of them could not be attended (maternity leave). Instead grants were used for Ms. Şirin Çalışkan's expenses in the Integral Workshop. A workshop was organized in September 2006, even though the activity belongs to the next reporting period, some of the expenses (airfare of invited speakers) are made in the first year. The longer visit to CESR was cancelled due to family reasons.