

Final Programme

&

Abstract book

New Visions of the X-ray Universe

in the XMM-Newton and Chandra era

*26-30 November 2001
ESTEC, Noordwijk, The Netherlands*

Scientific Organising Committee:

Mike Watson	University of Leicester, UK (chair)
Monique Arnaud	CEA/DSM/DAPNIA, Saclay, F
Bernd Aschenbach	MPE Garching, D
Xavier Barcons	IFCA (CSIC-UC), Santander, E
Andy Fabian	IoA, Cambridge, UK
Richard Griffiths	Carnegie Mellon University, US
Guenther Hasinger	AIP Potsdam/MPE Garching, D
Jelle Kaastra	SRON, Utrecht, NL
Steve Kahn	Columbia University, US
Thierry Montmerle	CEA/DSM/DAPNIA, Saclay, F
Roberto Pallavicini	OAPA, Palermo, I
Giorgio Palumbo	ASI, Rome, I
Liz Puchnarewicz	MSSL, University College London, UK
Marten van Kerkwijk	Utrecht University, NL

Local Host/ Organizing Committee:

F. Jansen, P. Gondoin, G. Elfering

Secretariat

ESTEC Conference Bureau
P.O.Box 299
2200 AG Noordwijk
Netherlands

Telephone: +31 71 5655005
Telefax: +31 71 5655658
E-mail: confburo@esa.int

Monday 26 November 2001

Plenary Session A –1

Room Newton

- 10:00 Welcome and introductory remarks
TBA
- 10:10 Invited talk: Status of the XMM-Newton Observatory
Jansen, Fred

Plenary Session B1: Stellar Coronae & Stellar Winds

Room Newton

- 10:30 Invited talk: New Views and Visions of Stellar Coronae and Stellar Winds
Guedel, Manuel
- 11:00 XMM-Newton Observations of Stellar Coronae: Density Diagnostics from Helium-like Ions
Magee, Hilary; Guedel, Manuel; Audard, Marc
- 11:20 Elemental Abundances in Stellar Coronae with XMM-Newton
Audard, Marc; Guedel, Manuel; Paul Scherrer Institut
- 11:40 High Resolution X-ray Spectroscopy of Eta Carinae with the XMM-Newton RGS
Leutenegger, Maurice; Kahn, Steven
- 12:00 Discovery of X-rays from Venus with Chandra
Dennerl, Konrad; Burwitz, Vadim; Englhauser, Jakob; Lisse, Carey; Wolk, Scott

Plenary Session B2: SNRs

Room Newton

- 12:20 Invited talk: X-ray Observations of Supernova Remnants
Decourchelle, Anne
- 13:00 lunch
- 14:00 A Synoptic Spectral Study of Cas-A based on XMM-Newton and BeppoSAX Observations
Bleeker, Johan; Willingale, Dick; Vink, Jacco; Kaastra, Jelle; van der Heyden, Kurt
- 14:20 High Resolution Spectroscopy of the LMC Supernova Remnants N103B and DEM L71 using XMM-Newton
van der Heyden, Kurt; Behar, Ehud; Kaastra, Jelle; Vink, Jacco; Bleeker, Johan
- 14:40 Chandra Observations of Young Supernova Remnants
Petre, Robert; Holt, Stephen; Hwang, Una; Harrus, Ilana; Stahle, Caroline
- 15:00 Young Neutron Stars and their Wind Nebulae
Slane, Patrick
- 15:20 Invited talk: Contemplating Original Spin
Helfland, David

15:50 break

Plenary Session B3: Clusters of Galaxies

Room Newton

- 16:20 The Structural and Scaling Properties of Clusters observed by XMM
Arnaud, Monique
- 16:40 Abundance Gradients in Galaxy Clusters
Gastaldello, Fabio; Molendi, Silvano
- 17:00 Spatially Resolved Spectroscopy of Clusters of Galaxies
Kaastra, Jelle; Tamura, Takayuki; Peterson, John; Johan, Bleeker; Ferrigno, Carlo
- 17:20 High Resolution Spectroscopy of 14 Cooling-Flow Clusters of Galaxies using the Reflection Grating Spectrometers
Peterson, John R.; Peterson, J. R.; Ferrigno, C.; Kaastra, J. S.; Paerels, F. B. S.; Kahn, S. M.; Jernigan, J. G.; Tamura, T.; Bleeker, J. A. M.
- 17:40 XMM-Newton EPIC Observations of Galaxy Clusters
Molendi, Silvano
- 18:00 end day 1

Tuesday 27 November 2001

Plenary Session B3`-1: Clusters of Galaxies (cont.)

Room Newton

- 09:00 Gas Bulk Flows in the Cluster Cores as seen from Chandra (**withdrawn**)
Markevitch, Maxim
- 09:20 Chandra Detection of a 300 kpc Kelvin-Helmholtz Instability in the Intergalactic Medium of the Merging Cluster of Galaxies A3667
Mazzotta, Pasquale; Mazzotta, Pasquale; Fusco-Femiano, Roberto; Vikhlinin, Alexey
- 09:40 Mass Distributions from Chandra Observations of Clusters of Galaxies
Bautz, Mark; Arabadjis, John; Garmire, Gordon
- 10:00 The Evolution of the X-ray Clusters (**to be rescheduled**)
Gioia, Isabella M.
- 10:20 Recent CHANDRA and XMM observations of two very different galaxy clusters: RBS797 and CL 0939+4713
De Filippis, Elisabetta; Schindler, Sabine; Castillo-Morales, Africa
- 10:40 X-ray Cavities and Feedback in Cluster Cooling Flows
Mcnamara, Brian
- 11:00 break

Plenary Session C1-1: X-Ray Binaries

Room Newton

- 11:30 Invited talk: High Resolution Spectroscopy of X-ray Binaries
Paerels, Frits
- 12:00 An XMM-Newton Study of the X-ray Binary MXB1659-298 and the Discovery of Narrow X-ray Absorption Lines
Sidoli, Lara; Parmar, Arvind; Lumb, David; Erd, Chris; Oosterbroek, Tim;
- 12:20 XMM-Newton and Chandra Observations of Dwarf Novae
Wheatley, Peter
- 12:40 Ultracompact X-Ray Binaries with Neon-Rich Degenerate Donors
Chakrabarty, Deepto; Juett, Adrienne; Schulz, Norbert; Canizares, Claude; Marshall, Herman; Lee, Julia; Houck, John
- 13:00 lunch

Plenary Session A-2

Room Newton

- 14:00 Invited talk: Update on the Performance of the EPIC Instrument on XMM-Newton
Turner, Martin
- 14:20 Invited talk: The Reflection Grating Spectrometer on XMM-Newton
Brinkman, Bert
- 14:40 Invited talk: Results from the Optical/UV Monitor Telescope onboard XMM-Newton
Mason, Keith
- 15:00 end day 2 plenary, start of parallel workshop sessions

Parallel Workshop WA2: XMM Instrument Calibration

Room Newton

- 15:00 Introduction to XMM Calibration Workshop
Lumb, David
- 15:15 Status of the EPIC/pn Calibration
Briel, Ulrich G.; Dennerl, K.; Freyberg, M.; Ghizzardi, S.; Haberl, F.; Hartner, G.; Kendziorra, E.; Kirsch, M.; Kuster, M.; Meidinger, N.; Molendi, S.; Tiengo, A.; Turner, M.; Zavlin.
- 15:40 Status of the EPIC/MOS calibration
Ferrando, Philippe; Abbey, Antony; Arnaud, Monique; Bennie, Paul; Dadina, Mauro; Denby, Mike; Ghizzardi, Simona; Griffiths, Gareth; La Palombara, Nicola; Lumb, Dave; Molendi, Silvano; Neumann, Doris; Sauvageot, Jean-Luc; Saxton, Richard; Sembay, Steve
- 16:05 WA2 break

- 16:20 Calibration of the Reflection Grating Spectrometers onboard XMM-Newton
Den Herder, Jan-Willem; Brinkman, A.C.; Kahn, S.M.; Branduardi-Raymont, G.; Audard, M.; Boggende, A.J. den; Cottam, J.; Erd, C.; Guedel, M.; Kaastra, J.S.; Paerels, F.B.; Peterson, J.R.; Rasmussen, A.P.; Reynolds, J.D.; Tamura, T.; De Vries, C.P.
- 16:45 The Calibration of the Optical Monitor
Breeveld, Alice; OM Cal team.
- 17:05 Cross-Calibration of the EPIC MOS and pn Cameras On-board XMM-Newton using Sources with Featureless Continuum Spectra
Griffiths, Gareth; Bennie, Paul; Briel, Ulrich; Dennerl, Konrad; Haberl, Frank; Molendi, Silvano; Saxton, Richard; Sembay, Steve; Zavlin, Slava
- 17:25 Cross-Calibration of the EPIC MOS and pn cameras on board XMM-Newton using Narrow Spectral Emission and Absorption Features
Haberl, F.
- 17:45 Relative Calibrations of EPIC and RGS Onboard of XMM-Newton
Den Herder, Jan-Willem; Ferrande, P.; Haberl, F.; Griffiths, G; Briel, U.; Kaastra, J.S.; Lumb, D.; Molendi, S. ; Rasmussen, A.P; Sembay, S.; Tamura, T.; De Vries, C.P.
- 18:05 XMM-Newton and Chandra Cross-Calibration Results for G21.5-0.9
Snowden, Steve
- 18:25 Absolute & Relative Timing with the EPIC PN Camera of XMM-Newton
Kuster, M.;Kendziorra, E.;Benloch, S.;Becker, W.;Lammers, U.
- 18:45 WA2 question & answer session
- 19:00 end WA2

Parallel Workshop WA3: XMM-Newton Data Analysis

Room Copernicus

- 15:30 **A-Presentations:**
- 15:30 Intro and Organisation
C. Erd
- 15:35 Start-up of SAS: Installation, set-up ofdfingest, ODF contents, structure of data
G. Vacanti
- 15:50 CCF and cifbuild
G. Vacanti
- 16:00 Reduction Processing:
PPS: Product Groups, Simple Overview
J. Osborne
- 16:15 Proc's
G. Vacanti

- 16:25 PPS Products and Content
J. Osborne
- 16:35 Spectral Analysis of Point-like Sources RGS
M. Audard
- 16:55 Spectral Analysis of Point-like Sources EPIC
M. Guainazzi
- 17:15 Event List Manipulations and Screening
M. Guainazzi
- 17:30 **B- Online Part**

Wednesday 28 November 2001

Plenary Session C1-2: X-Ray Binaries

Room Newton

- 09:00 XMM-Newton Observations of Cataclysmic Variables
Cropper, Mark; Ramsay, Gavin; Pandel, Dirk; Mauche, Chris; plus others
- 09:20 Chandra HETG Observations of Cataclysmic Variables
Mukai, Koji; Schlegel, Eric; Kallman, Tim; Orio, Marina
- 09:40 Chandra Observations of SS 433: the First Evidence for a Jet Outflow Reheating in an X-Ray Binary
Migliari, S.; Fender, P.; Mendez, M.

Plenary Session C2: AGN

- 10:00 Invited talk: Active Galaxies in the XMM and Chandra Era
Mushotzky, R.
- 10:30 X-ray Spectroscopy of NGC 1068 with XMM-Newton RGS and Chandra LETGS
Kinkhabwala, Ali; Sako, Masao; Behar, Ehud; Paerels, Frits; Kahn, Steve; Brinkman, Bert; Kaastra, Jelle; van der Meer, Rob; Liedahl, Duane
- 10:50 New XMM-Newton Results on AGN - Iron K Emission and the Nature of the Central Engine
Reeves, James
- 11:10 break
- 11:40 XMM-Newton EPIC Observation of the broad line of MCG-6-30-15
Wilms, Joern; Reynolds, Chris; Begelman, Mitchell; Reeves, James; Molendi, Silvano; Staubert, Ruediger; Kendziorra, Eckart
- 12:00 Preliminary Results of an XMM-Newton Long Look at MCG-6-30-15
Fabian, Andrew; Vaughan, Simon; Iwasawa, Kazushi; Nandra, Paul; Young, Andrew; Lee, Julia; Ballantyne, David

- 12:20 Relativistic Broad Emission Lines in the Seyfert Galaxy Mrk 766?
Mason, Keith; Branduardi-Raymont, Graziella; Ogle, Patrick; Page, Mat; Puchnarewicz, Liz; Behar, Ehud; Cordova, France; Maraschi, Laura; McHardy, Ian; O'Brien, Paul; Priedhorsky, William; Sasseen, Tim
- 12:40 The Complex Soft X-ray Spectral Structure of MCG-6-30-15 and Markarian 766
Sako, Masao; Kahn, Steve M.; Branduardi-Raymont, Graziella; Brinkman, Albert C.; Kaastra, Jelle S.; Page, Mat J.; Behar, Ehud; Paerels, Frits; Kinkhabwala, Ali; Liedahl, Duane A.
- 13:00 lunch
- 14:00 Invited talk: XMM-Newton Observations of the X-ray Continua of Seyfert 1 Galaxies
Pounds, Ken
- 14:30 Chandra finds kpc-scale X-ray Jets to be common in Radio-loud AGN
Worrall, Diana; Birkinshaw, Mark; Hardcastle, Martin
- 14:50 Chandra/HETGS Longest Exposure: 900 ks of the AGN NGC3783
Kaspi, Shai
- 15:10 A Full Orbit XMM Observation Of PKS 2155-304
Maraschi, Laura
- 15:30 Chandra Studies of Nearby Seyfert and Radio Galaxies
Wilson, Andrew; Shopbell, Patrick; Young, Andrew; Smith, David; Terasima, Yuichi; Yang, Yuxuan; Arnaud, Keith
- 15:50 break

Plenary Session D1: Neutron Star and White Dwarf Emission
Room Newton

- 16:20 Invited talk: XMM Observations of Neutron Stars
Becker, Werner; Trümper, Joachim; Caraveo, Patrizia; Nicastro, Luciano; Mignani, Roberto
- 16:50 Chandra Observations of the Millisecond Pulsar J0437-4715
Zavlin, Vyacheslav
- 17:10 The Chandra LETGS Spectrum of the Neutron Star RX J1856.5-3754
Burwitz, Vadim; Zavlin, Vyacheslav; Trümper, Joachim; Neuhäuser, Ralf; Predehl, Peter
- 17:30 XMM Observations of Recent Galactic Classical Novae
Hernanz, Margarita; ; Sala, Gloria; Jose, Jordi; Isern, Jordi;
- 17:50 end day 3

Thursday 29 November 2001

Plenary Session E2: Star-forming Regions & Star Clusters

Room Newton

- 09:00 Invited talk: X-rays from Star-forming Regions
Montmerle, Thierry; Grosso, Nicolas; Feigelson, Eric D.
- 09:30 X-ray Detection from Bona-fide and Candidate Brown Dwarfs in the Rho Ophiuchi Cloud with Chandra
Imanishi, Kensuke; Tsujimoto, Masahiro; Koyama, Katsuji
- 09:50 Discovery of X-Ray Emission from Protostellar Jets: L1551 IRS5
Favata, Fabio; Fridlund, M.; Micela, G.; Sciortino, S.

Plenary Session E1: Galactic Diffuse Emission and Source Populations

Room Newton

- 10:10 Invited talk: A New Look at the X-Ray Properties of our Galaxy
Warwick, Robert
- 10:40 X-Ray Analysis of the Local Bubble: Implications of XMM Observations of the Nearby Molecular Cloud
Freyberg, M.J.; Breitschwerdt, D.
- 11:00 break
- 11:30 Chandra Deep Observations on the Galactic Plane
Ebisawa, Ken; Yoshitomo, Maeda; Yamauchi, Shiegeo; Kaneda, Hidehiro; Satoh, Goro; Uchiyama, Yasunobu
- 11:50 Dust Models and X-ray Halos seen by Chandra and XMM/Newton
Smith, Randall

Plenary Session E3-1: Local Galaxies

Room Newton

- 12:10 Invited talk: XMM-Newton Studies of the Source Population and the Hot Interstellar Medium in Nearby Galaxies
Pietsch, Wolfgang
- 12:40 First Deep XMM-Newton Observations of the LMC: Identifying LMC Intrinsic Source Populations
Haberl, Frank

Plenary Session B3-2: Clusters of Galaxies

- 13:00 Invited talk: XMM-Newton Studies of Galaxy Cluster Structure and Cosmology
Boehringer, Hans
- 13:30 end day 4 plenary
- 13:00 lunch

Thursday 29 November 2001, p.m.

Start of parallel workshop sessions

Parallel Workshop WB1: X-Ray Surveys and Follow-up Programmes

Room Newton 1

- 14:30 X-ray AGN detected in the ROSAT All-Sky Survey and Sloan Digital Sky Survey
Voges, Wolfgang; Boller, Thomas; Anderson, Scott; Margon, Bruce; Richards, Gordon; Vanden Berk, Dan
- 14:45 One SEXSI Program: Serendipitous Extragalactic X-Ray Source Identification
Harrison, F.; Helfland, D.J.
- 15:10 Multi-wavelength Observations in the Chandra Deep Field North region: Current Coverage and Follow-up Observations
Alexander, David; Bauer, Franz; Chandra Deep Field North Team
- 15:25 The XMM-Newton Serendipitous Sky Survey: Progress from the SSC Programme
Barcons, Xavier
- 15:50 XMM-Newton Observations of the Lockman Hole: Spectral Analysis
Bergeron, Jacqueline
- 16:05 A Survey of Hard Spectrum ROSAT Sources: First XMM-Newton Data and Optical-X-ray Colours
Carrera, Francisco J.; Page, Mathew J.
- 16:20 WB1 break
- 16:35 The XMM-Newton Bright Serendipitous Source Sample (XMM BSS)
Della Ceca, Roberto
- 16:50 The Chandra Multiwavelength Project (ChaMP)
Wilkes, Belinda; Green, Paul; Cameron, Rob; Kim, Dong-Woo
- 17:15 Exploring the Relationship between SCUBA Sources Chandra Sources and EROs
Almaini, Omar; Dunlop, J.; Lawrence, A.; Manners, J.; Johnson, O.; Ivison, R.; Scott, S.; Peacock, J.; Mann, B.; Perez-Fournon, I.; Gonzales, E.; Willot, C.; Oliver, S.; Serjeant, S.; Fox, M.; Rowan-Robinson, M.; McMahon, R.; Ciliegi, P.
- 17:30 The XMM-LSS Data Base
Pierre, Marguerite
- 17:45 XMM Newton and Wide Field Optical Imaging to crack the Mystery of Gamma-ray Sources
Caraveo, Patrizia; De Luca, Andrea; Hartman, Roberto; Mignani, Roberto; Thompson, David; Bignami, Giovanni
- 18:00 end WB1

Parallel Workshop WB2: Plasma Processes, Diagnostics & Code

Room Newton 2

- 14:30 A General Introduction to X-Ray Spectroscopy of Astrophysical Plasmas
Kahn, S.
- 15:15 Photoionization Modelling: Lessons from XMM and Chandra
Kallman, Tim
- 15:30 Non-equilibrium Ionisation (NEI)
Mewe, Rolf
- 15:45 Radiative Recombination Continua in X-ray Photoionized Plasmas
Paerels, Frits
- 16:00 He-like Triplet Diagnostics
Dubau, Jacques; Porquet, Delphine
- 16:15 Inner-shell Absorption Lines in X-ray Astronomy
Behar, Ehud
- 16:30 WB2 break
- 16:45 Resonance Scattering in the Clusters of Galaxies.
Gilfanov, Marat
- 17:00 Accuracy and Limitations of Atomic Data for X-ray Spectroscopy
Brickhouse, Nancy
- 17:15 The FAC Atomic Code
Gu, Ming Feng
- 17:30 Recent Developments in Atomic and Plasma Codes: The APEC Code
Smith, Randall
- 17:45 SPEX
Kaastra, Jelle; Mewe, Rolf; Raassen, Ton
- 18:00 CHIANTI - An Atomic Database for X-EUV Spectral Lines
Landi, Enrico
- 18:15 end WB2

Parallel Workshop WB3: XMM-Newton Data Analysis

Room Copernicus

- 14:30 **A - Presentations**
- 14:30 Release Strategy of Current Calibration Files
C. Erd
- 14:40 Source Detection
G. Lamer

14:55 EPIC Analysis of Extended Sources
S. Molendi

15:15 OM Data Analysis
S. Rosen

15:35 **B - Online Part**

18:30 end of WB3

Friday 30 November 2001

Plenary Session E3-2: Local Galaxies

Room Newton

09:00 Invited talk: Chandra Observations of Nearby Disk Galaxies
Wang, Q. Daniel

09:30 The Nature of Ultraluminous X-ray Sources in Nearby Galaxies
Roberts, Timothy

09:50 XMM-Newton RGS Observations of the Elliptical Galaxy NGC 4636
Kahn, Steven M.; Xu, Haiguang; Peterson, John R.; Behar, Ehud; Paerels, Frits B.S.; Mushotzky, Richard F.; Jernigan, J. Garrett; Makishima, K.

10:10 The XMM-Newton Survey of M31
Osborne, Julian; Priedhorsky, Bill; Barnard, Robin; Borozdin, Konstantin; King, Andrew; Kolb, Ulrich; Mason, Keith; Schenker, Klaus; Shirey, Robert; Soria, Roberto; Trudolyubov, Sergey; Watson, Mike

10:30 Two Years of the X-ray Sky in M31
Kong, Albert; Garcia, Michael; Di Stefano, Rosanne; Murray, Steven; Primini, Francis

10:50 Optical Counterparts of Ultraluminous X-Ray Sources
Pakull, Manfred; Mirioni, Laurent

11:10 break

Plenary Session F: The X-Ray Background

Room Newton

11:40 Invited talk: The Sources of the X-ray Background
Hasinger, Gunther

12:10 Exotic Source Populations detected in the 1 Ms Chandra Deep Field North Survey
Alexander, David; Chandra Deep Field North Team

12:30 High Energy Large Area Surveys: from BeppoSAX to XMM-Newton
Fiore, Fabrizio

13:00 lunch

- 14:00 Hubble Deep Field North: a Comparison of 1Ms CXO versus 160ks XMM
Griffiths, Richard; Griffiths, Richard; Miyaji, Takamitsu; Lumb, David; Tomas, L.; Siddiqui, H.
- 14:20 On the Nature of Optically Quiet X-ray Bright Galaxies
Comastri, Andrea
- 14:40 Powerful, obscured AGN in the Fields of Chandra Clusters
Gandhi, Poshak; Crawford, Carolin; Fabian, Andrew

Plenary Session G: Future Missions & Instruments

- 15:00 Invited talk: Japanese X-Ray Programmes in the New Century
Kunieda, H.
- 15:20 Invited talk: Constellation-X: Status and Prospects
Petre, Robert
- 15:40 Invited talk: The XEUS Mission
Bleeker, Johan
- 16:00 end day 5