

Curriculum Vita

Frederik Bernard Stefan Paerels

Department of Astronomy and Columbia Astrophysics Laboratory
Columbia University
550 W. 120th St.
New York, NY 10027
(212) 854-0181
fax: (212) 854-8121
e-mail: frits@astro.columbia.edu

Born

16 June 1956 in Bussum, The Netherlands

Citizenship

US, Dutch

Education

Ph.D., University of Utrecht, Utrecht, The Netherlands, Astronomy, 1987
M.S., University of Utrecht, Utrecht, The Netherlands, Astronomy, 1984

Professional History

2022 (Jan—July 2022) Vice-Chair, Department of Astronomy
2014 (July—July 2015) Vice-Chair, Department of Astronomy
2011 (July—July 2014) Chair, Department of Astronomy
2010 (July—present) Professor of Astronomy, Columbia University
2010 (April—July 2011) Department of Astronomy, Vice Chair
2010 (January—July 2015)—co-Director, Columbia Astrophysics Laboratory, Columbia University.
2001 (July—July 2010)—Associate Professor of Astronomy, Columbia University.
1999 (July—2001 July)—Adjunct Associate Professor of Astronomy, Columbia University.
1999 (July—2003 October)—Director, Columbia Astrophysics Laboratory, Columbia University.
1998 (January—1999 July)—senior scientist, Space Research Laboratory Utrecht, Space Research Organization of the Netherlands.
1995 (September—2001 July)—Research Physicist, Columbia Astrophysics Laboratory, Columbia University.

- 1990 (September–1995 September)—Assistant Research Physicist, Space Sciences Laboratory, University of California, Berkeley.
- 1988 (September–1990 August)—Postdoctoral Fellow, Space Sciences Laboratory, University of California, Berkeley.
- 1988 (September–1990 August)—Postdoctoral Fellow, Institute for Geophysics and Planetary Physics, Lawrence Livermore National Laboratory.

Invited Lectures

- Colloquium, Department of Physics, University of Toronto, January 25, 2024
- Invited Presentation for the 'Science on Hudson' popular lecture series, October 15, 2020
- Invited Presentation, Advanced Spectroscopy School, Harvard-Smithsonian Center for Astrophysics, August 3, 2020
- Invited Presentation, Mini-symposium celebrating 20 Years of XMM-Newton, NASA Goddard Space Flight Center, November 2019
- Invited Presentation, Mini-symposium celebrating 20 Years of *Chandra*, SRON Space Research Organization of the Netherlands, Utrecht, the Netherlands, November 2019
- Invited Presentation, Retirement of Professor Takaya Ohashi, Tokyo Metropolitan University, June 2019
- Invited Presentation, Special Session at 17th Meeting AAS High Energy Astrophysics Division, Monterey, CA, March 17-21, 2019
- Summary Talk, ISSI Workshop on 'Cluster of Galaxies: Physics and Cosmology', ISSI, Bern, Switzerland, November 20-24, 2017
- Invited presentation at "Whereabouts and Physics of the Roaming Baryons in the Universe", INAF Workshop, Seston, Italy, July 10-14, 2017
- Invited two-day Review, High Resolution X-ray Spectroscopic Methods in Astrophysics, SRON Space Research Organization of the Netherlands, September 24-25, 2015
- Invited Presentation 'The Universe in High Resolution Spectra', *Chandra*-sponsored workshop, *Chandra* Science Center, SAO/Harvard, Cambridge, MA, August 19-21, 2015
- Invited Lecture 'Soft X-ray Astrophysical Spectroscopy', Symposium in honor of Professor Steven M. Kahn's 60th Birthday, Stanford University, January 29-30, 2015
- Colloquium, Department of Astronomy, University of Michigan, October 30, 2014
- Colloquium, Department of Astronomy, Michigan State University, October 29, 2014
- Invited Lectures 'Collisional Plasmas' and 'X-ray Absorption Edges and Features', NASA- and JAXA sponsored Workshop and School, Tokyo Metropolitan University, Tokyo, Japan, September 6-10, 2014.
- Invited Review 'High Resolution Astrophysical Spectroscopy: Current and Future', COSPAR General Assembly, August 3-10, 2014, Moscow, Russia.
- Invited Review, 'Astrophysics with Astro-H', workshop for Dutch astronomers, Space Research Organization of the Netherlands, Utrecht, the Netherlands, May 27, 2014.

- Four Invited Lectures 'X-rays from Neutron Stars', International School on Neutron Star Matter, Yukawa Institute for Theoretical Physics, Kyoto University, Japan, March 4-7, 2014.
- Invited Review 'Small telescopes, Big Dreams', SPIE Conference, Session on Instrumentation for X-ray and UV Astronomy, Amsterdam, the Netherlands, July 2-6, 2012.
- Invited review 'X-ray Absorption from the WHIM', "Whereabouts, Physical State and Metallicity of the Missing Baryons in the Local Universe", Cervia-Milano Marittima, Italy, May 27-30, 2012.
- Astrophysics Colloquium at the Kavli Institute for Astrophysics and Space Research at MIT, October 18, 2011.
- Invited Review 'Electromagnetic Constraints on the Neutron Star Equation of State', First Gravitational Wave Physics and Astronomy Workshop, University of Wisconsin-Milwaukee, January 26-29, 2011.
- Lecturer, First Astro-H Advanced School in Astrophysics, Minakami, Japan, August 19-21, 2010.
- Invited Lecture, High Resolution X-ray Spectroscopy, Utrecht, the Netherlands, March 15-18, 2010.
- Invited presentation, Special Session on the Physics of the Warm Intergalactic Medium, 11th biannual meeting of the High Energy Astrophysics Division of the American Astronomical Society, Kona, Hawaii, February 2010.
- Invited Lectures, 1st Mullard Space Science Laboratory School on High Resolution X-ray Spectroscopy, MSSL, Holmbury St Mary, Surrey, UK, March 13-14, 2009.
- 'Measuring the Masses and Radii of Neutron Stars', General Physics Colloquium, Utrecht University, Utrecht, May 30, 2008
- 'Photospheric Spectroscopy of Neutron Stars', colloquium at the Theoretical Astrophysics Section, Ioffe Physico-Technical Institute of the Russian Academy of Sciences, St. Petersburg, Russia, May 23, 2008
- 'Physical Properties and Observables of the Warm/Hot IGM', invited presentation at "The Warm and Hot Universe", Columbia University, New York, May 7, 2008
- Colloquium, Department of Astronomy, Leiden University, Leiden, the Netherlands, March 20, 2008
- Invited Talk, Symposium on the Occasion of the Retirement of Professor John Heise, Sterrenwacht 'Sonnenborgh', Utrecht, February 22, 2008
- Colloquium, Department of Astronomy, Utrecht University, Utrecht, the Netherlands, January 23, 2008
- Colloquium, Department of Astronomy, Groningen University, Groningen, the Netherlands, November 5, 2007
- Invited review, International Team "Non-virialized X-ray Components of Clusters of Galaxies", International Space Science Institute, Bern, Switzerland, October 30-November 3, 2006.
- Colloquium, Department of Physics, University of Miami, Miami, FL, April 21, 2006
- Colloquium, Department of Astronomy, University of Toronto, Toronto, Canada, April 7, 2006
- Invited review, Workshop on Sterile Neutrinos in Astrophysics and Cosmology, Crans-Montana, Switzerland, March 25-29, 2006.

- Invited review, 2nd Mullard Space Science Laboratory Workshop on High Resolution X-ray Spectroscopy, MSSL, Holmbury St Mary, Surrey, UK, March 27-28, 2006.
- Invited Lecture, E. L. Hulbert Center and Remote Sensing Division, Naval Research Laboratory, Washington, DC, March 2, 2006.
- Invited Review, NASA Laboratory Astrophysics Workshop, University of Las Vegas, Nevada, February 14-16, 2006
- invited review, 'High resolution X-ray Photospheric X-ray Spectroscopy of Neutron Stars', 'X-ray Universe 2005' meeting (five years of Science with XMM-Newton), El Escorial (Spain), September 26-30, 2005.
- invited review, 'Workshop on Measuring the Diffuse Intergalactic Medium', Shonan Village Center (Japan), October 12-16, 2005
- Meeting Summary and Review, 'X-ray Diagnostics of Astrophysical Plasmas', Cambridge, MA, November 2004.
- invited review, SPIE Glasgow (astrophysical X-ray spectroscopy), June 2004
- invited review Cospar meeting Paris, astrophysical X-ray spectroscopy, July 2004
- Colloquium, Department of Astronomy, University of Massachusetts, Amherst, March 25, 2004
- Invited Review, 'X-ray Observations of the Intergalactic Medium ', 'Four Years of *Chandra*' Symposium, Huntsville, Ala., September 2003.
- Colloquium, Laboratory for High Energy Astrophysics, NASA Goddard Space Flight Center, August 26, 2003
- Invited Review, 'Physics and Astrophysics of Neutron Stars', Santa Fe, NM, July 29, 2003
- Colloquium, Department of Physics and Astronomy, Rice University, April 2, 2003
- Invited Review, 'First *Constellation-X* Workshop on X-ray Spectroscopy', Columbia University, New York, May 2003
- Invited Review, 'New Directions in X-ray Astronomy', 201st Meeting of the American Astronomical Society, Seattle, WA, January 8, 2003
- Invited Lecture, Amateur Astronomy Association of New York, American Museum of Natural History, October 25, 2002
- Invited Lecture 'Recent Highlights of High Energy Astrophysics', 91st Spring Meeting of the American Association of Variable Star Observers, Waikoloa, HI, July 2002
- Colloquium, Department of Physics and Astronomy, Ohio University, May 2, 2002
- Invited Presentation at the 13th APS Topical Conference on Atomic Processes in Plasmas, Gatlinburg, TN, April 22-25, 2002
- Invited Presentation at the 'XEUS – Studying the Evolution of the Hot Universe' Workshop, Garching, Germany, March 11-13, 2002
- Colloquium, Department of Astronomy and Astrophysics, Penn State University, January 23, 2002
- Invited Presentation at the 2nd XMM-Newton Workshop, ESTEC, Noordwijk, the Netherlands, November 26-30, 2001
- Colloquium, Department of Physics, Columbia University, November 19, 2001
- Invited Presentation at the 13th Rencontres de Blois Meeting: 'Frontiers of the Universe', Blois, France, June 17-23, 2001

- Special Astrophysics Seminar, Department of Physics and Astronomy, Rutgers University, April 26, 2001
- Special Astrophysics Seminar, Department of Physics and Astronomy, SUNY/Stony Brook, April 18, 2001
- Special Astrophysics Seminar, Center for Space Research, MIT, February 19, 2001
- Colloquium, Department of Physics and Astronomy, University of Illinois Urbana-Champaign, February 13, 2001
- Invited. Reviewer, American Astronomical Society 2001 Winter Meeting, January 7-11, 2001 (San Diego, CA)
- Invited Lecturer, International Astronomical Union General Assembly, Manchester (UK), August 2000
- Invited Lecturer, 196th Meeting of the American Astronomical Society, Special Session A New Era in X-ray Astronomy, Rochester, NY, June 2000
- Invited Reviewer, 33d COSPAR Assembly, Special Symposium New Vistas from X-ray Observatories, Warsaw, July 2000
- Invited Reviewer, X-ray Astronomy 1999, Bologna, September 1999
- Invited Lecturer, 10th European Astrophysics Doctoral Network Summer School, University of Amsterdam, September 1997
- Invited Reviewer, 'Advanced Satellite for Cosmology and Astrophysics' workshop (Washington, DC, 1997)
- Invited Reviewer, International Astronomical Union Colloquium No. 152 'Astrophysics in the Extreme Ultraviolet' (Berkeley, 1995)

Committee Assignments

- Chandra Legacy Program Review Committee, January 2024.
- XRISM Guest Scientist, NASA/JAXA/ESA X-ray Imaging and Spectroscopy Mission (XRISM), December 2022-
- NASA Astrophysics Data Analysis Program Peer Review, August 22-24, 2021.
- Member, Selection committee for the Lise Meitner Excellence Program, 2020 Selection, Max Planck Society, Germany, July 2020.
- Chandra Peer Review Cycle 22, 'Pundit' Subcommittee on Large Proposals, June 2020
- Treasurer and Member, Executive Committee of the High Energy Astrophysics Division of the American Astronomical Society, March 2019-March 2022.
- Member, Scientific Organizing Committee, IAU General Assembly Focus Meeting 'Warm and Hot Baryons in the Cosmos', IAU General Assembly, Vienna, 2018
- Member, NASA *Lynx* Science and Technology Definition Team, March 2016-June 2019.
- Chair, Scientific Organizing Committee, Symposium in Celebration of Professor Steven M. Kahn's 60th Birthday, Stanford University, January 29-30, 2015.
- Member, Scientific Organizing Committee, COSPAR General Assembly, "Research In Astrophysics from Space", Session E1.4 'X-ray Spectroscopy of Large-scale Plasmas', Moscow, August 2-10, 2014.

- Member, Scientific Organizing Committee, Symposium in Celebration of Professor Edward A. Spiegel's Eightieth Birthday, Columbia University, May 2011
- Member, Executive Committee of the High Energy Astrophysics Division of the American Astronomical Society, February 2010-February 2013
- Member, *Electromagnetic Observations from Space* Program Prioritization Panel of the National Research Council *Astro2010* Decadal Survey of Astronomy and Astrophysics
- Member, *Astro-H* Science Working Group, February 2009-present
- Member, *International X-ray Observatory* Science Definition Team, September 2008-May 2012
- Member, Scientific Organizing Committee, conference on 'High resolution X-ray Spectroscopy: Past, Present, and Future', Utrecht University, the Netherlands, March 2010.
- Chair, Scientific Organizing Committee, conference on 'The Warm & Hot Universe', Columbia University, May 2008
- *Constellation-X* observatory Facility Science Team, chair of the science panel on 'Extreme states of matter', January 2008-August 2008.
- Member and Panel Chair, XMM-Newton X-ray Observatory Guest Investigator Program Peer Review Committee, 2007.
- Member, Chandra X-ray Observatory Guest Investigator Program Peer Review Committee, 2006.
- Chair, NASA High Energy Astrophysics Archival Research Center Users Committee (Fall 2005-current)
- Member, Chandra X-ray Observatory Guest Investigator Program Peer Review Committee, 2005.
- Member, Astro-E2 Users Committee (Spring 2005-current)
- Member, *XMM-Newton* Observatory Time Allocation Committee, November 2004
- Member, NASA 'Astrophysics and Physics Research and Analysis' program peer review, August, 2004
- Member, NASA 'Astrophysics and Physics Research and Analysis' program peer review, June, 2003
- Member, *XMM-Newton* Observatory Time Allocation Committee, June 2003
- Member, Scientific Organizing Committee, 'First *Constellation-X* Workshop on X-ray Spectroscopy', Columbia University, May 2003
- Chair, Chandra Fellowship Selection Committee, 2003
- Member, Chandra Fellowship Selection Committee, 2001.
- Member, Chandra X-ray Observatory Guest Investigator Program Peer Review Committee, 2000.
- Member, Chandra X-ray Observatory Users Committee, 2000-2003
- Member, Astro-E Guest Investigator Program Peer Review Committee, 1999.
- Member, Scientific Organizing Committee, X-ray Astronomy 1999, Bologna, September 1999.
- Member, Scientific Organizing Committee, First XMM Workshop, Noordwijk (NL), 1998.
- Member, X-ray Astrophysics Working Group for the X-ray Evolving Universe (XEUS) Observatory, 1999-
- Member, Emission Line Project for the Chandra X-ray Observatory Peer Review Committee, August 1999.

- Member, Advanced Satellite for Astrophysics and Cosmology Guest Investigator Program Peer Review Committees, 1993-1997.
- Delegate to US/Japan Merger Meeting, Joint Advanced Satellite for Astrophysics and Cosmology Guest Investigator Program Peer Review Committee, November 1994.
- Member, Rontgen Satellite Guest Investigator Program Peer Review Committees, 1993-1996.
- Member, NASA High Energy Astrophysics Archival Research Center Users' Group, 1993-1998.

Awards

- 2010 Presidential Award for Outstanding Teaching, Columbia University

Professional Affiliations and Memberships

- Member, American Astronomical Society
- Member, International Astronomical Union

Publications:**Frederik B. S. Paerels**

- 2024 A Prompt Search of the Galactic Plane for X-ray Scattering Halos Associated with Black Hole-Black Hole Merger Gravitational Wave Sources, Joheen Chakraborty, Frits Paerels, *et al.*, *in preparation*.
- 2023 X-ray Spectroscopy of Interstellar Carbon: Evidence for Scattering by Graphite in the spectrum of 1ES 1553+113, John Staunton and Frits Paerels, *Ap.J.*, **949**, 26.
- 2023 Systematic Uncertainties of Atomic Data in Photoionization Modeling, R. Ballhausen, T. R. Kallman, L. Gu, F. Paerels, *Ap.J.*, **956**, 65.
- 2022 Invited chapter on X-ray diffraction gratings in High Energy Astrophysics, in *Handbook of X-ray and Gamma-ray Astrophysics*, Cosimo Bambi and Andrea Santangelo (Eds.), Springer, 2022.
- 2021 The Voyage of Metals in the Universe from Cosmological to Planetary Scales: the need for a Very High-Resolution, High Throughput Soft X-ray Spectrometer, F. Nicastro *et al.*, *Experimental Astronomy*, **51**, 1013N.
- 2021 The High Resolution Soft X-ray Spectrum of Nova Delphini 2013, Johon Milla and Frits Paerels, *Ap.J.*, **943**, id 31.
- 2021 A High Resolution Fe X-ray Spectrum of Cygnus X-3, Aswath Suryanarayanan and Frits Paerels, *submitted*.
- 2020 Detecting and Locating Electromagnetic Counterparts to Gravitational Wave Sources Using Galactic Dust Scattering Halos, Richard Nederlander and Frits Paerels, *Astrophysical Journal*, **890**, 135.
- 2019 Photoionization Emission Models for the Cyg X-3 X-Ray Spectrum, Tim Kallman, Michael McCollough, K. Koljonen, Duane Liedahl, Jon Miller, Frits Paerels, G. Pooley, Masao Sako, Norbert Schulz, S. Trushkin, and Lia Corrales, *Astrophysical Journal*, **874**, 51.
- 2019 NuSTAR Observations of the Accreting Atolls GX 3+1, 4U 1702-429, 4U 0614+091, and 4U 1746-371, Renee Ludlam, Jon Miller, Didier Barret, Edward Cackett, B. M. Coughenour, T. Dauser, N. Degenaar, Javier Garca, Fiona Harrison, and F. Paerels, *Astrophysical Journal*, **873**, 99.
- 2019 Constraining Gas Motions in the Intra-Cluster Medium, Simionescu, Aurora, ZuHone, John, Zhuravleva, Irina, Churazov, Eugene, Gaspari, Massimo, Nagai, Daisuke, Werner, Norbert, Roediger, Elke, Canning, Rebecca, Eckert, Dominique, Gu, Liyi, Paerels, Frits, *Space Sci. Rev.*, **215**, 24.
- 2019 Shocks and Non-thermal Particles in Clusters of Galaxies, Bykov, A. M., Vazza, F., Kropotina, J. A., Levenfish, K. P., Paerels, F. B. S., *Space Sci. Rev.*, **215**, 14.
- 2018 Detection of polarized gamma-ray emission from the Crab nebula with the Hitomi Soft Gamma-ray Detector, F. Aharonian *et al.* (Hitomi Collaboration), *Publ. Astron. Soc. Japan*, **70**, 113.
- 2018 X-Ray Spectroscopy of Galaxy Clusters: Beyond the CIE Modeling, Gu, Liyi, Zhuravleva, Irina, Churazov, Eugene, Paerels, Frits, Kaastra, Jelle, Yamaguchi, Hiroya, *Space Sci. Rev.*, **214**, 108.
- 2018 Detection of the Missing Baryons in a Warm-Hot Intergalactic Medium, Fabrizio Nicastro, J. Kaastra, Y. Krongold, S. Borgani, E. Branchini, R. Cen, M. Dadina, C.W. Danforth, M. Elvis, F. Fiore, A. Gupta, S. Mathur, D. Mayya, F. Paerels, L. Piro, D. Rosa-Gonzalez, J. Schaye, J.M. Shull, J. Torres-Zafra, N. Wijers, and L. Zappacosta, *Nature*, **558**, 406.
- 2018 Hitomi X-ray observation of the pulsar wind nebula G21.5-0.9, F. Aharonian *et al.* (Hitomi Collaboration), *Publ. Astron. Soc. Japan*, **70**, 38.

- 2018 Search for gravitational redshifted absorption lines in LMXB Serpens X-1, Hiroki Yoneda, Chris Done, Frits Paerels, Tadayuki Takahashi, and Shin Watanabe, *Mon. Not. Royal Astron. Soc.*, **475**, 2194.
- 2018 The very faint X-ray binary IGR J17062-6143: a truncated disc, no pulsations, and a possible outflow, J. van den Eijnden *et al.*, *Mon. Not. Royal Astron. Soc.*, **475**, 2027.
- 2018 Glimpse of the highly obscured HMXB IGR J16318-4848 with Hitomi, F. Aharonian *et al.* (Hitomi Collaboration), *Publ. Astron. Soc. Japan*, **70**, 17.
- 2018 Hitomi observations of the LMC SNR N 132 D: Highly redshifted X-ray emission from iron ejecta, F. Aharonian *et al.* (Hitomi Collaboration), *Publ. Astron. Soc. Japan*, **70**, 16.
- 2018 Hitomi X-ray studies of giant radio pulses from the Crab pulsar, F. Aharonian *et al.* (Hitomi Collaboration), *Publ. Astron. Soc. Japan*, **70**, 15.
- 2018 Search for thermal X-ray features from the Crab nebula with the Hitomi soft X-ray spectrometer, F. Aharonian *et al.* (Hitomi Collaboration), *Publ. Astron. Soc. Japan*, **70**, 14.
- 2018 Hitomi observation of radio galaxy NGC 1275: The first X-ray microcalorimeter spectroscopy of Fe-K line emission from an active galactic nucleus, F. Aharonian *et al.* (Hitomi Collaboration), *Publ. Astron. Soc. Japan*, **70**, 13.
- 2018 Atomic data and spectral modeling constraints from high-resolution X-ray observations of the Perseus cluster with Hitomi, F. Aharonian *et al.* (Hitomi Collaboration), *Publ. Astron. Soc. Japan*, **70**, 12.
- 2018 Temperature structure in the Perseus cluster core observed with Hitomi, F. Aharonian *et al.* (Hitomi Collaboration), *Publ. Astron. Soc. Japan*, **70**, 11.
- 2018 Measurements of resonant scattering in the Perseus Cluster core with Hitomi SXS, F. Aharonian *et al.* (Hitomi Collaboration), *Publ. Astron. Soc. Japan*, **70**, 10.
- 2018 Atmospheric gas dynamics in the Perseus cluster observed with Hitomi, F. Aharonian *et al.* (Hitomi Collaboration), *Publ. Astron. Soc. Japan*, **70**, 9.
- 2017 A Hard Look at the Neutron Stars and Accretion Disks in 4U 1636-53, GX 17+2, and 4U 1705-44 with NuStar, R. M. Ludlam, J. M. Miller, M. Bacchetti, D. Barret, A. C. Bostrom, E. M. Cackett, N. Degenaar, T. Di Salvo, L. Natalucci, J. Tomsick, F. Paerels, M. L. Parker, *Astrophys. J.*, **836**, 140.
- 2017 Solar abundance ratios of the iron-peak elements in the Perseus cluster, F. Aharonian *et al.* (Hitomi Collaboration), *Nature*, **551**, 478.
- 2017 Discovery of Galactic O iv and O v X-ray absorption due to transition temperature gas in the PKS 2155-304 spectrum, J. Nevalainen, B. Wakker, J. Kaastra, M. Bonamente, S. Snowden, F. Paerels, and C. de Vries, *Astron. Astrophys.*, **605**, 47.
- 2017 An in-depth study of a neutron star accreting at low Eddington rate: on the possibility of a truncated disc and an outflow, N. Degenaar, C. Pinto, J. M. Miller, R. Wijnands, D. Altamirano, F. Paerels, A. C. Fabian, D. Chakrabarty, *Mon. Not. Royal Astr. Soc.*, **464**, 398.
- 2017 Hitomi constraints on the 3.5 keV line in the Perseus galaxy cluster, Hitomi Collaboration (F. Aharonian, H. Akamatsu, F. Akimoto *et al.*), *Astrophys. J. (Letters)*, **837**, L15.
- 2016 The quiescent intracluster medium in the core of the Perseus cluster, Hitomi Collaboration (F. Aharonian, H. Akamatsu, F. Akimoto *et al.*), *Nature*, **535**, 117.

- 2015 Flows of X-ray gas reveal the disruption of a star by a massive black hole, Jon M. Miller *et al.*, *Nature*, **526**, 542.
- 2015 The dust scattering halo of Cygnus X-3, Lia Corrales and Frits Paerels, *Mon. Not. Royal Astron. Soc.*, **453**, 1121.
- 2015 Calibration and In-orbit Performance of the Reflection Grating Spectrometer on board *XMM-Newton*, C. P. de Vries, J. W. den Herder, C. Gabriel, R. Gonzalez-Riestra, A. Ibarra, J. S. Kaastra, A. M. T. Pollock, A. J. J. Raassen, F. B. S. Paerels, *Astron. Astrophys.*, **573**, 128.
- 2014 ASTRO-H White Paper - Chemical Evolution in the High-z Universe, M. S. Tashiro *et al.*, arXiv 1412.1179
- 2014 ASTRO-H White Paper -High Resolution Spectroscopy of Interstellar and Circumgalactic Gas in the Milky Way and Other Galaxies, F. Paerels *et al.*, arXiv 1412.1174
- 2014 ASTRO-H White Paper - Low Mass X-ray Binaries, C. Done *et al.*, arXiv 1412.1164
- 2013 Constraints on the Neutron Star and Inner Accretion Flow in Serpens X-1 Using NuSTAR, J. Miller *et al.*, *Ap.J.*, **779**, L2.
- 2013 the Chandra View of the Warm-hot Intergalactic Medium toward 1ES 1553+113: I: Absorption-line Detections and Identifications, F. Nicastro *et al.*, *Ap. J.*, **769**, 90.
- 2012 A bright thermonuclear X-ray burst simultaneously observed with Chandra and RXTE, J. in 't Zand, D. Galloway, H. Marshall, D. Ballantyne, P. Jonker, F. Paerels, D. Palmer, A. Patruno, N. Weinberg, *Astron. Astrophys.*, **553**, 83.
- 2012 ORIGIN: metal creation and evolution from cosmic dawn, J. den Herder *et al.*, *Exp. Astronomy*, **34**, 519.
- 2012 Cosmological X-ray scattering from intergalactic dust, L. Corrales & F. Paerels, *Ap. J.*, **751**, 93.
- 2011 The metal content of two groups of galaxies, Y. Grange, J. de Plaa, J. Kaastra, N. Werner, F. Verbunt, F. Paerels, C. de Vries, *Astron. Astrophys.*, **531**, 15.
- 2011 Studying the Warm-hot Intergalactic Medium in Emission, Y. Takei *et al.*, *Ap.J.*, **734**, 91.
- 2010 X-ray Diffraction Gratings for Astrophysics, Frits Paerels, *Space Science Reviews*, **157**, 15.
- 2010 The Astro-H Mission, T. Takahashi *et many al.*, *Proc. SPIE*, **7732**, 77320Z.
- 2009 HDE 245059: A Weak-Lined T Tauri Binary Revealed by Chandra and Keck, C. Baldwin-Saavedra, M. Audard, G. Duchne, M. Gdel, S.L. Skinner, F. B. S. Paerels, A. Ghez and C. McCabe, *Ap.J.*, **697**, 493.
- 2009 Studying the Warm-Hot Intergalactic Medium with Gamma-Ray Bursts, E. Branchini, E. Ursino, A. Corsi, D. Martizzi, L. Amati, J. W. den Herder, M. Galeazzi, B. Gendre, J. Kaastra, L. Moscardini, F. Nicastro, T. Ohashi, F. Paerels, L. Piro, M. Roncarelli, Y. Takei and M. Viel, *Ap.J.*, **697**, 328.
- 2009 Properties of the Ionised Plasma in the Vicinity of the Neutron Star X-ray Binary EXO0748-676, J. C. A. van Peet, E. Costantini, M. Méndez, F. B. S. Paerels, J. Cottam, *Astron. Astrophys.*, **497**, 805.
- 2009 Effective area calibration of the reflection grating spectrometers of XMM-Newton. II. X-ray spectroscopy of DA white dwarfs, J. S. Kaastra, T. Lanz, I. Hubeny, F. B. S. Paerels, *Astron. Astrophys.*, **497**, 311.

- 2009 EDGE: Explorer of diffuse emission and gamma-ray burst explosion, L. Piro , J. W. den Herder, T. Ohashi L. Amati, J. L. Atteia, S. Barthelmy, M. Barbera, D. Barret, *and 109 co-authors*, *Experimental Astronomy*, **23**, 67.
- 2009 X-ray Spectroscopy of the Warm-Hot Intergalactic Medium, Frits Paerels , J.-W. den Herder , T. Ohashi , M. Bautz , G. Bryan , D. Buote , A. Bykov , C. Canizares , T. Fang , M. Galeazzi , J. Kaastra , F. Nicastro , M. Putman , A. Rasmussen , M. Schattenburg , J. Schaye , D. Schiminovich , Y. Takei , N. Werner, *Astro2010: The Astronomy and Astrophysics Decadal Survey*, Science White Papers, no. 231
- 2009 The Behavior of Matter Under Extreme Conditions, F. Paerels , M. Méndez , M. Agueros , M. Baring , D. Barret , S. Bhattacharyya , E. Cackett , J. Cottam , M. Díaz Trigo , D. Fox , M. Garcia , E. Gotthelf, W. Hermsen , W. Ho , K. Hurley , P. Jonker , F. Özel, G. Pavlov , R. Rutledge , R. Smith , L. Stella , T. Strohmayer , H. Tananbaum , P. Uttley, M. van Kerkwijk , M. Weisskopf , S. Zane, *Astro2010: The Astronomy and Astrophysics Decadal Survey*, Science White Papers, no. 230
- 2009 Solid State Astrophysics: Probing Interstellar Dust and Gas Properties with X-rays, Julia C. Lee, Randall K. Smith, C. R. Canizares, E. Costantini, C. de Vries, J. Drake, E. Dwek, R. Edgar, A. M. Juett, A. Li, C. Lisse, F. Paerels, D. Patnaude, B. Ravel, N. S. Schulz, T. P. Snow, L. A. Valencic, J. Wilms, J. Xiang, *Astro2010: The Astronomy and Astrophysics Decadal Survey*, Science White Papers, no. 178
- 2009 Fundamental Accretion and Ejection Astrophysics, J. Miller, M. Nowak, P. Nandra, N. Brandt, G. Matt, M. Cappi, G. Risaliti, S. Kitamoto, F. Paerels. M. Watson, R. Smith, M. Weisskopf, Y. Terashima, Y. Ueda, *Astro2010: The Astronomy and Astrophysics Decadal Survey*, Science White Papers, no. 208
- 2009 Stellar-Mass Black Holes and Their Progenitors, J. Miller, P. Uttley, K. Nandra, D. Barret, G. Matt, F. Paerels, M. Méndez, M. Díaz Trigo, M. Cappi, S. Kitamoto, M. Nowak, J. Wilms, R. Rothschild, R. Smith, M. Weisskopf, Y. Terashima, Y. Ueda, *Astro2010: The Astronomy and Astrophysics Decadal Survey*, Science White Papers, no. 207
- 2009 Spin and Relativistic Phenomena Around Black Holes, L. Brenneman, J. Miller, P. Nandra, M. Volonteri, M. Cappi, G. Matt, S. Kitamoto, F. Paerels, M. Mendez, R. Smith, M. Nowak, M. Garcia, M. Watson, M. Weisskopf, Y. Terashima, Y. Ueda, *Astro2010: The Astronomy and Astrophysics Decadal Survey*, Science White Papers, no. 26
- 2008 Clusters of Galaxies: Beyond the Thermal View, J. Kaastra, A. M. Bykov, S. Schindler, J. Bleeker, S. Borgani, A. Diaferio, K. Dolag, F. Durret, J. Nevalainen, T. Ohashi, F. Paerels, V. Petrosian, R. Rephaeli, P. Richter, J. Schaye, N. Werner, N., *Space Sci. Rev.*, 2-13-2008.
- 2008 FUV and X-Ray Absorption in the Warm-Hot Intergalactic Medium, P. Richter, F. Paerels, J. Kaastra, *Space Sci. Rev.*, 2-13-2008.
- 2008 Future Instrumentation for the Study of the Warm-Hot Intergalactic Medium, F. Paerels, J. Kaastra, T. Ohashi, P. Richter, A. M. Bykov, J. Nevalainen, *Space Sci. Rev.*, 2-13-2008.
- 2008 Thermal Radiation Processes, J. Kaastra, F. Paerels, F. Durret, S. Schindler, P. Richter, *Space Sci. Rev.*, 2-13-2008.
- 2008 Equilibration Processes in the Warm-Hot Intergalactic Medium, A. M. Bykov, F. Paerels, V. Petrosian, *Space Sci. Rev.*, 2-13-2008.

- 2007 Nondetection of Gravitationally Redshifted Absorption Lines in the X-Ray Burst Spectra of GS 1826-24, A. K. H. Kong, J. M. Miller, M. Mndez, J. Cottam, W. H. G. Lewin, F. Paerels, E. Kuulkers, R. Wijnands, M. van der Klis, *Ap.J.*, **670**, L17.
- 2007 The Burst Spectra of EXO 0748-676 during a Long 2003 XMM-Newton Observation, J. Cottam, F. Paerels, M. Mndez, L. Boirin, W. H. G. Lewin, E. Kuulkers, J. M. Miller, J. M., *Ap.J.*, **672**, 504.
- 2007 A Mid-Infrared Spitzer Study of the Herbig Be Star R Mon and the Associated HH 39 Herbig-Haro Object, M. Audard, S. Skinner, M. Güdel, T. Lanz, F. Paerels, H. Arce, *in press*; astro-ph/0701906
- 2007 Evidence for the importance of resonance scattering in X-ray emission line profiles of the O star ζ Puppis, Maurice A. Leutenegger, Stanley P. Owocki, Steven M. Kahn, Frits B. S. Paerels, *Ap. J.*, **659**, 642.
- 2007 A possible dearth of hot gas in galaxy groups at intermediate redshift, D. Spiegel, F. Paerels, C. Scharf, *Ap.J.*, **658**, 288.
- 2007 Discovery of X-ray burst triplets in EXO 0748-676, L. Boirin, L. Keek, M. Mendez, A. Cumming, J. in 't Zand, J. Cottam, F. Paerels, W. Lewin, *Astron. Astrophys.*, **465**, 559.
- 2007 On the Putative Detection of $z > 0$ X-ray Absorption Features in the Spectrum of Markarian 421, Andrew P. Rasmussen, Steven M. Kahn, Frits Paerels, Jan Willem den Herder, Jelle Kaastra, Cor de Vries, *Ap. J.*, **656**, 129.
- 2006 NEW: a mission to explore the warm-hot intergalactic medium, Jan Willem den Herder, Jelle S. Kaastra, Frits B. S. Paerels, Piet A. J. de Korte, Lucien Kuiper, Henk F. C. Hoevers, Wim Hermsen, Mariano Mendez, Steven M. Kahn, Andrew P. Rasmussen, *Proc. SPIE*, **6266**, 13.
- 2006 The O VII X-ray forest toward Markarian 421: Consistency between XMM-Newton and Chandra, J.S. Kaastra, N. Werner, J.W.A. den Herder, F.B.S. Paerels, J. de Plaa, A.P. Rasmussen, C.P. de Vries, *Ap. J.*, **652**, 189.
- 2006 Measurements and analysis of helium-like triplet ratios in the X-ray spectra of O-type stars, Maurice A. Leutenegger, Frits B. S. Paerels, Steven M. Kahn, David H. Cohen, *Ap. J.*, **650**, 1096.
- 2006 X-ray Spectral Study of the Photoionized Stellar Wind in Vela X-1, Shin Watanabe, Masao Sako, Manabu Ishida, Yoshitaka Ishisaki, Steven M. Kahn, Takayoshi Kohmura, Fumiaki Nagase, Fredrik Paerels, Tadayuki Takahashi, *Ap. J.*, **651**, 421.
- 2006 A Direct Upper Limit on the Density of Cosmological Dust from the Absence of an X-ray Scattering Halo around the $z=4.3$ QSO 1508+5714, A. O. Petric, G. A. Telis, F. Paerels, D. J. Helfand, *Ap. J.*, **651**, 41.
- 2005 Tentative detection of warm intervening gas towards *PKS0548 – 322* with XMM-Newton, X. Barcons, F. B. S. Paerels, F. J. Carrera, M. T. Ceballos, M. Sako, *Astron. Astrophys.*, *Mon. Not. Royal Astron. Soc.*, **359**, 1459.
- 2005 Non-LTE Model Atmosphere Analysis of the Large Magellanic Cloud Supersoft X-Ray Source CAL 83, Thierry Lanz, Gisela A. Telis, Marc Audard, Frits Paerels, Andrew P. Rasmussen, Ivan Hubeny, *Ap. J.*, **619**, 517.
- 2005 X-Ray/Ultraviolet Observing Campaign of the Markarian 279 Active Galactic Nucleus Outflow: A Global-Fitting Analysis of the Ultraviolet Absorption, Gabel, Jack R., Arav, Nahum, Kaastra, Jelle S., Kriss, Gerard A., Behar, Ehud, Costantini, Elisa, Gaskell, C. Martin, Korista, Kirk T., Laor, Ari, Paerels, Frits, *Ap. J.*, **623**, 85.

- 2005 An XMM-Newton Study of the Coronae of sigma2 Coronae Borealis, Suh, Jin A., Audard, Marc, Gdel, Manuel, Paerels, Frederik B. S., *Ap.J.*, **630**, 1074.
- 2005 XMM-Newton observations of the heavily absorbed Seyfert 1 galaxy IC 4329A, Steenbrugge, K. C., Kaastra, J. S., Sako, M., Branduardi-Raymont, G., Behar, E., Paerels, F. B. S., Blustin, A. J., Kahn, S. M., *Astron. Astrophys.*, **432**, 453.
- 2005 The temperature structure in the core of Srsic 159-03, de Plaa, J., Kaastra, J. S., Mndez, M., Tamura, T., Bleeker, J. A. M., Peterson, J. R., Paerels, F. B. S., Bonamente, M., Lieu, R., *Adv. Space Res.*, **36**, 601.
- 2004 A Strong, Broad Absorption Feature in the X-ray Spectrum of the Nearby Neutron Star RX J1605.3 + 3249, M. H. van Kerkwijk, D. L. Kaplan, M. Durant, S. R. Kulkarni, F. Paerels, *Ap. J.*, **608**, 432.
- 2004 Detecting the warm-hot intergalactic medium, Jan Willem den Herder, Frits B. S. paerels, Andrew Rasmussen, Marcel Bruijn, henk Hoeffers, Jelle S. Kaastra, Steven M. Kahn, Piet A. de Korte, Caleb Scharf, Proc. SPIE, **5488**, 922.
- 2004 Spatially resolved X-ray Spectroscopy of Cooling Clusters of Galaxies, J. S. Kaastra, T. Tamura, J. R. Peterson, J. A. M. Bleeker, C. Ferrigno, S. M. Kahn, F. B. S. Paerels, R. Piffaretti, G. Branduardi-Raymont, H. Böhringer, *Astron. Astrophys.*, **415**, 413.
- 2004 Chandra Phase-Resolved Spectroscopy of the Crab Pulsar, Martin C. Weisskopf, Stephen L. O'Dell, Frits Paerels, Werner Becker, Allyn F. Tennant, Douglas A. Swartz, *Ap. J.*, **601**, 1050.
- 2003 An X-ray jet discovered by Chandra in the $z = 4.3$ radio-selected quasar GB1508+5714, Aneta Siemiginowska, Randall K. Smith, Thomas L. Aldcroft, D.A. Schwartz, Frederik Paerels, Andreea O. Petric, *Ap. J.*, **598**, L15.
- 2003 Detection of a Fully Resolved Compton Shoulder of the Iron Ka Line in the Chandra X-Ray Spectrum of GX 301-2, S. Watanabe, M. Sako, M. Ishida, Y. Ishisaki, S. M. Kahn, T. Kohmura, U. Morita, F. Nagase, F. Paerels, T. Takahashi, *Ap. J.*, **597**, L37.
- 2003 High Resolution Astrophysical X-ray Spectroscopy with *Chandra* and *XMM-Newton*, F. B. S. Paerels and S. M. Kahn, *Ann. Rev. Astron. Astrophys.*, **41**, 291.
- 2003 Can a Dusty Warm Absorber Model Reproduce the Soft X-ray Spectra of MCG-6-30-15 and Mrk 766? M. Sako, S. M. Kahn, G. Branduardi-Raymont, J. S. Kaastra, A. C. Brinkman, M. J. Page, E. Behar, F. Paerels, A. Kinkhabwala, D. A. Liedahl, J. W. den Herder, *Ap.J.*, **596**, 114.
- 2003 Atomic Spectral Features during Thermonuclear Flashes on Neutron Stars, Lars Bildsten, Philip Chang, Frits Paerels, *Ap. J.*, **591**, L29.
- 2003 The interstellar oxygen-K absorption edge as observed by *XMM-Newton* and *Chandra*, C. P. de Vries, A. J. den Boggende, J. W. denHerder, J. S. Kaastra, F. B. Paerels, A. P. Rasmussen, *Astron. Astrophys.*, **404**, 959.
- 2003 High-Resolution X-Ray Spectroscopic Constraints on Cooling-Flow Models for Clusters of Galaxies, J. R. Peterson, S. M. Kahn, F. B. S. Paerels, J. S. Kaastra, T. Tamura, J. A. M. Bleeker, C. Ferrigno, J. G. Jernigan, *Ap. J.*, **590**, 207.
- 2003 High-Resolution Grating Spectroscopy of GRB 020405 with the Chandra Low Energy Transmission Grating Spectrometer, N. Mirabal, F. Paerels, J. Halpern, *Ap. J.*, **587**, 128.
- 2003 Two Types of X-Ray Spectra in Cataclysmic Variables, K. Mukai, A. Kinkhabwala, J. R. Peterson, S. M. Kahn, F. Paerels, *Ap. J.*, **586**, L77.

- 2003 Performance and results of the reflection grating spectrometers onboard XMM-Newton, J.-W. den Herder, A. C. Brinkman, S. M. Kahn, G. Branduardi-Raymont, M. Audard, E. Behar, A. Blustin, A. J. F. den Bogge, J. Cottam, C. Erd, C. Gabriel, M. Guedel, K. van der Heyden, J. S. Kaastra, A. Kinkhabwala, M. Leutenegger, R. Mewe, F. Paerels, A. J. J. Raassen, J. R. Peterson, A. Pollock, A. P. Rasmussen, M. Sako, M. Santos-Lleo, K. Steenbrugge, T. Tamura, C. P. de Vries, *Proc. SPIE*, **4851**, 196.
- 2003 XMM-Newton confirmation of soft X-ray excess emission in clusters of galaxies - The discovery of O VII emission from an extended warm baryonic component, J. S. Kaastra, R. Lieu, T. Tamura, F. Paerels, J.-W. den Herder, *Astron. Astrophys.*, **397**, 445.
- 2003 Resolving the Effects of Resonant X-Ray Line Scattering in Centaurus X-3 with Chandra, P. S. Wojdowski, D. A. Liedahl, M. Sako, S. M. Kahn, F. Paerels, *Ap. J.*, **582**, 959.
- 2003 X-ray Absorption and Emission Spectroscopy of the Intergalactic Medium at Small Redshift, F. Paerels, A. Rasmussen, S. M. Kahn, J.-W. den Herder, C. de Vries, Proceedings of an international workshop at MPE Garching, XEUS - studying the evolution of the hot Universe, Th. Boller (ed.), MPE Report 281, 57
- 2002 Gravitationally redshifted absorption lines in the burst spectra of the neutron star in the X-ray binary EXO 0748-676, J. Cottam, F. Paerels, M. Mendez, *Nature*, **420**, 51.
- 2002 High Resolution Observations of the Elliptical Galaxy NGC 4636 with the Reflection Grating Spectrometer On-Board XMM-Newton, H. Xu, S. M. Kahn, J. R. Peterson, E. Behar, F. Paerels, R. F. Mushotzky, J. G. Jernigan, & K. Makishima, *Ap.J.*, **579**, 600.
- 2002 The Soft X-ray Spectrum of NGC 1068 Observed with LETGS on Chandra, A. C. Brinkman, J. S. Kaastra, R. L. J. van der Meer, D. A. Kinkhabwala, E. Behar, F. Paerels, S. M. Kahn, & M. Sako, *Astron. Astrophys.*, **396**, 761.
- 2002 Discrete Soft X-ray Line Emission from NGC 1068, A. Kinkhabwala, M. Sako, E. Behar, F. Paerels, S. M. Kahn, A. C. Brinkman, J. S. Kaastra, & D. A. Liedahl, *Ap.J.*, **575**, 732.
- 2002 Evidence for a Heated Gas Bubble inside the "Cooling Flow" Region of MKW 3s, P. Mazzotta, J. S. Kaastra, F. B. Paerels, C. Ferrigno, S. Colafrancesco, R. Mewe, & W. R. Forman, *Ap.J.*, **567**, L37
- 2002 High Resolution Soft X-ray Spectroscopy of M87 with the Reflection Grating Spectrometers on XMM-Newton, I. Sakelliou, J. R. Peterson, T. Tamura, F. Paerels, J. Kaastra, E. Belsole, H. Bohringer, G. Branduardi-Raymont, C. Ferrigno., J. W. den Herder, J. Kennea, R. F. Mushotzky, W. Vestrand, & D. Worrall, *Astron. Astrophys.*, **391**, 903.
- 2001 High Resolution X-ray Spectroscopy of the Accretion Disk Corona Source 4U1822-37, Jean Cottam, Masao Sako, Steven M. Kahn, Frits Paerels, Duane A. Liedahl, *Ap.J.*, **557**, L101
- 2001 Discovery of X-ray Emission from the Crab Pulsar at Pulse Minimum, Allyn F. Tennant, Werner Becker, Michael Juda, Ronald F. Elsner, Jeffery J. Kolodziejczak, Stephen S. Murray, Stephen L. O'Dell, Frits Paerels, Douglas A. Swartz, Noriaki Shibazaki, and Martin C. Weisskopf, *Ap.J.*, **554**, L173.
- 2001 First Light measurement with the XMM-Newton Reflection Grating Spectrometers: evidence for an Inverse First Ionization Potential Effect, and anomalous abundances in the coronae of HR1099, A. C. Brinkman, E. Behar, M. Gudel, M. Audard, A. den Bogge, G. Branduardi-Raymont, J.

- Cottam, C. Erd, J. W. den Herder, F. Jansen, J. S. Kaastra, S. M. Kahn, R. Mewe, F. Paerels, J. R. Peterson, A. P. Rasmussen, I. Sakelliou, C. de Vries, *Astron. Astrophys.*, **365**, L324.
- 2001 Detection of X-ray line emission from the shell of PSR B0540-69.3 with *XMM-Newton RGS*, K. J. van der Heyden, J. Cottam, F. Paerels, J. S. Kaastra, G. Branduardi-Raymont, *Astron. Astrophys.*, **365**, L254.
- 2001 The Reflection Grating Spectrometer on board *XMM-Newton*, J. W. den Herder, A. C. Brinkman, S. M. Kahn, G. Branduardi-Raymont, K. Thomson, H. Aarts, M. Audard, J. V. Bixler, A. den Boggende, J. Cottam, T. Decker, L. Dubbeldam, C. Erd, H. Goulooze, M. Gudel, P. Guttridge, C. J. Hailey, K. Al Janabi, J. S. Kaastra, P. A. J. de Korte, B. J. van Leeuwen, C. Mauche, A. McCalden, R. Mewe, A. Naber, F. Paerels, J. R. Peterson, A. P. Rasmussen, K. Rees, I. Sakelliou, M. Sako, J. Spodek, M. Stern, T. Tamura, J. Tandy, C. de Vries, S. Welch, A. Zehnder, *Astron. Astrophys.*, **365**, L7.
- 2001 The variable *XMM-Newton* spectrum of Markarian 766, M. J. Page, K. O. Mason, Th. Boller, F. J. Carrera, J. S. Kaastra, H. Brunner, J. Clavel, C. Ferrigno, I. M. George, F. Paerels, K. A. Pounds, E. M. Puchnarewicz, M. Santos-Lleo, S. P. Trudolyubov, *Astron. Astrophys.*, **365**, L152.
- 2001 *XMM-Newton* Observations of the Lockman Hole, G. Hasinger, B. Altieri, K. Dennerl, M. Arnaud, X. Barcons, J. Bergeron, H. Brunner, M. Dadina, K. Denneri, P. Ferrando, A. Finoguenov, R. E. Griffiths, Y. Hashimoto, F. A. Jansen, D. H. Lumb, K. O., S. Mateos, R. G. McMahon, T. Miyaji, F. Paerels, M. J. Page, A. F. Ptak, T. Sasseen, N. Schartel, G. P. Szokoly, J. Trumper, M. Turner, R. S. Warwick, M. G. Watson, *Astron. Astrophys.*, **365**, L45.
- 2001 *XMM-Newton* Observations of the cluster of galaxies Sersic 159-03, J. S. Kaastra, C. Ferrigno, T. Tamura, F. B. S. Paerels, J. R. Peterson, J. P. D. Mittaz, *Astron. Astrophys.*, **365**, L99.
- 2001 X-ray Spectroscopy of the cluster of galaxies Abell 1795 with *XMM-Newton*, T. Tamura, J. S. Kaastra, J. R. Peterson, F. Paerels, J. P. D. Mittaz, S. P. Trudolyubov, G. Stewart, A. C. Fabian, R. F. Mushotzky, D. H. Lumb, Y. Ikebe, *Astron. Astrophys.*, **365**, L87.
- 2001 X-ray Imaging Spectroscopy of Abell 1835, J. R. Peterson, F. B. S. Paerels, J. S. Kaastra, M. Arnaud, T. H. Reiprich, A. C. Fabian, R. F. Mushotzky, J. G. Jernigan, I. Sakelliou, *Astron. Astrophys.*, **365**, L104.
- 2001 A High Resolution Spectroscopic Observation of CAL 83 with *XMM-Newton/RGS*, Frits Paerels, Andrew P. Rasmussen, H. W. Hartmann, J. Heise, A. C. Brinkman, C. P. de Vries, and J.-W. den Herder, *Astron. Astrophys.*, **365**, L303.
- 2001 First *XMM-Newton* observations of an isolated neutron star: RXJ0720.4-3125, Frits Paerels, Kaya Mori, Christian Motch, Frank Haberl, Vyacheslav E. Zavlin, Silvia Zane, Gavin Ramsay, Mark Cropper, and Bert Brinkman, *Astron. Astrophys.*, **365**, L298.
- 2001 Interstellar X-ray Absorption Spectroscopy of Oxygen, Neon, and Iron with the *Chandra* LETGS Spectrum of X0614+091, Frits Paerels, A. C. Brinkman, R. L. J. van der Meer, J. S. Kaastra, E. Kuulkers, A. J. F. den Boggende, P. Predehl, Jeremy J. Drake, and Brendan M. McLaughlin, *Ap.J.*, **546**, 338.
- 2000 The *Chandra* High-Energy Transmission Grating Observation of an X-Ray Ionization Cone in Markarian 3, Masao Sako, Steven M. Kahn, Frits Paerels, and Duane A. Liedahl, *Ap.J.*, **543**, L115.

- 2000 The Physical Conditions in the X-ray Emission Line Regions in the Circinus Galaxy, Masao Sako, Steven M. Kahn, Frits Paerels, and Duane A. Liedahl, *Ap.J.*, **542**, 684.
- 2000 Description and performance of the Reflection Grating Spectrometer on Board *XMM-Newton*, J. W. den Herder, A. den Boggende, G. Branduardi-Raymont, A. C. Brinkman, J. Cottam, L. Dubbeldam, C. Erd, M. Guedel, J. Kaastra, S. M. Kahn, R. Mewe, F. Paerels, A. Rasmussen, I. Sakelliou, J. Spodek, K. Thomson, and C. de Vries, *Proc. SPIE*, in press.
- 2000 *Chandra* measurement of the geometrical distance to Cyg X-3 using its X-ray scattering halo, P. Predehl, V. Burwitz, F. Paerels, and J. Trumper, *Astron. Astrophys.*, **357**, L25
- 2000 High Resolution Spectroscopy of the X-ray Photoionized Wind in Cygnus X-3 with the *Chandra* High Energy Transmission Grating Spectrometer, Frits Paerels, Jean Cottam, Masao Sako, Duane A. Liedahl, A. C. Brinkman, R. L. J. van der Meer, J. S. Kaastra, and P. Predehl, *Ap.J. (Letters)*, **533**, L135.
- 2000 X-ray Spectral Diagnostic of Gamma-Ray Burst Environments, Frits Paerels, Erik Kuulkers, John Heise, and Duane A. Liedahl, *Ap.J. (Letters)*, **535**, L25.
- 2000 First Light Measurements of Capella with the Low Energy Transmission Grating Spectrometer aboard the *Chandra* X-ray Observatory, A. C. Brinkman, C. J. T. Gunsing, J. S. Kaastra, R. L. J. van der Meer, R. Mewe, F. Paerels, A. J. J. Raassen, J. J. van Rooijen, H. Brauniger, W. Burkert, V. Burwitz, G. Hartner, P. Predehl, J.U. Ness, J. H. M. M. Schmitt, J. J. Drake, O. Johnson, M. Juda, V. Kashyap, S. S. Murray, D. Pease, P. Ratzlaff, B. J. Wargelin, *Ap.J. (Letters)*, **530**, L111.
- 1999 The X-Ray Spectrum and Global Structure of the Stellar Wind in Vela X-1, Masao Sako, Duane A. Liedahl, Steven M. Kahn, and Frits Paerels *Ap.J.*, **525**, 921.
- 1998 High Resolution Spectroscopy with XMM, Paerels, F., Brinkman, A. C., den Herder, J.-W., de Vries, C., den Boggende, A. J. F., Mewe, R., Kaastra, J., Kahn, S. M., Rasmussen, A., Decker, T., Stern, M., Cottam, J., Spodek, J., Branduardi-Raymont, G., Guedel, M., Liedahl, D., Erd, C., Proceedings First XMM Workshop, October 31-November 2, 1998, Estec, the Netherlands (<http://astro.estec.esa.nl/XMM/xmm.top.html>).
- 1998 Future X-ray Spectroscopy Missions, in *X-ray Spectroscopy*, Proceedings of the European Astrophysics Doctoral Network Tenth Summer School, J. van Paradijs (Ed.) (Springer).
- 1997 A Recalibration of the Diffraction Efficiency of the Transmission Grating Spectrometers on *EXOSAT*, Paerels, F., Wolkovitch, D. N., and Kahn, S. M. K., *Ap.J.*, **496**, 473.
- 1997 Properties and Spectroscopic Implications of Thermal Instability in X-ray Binary and Active Galactic Nuclei Accretion Flows, Hess, Cynthia J., Kahn, Steven M., and Paerels, F. B. S., *Ap.J.*, **478**, 94.
- 1997 Pressure Broadening of Absorption Lines in Neutron Star Atmospheres and Prospects for Measuring Neutron Star Masses and Radii, Paerels, F., *Ap.J. (Letters)*, **476**, L47.
- 1996 Reflection Grating Spectrometer on Board XMM, Brinkman, A. C., Aarts, H. J., den Boggende, A. J., Bootsma, T. M., Dubbeldam, L., den Herder, J. W., Kaastra, J., de Korte, P., van Leeuwen, B. J., Mewe, R., van Zwet, E. J., Decker, T. A., Hailey, C. J., Kahn, S. M., Paerels, F., Pratuch, S., Rasmussen, A., Branduardi-Raymont, G., Guttridge, P., Bixler, J., Thomsen, K., Zehnder, A., Erd, C., *Proc.SPIE*, 2808, 463.
- 1996 Reflection Grating Arrays for the Reflection Grating Spectrometer on Board XMM, Kahn, S. M., Cottam, J., Decker, T., Paerels, F., Pratuch, S., Rasmussen, A., Spodek, J., Bixler, J., Brinkman, A., den Herder, J. W., Erd, C., *Proc. SPIE*, 2808, 450.

- 1996 Photoionization Driven X-ray Line Emission in Cygnus X-3, Liedahl, D. A., and Paerels, F., *Ap.J. (Letters)*, **468**, 33L.
- 1996 *ASCA* Observations of the Magnetic Cataclysmic Variable BY Cameleopardalis, Kallman, T., Mukai, K., Schlegel, E. M., and Paerels, F. B. S., *Ap.J.*, **466**, 884.
- 1996 X-ray Spectroscopy with the Reflection Grating Spectrometer on-board of XMM, Brinkman, A., Aarts, H., den Boggende, A., Dubbeldam, L., den Herder, J. W., Kaastra, J., de Korte, P., Mewe, R., Hailey, C., Kahn, S. M., Paerels, F., Branduardi-Raymont, G., Bixler, J., Thomsen, K., and Zehnder, A., in *"Röntgenstrahlung from the Universe"*, Zimmermann, U., Trümper, J., and Yorke, H. (Eds.), (Max Planck Institut für Extraterrestrische Physik; München).
- 1995 Extreme Ultraviolet Spectroscopy of Magnetic Cataclysmic Variables, Paerels, F., Hur, M.-Y., and Mauche, C. W., in: 'Astrophysics in the Extreme Ultraviolet', Proc. IAU Colloquium 152, ed. S. Bowyer and B. Haisch (Cambridge: CUP)
- 1995 Extreme Ultraviolet Spectroscopy of the White Dwarf Photosphere in AM Herculis, Paerels, F., Hur, M. Y., Mauche, C., and Heise, J., *Ap.J.*, **464**, 884.
- 1995 Neon Line Emission in the X-ray Spectrum of the Pulsar 4U1626-67, Angelini, L. White, N., Nagase, F., Kallman, T., Yoshida, A., Takeshima, T., Becker, C., and Paerels, F., *Ap.J. (Letters)*, **449**, 41L.
- 1995 Luminous Supersoft X-ray Sources and the Planetary Nebula Luminosity Function, Di Stefano, R., Paerels, F., and Rappaport, S., *Ap.J.*, **705**, 240.
- 1994 Modeling and Analysis of X-ray Emission Line Images Acquired with a Prototype Model of the XMM Reflection Grating Spectrometer, Paerels, F. B. S., Bixler, J. V., den Herder, J. W., Hailey, C. J., Kahn, S. M., and Mauche, C. W., Proc. SPIE, **2283**, 107.
- 1994 Integrated X-ray Testing of the Electro-optical Breadboard Model for the X-ray Multimirror Mission (XMM) Reflection Grating Spectrometer, Bixler, J., Aarts, H., Burkert, W., den Boggende, A., Branduardi-Raymont, G., Bräuniger, H., Brinkman, A., Craig, W., Decker, T., Dubbeldam, L., Erd, C., Hailey, C., den Herder, J. W., Jansen, F., Kahn, S. M., de Korte, P., Mauche, C., Paerels, F., and Thomsen, K., Proc.SPIE, **2280**, 418.
- 1994 Reflection Grating Spectrometer onboard the ESA X-ray Multi-Mirror (XMM) Mission, den Herder, J. W., Aarts, H., van den Berg, M., Bixler, J., den Boggende, A., Branduardi-Raymont, G., Brinkman, A., Decker, T., Dubbeldam, L., Hailey, C., Jansen, F., Kahn, S. M., de Korte, P., Mauche, C., Montesanti, R., Paerels, F., Spruijt, H., Thomsen, K., Verhoeve, P., and Zehnder, A., Proc. SPIE, **2209**, 451.
- 1994 Simultaneous Soft and Hard X-ray Spectroscopy of AM Herculis with *EXOSAT*: Discovery of Photospheric Absorption Features, Paerels, F., Heise, J., and van Teeseling, A., *Ap.J.*, **426**, 313.
- 1994 The interpretation of Soft X-ray Emission Lines in the Spectra of Accretion Powered Sources: the Effects of Thermal Stability, Hess, C. J., Paerels, F., Kahn, S. M., Liedahl, D. A., and Rogers, R. D., in: 'The Evolution of X-ray Binaries', Proc. 4th Annual October Astrophysics Conference, eds. S. S. Holt and C. S. Day (New York: AIP).
- 1994 X-ray Irradiation of White Dwarf Atmospheres: the Soft X-ray Spectrum of AM Herculis, van Teeseling, A., Heise, J., and Paerels, F., *Astron. Astrophys.*, **281**, 119.
- 1993 BBXRT Observations of the Magnetic Cataclysmic Variable H0538+608 BY Cam, Kallman T. R., Schlegel, E. M., Serlemitsos, P. R., Petre, R. Marshall, F., Jahoda K., Boldt E. A., Holt S. S.,

- Mushotzky, R. F., Swank, J., Szymkowiak, A. E., Kelley, R. E., Smale, A., Arnaud, K., Weaver, K., and Paerels F. B. S., *Ap.J.*, **411**, 869.
- 1991 Bowen Fluorescence in AM Herculis Stars, Schachter, J., Filippenko, A. V., Kahn, S. M., and Paerels, F. B. S., *Ap.J.*, **373**, 633.
- 1991 On the X-ray-Emitting Boundary Layer of the Dwarf Nova VW Hydri, Mauche, C. W., Wade, R. A., Polidan, R. S., van der Woerd, H., and Paerels, F. B. S., *Ap.J.*, **372**, 659.
- 1991 Results of High Resolution Soft X-ray/EUV Spectroscopy of Hot White Dwarfs with EXOSAT, Paerels, F., and Heise, J., in *Proceedings of the Berkeley Colloquium on EUV Astronomy*, ed. R. F. Malina and S. Bowyer, (New York: Pergamon).
- 1991 Design and Analysis of the Reflection Grating Arrays for the X-ray Multi-Mirror Mission (XMM), Atkinson, D., Bixler, J., Geraghty, P., Hailey, C., Klingmann, J., Montesanti, R., Kahn, S., and Paerels, F., *Proc. SPIE*, **1343**, 530.
- 1990 The EXOSAT Low Energy Imaging Telescopes and Transmission Grating Spectrometers; Calibration and In-flight Verification, Paerels, F. B. S., Brinkman, A. C., den Boggende, A. J. F., de Korte, P. A. J., and Dijkstra, J., *Astron. Astrophys.*, **85**, 1021.
- 1990 EXOSAT Observations of Cygnus X-2 Continuum and Line Spectrum, Chiappetti, L., Treves, A., Branduardi-Raymont, G., Ciapi, A. L., Ercan, E. N., Freeman, P. E., Kahn, S. M., Paerels, F. B. S., and Tanzi, E. G., *Ap.J.*, **361**, 596.
- 1989 X-ray Emission from Hot White Dwarfs; EXOSAT Results, and Implications for Atmospheric Models, Paerels, F., and Heise, J., in *Proceedings IAU Colloquium 114 'White Dwarfs,'* ed. G. Wegner (Berlin: Springer), p. 198.
- 1989 A Soft X-ray Survey of Hot White Dwarfs with EXOSAT, Paerels, F. B. S., and Heise, J., *Ap.J.*, **339**, 1000.
- 1988 Results of High Resolution Soft X-ray Spectroscopy of Hot White Dwarfs with EXOSAT, Paerels, F., and Heise, J. *Adv. Space Res.*, **8(2-3)**, 249.
- 1988 The High Resolution Soft X-ray Spectrum of HZ 43; II: Bolometric X-ray Flux, Effective Temperature, and Radius, Heise, J., Paerels, F. B. S., Bleeker, J. A. M., and Brinkman, A. C., *Ap.J.*, **334**, 958.
- 1988 The High Resolution Photospheric Soft X-ray Spectrum of Sirius B, Paerels, F. B. S., Bleeker, J. A. M., Brinkman, A. C., and Heise, J., *Ap.J.*, **329**, 849.
- 1987 Determination of Photospheric Helium Abundances for the Hot White Dwarfs LB 1663 and CoD -38 10980 from EXOSAT Soft X-ray Photometry, Paerels, F. B. S., Heise, J., Kahn, S. M., and Rogers, R. D., *Ap.J.*, **322**, 315.
- 1987 Discovery of Soft X-ray Oscillations in VW Hyi, van der Woerd, H., Heise, J., Paerels, F., Beuermann, K., van der Klis, M., Motch, C., and van Paradijs, J., *Astron. Astrophys.*, **182**, 219.
- 1987 Low-Energy X-ray Transmission Grating Spectrometer for the *Advanced X-ray Astrophysics Facility*, Brinkman, A., van Rooijen, J., Bleeker, J., Dijkstra, J., Heise, J., de Korte, P., Mewe, R., Paerels, F., *Astrophysics Letters*, **26**, 73.
- 1986 Measurement of the EUV Spectrum of the Hot White Dwarf Feige 24, Paerels, F. B. S., Bleeker, J. A. M., Brinkman, A. C., Heise, J., *Ap.J. (Letters)*, **309**, L33.
- 1986 The High Resolution Soft X-ray Spectrum of HZ 43, Paerels, F. B. S., Bleeker, J. A. M., Brinkman, A. C., Gronenschild, E. H. B. M., and Heise, J., *Ap.J.*, **308**, 190.

- 1986 Low Energy X-ray Transmission Grating Spectrometer for *AXAF*, Brinkman, A., van Rooijen, J., Bleeker, J., Dijkstra, J., Heise, J., de Korte, P., Mewe, R., and Paerels, F., *Proc. SPIE*, **597**, 232.
- 1985 Dispersive X-ray Spectroscopy with Transmission Gratings, Paerels, F., Bleeker, J. A. M., Brinkman, A. C., Dijkstra, J., Mewe, R., Schrijver, C. J., *Proceedings ESA Workshop*, Lyngby, Denmark, 24-26 June 1985 (ESA SP-239).
- 1985 Soft X-ray Characteristics of Hot White Dwarfs Observed with EXOSAT, Heise, J., Bleeker, J. A. M., Brinkman, A. C., Gronenschild, E., Paerels, F., Grewing, F., Wulf-Mathies, C., and Beuermann, K., *Adv. Space Res.*, **5(3)**, 61.
- 1985 The Soft X-ray Superoutburst of VW Hyi: 14-second Periodicity, van der Woerd, H., Heise, J., and Paerels, F., *Adv. Space Res.*, **5(3)**, 77.
- 1984 Discovery of a 14 sec Periodicity in the X-ray Flux from VW Hyi in Superoutburst, Heise, J., Paerels, F., and van der Woerd, H., *IAU Circular* 3939.
- 1980 The Effect of Mass Loss on the Age Determination of Young Clusters, with an Application to the Orion OB Association, Paerels, F. B. S., Lamers, H. J. G. L. M., and de Loore, C., *Astron. Astrophys.*, **90**, 204.
- 1980 Masses and Mass Loss from O and Of Stars, Lamers, H. J. G. L. M., Paerels, F. B. S., and de Loore, C., *Astron. Astrophys.*, **87**, 68.