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Persons of reference:

- Prof. Jelle S. Kaastra (SRON, The Netherlands) – J.S.Kaastra@sron.nl
- Dr. Matteo Guainazzi (ESA/ESTEC, The Netherlands) – Matteo.Guainazzi@sciops.esa.int
- Dr. Norbert Werner (Masaryk University, Czech Rep.) – werner@physics.muni.cz

Born: June 27, 1989 – Brussels, Belgium

Nationalities: Belgian, French

Current position

ESA Research Fellow, ESTEC (Mentor: Dr. Matteo Guainazzi)
(Noordwijk, The Netherlands)

Past positions

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| 2017-2019 | <i>Postdoctoral Researcher</i> , MTA-Eötvös University (Mentor: Dr. Norbert Werner) (Budapest, Hungary) |
| 2017-2017 | <i>Postdoctoral Researcher</i> , Leiden University (Mentor: Prof. Jelle S. Kaastra) (Leiden, The Netherlands) |

Skills

AREAS OF SPECIALIZATION

High-energy astrophysics – X-ray spectroscopy – Clusters/groups of galaxies –
Intracuster medium – Chemical enrichment – *XMM-Newton*

COMPUTING SKILLS

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| Expert | SPEX • <i>XMM-Newton</i> SAS |
| Good | UNIX console – BASH – fortran 90 – Python (incl. numpy, scipy, astropy, matplotlib) – L ^A T _E X – XSPEC – HEAsoft – SAO ds9 – <i>Chandra</i> CIAO – Linux – Mac OS |
| Intermed. | Inkscape – GIMP – C – Windows |
| Basic | HTML – C++ – IDL – IRAF |

LANGUAGES

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| Fluent | French – English |
| Intermed. | Dutch |

Education

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| 2013-2017 | PHD in High-energy Astrophysics, Leiden University/SRON (Leiden/Utrecht, The Netherlands) |
| 2010-2012 | MSc in Space Sciences, University of Liège (Liège, Belgium) – <i>Magna Cum Laude</i> |
| 2007-2010 | BSc in Physics, Université Libre de Bruxelles (Brussels, Belgium) – <i>Cum Laude</i> |
| 2001-2007 | HIGH SCHOOL in Latin-Mathematics, Lycée Émile Jacqmain (Brussels, Belgium) – <i>Cum Laude</i> |

Grants & Awards

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|------|---|
| 2020 | <i>XMM-Newton</i> observation (PI) - “A deep exploration of chemical enrichment and thermodynamics of S0 galaxies”, AO20, 110 ks (~31 h) |
| 2019 | <i>XMM-Newton</i> observation (PI) - “Searching for X-ray non-thermal emission in an extraordinarily radio-bright galaxy group”, AO19, 210 ks (~58 h) |
| 2016 | 71th Netherlands Astronomy Conference - Poster Prize: Laureate |
| 2006 | Orthograph Championship (French): Laureate |

Scientific responsibilities & collaborations

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| 2021-now | Co-chair of the Athena Topical Panel SWG1.2 (<i>Athena</i> Science Study team) |
| 2015-now | CHEERS collaboration (PI: J. de Plaa) |
| now | Ongoing projects / collaborations: E. Pointecouteau, D. Barret, N. Clerc (France) – A. Simionescu, H. Akamatsu, J. de Plaa, J. S. Kaastra, L. Gu, M. Guainazzi, M. Wise (Netherlands) – N. Werner, R. Grossová, J. P. Breuer (Czech Republic) – N. Truong (Germany) – F. Gastaldello, C. Pinto, S. Etti, M. Gaspari, V. Biffi (Italy) – Y. Ichinohe, T. Fukazawa, K. Nomoto (Japan) – Y. Su, A. Tumer (USA) – M.-L. Gendron-Marsolais (Chili) – A. Richard-Laferrrière, A. E. Sansom (UK) |
| – | Reviewed 5 publications as anonymous referee. |
| – | Invited in 2 time allocation committees of X-ray observatories. |

Conferences, Colloquia & Workshops

INVITED TALKS

- Dec. 2021 “Measuring metal abundances in galaxy groups: challenges and prospects”, *Japan-Netherlands joint workshop: high-resolution X-ray spectroscopy of cosmic plasmas*, online
- Dec. 2020 “Chemical enrichment in galaxy clusters”, *Extragalactic universe with HE and VHE sources*, online
- June 2019 “Chemical abundances in the hot atmospheres of galaxy clusters, groups, and elliptical galaxies”, *Astrophysics of Hot Plasmas in Extended X-ray Sources*, ESAC, Madrid (Spain)
- March 2018 “Spatial distribution of metals in the intracluster medium”, *SnowCluster 2018: The Physics of Galaxy Clusters*, Snowbird, Utah (USA)
- Nov. 2017 “Elemental abundances and chemical enrichment in the intracluster medium”, *Clusters of Galaxies: Physics and Cosmology – International Space Science Institute (Workshop)*, Bern (Switzerland)

CONTRIBUTED TALKS

- Nov. 2021 “The cycle of metals in the elliptical galaxy NGC1404”, *14th ESA SCI-S Workshop (SSW)*, Aranjuez (Spain)
- Oct. 2020 “Metals (and dust) in the hot gas phase: From massive clusters down to massive galaxies”, *The Rise of Metals and Dust through Cosmic Times*, online
- July 2019 “Chemical abundances and enrichment in the intracluster medium”, *Tracing Cosmic Evolution with Clusters of Galaxies*, Sexten (Italy)
- March 2019 “Chemical enrichment of the atmospheric gas in clusters, groups, and massive galaxies”, *Physics of the Intra-Cluster Medium: Theory and Computation*, Budapest (Hungary)
- June 2017 “Radial distribution of metals in the hot intra-cluster medium as observed by XMM-Newton”, *The X-ray Universe 2017*, Rome (Italy)
- April 2017 “Radial metal abundance profiles in the intra-cluster medium of cool-core clusters, groups, and ellipticals”, *Physics of the Intra-Cluster Medium*, Beijing (China)
- May 2016 “CHEERS! The origin of heavy elements in galaxy clusters”, *SRON Science Days*, Delfsen (The Netherlands)
- July 2015 “The CHEERS project”, *The Metal Enrichment of Diffuse Gas in the Universe*, Sexten (Italy)
- May 2015 “CHEERS: Chemical enrichment in the hot gas of galaxy clusters seen through XMM-Newton EPIC”, *Spectroscopy of Cosmic Plasma in the Era of ASTRO-H*, Tokyo (Japan)
- June 2014 “An XMM-Newton view of Abell 4059”, *The X-ray Universe 2014*, Dublin (Ireland)

COLLOQUIA & SEMINARS

- Oct. 2021 “The link between supernovae, supermassive black holes, and the large-scale Universe”, *GRAD Talks (Yildiz Technical University)*, [online](#)
- March 2021 “How to understand stars and supernovae by looking at... galaxy clusters”, *ESTEC breakfast seminar*, online
- Feb. 2021 “From stars to large-scale structures: chemical enrichment in the intracluster medium”, *Video-Seminar (Observatoire de Strasbourg)*, online
- Jan. 2021 “From stars to large-scale structures: chemical enrichment in the intracluster medium”,

IPAG seminar (Université Grenoble-Alpes), online

- Jan. 2021 “From stars to large-scale structures: chemical enrichment in the intracluster medium”, *GECCO Café Club (Laboratoire d’Astrophysique de Marseille)*, online
- Sept 2020 “Dragonfly 44 (...and the dark matter content of ultra-diffuse galaxies)”, *ESTEC breakfast seminar*, online
- April 2020 “Discovery of a giant fossil cavity in the Ophiuchus galaxy cluster”, *ESTEC breakfast seminar*, online
- March 2020 “Does gravity really exist? Clues from galaxy clusters”, *ESTEC breakfast seminar*, Noordwijk (The Netherlands)
- Jan. 2020 “From supernovae to galaxies (and beyond): What metals in hot galactic and cluster atmospheres tell us”, *Kavli IPMU Colloquium*, Tokyo (Japan)
- Jan. 2020 “From supernovae to galaxies (and beyond): What metals in hot galactic and cluster atmospheres tell us”, *Hiroshima University Seminar*, Hiroshima (Japan)
- Jan. 2019 “Elemental abundances and chemical enrichment in the hot intracluster medium”, *MPE seminar*, Garching (Germany)
- Dec. 2018 “Metals in galaxy clusters and groups, and giant elliptical galaxies hot atmospheres: Recent improvements and current challenges of X-ray observations”, *CfA lunch talk*, Cambridge (USA)
- May 2018 “Elemental abundances and chemical enrichment in the hot intracluster medium”, *Hiroshima University Seminar*, Hiroshima (Japan)
- May 2018 “Understanding the chemical enrichment pattern in the hot haloes of massive ellipticals, groups, and clusters of galaxies”, *Kavli IPMU Colloquium*, Tokyo (Japan)
- March 2018 “From supernovae to galaxy clusters: Chemical enrichment in the hot intracluster medium”, *Lowell Observatory Colloquium*, Flagstaff, Arizona (USA)
- Feb. 2018 “Elemental abundances and chemical enrichment in the intracluster medium”, *IRAP Seminar*, Toulouse (France)
- April 2017 “From supernovae to galaxy clusters: Observing the chemical enrichment in the intra-cluster medium”, *PhD Colloquium*, Leiden (The Netherlands)
- Jan. 2017 “From supernovae to galaxy clusters: Chemical enrichment of the intra-cluster medium seen by *XMM-Newton*”, *Ortvaay Colloquium*, Budapest (Hungary)
- Dec. 2013 “Probing chemical abundances in Abell 4059 using *XMM-Newton*”, *Argelander Institut für Astronomie Seminar*, Bonn (Germany)

POSTERS

- June 2021 “Clusters, groups, and isolated galaxies: similar or different chemical enrichment histories?”, *EAS 2021 (European Astronomical Society Annual Meeting)*, Leiden (online)
- June 2021 “The cycle of metals of the elliptical galaxy NGC 1404”, *Galaxy Cluster Formation II (GCF 2021)*, ESO (online)
- Sept. 2019 “Metals in the intracluster medium”, *X-ray astronomy 2019: Current Challenges and New Frontiers in the Next Decade*, Bologna (Italy)
- Sept. 2018 “Abundance measurements in the intracluster medium: Consequences of spectral code improvements”, *Exploring the Hot and Energetic Universe: The second scientific conference dedicated to the Athena X-ray observatory*, Palermo (Italy)
- Sept. 2017 “Radial distribution of metals in the intra-cluster medium”, *The power of X-ray spectroscopy*, Warsaw (Poland)
- Dec. 2016 “Radial metal abundance profiles in the hot intra-group and intra-cluster medium”, *The Physics of Groups and Galaxy Properties therein*, Paris (France)
- May 2016 “Chemical enrichment in the hot intra-cluster medium seen with *XMM-Newton*/EPIC”, *XMM-Newton: The next decade*, ESAC, Madrid (Spain)

- May 2016 “The origin of heavy elements in galaxy clusters”, *71th Netherlands Astronomy Conference*, Nunspeet (The Netherlands)
- May 2015 “An *XMM-Newton* study of temperatures and abundances in Abell 4059”, *70th Netherlands Astronomy Conference*, Nunspeet (The Netherlands)
- Sept. 2013 “Chemical enrichment in clusters of galaxies from the *XMM/Suzaku* to the *ASTRO-H* era”, *4th ASTRO-H summer school*, Shuzenji (Japan)

Teaching & Outreach

- 2021 Supervising MSc students (Teresa Matamoro, Amanda Byström): [LEAPS summer programme](#), ESTEC
- 2021 Co-supervising MSc student (Dimitris Chatzigiannakis): MSc thesis, Leiden Observatory
- 2020 Supervising BSc student (Tora Arnesen): [LEAPS summer programme](#), ESTEC
- 2020 Co-supervising BSc student (Iga Kaczmarek): ESA internship, ESTEC
- 2019 “[Astronomy on Tap - Budapest](#)” (co-organiser), wide audience
- 2018 High energy astrophysics (guest lecturer), MSc level, Eötvös University
- 2018-2019 Co-supervising BSc student (Anna Görgei): BSc thesis, Eötvös University
- 2017-2018 Co-supervising BSc student (Ádám Boldog): BSc thesis, Eötvös University
- Sum. 2015 Co-supervising BSc student (Sinancan Kara): BSc thesis, SRON/Bogazici University
- 2014-2015 High energy astrophysics (Teaching assistant), MSc level, Leiden Observatory
- 2011-2013 Private student tutoring (Mathematics; physics), high school level, Brussels
- 2007-now Astronomy camp (teaching & animating, high school level), “[Jeunesse et Science ASBL](#)”, Modave (Belgium)

OUTREACH TALKS

- Sept. 2021 “The link between supernovae, supermassive black holes, and the large-scale Universe”, *Astronomy on Tap - Leiden*, Leiden (The Netherlands)
- Aug. 2020 “Black holes” (in French), *Jeunesse et Science*, Modave (Belgium)
- Dec. 2019 “Space telescopes” (in French), *Jeunesse et Science*, Modave (Belgium)
- July 2019 “Clusters of galaxies... and the surprises of their spectacular hot atmospheres”, *Astronomy on Tap - Budapest*, Budapest (Hungary)
- April 2019 “The dark side of matter”, *Astronomy on Tap - Budapest*, Budapest (Hungary)
- Dec. 2018 “Pluto (and the borders of the Solar System)” (in French), *Jeunesse et Science*, Modave (Belgium)
- Dec. 2017 “Stellar nucleosynthesis” (in French), *Jeunesse et Science*, Modave (Belgium)
- Jan. 2017 “A journey to the stars” (in French), *Heydeken rest home*, Brussels (Belgium)
- April 2016 “Clusters of galaxies” (in French), *Jeunesse et Science*, Modave (Belgium)
- Aug. 2014 “Clusters of galaxies” (in French), *Jeunesse et Science*, Modave (Belgium)
- April 2013 “Massive stars” (in French), *Jeunesse et Science*, Modave (Belgium)
- Aug. 2012 “The Sun across time” (in French), *Jeunesse et Science*, Modave (Belgium)
- Aug. 2011 “Dark matter” (in French), *Jeunesse et Science*, Modave (Belgium)
- Aug. 2010 “Death of stars” (in French), *Jeunesse et Science*, Modave (Belgium)
- April 2008 “Black holes” (in French), *Jeunesse et Science*, Modave (Belgium)

Department responsibilities & initiatives

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| 2020-now | Member of the ESTEC SAC (Staff Association Committee), ESTEC |
| 2020-now | Member/coordinator of the YPAG (Young Professional Advisory Group), ESTEC |
| 2020-now | Organiser of weekly “ breakfast seminars ”, ESTEC |
| Jan. 2021 | Organiser of a mini-workshop on galaxy clusters (~15 participants from Dutch institutes), ESTEC |
| 2019 | Webmaster of the Lendület Hot Universe Research Group website, Budapest |
| March 2019 | LOC member of the “ Physics of the Intra-Cluster Medium: Theory and Computation ” conference, Budapest |
| 2014-2017 | Chair/organiser of regular “Galaxy clusters meetings”, Leiden Observatory |
| 2014-2015 | Organiser of the colloquium dinner events, SRON |
| 2014-2017 | Member of the “Social committee”, Leiden Observatory |
| 2013-2014 | Online update of arXiv preprints, Leiden Observatory website |

Last updated: December 6, 2021