



# Roberta Amato

## *Curriculum Vitae et Studiorum*

### Personal information

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### Academic employment

April 2021 – **Postdoctoral research**, *Institut de Recherche en Astrophysique et Planétologie (IRAP), Toulouse, France.*  
on going

### Education

- November 2017 – **Doctoral degree in Physical Science - Dr. rer. nat.**, *University of Palermo - INAF/IASF Palermo - Eberhard-Karls-Universität Tübingen*, EQF Level 8.
- October 2020 PhD in cotutelle agreement – Thesis successfully defended in March 2021
- 2015–2017 **Master Degree in Physics, curriculum Astrophysics**, *University of Palermo*, Palermo, Italy, EQF Level 7.  
Final grade: 110/110 cum laude
- 2017 **Erasmus+ for Traineeship**, *Anton Pannekoek Institute for Astronomy*, Amsterdam, Netherlands, 02 May - 31 July 2017.
- 2010–2015 **Bachelor Degree in Physical Science**, *University of Palermo*, Palermo, Italy, EQF Level 6.  
Final grade: 100/110
- 2005–2010 **High School Diploma**, *Liceo Classico "Don G. Colletto"*, Corleone (PA), Italy, EQF Level 4.  
Final grade: 100/100

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## List of publications

### Peer reviewed

- **R. Amato**, S. Diebold, et al., *Scattering efficiencies measurements of soft protons at grazing incidence from an Athena Silicon Pore Optics sample*, Experimental Astronomy, July 2021. DOI: 10.1007/s10686-021-09806-9
- F. Camilloni, S. Bianchi, **R. Amato**, G. Ferland, and V. Grinberg, *Cloudy in the Microcalorimeter Era: Improved Energies for Si and S  $K\alpha$  Fluorescence Lines*, Res. Notes AAS, 5:149. DOI: 10.3847/2515-5172/ac0cff
- **R. Amato**, V. Grinberg, N. Hell, S. Bianchi, C. Pinto, A. D'Ai, M. Del Santo, T. Mineo, and A. Santangelo. *Looking through the photoionisation wake: Vela X-1 at  $\phi_{orb} \approx 0.75$  with Chandra/HETG*. A&A, 648:A105, April 2021. DOI: 10.1051/0004-6361/202039125
- **R. Amato**, T. Mineo, A. D'Ai, S. Diebold, V. Fioretti, A. Guzman, S. Lotti, C. Macculi, S. Molendi, E. Perinati, C. Tenzer, and A. Santangelo *Soft proton scattering at grazing incidence from X-ray mirrors: analysis of experimental data in the framework of the non-elastic approximation*. Experimental Astronomy, 49(3):115–140, April 2020. DOI: 10.1007/s10686-020-09657-w
- **R. Amato**, A. D'Ai, M. Del Santo, D. de Martino, A. Marino, T. Di Salvo, R. Iaria, and T. Mineo. *Search for multiwavelength emission from the binary millisecond pulsar PSR J1836-2354A in the globular cluster M22*. MNRAS, 486(3):3992–4000, July 2019. DOI: 10.1093/mnras/stz1100

### Others

- 4XMM-DR11 XMM-Newton serendipitous source catalogue, released in September 2021 (more at [http://xmmssc.irap.omp.eu/Catalogue/4XMM-DR11/4XMM\\_DR11.html](http://xmmssc.irap.omp.eu/Catalogue/4XMM-DR11/4XMM_DR11.html)).

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## Conferences

### Podium presentations

- 2020 *Investigating the wind-fed accretion onto a strongly magnetised neutron star: a high-resolution look at the photoionisation wake of Vela X-1*, EAS 2020 (European Astronomical Society Annual Meeting), Leiden (Virtual), 29 June – 3 July 2020
- 2020 *Investigating the clumpy environment of Vela X-1: a high-resolution look at its photoionisation wake*, EAS 2020 (European Astronomical Society Annual Meeting), Leiden (Virtual), 29 June – 3 July 2020

### Poster presentations

- 2019 *Search for multiwavelength emission from the binary millisecond pulsar PSR J1836-2354A in the globular cluster M22*, X-ray Astronomy 2019, CNR/INAF Research Area, Bologna, Italy, 8-13 September 2019
- 2018 *Soft proton scattering at grazing incidence*, Exploring the Hot and Energetic Universe: the second scientific conference dedicated to the Athena X-ray observatory, Palermo, 24-27 September 2018

- 2018 *A comprehensive analysis of the X-ray population of M22*, Exploring the Hot and Energetic Universe: the second scientific conference dedicated to the *Athena* X-ray observatory, Palermo, 24-27 September 2018

### Others

- 2021 EAS 2021 (European Astronomical Society Annual Meeting), 29 June – 3 July 2020, virtual
- 2017 72nd Netherlands Astronomy Conference, 28 June – 2 July 2021

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## Meetings, schools, workshops and other activities

### Podium presentations

- 2021 *Soft proton scattering at grazing incidence from X-ray mirrors*, ATHENA magnetic diverter workshop, virtual, 21 January 2021
- 2020 *High-resolution spectroscopy of Vela X-1 at the orbital phase  $\phi_{orb} = 0.75$* , High Energy Astrophysics group meeting, IAAT Tübingen, 15 May 2020
- 2019 *Contribution of pseudo-focalised soft protons to the Athena background*, Kepler Center for Astro and Particle Physics PhD Workshop, Obermarchtal, Germany, 30 September - 2 October 2019
- 2019 *Contribution of pseudo-focused soft protons to Athena background - Updates on the EXACRAD project*, High Energy Astrophysics group meeting, IAAT Tübingen, 28 June 2019
- 2018 *Contribution to Athena background due to pseudo-focused soft protons*, INAF-IASF Palermo, 3 May 2018

### Attended Meetings

- 2019 #10 X-IFU Consortium Meeting, Institut Aéronautique et Spatial (IAS), Toulouse, France, 16-20 September 2019
- 2018 #8 X-IFU Consortium Meeting, École de Physique, Geneva, Switzerland, 4-10 September 2018
- 2018 #7 X-IFU Consortium Meeting, Astroparticle and Cosmology Laboratory, Paris, France, 19-24 March 2018

### Schools

- 2020 8th AtomDB Workshop and Spectroscopy School, virtual, 3-5-August 2020
- 2018 DIAS Summer School on High-Energy Astrophysics 2018, Dublin Institute for Advanced Studies, Dublin, Ireland, 19-29 June 2018
- 2017 5th International School on Geant4, INFN Catania, Catania, Italy, 23-27 October 2017

### Grants

- 2018 AHEAD Data Analysis Program, University of Leicester, Leicester, UK, 4-8 June 2018

### Approved observational proposals

2018 *Swift* (XRT) monitoring campaign of three HMXBs, PI Roberta Amato, accepted proposal for 99 ks of observing time

## Laboratory experience

2019-2020 Several experimental campaigns to measure the scattering efficiency of low energy protons at grazing incidence from a sample of silicon pore optics. The experiment was part of the EXACRAD (Experimental Evaluation of ATHENA Charged Particle Background from Secondary Radiation and Scattering in Optics) activities, funded by ESA. It was conducted at the Van de Graaff accelerator of the Goethe University (Riedberg Campus), in Frankfurt am Main, Germany.

## Additional information

### Languages

Italian	Mother tongue	
English	Effective Operational Proficiency	<i>IELTS certification, level C1</i>
French	Basic	<i>Level A1</i>

### Digital skills

Operating systems	MacOS, Linux (Ubuntu), Windows
Advanced	X-ray data analysis software and tools (CIAO, XSPEC, FTOOLS, SAS, ISIS), $\LaTeX$ , Python, command of office suite (word processor, spread sheet, presentation software) for MacOS/Linux/Windows operative systems
Intermediate	C++, root (CERN), Geant4

### Scientific writing

Solid scientific writing skills, improved after successfully completed an online course, held by Dr. Kristin Sainani from the Stanford University (certificate available).

### Affiliations

- Member of the *XMM-Newton* Survey Science Centre (SSC)
- Member of the *Athena* community, panels SWG 2.5 Physics of accretion and MWG5.2 Background
- Member of the X-IFU Consortium