Dr Riccardo Arcodia

Curriculum Vitae

70 Vassar St (37-667)
02139 Cambridge, MA, USA
rarcodia@mit.edu

Employment

2023–present **NASA Einstein Postdoctoral Fellow**, *MIT Kavli Institute for Astrophysics and Space Research*
NASA Einstein Fellow working on "The awakening of massive black holes".

2021–2022 **Postdoc**, *Max Planck Institute for Extraterrestrial Physics*
Scientific exploitation of eROSITA data and Einstein Probe scientific support.

Education

2017–2021 **PhD *summa cum laude* in Astrophysics**, *Max Planck Institute for Extraterrestrial Physics*
Supervisors: Andrea Merloni, Kirpal Nandra
Defense date: 30 September 2021
Thesis Title: *Accretion onto black holes across the mass scale*

2015–2017 **Master's Degree *magna cum laude* in Astrophysics and Space Physics**, *Università degli Studi di Milano-Bicocca*
Thesis Title: *X-ray absorption study of high-redshift blazars: a way to probe the intergalactic medium*
Supervisors: Sergio Campana, Gabriele Ghisellini
- Two semesters of classes
- Nine months of thesis with defence

2012–2015 **Bachelor's Degree in Physics**, *Università degli Studi di Milano-Bicocca*
Thesis Title: *Study of the X-ray absorption of a complete sample of Swift GRBs*
Supervisors: Sergio Campana, Monica Colpi
- Six semesters of classes
- Two months of thesis with defence

Awards and Prizes

2022 **NASA Einstein Fellowship**, class of 2022 (~ 115 k$/yr)

2022 **ORIGINS Excellence Cluster PhD Award 2022** (2 k€)

2021 **IAU PhD Prize 2021** for Division D

Service Activities

International collaborations

2024 - present NICER Users Group member

2023 - present Member of the LGWA multi-messenger astronomy working group

2023 - present Member of the AXIS TDAMM X-ray Telescope Science Team

2023 - present eROSITA-DE individual external collaborator

2019 - 2022 eROSITA-DE member

Organizing committees

2024-2025 SOC member of international conference "X-ray QPEs and extreme, repeating extragalactic transients"; June 2025; Madrid, Spain

2024 Co-organizer of the Astro-ML workshop "Freedom Trail of Code: Boston Astrophysics x Machine Learning Hackathon 2024"; Cambridge, USA

2023 Co-organizer of the first "*BABAM!* Boston-Area Blackhole Accretion Meeting" workshop; Cambridge, USA

Peer reviewer

2020 - present Panelist: XMM-Newton; Hubble Space Telescope; OPTICON Telescopes network

2020 - present Reviewer: *Nature*, ApJ, ApJ Letters, A&A, MNRAS

Research experience

Approved guest observer proposals as Principal Investigator

2024-present – XMM AO24: ~ 110 ks aToO allocated + ~ 25 ks *Swift-XRT*. To be observed.

2023-2024 – Chandra Cycle 26: ~ 10 ks allocated + ~ 0.5 h VLA. To be analyzed.

– XMM AO23: ~ 116 ks allocated. Observed (work in prep.).

– XMM AO23: ~ 68 ks allocated + ~ 2 h with VLA. Observed (work in prep.).

– VLA/24B-353: ~ 3.5 h allocated. To be observed.

– ATCA: ~ 25 h allocated in two proposals. Observed (work in prep.).

– Swift Cycle 20: ~ 70 ks allocated. Observed (work in prep.).

– NICER Cycle 6: ~ 69 ks allocated. Observed (work in prep.).

2022-2023 – NICER Cycle 5: ~ 77 ks allocated. Published as senior author.

– ATCA 2023APRS: 14h allocated. Published as 1st author.

2021-2022 – NICER Cycle 4: ~ 98 ks allocated. Published as senior author.

– VLA/23A-0594: - 3.50 hours at Priority A. Published as senior author.

2020-2021 – XMM-Netwon A020 Large Programme: 4x130 ks anticipated ToOs allocated. Fully triggered, published as 1st author.

– NICER Cycle 3: ~ 120 ks allocated. Published as senior author.

– Chandra Cycle 22: 2x75 ks-long anticipated ToOs allocated by the panel. Not triggered.

2019-2020 – NICER Cycle 2: - ToO monitoring for a total of ~ 186 ks. Published as 1st author.

– XMM-Netwon A019: 2x90 ks anticipated ToOs. Published as 1st author.

2018-2019 – XMM-Netwon A018: 123 ks in priority C, not observed.

Selected Colloquia - Invited Seminars

02/2025 *Univ. of Michigan* - Colloquium

01/2025 *Carnegie Observatories* - Colloquium

11/2024 *CfA* - Invited UMBRELA seminar

02/2024 *STSci* - Invited seminar

10/2023 *Michigan State Univ.* - Colloquium

05/2023 *IAS Princeton* - Invited seminar

04/2023 *UC Berkeley* - Invited seminar

02/2023 *McGill Univ. Montreal* - Colloquium

10/2022 *Univ. of Milan Bicocca* - Invited seminar

09/2022 *Racah Institute of Physics* - Invited seminar

05/2022 *IoA Cambridge UK* - virtual seminar

05/2022 *ESO Garching* - virtual Hypatia colloquium

04/2022 *Columbia Univ.* - virtual seminar

03/2022 *MIT* - virtual seminar

10/2021 *INAF/IASF Milano* - virtual seminar

08/2021 *Hebrew University of Jerusalem* - virtual seminar

06/2021 *National Astronomical Observatories, China* - virtual seminar

06/2021 *Bologna Univ.* - virtual seminar

Selected conferences

03/2025 *Frontiers of Astrophysical black holes* - Sexten - Invited.

10/2024 *5th gravi-gamma-nu workshop* - Bari - Invited.

09/2024 *First Results from SRG/eROSITA* - Munich - Invited.

09/2024 *Galactic and extragalactic X-ray transients* - Warsaw - Invited.

09/2024 *TDEs and Nuclear Transients* - Heraklion - Invited.

06/2024 *AAS 244* - Madison, USA - Contributed + press release.

04/2024 *TDE24* Conference and Programme - KITP Santa Barbara - Invited.

12/2023 *Intermediate-mass black holes* - San Pedro - Contributed.

06/2023 *Flares and Bursts in Galactic Nuclei* - Princeton - Invited.

04/2023 *AAS HEAD 20* - Waikoloa - Invited.

03/2023 *Extreme black holes* - Aspen - Contributed.

12/2022 *ORIGINS science week* - Seeon - Invited (prize).

08/2022 *IAU General Assembly 2022* - Busan - Invited (prize).

07/2022 *44th COSPAR Assembly* - Athens - Two contributed.

07/2022 *From the Dolomites to the event horizon: sledging down the black hole potential well* - Sexten - Invited.

06/2022 *Black holes under the X-ray microscope* - Madrid - Invited.

04/2022 *Intermediate-mass black holes* - San Juan - Contributed.

07/2021 *Sixteenth Marcel Grossmann Meeting* - Virtual - Contributed.

06/2021 *European Astronomical Society 2021* - Virtual - Two contributed.

11/2019 *AGN Spectral States - Unification of Black Holes across the mass scale* - Prague - Contributed.

09/2019 *X-ray Astronomy 2019 - Current challenges and new frontiers in the next decade* - Bologna - Contributed.

07/2019 *From the Dolomites to the event horizon: sledging down the black hole potential well* - Sexten - Contributed.

06/2019 *Supermassive Black Holes: environment and evolution* - Corfu - Contributed.

Press Releases

2024 AAS 244 Conference press event. Speaker.

2024 MPE press release - "Massive black holes in low-mass galaxies: what happened to the X-ray Corona?". Writing.

2021 EAS 2021 Conference: eROSITA press release. Speaker.

2021 MPE press release - "eROSITA witnesses the awakening of massive black holes". Writing.

Outreach Activities

2016 Co-organizer of a stand on Gravitational Waves at the 2016 European Researchers Night event MEETmeTONIGHT, in Milan.

2016 Staff member at Pint of Science 2016, in Milan.

Supervision & Mentorship

Direct supervision

01/2025-present MIT UROP Spring students Peter Dong, Paulina Xu.

12/2024 - 01/2025 MIT UROP IAP students Peter Dong, Justin Zhang, Paulina Xu.

2024 MIT UROP Spring student Kush Khamesra

Mentorship

2023 - present MIT PhD student Joheen Chakraborty (superv. Prof. Kara)

2023 - present MPE PhD student Zsofi Igo (superv. Dr Merloni)

2023 - present MPE PhD student Pietro Baldini (superv. Dr Rau)

Equity & Inclusion initiatives

2024 Co-proposer for FY 2024 NHFP funds for IDEA working group

Publications

ORCID 0000-0003-4054-7978

Stats 02/25 342 citations from 10 1st author refereed publications

2642 citations from 58 total refereed publications

First three authors

- *Fragments of harmony amid apparent chaos: a closer look at the X-ray quasi-periodic eruptions of the galaxy RX J1301.9+2747*

  M. Giustini, G. Miniutti, **R.Arcodia**, et al.; A&A, 692, A15 (2024)
- *Ticking away: the long-term X-ray timing and spectral evolution of eRO-QPE2*

  R.Arcodia, I. Linial, G. Miniutti, et al.; A&A, 690, A80 (2024)
- *Cosmic hide and seek: The volumetric rate of X-ray quasi-periodic eruptions*

  R.Arcodia, A. Merloni, J. Buchner et al.; A&A, 684, L14 (2024)
- *Testing EMRI Models for Quasi-periodic Eruptions with 3.5 yr of Monitoring eRO-QPE1*

  J. Chakraborty, **R.Arcodia**, E. Kara et al.; ApJ, 965, 12 (2024)
- *The more the merrier: SRG/eROSITA discovers two further galaxies showing X-ray quasi-periodic eruptions*

  R.Arcodia, Z. Liu, A. Merloni et al.; A&A, 684, A64 (2024)

- *Massive black holes in nuclear star clusters. Investigation with SRG/eROSITA X-ray data*

  N. Hoyer, **R.Arcodia**, S. Bonoli et al.; A&A, 682, A36 (2024)
- *O Corona, where art thou? eROSITA's view of UV-optical-IR variability-selected massive black holes in low-mass galaxies*

  R.Arcodia, A. Merloni, J. Comparat et al.; A&A, 681, A97 (2024)
- *Alive and kicking: A new QPE phase in GSN 069 revealing a quiescent luminosity threshold for QPEs*

  G. Miniutti, M. Giustini, **R.Arcodia** et al.; A&A, 674, L1 (2023)
- *Repeating tidal disruptions in GSN 069: Long-term evolution and constraints on quasi-periodic eruptions' models*

  G. Miniutti, M. Giustini, **R.Arcodia** et al.; A&A, 670, A93 (2023)
- *The complex time and energy evolution of quasi-periodic eruptions in eRO-QPE1*

  R.Arcodia, G. Miniutti, G. Ponti et al.; A&A, 662, A49 (2022)
- *X-ray detection of a nova in the fireball phase*

  O. Koenig, J. Wilms, **R.Arcodia** (alph.) *Nature*, 605, 7909 (2021)
- *X-ray quasi-periodic eruptions from two previously quiescent galaxies*

  R.Arcodia, A. Merloni, K. Nandra et al.; ***Nature***, 592, 704 (2021)
- *Do stellar-mass and super-massive black holes have similar dining habits?*

  R.Arcodia, G. Ponti, A. Merloni, K. Nandra; A&A, 638, A100 (2020)
- *Testing the disk-corona interplay in radiatively-efficient broad-line AGN*

  R.Arcodia, A. Merloni, K. Nandra, G. Ponti; A&A, 628, A135 (2019)
- *X-ray absorption towards high-redshift sources: probing the intergalactic medium with blazars*

  R.Arcodia, S. Campana, R. Salvaterra, G. Ghisellini; A&A, 616, A170 (2018)
- *The dependence of gamma-ray burst X-ray column densities on the model for Galactic hydrogen*

  R.Arcodia, S. Campana, R. Salvaterra; A&A, 590, A82 (2016)

Selected white & collaboration papers

- *The Lunar Gravitational-wave Antenna: Mission Studies and Science Case*

  P. Ajith, P. Amaro Seoane, M. Arca Sedda, JCAP, 2025, 01, 108 (2025).
- *Prospects for Time-Domain and Multi-Messenger Science with AXIS*

  AXIS TDAMM group, Universe, 10, 316 (2024).

- *The SRG/eROSITA all-sky survey. First X-ray catalogues and data release of the western Galactic hemisphere*

  A. Merloni, G. Lamer T. Liu, A&A, 682, A34 (2024).
- *The eROSITA Final Equatorial-Depth Survey (eFEDS): The AGN Catalogue and its X-ray Spectral Properties*

  T. Liu, J. Buchner, K. Nandra, A&A, 661, A5 (2022).
- *The eROSITA Final Equatorial-Depth Survey (eFEDS): Identification and characterization of the counterparts to the point-like sources*

  M. Salvato, J. Wolf, t. Dwelly, A&A, Volume 661, A3 (2022).
- *The 16th Data Release of the Sloan Digital Sky Surveys: First Release from the APOGEE-2 Southern Survey and Full Release of eBOSS Spectra*

  R. Ahumada, C. Allende Prieto, A. Almeida et al., APJS, 249, 3 (2020).
- *The final SDSS-IV/SPIDERS X-ray point source spectroscopic catalogue*

  J. Comparat, A. Merloni, T. Dwelly et al., A&A, 636, A97 (2020).

Languages

Italian	Native speaker	
English	Fluent	
German	Good command	*A2/B1 course*
French	Good command	*High school second language*