Dr. Urmila Chadayammuri

60 Garden St, Cambridge, MA – 02138 · uchadayammuri@cfa.harvard.edu · milchada.github.io

EDUCATION

2017 – 2021	**PhD Astronomy** Advisors: Daisuke Nagai (Yale) and Paul Nulsen (SAO)	Yale University, New Haven, USA
2015 – 2017	**MPhil & MA Astronomy**	Yale University, New Haven, USA
2009 – 2013	**BSc (Hons) Physics** Thesis Advisor: Savvas Koushiappas	Brown University, Providence, USA

EMPLOYMENT

Oct 2023 –	**Postdoctoral Fellow** Independent research fellow in Galaxies & Cosmology. Mentor for 2 Masters and 1 PhD student.	Max Planck Institut für Astronomie, Heidelberg, Germany
Jun – Aug 2023	**Research Supervisor, Smithsonian Research Experience for Undergraduates** Supervised an undergraduate student in a 10-week research project. The student learned to run simulations with the hydrodynamical code AREPO, and analysed observations from the Gaia telescope. A paper is in prep.	Smithsonian Astrophysical Observatory, Cambridge, USA
Jan – May 2023	**Teaching Fellow, GenEd 1112: PredictionX** Led a weekly section delving into the history and development of predictive technology across human society. Graded assignments and oversaw capstone projects.	Harvard University, Cambridge, USA
Jun – Sep 2022	**MAST Training Materials Developer, ScienceBetter Consulting** Developed 2 tutorials on using the Mikulski Archive of space telescope observations for projects in star formation and galaxy evolution.	Space Telescope Science Institute, Baltimore, USA
2021 – 2023	**Postdoctoral Fellow** Observational and theoretical astrophysics and cosmology with X-ray telescopes.	Center for Astrophysics | Harvard & Smithsonian, Cambridge, USA
Mar – Jun 2020	**Data Analysis Consultant** Built a model to predict the spread of COVID-19 and wrote an explanation for the President of Argentina. Sponsored by the Inter-American Development Bank and the Ministry of Health of Argentina.	Tekal.ai, Cambridge, USA
2017-2018	**Graduate Writing Fellow** Developed and taught workshops for graduate students about	Yale University, New Haven, USA

communicating research to various audiences.

Aug – Dec 2017	**Student Liaison, Greenberg World Fellows Program** Organized events for education pioneer Lin Kobayashi and Member of European Parliament Annemie Turtelboom on issues of education, immigration and women in leadership.	Yale University, New Haven, USA
2015 – 2018	**Graduate Teaching Fellow** Attended lectures, held office hours and graded assignments for three undergraduate courses.	Yale University, New Haven, USA
2016 – 2018	**Staff Writer** Covered current research in astronomy, medicine and material science.	Yale Scientific Magazine, New Haven, USA

TEACHING EXPERIENCE

Graduate Teaching Assistant, Yale University

Fall 2017	Galaxies in the Universe
Fall 2016	Research Methods in Astrophysics
Spring 2016	Galaxies in the Universe

Lead Instructor, Yale Young Global Scholars Program

2016 – 2017	Applied Science and Engineering
2016	Technology, Innovation and Entrepreneurship
2017	Fundamentals of Mathematics and Science

Grader, Brown University

Spring 2013	Introduction to General Relativity

Peer Tutor, Brown University

2010–2012	Introduction to Mechanics
	Introduction to Electricity & Magnetism
	Calculus I
	Calculus II

SELECTED PUBLIC TALKS

PBS NOVA: The Universe. Episodes on Black Holes and Cosmology. Streaming October 27, 2021.

NASA Data Challenge Explainer: The M87 Galaxy. https://www.youtube.com/watch?v=-femHarhbKQ July 2021.

"Working Scientist podcast: How films and festivals can showcase your science". Interview for Nature Podcast. Published June 11, 2020. https://www.nature.com/articles/d41586-020-01724-8

"What if the Universe weren't uniform?" **Episode written for SciShow Space**. Published Apr 7, 2020. https://www.youtube.com/watch?v=YGVW4BaA0qA&t=67s

Computational Cosmology: Testing theory in the era of big data. Invited talk at Lenovo Innovation Challenge, Supercomputing 2017, Denver, CO, USA.

PEER-REVIEWED PUBLICATIONS

Chadayammuri et al (2022). Testing Galaxy Feedback Models with Resolved X-Ray Profiles of the Hot Circumgalactic Medium. ApJ Letters, Volume 936, Issue 1, id.L15, 9 pp.

Russell, ... Chadayammuri et al (2022). The structure of cluster merger shocks: turbulent width and the electron heating time-scale. MNRAS, Volume 514, Issue 1, pp.1477-1493.

Chadayammuri et al (2022). Turbulent magnetic fields in merging clusters: a case study of Abell 2146. MNRAS, Volume 512, Issue 2, pp.2157-2170.

Chadayammuri et al (2022). Constraining merging galaxy clusters with X-ray and lensing simulations and observations: the case of Abell 2146. MNRAS, Volume 509, Issue 1, pp.1201-1216.

Chadayammuri et al (2021). Fountains and storms: the effects of AGN feedback and mergers on the evolution of the intracluster medium in the ROMULUSC simulation. MNRAS, Volume 504, Issue 3, pp.3922-3937.

Tremmel ... Chadayammuri et al (2019). Introducing ROMULUSC: a cosmological simulation of a galaxy cluster with an unprecedented resolution. MNRAS, Volume 483, Issue 3, p.3336-3362.

Natarajan, Chadayammuri et al (2017). Mapping substructure in the HST Frontier Fields cluster lenses and in cosmological simulations. MNRAS, Volume 468, Issue 2, p.1962-1980.

AWARDS

2022	Smithsonian Scholarly Studies Award
2019	Fidelity Data Visualization Prize at MIT Reality Virtually Hackathon
2018	Chandra X-Ray Center Pre-Doctoral Fellowship
2017	Henry A Smith Fellowship in Astronomy, Yale University
2016	Bunker Fellow, Graduate School of Arts and Sciences, Yale University
2013	Smiley Award for Excellence in Astronomy, Office of the Dean, Brown University
2012	Undergraduate Teaching and Research Assistantship, Brown University
2011	Brown International Scholars Program Fellow
2009	Davis United World Scholars Program
2009	Harrison Family Presidential Scholarship

LANGUAGES

| **Computer** | Python, C | Some SQL, HTML/CSS |
| **Human** | English, Russian, Malayalam, Hindi | Some German, French |