

Kavitha Arur

Curriculum Vitae

Center for Relativistic Astrophysics
Georgia Institute of Technology
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Personal Details

Place of Birth Chennai, India
Citizenship Indian

Employment

Sep 2020 - Present **CRA Postdoctoral Fellow**, *Georgia Institute of Technology, USA*.
May - Aug 2020 **Postdoctoral Researcher**, *Texas Tech University, USA*.

Education

2015 – 2020 **Ph.D in Physics**, *Texas Tech University, USA*,
Topic: Fast variability of accretion flow around black holes.
2014 – 2015 **M.Sc in Physics**, *Texas Tech University, USA*, .
2009 – 2013 **M.Phys Physics and Astronomy**, *University of Southampton, UK*, .
Master's Thesis: A study of LMXBs using RXTE/INTEGRAL
Bachelor's Dissertation: Thermonuclear bursts from Neutron Stars

Research

2016–2020 **Research Assistant**, *Texas Tech University*.
2013 – 2016 **Teaching Assistant**, *Texas Tech University*.
2011 **Summer Undergraduate Research**, *University of Southampton, UK*, .
Topic: Investigating coronal quenching during outbursts in LMXBs.

Honours & Awards

2020 Outstanding PhD Student Award
2019 TTU Graduate School Travel Grant
2019 Bucy Graduate Scholarship in Applied Physics
2017 TTU Departmental Poster Competition, 3rd Place
2017 David Howe Graduate Fellowship in Physics
2009 – 2013 School of Physics and Astronomy International Scholarship

Publications

Refereed

- **Arur.K.** and Maccarone.T. J., 2020 "Inclination Dependence in the Non-linear Variability of Quasi Periodic Oscillations from Black Hole Binaries", *MNRAS*, 491, 313

- **Arur.K.** and Maccarone.T. J., 2019 "Non linear Variability of Quasi-Periodic Oscillations in GX 339-4", *MNRAS*, 486,3431
- **Arur.K.** and Maccarone.T. J., 2018 "Selection Effects on the Orbital Period Distribution of Low Mass Black Hole X-ray Binaries", *MNRAS*, 474,69
- P.H.Sell, **K.Arur**, T.J.Maccarone, R.Kotak, C.Knigge, D.J.Sand & S. Valenti, 2018, "Chandra X-ray Constraints on the Candidate Ca-rich Gap Transient SN 2016hnk", *MNRAS*, 475,111
- Gandhi. P, Rao. A., Charles. P. A., Belczynski. K., Maccarone. T. J., **Arur. K.**, Corral-Santana. J. M, "Orbital period dependent spatial scatter of Galactic Black Hole Transients", *MNRAS Letter*, Submitted

Unrefereed

- T.J.Maccarone and **K.Arur**, 2019, "On the mass of the white dwarf in BZ UMa", *RNAAS*, 3, 185
- P.S Ray et al. (33 authors incl. **K. Arur**), 2018, STROBE-X: A Probe-Class Mission for X-ray Spectroscopy and Timing on Timescales from Microseconds to Years, *Proc. SPIE*, 10699, 1069919

Invited Talks & Seminars

- 2020 Michigan State University ; Astronomy Seminar
- 2019 University of Oxford ; Group Seminar
- 2018 University of Arizona ; Lunch Seminar
- 2018 University of Southampton ; Seminar
- 2018 IUCAA, Pune ; Seminar
- 2017 Institute of Mathematical Science, Chennai ; Seminar
- 2017 Texas Tech University; Graduate Research Talk
- 2017 Arecibo Observatory; Colloquium

Academic Service

- 2020–Present AAS Committee on Employment
- 2019 TTU Departmental Poster Competition, *Lead Organizer*
- 2019–2020 Sigma Pi Sigma, *President, TTU Chapter*
- 2018–2019 Sigma Pi Sigma, *Secretary, TTU Chapter*
- 2017–2019 STROBE-X, *Science Working Group*
- 2017 STROBE-X Science Definition Workshop, *Local Organizer*
- 2016 Stellar Remnants at the Junction, *Local Organizer*

Conferences

- 2020 235th AAS Meeting, Honolulu,HI. *Dissertation Talk: 'Using the Bispectrum to Understand Variability from Black Hole X-ray Binaries'*
- 2019 Future of X-ray Timing, Amsterdam. *Talk: 'Inclination dependence of the non linear variability of QPOs.'*
- 2019 16th AAS HEAD Meeting. *Poster: 'Inclination dependence of the non linear variability of QPOs.'*
- 2018 34th Annual New Mexico Symposium.*Poster: 'Bicoherence of QPOs from GX 339-4'*
- 2018 42nd COSPAR, Pasadena California.*Talk: 'Bicoherence of QPOs from GX 339-4'*

- 2017 229th AAS Meeting, Grapevine, TX. *Poster: 'Selection effects on the orbital period distribution of LMXBs.'*
- 2012 New Results in X-ray Astronomy 2011. *Poster: 'Coronal Quenching of Aql X-1'*

Computer skills

OS	MacOS, Linux, Windows
Programming	Python(Intermediate), C++(Beginner)
Other	Jupyter, Github
Scientific	XSPEC, DS9
Typography	L ^A T _E X, Microsoft Office

Teaching Experience (Lab)

- PHYS 3101: Legacy Modern Physics
- ASTR 1400: Solar System Astronomy
- PHYS 1408: Physics I (Calculus based)
- PHYS 1403: Physics I (Algebra based)

Volunteer Service

- 2015 – 2020 **South Plains Regional Fair, Judge.**
- 2015 – 2018 **Mentor Tech, Mentor.**
Mentor for incoming freshman to help them achieve their personal and professional goals.
- 2015 – 2018 **Mentor Tech, Physics Tutor.**
Volunteer physics tutor for monthly study sessions open to all Mentor Tech participants.

Professional Societies

- Sigma Pi Sigma, Physics National Honor Society
- American Astronomical Society

Outreach Highlights

Texas Tech University

- 2019 **Astro Night.**
Monthly astronomy outreach event for the public at TTU
- 2019 **Public Astronomy Outreach.**
Event for public viewing of the total lunar eclipse on campus
- 2018 **Science Made Simple.**
Hands-on science demonstrations for the public at the TTU Museum.
- 2017 **AAUW Tech Savvy Day.**
Lead presenter of demonstration on optics and cameras to encourage girls in middle school to pursue careers in STEM.
- 2016 **AAUW Tech Savvy Day.**
Co-presented demonstration on water rockets to encourage girls in middle school to pursue careers in STEM.
- 2015 **TTU Physics Circus.**
Demonstrated various hands-on physics activities.

University of Southampton

2012 **SUSF Physoc Outreach Launch I**, Part of the founding committee of the Southampton University Space Flight Society.

Helped organize balloon launch carrying science experiments with students from a local school and was in charge of coordinating and updating social media.

Languages

English and Tamil (Both native)