

Kavitha Arur

Curriculum Vitae

Dept. of Physics and Astronomy
Texas Tech University
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📁 karur.github.io/homepage

Personal Details

Place of Birth Chennai, India
Citizenship Indian

Education

- 2015 – Present **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–Present **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

- 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 2016hmk", *MNRAS*, 475,111

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

- 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

- 2019 TTU Departmental Poster Competition, *Lead Organizer*
- 2019–Present 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

- 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 \LaTeX , 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–Present **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)