Yash Bhargava

Curriculum Vitae

Personal Data

DOB	01 Oct 1992
Nationality	Indian
Postal Address	CM 33, Department of Astronomy and Astrophysics, Tata Institute of Fundamental Research, Mumbai-400005
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Education

Aug 2016 - Jan 2022 **Ph.D.**, *Inter University Centre for Astronomy and Astrophysics (IUCAA)*, India,
Thesis title: Spectro-timing study of Accretion Disks in Black Hole binaries
Supervisors: Prof. Dipankar Bhattacharya and Prof. Ranjeev Misra
Degree awarded in February, 2022

Aug 2010 - Jul 2015 **B.Tech & M.Tech in Energy engineering**, *Indian Institute of Technology Bombay*, Mumbai, India, GPA 8.82/10

Academic Employment

Aug 2022-current **Postdoctoral Fellow**, *Tata Institute of Fundamental Research*, Mumbai, India, PI: Prof. Sudip Bhattacharyya

Sep. 2015 - Jul 2016 **Junior Research Fellow**, *Tata Institute of Fundamental Research*, Mumbai, India, Supervisor: Prof. A. R. Rao

Research Interests

High Energy Astrophysics Accretion in compact objects, Black hole binaries, Neutron star binaries, X-ray Novae

Computing Skills and Experience

Programming languages/tools: Python, Bash, Git

High energy Astrophysics software: HEASoft, XSPEC, GHATS

Fellowships and Awards

2023 K.D. Abhyankar Best thesis presentation award- Honorable mention @ ASI 2023

2022 National Postdoctoral fellowship

2016 Council of Scientific and Industrial Research-University Grants Commission (India) Research Fellowship

Recent Journal articles: published

2024 **Probing outbursts of the transient neutron star low mass X-ray binary Aql X-1 with NICER: a study of spectral evolution.**, K. G. Putha, **Yash Bhargava**, and S. Bhattacharyya, MNRAS, in press, https://doi.org/10.1093/mnras/stae1711

2024 **An IXPE-led X-Ray Spectropolarimetric Campaign on the Soft State of Cygnus X-1: X-Ray Polarimetric Evidence for Strong Gravitational Lensing**, J. Steiner, and others including **Yash Bhargava**, ApJL Volume 969, Issue 2, L30, https://doi.org/10.3847/2041-8213/ad58e4

2024 **Soft X-ray and FUV observations of Nova Her 2021 with AstroSat**, **Yash Bhargava**, K. P. Singh, G. C. Dewangan and others, MNRAS Volume 528 Issue 1 pp28, https://doi.org/10.1093/mnras/stad3870

2024 **High hard X-ray polarization in Cygnus X-1 confined to the intermediate hard state: evidence for a variable jet component**, T. Chattopadhyay, A. Kumar, A.R. Rao, **Yash Bhargava**, and others, ApJL Volume 960, Issue 1, L2, https://doi.org/10.3847/2041-8213/ad118d

2024 **AstroSat and NICER timing view of the Z-type Neutron Star X-ray binary GX 340+0**, M. Pahari S. Suman, **Yash Bhargava**, and others, MNRAS Volume 528, Issue 3 pp 4125, https://doi.org/10.1093/mnras/stae309

2023 **Probing the soft state evolution of 4U 1543-47 during its 2021 outburst using AstroSat**, N Husain, **Yash Bhargava**, A. Garg et al., MNRAS, Volume 524, Issue 4, pp.5817, https://doi.org/10.1093/mnras/stad2204

2023 **AstroSat View of the Neutron Star Low-mass X-Ray Binary GX 340+0**, **Yash Bhargava**, S.Bhattacharyya, J. Homan, and M. Pahari, ApJ, Volume 955, Issue 2, pp.102 https://doi.org/10.3847/1538-4357/acee7a

2022 **Probing the shot behaviour in Cygnus X-1 using simultaneous AstroSat-NICER observation**, **Yash Bhargava**, N. Hazra, A. R. Rao, R. Misra, et al , MNRAS, Volume 512, Issue 4, pp.6067-6077 https://doi.org/10.1093/mnras/stac853

2022 **Accreting on the edge: a luminosity-dependent cyclotron line in the Be/X-ray Binary 2S 1553-542 accompanied by accretion regimes transition**, C. Malacaria, **Yash Bhargava**, J. B. Coley, L. Ducci, et al., ApJ, Volume 927, Issue 2, id.194, 8 pp. https://doi.org/10.3847/1538-4357/ac524f

See this link for the ADS list of all publications

Journal articles: under review

ApJ **X-ray and Radio campaign of the Z-source GX 340+0: discovery of X-ray polarization and its implications** , **Yash Bhargava**, M Ng, and others, arXiv:2405.19324

MNRAS **Rapid Mid-Infrared Spectral-Timing with JWST. I. The prototypical black hole X-ray Binary GRS 1915+105 during a MIR-bright and X-ray-obscured state** , P. Gandhi and others including **Yash Bhargava**, arXiv:2406.18637

Peer review

Oct 2021-current Acted as a reviewer for Monthly Notices of Royal Astronomical Society (MNRAS)

Recent accepted Observation Proposals

Accepted in Dec 2023	Polarimetric observation of GX 340+0 along the Z-track. *Observatory*: IXPE
May 2023	Investigating the spectro-polarimetric properties of Cyg X-1 using AstroSat-IXPE coordinated observation*Observatory*: AstroSat
Jul 2022	Probing rapid variability in the jet of BHB GX 339-4 using multi-wavelength observations*Observatory*: AstroSat

Select Conferences and Seminars

Jul 2024	COSPAR 2024 **Talk**: Fast and Furious: Nova Her 2021 caught by *AstroSat* from UV to X-rays **Talk**: Evolution along the Z track: spectro-timing observations of GX 340+0 with *AstroSat*
Jun 2023	X-ray Universe 2023 **Poster**: Explaining the Z-track of GX 340+0 using wideband observations with *AstroSat*
Jul 2022	COSPAR 2022 **Talk**: Peculiar periodicity in V1674 Her 2021 using multi-wavelength observations **Talk**: Investigating low reflection in black hole binaries using NuSTAR
Mar 2022	Astronomical Society of India meeting **Poster**: Peculiar periodicity in V1674 Her 2021 using multi-wavelength observations
Jan 2021	COSPAR 2021, *(attended virtually)* **Talk**: Variability in MAXI J1820+070
Feb 2020	Astronomical Society of India meeting **Talk**: Shots of Cyg X-1

Select Schools and Workshops

Mar 2022	Workshop on Accretion physics, ASI 2022
Aug 2021	ZTF summer school on Variable stars, *(attended virtually)*
May 2021	NICER analysis workshop *(attended virtually)* **Talk**: Estimating the spin of MAXI J1820+070
Oct 2020	Chandra Frontiers in Time Domain Science *(attended virtually)* **Talk**: Understanding X-ray Shots in Cygnus X-1

Teaching Activities

Nov 2019	AstroSat Data Analysis in Goa University
Aug 2019 - Sep 2019	Teaching Assistant for the IUCAA Graduate School course Mathematical Methods in Physics (Course Instructor: Prof. Dipankar Bhattacharya)
May 2018	Hands on X-ray data analysis for Summer School participants at IUCAA

References

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