Curriculum Vitae of Devraj Pawar

Full Name	:	Dr. Devraj D. Pawar
Education	:	B.Sc. Physics, University of Mumbai M.Sc. Physics, University of Pune Ph.D. University of Mumbai Thesis title : Different Manifestations of Accretion on to Neutron Stars and Black Holes
Employment	:	Associate Professor in Ramniranjan Jhunjhunwala College (Empowered Autonomous) affiliated to University of Mumbai
Research Activities	:	X-ray astronomy, study of accretion phenomena in stellar mass compact objects in binary systems . My work is based on data from RXTE/PCA, Swift/XRT and presently on Astrosat data.
Teaching	:	I teach physics to first, second and third year students in B.Sc. Physics programme in Ramniranjan Jhunjhunwala College. I have taught radiative processes and data analysis to M.Sc. Students in the Department of Physics in the University of Mumbai.
Publications (Research Papers)	:	**1) Title :** On the modulation of low-frequency quasi-periodic oscillations in black hole transients, Monthly Notices of the Royal Astronomical Society, Volume 448, Issue 2, 1 April 2015, Pages 1298–1304, **Authors :** Pawar, D.D., Motta, S., Shanthi, K., Bhattacharya, D., Belloni, T. **DOI :** https://doi.org/10.1093/mnras/stv024 **2) Title :** Discovery of twin KHz quasi-periodic oscillations in the low-mass X-ray binary XTE J1701-407, *Monthly Notices of the Royal Astronomical Society*, Volume 433, Issue 3, 11 August 2013, Pages 2436–2444, **Authors :** Pawar, D.D., Kalamkar, M., Altamirano, D., Linares, M., Shanthi, K., Strohmayer, T., Bhattacharya, D., van der Klis,M. **DOI :** https://doi.org/10.1093/mnras/stt919 **3) Title :** Radio polarimetry as a probe of unresolved jets: the 2013 outburst of XTE J1908+094, *Monthly Notices of the Royal Astronomical Society*, Volume 451, Issue 4, 21 August 2015, Pages 3975–3985, **Authors :** Curran P.A., Miller-Jones J.C.A., Rushton A.P., Pawar D.D., Anderson G.E., Altamirano D., Krimm H.A., Broderick J.W., Belloni T.M., Fender R.P., Körding E.G., Maitra D., Markoff S., Migliari S., Rumsey C., Rupen M.P., Russell D.M., Russell T.D., Sarazin C.L., Sivakoff G.R., Soria R., Tetarenko A.J., Titterington D., Tudose V. **DOI :** https://doi.org/10.1093/mnras/stv1252

4) Title: The hard state of black hole candidates: XTE J1752-223, *Monthly Notices of the Royal Astronomical Society: Letters*, Volume 404, Issue 1, May 2010, Pages L94–L98,
Authors: Muñoz-Darias T., Motta S., Pawar D., Belloni T. M., Campana S., Bhattacharya D.
DOI : https://doi.org/10.1111/j.1745-3933.2010.00842.x

5) Title: X-ray Study on core collapse supernova 2008ax using XMM-Newton and Swift/XRT, Physica Scripta, Volume 99, Number 7, 27 June 2024
Authors: Ahmed Fouad, SH. M. Shehata, Devraj Pawar, Zainab Awad, Ali Takey and Hany Dwidar
DOI : https://dx.doi.org/10.1088/1402-4896/ad558d

6) Title: AstroSat Observations of the Dipping Low Mass X-ray Binary XB 1254-690, Monthly Notices of the Royal Astronomical Society, Volume 532, Issue 3, August 2024, Pages 2955–2964,
Authors: Navale, Nilam R., Pawar, Devraj, Rao, A. R., Misra, Ranjeev, Chakraborty, Sudip, Bhattacharyya, Sudip, Bambole, Vaishali A.
DOI : https://doi.org/10.1093/mnras/stae1668

7) Title: 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, Monthly Notices of the Royal Astronomical Society, Monthly Notices of the Royal Astronomical Society, Volume 537, Issue 2, February 2025, Pages 1385–1403,
Authors: Gandhi, P. and Borowski, E.S. and Byrom, J. and Hynes, R.I. and Maccarone, T.J. and Shaw, A.W. and Adegoke, O.K. and Altamirano, D. and Baglio, M.C. and Bhargava, Y. and Britt, C.T. and Buckley, D.A.H. and Buisson, D.J.K. and Casella, P. and Castro Segura, N. and Charles, P.A. and Corral-Santana, J.M. and Dhillon, V.S. and Fender, R. and G'urpide, A. and Heinke, C.O. and Igl, A.B. and Knigge, C. and Markoff, S. and Mastroserio, G. and McCollough, M.L. and Middleton, M. and Miller, J.M. and Miller-Jones, J.C.A. and Motta, S.E. and Paice, J.A. and Pawar, D.D. and Plotkin, R.M. and Pradhan, P. and Ressler, M.E. and Russell, D.M. and Russell, T.D. and Santos-Sanz, P. and Shahbaz, T. and Sivakoff, G.R. and Steeghs, D. and Tetarenko, A.J. and Tomsick, J.A. and Vincentelli, F.M. and George, M. and Gurwell, M. and Rao, R.
DOI : https://doi.org/10.1093/mnras/staf036

8) Title: Calibrating the clock of JWST, The Astronomical Journal, Published 2024 December 11 • © 2024. The Author(s). Published by the American Astronomical Society. The Astronomical Journal, Volume 169, Number 1,
Authors: A. W. Shaw, D. L. Kaplan, P. Gandhi, T. J. Maccarone, E. S. Borowski, C. T. Britt, D. A. H. Buckley, K. B. Burdge, P. A. Charles, V. S. Dhillon, R. G. French, C. O. Heinke, R. I. Hynes, C. Knigge, S. P. Littlefair, Devraj Pawar, R. M. Plotkin, M. E. Ressler, P. Santos-Sanz, T. Shahbaz, G. R. Sivakoff and A. L. Stevens
DOI : https://iopscience.iop.org/journal/1538-3881

9) Title: Rapid far-IR spectral timing of X-ray binaries with PRIMA, Journal of Astronomical Telescopes, Instruments and Systems, Journal of Astronomical Telescopes, Instruments, and Systems, Vol. 11, Issue 3, 031603 (March 2025)
Authors: Alexandra Tetarenko (Texas Tech University/University of Lethbridge), Poshak Gandhi (University of Southampton), Devraj Pawar (R. J. College, Mumbai-86)
DOI : https://doi.org/10.1117/1.JATIS.11.3.031603

Publications (Book chapters)

Title : Rapid far-IR spectral timing of X-ray binaries : Chapter in the "PRIMA General Observer Science Book", PRIMA (the Probe far-Infrared Mission for Astrophysics, Astrophysics) is a concept for a far-IR observatory, developed in response to the Announcement of Opportunity for an Astrophysics Probe Explorer issued by NASA in July 2023.
Authors : Alexandra Tetarenko (Texas Tech University/University of Lethbridge), Poshak Gandhi (University of Southampton), Devraj Pawar (R. J. College, Mumbai-86)
DOI : https://doi.org/10.48550/arXiv.2310.20572

Projects (MAJOR PI)

1) Study of Low Mass X-ray Binaries using AstroSat, ISRO-RESPOND, Department of Space, Government of India (2019; Rs. 21L)
2) Study of dipping LMXBs using AstroSat, ISRO-SSPO, Department of Space, Government of India (2019; Rs. 15L)

Projects (MAJOR Co-I)

1) AstroSat : a new window on General Relativity, India-Italy Exchange of researchers, Department of Science & Technology (2017)
2) Probing General Relativity in the vicinity of Black HOles using AstroSat, India-Italy Exchange of researchers, Department of Science & Technology (2012)

Projects (MINOR PI)

1) Interplay of dynamics with irregular structure and boundary in models of self organized criticality (UGC - Minor)
2) Study of variations in the spectral states of compact X-ray binaries (BCUD -University of Mumbai)
3) Study of time dependent properties of self-organized criticality models on fractals (BCUD -University of Mumbai)

Conferences :

1) **Talk :** X-ray view of cosmos, PRL, Ahmedabad, January 2012
2) **Participant :** Fifth International ASTROD Symposium on Laser Astrodynamics, RRI, Bengaluru, May 2012
3) **Talk :** "Spectral and Timing analysis of 4U 1957+11 with Astrosat" in the international discussion meeting on Science with AstroSat, IUCAA 2018
4) **Talk :** "A study of Dipping LMXB XB 1254-690 using AstroSat" in seminar "Celebrations of5 years of AstroSat at ISRO HQ", on 28th September 2020.
5) **Keynote Address** : "Observations of X-ray Binary Systems" , The Arab Conference on Astronomy and Geophysics - ACAG 7 held in National Research Institute of Astronomy and Geophysics (NRIAG), Cairo, Egypt, October 11-14, 2021

6) **Keynote Address** : “Low Mass X-ray Binaries” , The Arab Conference on Astronomy and Geophysics - ACAG 8 held in National Research Institute of Astronomy and Geophysics (NRIAG), Cairo, Egypt, October 9-12, 2023
7) **Chair** : “Session on X-ray Binaries”, The Arab Conference on Astronomy and Geophysics - ACAG 8 held in National Research Institute of Astronomy and Geophysics (NRIAG), Cairo, Egypt, October 9-12, 2023

Posters

1) RXTE Observations of LMXB XTE J1701-407, poster presented in the Conference on Wideband X-ray Astronomy: Frontiers in Timing and Spectroscopy, IUCAA, Pune
2) Twin kHz QPOs in the Low Mass X-ray Binary in XTE J1701-407, poster presented in Centre for Planetary Sciences 8th School, Osaka, Japan, October 2011
3) Timing properties of Black hole Binaries, poster presented in Timing and Transients meeting in IUCAA, Pune, January 2013
4) QPOs in Black hole Binaries, poster presented in Scientific Advisory Committee meeting in IUCAA, Pune, February 2013
5) Gemini observations of MAXI J1820+070, poster presented in the International conference "Exploring the Universe: Near Earth space science to extragalactic astronomy", S. N. Bose, Kolkata, 14th -17th November, 2018
6) X-ray and Optical variability in MAXI J1820+070, poster presented in 4th National conference on. Recent Trends in the Study of Compact Objects: Theory and Observation (RETCO-IV) 17 - 20 April 2019, IUCAA, Pune

Associations :

1) Visiting Associate of Inter University Centre for Astronomy and Astrophysics (IUCAA – Pune, India)
2) Indian Association of Physics Teachers (IAPT, India)