Curriculum Vitae

Ashkbiz 'Ash' Danehkar

Contact Information

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Personal Information

Citizenship	American, Australian

Research Interests

• Starburst Feedback • AGN Feedback • Extreme Astrophysics • ISM Astrophysics

Employment

2022–present	Scientist II (Astrophysicist/PI), Eureka Scientific, Inc., Oakland, CA
2019–2021	Research Fellow, University of Michigan, Department of Astronomy, Ann Arbor, MI
2015–2018	Postdoctoral Fellow, Harvard–Smithsonian Center for Astrophysics, Cambridge, MA
2008	Visiting Early-stage Researcher in Physics, University of Craiova, Romania

Education

2014	PhD, Physics and Astronomy, Macquarie University, Sydney, NSW, Australia
2009	MS, Plasma Physics (distinction), Queen's University Belfast, Northern Ireland, UK
2007	MS, Computational Electrical Engineering (merit), Universität Rostock, Germany

Grants and Funds

2024–2025	NASA *Fermi* Theory Program ($75k; 80NSSC24K0630 PI: Danehkar): "Tracing the History and Origin of the Fermi and eROSITA Bubbles using RHD Simulations"
2024	NASA *NICER* GO Program ($42k; 80NSSC23K1098 PI: Danehkar): "Monitoring the Nearest Tidal Disruption Event Candidate IGR J12580+0134"
2022–2025	NASA Astrophysics Data Analysis Program (ADAP 80NSSC22K0626): "Black Hole Spin Survey of Radio-quiet AGN" (21-ADAP21-0207; PI: Danehkar)
2022	IAU & KAS Travel Grants for IAUGA2022, IAUS370 & 373 (€2.2k)
2022	NRAO Travel Grant for ngVLA22 ($440), Marie Curie Alumni Association Micro-grant (€400)
2021	NPSS Young Professionals Grant for ICOPS 2021 ($300)
2014	Astronomical Society of Australia (ASA) Travel Award ($1k)
2014	Australian Institute of Physics, Student Conference Support ($500)
2014	IAU & KAS Travel Grants for IAUGA2014 & IAUS312 (€1.5k)
2013	Sigma Xi Grants-in-Aid of Research (GIAR; $1.5k)
2012	Macquarie University Higher Degree Research Funds ($8k)
2011	IAU Travel Grants for IAUS281–283 (€2.25k)

Honors and Awards

2018	Symmetry Outstanding Reviewer Award (MDPI; 500 F)
2011	Max Planck Institute for Extraterrestrial Physics Travel Award (ICPDP6; €1.5k)
2010–2014	Macquarie University Research Excellence Scholarship ($136k)
2008–2009	Department for Employment and Learning Studentship (Northern Ireland, QUB; £25k)
2008	Marie Curie Early Stage Researcher Scholarship (MRTN-CT-2004-005104, U. Craiova; €16k)

Academic Service Activities

2025	*Reviewer* for NSF Graduate Research Fellowships Program (GRFP Astronomy & Astrophysics)
2024	*Reviewer* for GMRT Observing Time (Cycle 46)
2021, 22, 24	Session Chair and Chambliss Award Judge, 237th, 240th & 243rd AAS Meeting
2022, 23, 24	Distributed Peer *Reviewer* for ESO Telescopes (Period 111, 113, 114 & 115)
2022	*Review Panelist* for NOIRLab Time Allocation Committee, Chandra Cycle 24 Peer Review
2022	*Reviewer* for Canada-France-Hawaii Telescope & National Science Center (Poland)
2021	*Review Panelist* for NSF Astronomy & Astrophysics Research Grants (AAG)
2019, 20, 23, 24	*Reviewer* for NASA Postdoctoral Program (NPP)
2017, 19	*Review Panelist* for NASA's Astrophysics Data Analysis Program (ADAP)
2011–present	*Referee* for peer-reviewed journals: 96 verified reviews in Web of Science
2018–2021	*Guest Editor* for 2 Issues in Universe & Front.Phys.: 9 verified records in Web of Science

Teaching and Mentoring Experience

2023	Educator, TED-Ed Lesson, Non-profit TED Foundation
2022–present	Subject Matter Expert, NASA Community College Network (NCCN), SETI Institute
2021	Higher Education Teaching Certificate, Harvard University, Derek Bok Center
2020	Inclusive STEM Teaching Project, University of Michigan, CRLT
2020	College STEM Teaching Certificate (Postdoc Short Course), University of Michigan, CRLT
2019–2020	Mentoring, one UROP program undergraduate student
2019–2020	Mentoring, two undergraduate students supervised by Prof. Sally Oey
2018	TA for Holographic Duality (PHY 8.871; taught by Prof. Hong Liu), MIT Physics
2015	Learning Management Specialist, Think Education (Laureate), Sydney, Australia
2011–2012	Lab. TA for Mechanics (PHYS107) and Electromagnetism (PHYS202), Macquarie Univ.

Computing Experience

Computing:	Professional programming with C++, Python, FORTRAN, IDL/GDL, OpenMPI
Data Analysis:	Programming with AstroPy, SciPy, pandas, NumPy, Matplotlib, h5py, yt
Data Reduction:	Extensive experience with IRAF, HEASoft, XMMSAS, DrizzlePac, CIAO

Telescope Time

Space Observatories

2023/AO5	(PI) *NICER* (GO 90 ks at Priority A), Proposal ID 6093 "Monitoring the Nearest Tidal Disruption Event Candidate IGR J12580+0134"

Ground-based Observatories

2024/A	(PI) ESO VLT UT4 8.2-m Telescope (2.5 hrs on Rank B), Proposal ID 113.26GC "MUSE Survey of Planetary Nebulae with High Abundance Discrepancies"
2023/B	(PI) Gemini North 8.1-m Telescope (Queue 8 hrs on Band 3), Proposal ID GN-2023B-Q-315 "Exploring the Nearest Green Pea Analog Mrk 71 with Gemini/GMOS"
2023/03	(PI) NRAO VLA (7.0 hours at Priority B), Proposal ID VLA/23A-369 "Mapping the Nearest Green Pea Analog and LyC Emitter Candidate NGC 2366/Mrk 71"
2018/03	(Co-I) NRAO VLA (5.0 hours at Priority B), Proposal ID VLA/18A-271 "Dynamic Evolution of the Powerful Jet Activity in the Symbiotic System R Aqr"
2013/A	(PI) Gemini South 8.1-m Telescope (Queue 8 hrs on Band 3), Proposal ID GS-2013A-Q-88 "Kinematic and ionization study of planetary nebulae with close-binary nuclei"
2013/07	(Co-I) AAT 3.9-m Telescope (3.9 hours), AAO-SPIRAL Service Proposal ID SP019 "Kinematical study of Galactic planetary nebulae with binary central stars"
2012/B	(PI) Gemini South 8.1-m Telescope (Queue 5.2 hrs on Band 3), Proposal ID GS-2012B-Q-69 "Kinematic study of planetary nebulae with potential double-degenerate nuclei"
2012/08	(PI) ANU 2.3-m Telescope (Classical 4 nights), WiFeS, Proposal ID 3-12-0158 "Morpho-kinematics and abundances analysis of Galactic planetary nebulae"
2012/02	(PI) ANU 2.3-m Telescope (Classical 4 nights), WiFeS, Proposal ID 1-12-0214 "Kinematic study of planetary nebulae with potential double-degenerate nuclei"

Computing Time

2022	(PI) NSF ACCESS (Explore PHY220146; 200 kSU)
2016	(PI) NSF XSEDE (STAMPEDE; 20 kSU)
2014	(PI) NCI National Facility, gSTAR/swinSTAR (project p063_astro; 250 kSU)
2012	(Co-I) NCI National Facility, raijin/vayu (project g33; 350 kSU)
2011	(PI) NCI National Facility, orange (200 kSU)

Selected Conference Talks

2024	AAS Summer 243rd Meeting, New Orleans, LA, USA
2022	IAU Symposia 370 & 373, Busan, South Korea
2022	AAS Summer 240th Meeting, Pasadena, CA, USA
2022	EAS Annual Meeting, Valencia, Spain
2021	IAUS 362: Predictive Power of Computational Astrophysics (Virtual)

Professional Development

2020	Applied Data Science with Python, Specialization Certificate, University of Michigan
2020	Professional Development DEI Certificate, University of Michigan (Rackham School)

Professional Memberships

2018–present	International Astronomical Union (IAU), Member
2017–present	American Physical Society (APS), Member
2015–present	American Astronomical Society (AAS), Full Member

Publications in Refereed Journals

Total Refereed Papers:	34
Leading Author Refereed Papers:	28
h-index:	15
List of Publications:	All records on ADS (orcid:0000-0003-4552-5997)

[34] 2024. Danehkar, A., Relativistic Reflection Modeling in AGN and Related Variability from PCA: A Brief Review, *Front.Astron.Space Sci.*, 11, 1479301. doi:10.3389/fspas.2024.1479301 arXiv:2410.01852 [astro-ph.HE]

[33] 2024. Danehkar, A., Drake, J. J., and Luna, G. J. M., X-ray Variability in the Symbiotic Binary RT Cru: Principal Component Analysis, *ApJ*, 972, 109. doi:10.3847/1538-4357/ad5cf6 arXiv:2406.17161 [astro-ph.HE]

[32] 2024. Danehkar, A., Silich, S., Herenz, E. C., and Östlin, G., Disentangling the X-ray variability in the Lyman continuum emitter Haro 11, *A&A*, 689, A333. doi:10.1051/0004-6361/202449388 arXiv:2407.01604 [astro-ph.HE]

[31] 2023. Oey, M. S., Sawant, A. N., Danehkar, A., Silich, S., Smith, L. J., Melinder, J., Leitherer, C., Hayes, M., Jaskot, A. E., Calzetti, D., Chu, Y.-H., James, B. L., and Östlin, G., Nebular C IV λ1550 Imaging of the Metal-Poor Starburst Mrk 71: Direct Evidence of Catastrophic Cooling, *ApJL*, 958, L10. doi:10.3847/2041-8213/ad07dd arXiv:2310.13751 [astro-ph.GA]

[30] 2022. Danehkar, A., Oey, M. S., and Gray, W. J., Catastrophic Cooling in Superwinds. III. Nonequilibrium Photoionization, *ApJ*, 937, 68. doi:10.3847/1538-4357/ac8cec arXiv:2208.12030 [astro-ph.GA]
VizieR Online Data Catalog:J/ApJ/937/68 Interactive Figures:galacticwinds.github.io/superwinds

[29] 2022. Danehkar, A., and Parthasarathy, M., Physical Conditions and Chemical Abundances of the Variable Planetary Nebula IC 4997, *MNRAS*, 514, 1217–1230. doi:10.1093/mnras/stac1364 arXiv:2205.14250 [astro-ph.SR]
VizieR Online Data Catalog:J/MNRAS/514/1217

[28] 2022. Danehkar, A., Covariant Evolution of Gravitoelectromagnetism, *Universe*, 8, 318.
doi:10.3390/universe8060318 arXiv:2206.13946 [gr-qc]

[27] 2022. Danehkar, A., Morpho-kinematic Properties of Wolf-Rayet Planetary Nebulae, *ApJS*, 260, 14.
doi:10.3847/1538-4365/ac5cca arXiv:2107.03994 [astro-ph.SR]
Interactive 3D Sketchfab:skfb.ly/opFZv

[26] 2022. Danehkar, A., Morphologies of Wolf-Rayet Planetary Nebulae based on IFU Observations, *Galaxies*, 10, 45.
doi:10.3390/galaxies10020045 arXiv:2203.03354 [astro-ph.SR]

[25] 2022. Danehkar, A., 3D spatio-kinematic modeling of Abell 48, a planetary nebula around a Wolf-Rayet [WN] star, *MNRAS*, 511, 1022–1028. doi:10.1093/mnras/stab3735 arXiv:2112.12043 [astro-ph.SR]
Interactive 3D Sketchfab:skfb.ly/o7nxA

[24] 2021. Danehkar, A., Physical and Chemical Properties of Wolf–Rayet Planetary Nebulae, *ApJS*, 257, 58.
doi:10.3847/1538-4365/ac2310 arXiv:2106.10762 [astro-ph.SR]
VizieR Online Data Catalog:J/ApJS/257/58

[23] 2021. Danehkar, A., Oey, M. S., and Gray, W. J., Catastrophic Cooling in Superwinds. II. Exploring the Parameter Space, *ApJ*, 921, 91. doi:10.3847/1538-4357/ac1a76 arXiv:2106.10854 [astro-ph.GA]
VizieR Online Data Catalog:J/ApJ/921/91 Interactive Figures:superwinds.astro.lsa.umich.edu

[22] 2021. Danehkar, A., Alshal, H., and Curtright, T. L., Dual fields of massive/massless gravitons in IR/UV completions, *Int.J.Mod.Phys.D*, 30, 2142021. doi:10.1142/S0218271821420219 arXiv:2109.05148 [hep-th]

[21] 2021. Danehkar, A., Karovska, M., Drake, J. J., and Kashyap, V. L., Long-term X-ray variability of the symbiotic system RT Cru based on *Chandra* spectroscopy, *MNRAS*, 500, 4801–4817. doi:10.1093/mnras/staa3554 arXiv:2011.07390 [astro-ph.HE]

[20] 2020. Danehkar, A., Gravitational fields of the magnetic-type, *Int.J.Mod.Phys.D*, 29, 2043001.
doi:10.1142/S0218271820430014 arXiv:2006.13287 [gr-qc]

[19] 2019. Boissay-Malaquin, R., Danehkar, A., Marshall, H. L., Nowak, M. A., Relativistic Components of the Ultra-fast Outflow in the Quasar PDS 456 from *Chandra*/HETGS, *NuSTAR*, and *XMM-Newton* Observations, *ApJ*, 873, 29. doi:10.3847/1538-4357/ab0082 arXiv:1901.06641 [astro-ph.HE]

[18] 2019. Danehkar, A., Electric-magnetic duality in gravity and higher-spin fields, *Front.Phys.*, 6, 146.
doi:10.3389/fphy.2018.00146

[17] 2018. Kriss, G. A., Lee, J. C., and Danehkar, A., A Search for H I Lyα Counterparts to Ultra-fast X-ray Outflows, *ApJ*, 859, 94. doi:10.3847/1538-4357/aabf38 arXiv:1804.05652 [astro-ph.GA]

[16] 2018. Kriss, G. A., Lee, J. C., Danehkar, A., Nowak, M. A., Fang, T., Hardcastle, M. J., Neilsen, J., and Young, A. J., Discovery of an Ultraviolet Counterpart to an Ultra-fast X-ray Outflow in the Quasar PG 1211+143, *ApJ*, 853, 166. doi:10.3847/1538-4357/aaa42b arXiv:1712.08850 [astro-ph.HE]

[15] 2018. Danehkar, A., Nowak, M. A., Lee, J. C., Kriss, G. A., Young, A. J., Hardcastle, M. J., Chakravorty, S., Fang, T., Neilsen, J., Rahoui, F., and Smith, R. K., The Ultra-fast Outflow of the Quasar PG 1211+143 as Viewed by Time-averaged *Chandra* Grating Spectroscopy, *ApJ*, 853, 165. doi:10.3847/1538-4357/aaa427 arXiv:1712.07118 [astro-ph.HE]

[14] 2018. Danehkar, A., Nowak, M. A., Lee, J. C., and Smith, R. K., MPI_XSTAR: MPI-based parallelization of the XSTAR photoionization program, *PASP*, 130, 024501. doi:10.1088/1538-3873/aa9dff arXiv:1712.00343 [astro-ph.HE]

[13] 2018. Danehkar, A., Karovska, M., Maksym, W. P., and Montez Jr, R., Mapping Excitation in the Inner Regions of the Planetary Nebula NGC 5189 Using *HST* WFC3 Imaging, *ApJ*, 852, 87. doi:10.3847/1538-4357/aa9e8c arXiv:1711.11111 [astro-ph.SR]

[12] 2018. Danehkar, A., Electron beam-plasma interaction and electron-acoustic solitary waves in a plasma with suprathermal electrons, *Plasma Phys.Control.Fusion*, 60, 065010. doi:10.1088/1361-6587/aabc40 arXiv:1804.07299 [physics.plasm-ph]

[11] 2018. Danehkar, A., Bi-Abundance Ionisation Structure of the Wolf–Rayet Planetary Nebula PB 8, *PASA*, 35, e005. doi:10.1017/pasa.2018.1 arXiv:1801.00892 [astro-ph.SR]

[10] 2017. Danehkar, A., Electrostatic solitary waves in an electron-positron pair plasma with suprathermal electrons, *Phys.Plasmas*, 24, 102905. doi:10.1063/1.5000873 arXiv:1711.01141 [physics.plasm-ph]

[9] 2016. Danehkar, A., Parker, Q. A. and Steffen, W., Fast, low-ionization emission regions of the planetary nebula M2-42, *AJ*, 151, 38. doi:10.3847/0004-6256/151/2/38 arXiv:1601.01702 [astro-ph.SR]

[8] 2015. Danehkar, A., Discovery of collimated bipolar outflows in the planetary nebula Th 2-A, *ApJ*, 815, 35. doi:10.1088/0004-637X/815/1/35 arXiv:1512.02330 [astro-ph.SR]

[7] 2015. Danehkar, A., and Parker, Q. A., Spatially resolved kinematic observations of the planetary nebulae Hen 3-1333 and Hen 2-113, *MNRAS:Letters*, 449, L56–L59. doi:10.1093/mnrasl/slv022 arXiv:1503.01551 [astro-ph.SR]

[6] 2014. Frew, D. J., Bojicic, I. S., Parker, Q. A., Stupar, M., Wachter, S., DePew, K., Danehkar, A., Fitzgerald, M. T., and Douchin, D., The planetary nebula Abell 48 and its [WN] nucleus, *MNRAS*, 440, 1345–1364. doi:10.1093/mnras/stu198 arXiv:1301.3994 [astro-ph.SR]

[5] 2014. Danehkar, A., Todt, H., Ercolano, B., and Kniazev, A. Y., Observations and three-dimensional photoionization modelling of the Wolf–Rayet planetary nebula Abell 48, *MNRAS*, 439, 3605–3615. doi:10.1093/mnras/stu203 arXiv:1403.0567 [astro-ph.SR]

[4] 2013. Danehkar, A., Parker, Q. A., and Ercolano, B., Observations and three-dimensional ionization structure of the planetary nebula SuWt 2, *MNRAS*, 434, 1513–1530. doi:10.1093/mnras/stt1116 arXiv:1307.2974 [astro-ph.SR]

[3] 2011. Danehkar, A., Saini, N. S., Hellberg, M. A., and Kourakis. I., Electron-acoustic solitary waves in the presence of a suprathermal electron component, *Phys.Plasmas*, 18, 072902. doi:10.1063/1.3606365 arXiv:1107.5226 [astro-ph.SR]

[2] 2009. Danehkar, A., On the significance of the Weyl curvature in a relativistic cosmological model, *Mod.Phys.Lett.A*, 24, 3113–3127. doi:10.1142/S0217732309032046 arXiv:0707.2987 [gr-qc]

[1] 2009. Bizdadea, C., Cioroianu, E. M., Danehkar, A., Iordache, M., Saliu, S. O., and Sararu, S. C., Consistent interactions of dual linearized gravity in $D = 5$: couplings with a topological BF model, *Eur.Phys.J.C*, 63, 491–519. doi:10.1140/epjc/s10052-009-1105-0 arXiv:0908.2169 [hep-th]

Scientific Codes (Refereed)

[4] 2020. Danehkar, A., AtomNeb Python Package, an addendum to AtomNeb: IDL Library for Atomic Data of Ionized Nebulae, *J. Open Source Softw.*, 5, 2797. doi:10.21105/joss.02797 arXiv:1907.02528 [astro-ph.IM]

[3] 2020. Danehkar, A., pyEQUIB Python Package, an addendum to proEQUIB: IDL Library for Plasma Diagnostics and Abundance Analysis, *J. Open Source Softw.*, 5, 2798. doi:10.21105/joss.02798 arXiv:2410.13998 [astro-ph.IM]

[2] 2019. Danehkar, A., AtomNeb: IDL Library for Atomic Data of Ionized Nebulae, *J. Open Source Softw.*, 4, 898. doi:10.21105/joss.00898 arXiv:1907.02528 [astro-ph.IM]

[1] 2018. Danehkar, A., proEQUIB: IDL Library for Plasma Diagnostics and Abundance Analysis, *J. Open Source Softw.*, 3, 899. doi:10.21105/joss.00899 arXiv:1812.01605 [astro-ph.IM]

Book Reviews (Refereed)

[2] 2019. Danehkar, A., Book Review: Holographic Entanglement Entropy, *Front.Phys.*, 7, 121. doi:10.3389/fphy.2019.00121

[1] 2018. Danehkar, A., Book Review: Gauge/Gravity Duality: Foundations and Applications, *Front.Phys.*, 6, 82. doi:10.3389/fphy.2018.00082

Conference Proceedings

[19] 2024. Oey, M. S., Jecmen, M. C., Sawant, A. N., Jaskot, A. E., Danehkar, A., Smith, L. J., and Melinder, J., Massive-Star Feedback at Low Metallicity, In: *Proceedings of the IAU Symposium 377: Early Disk-Galaxy Formation from JWST to the Milky Way*, *IAU Symp.*, 377, 14-21. doi:10.1017/S1743921323001072

[18] 2023. Danehkar, A., Oey, M. S., and Gray, W. J., Numerical Modeling of Galactic Superwinds with Time-evolving Stellar Feedback, In: *Proceedings of the IAU Symposium 370: Winds of Stars and Exoplanets*, *IAU Symp.*, 370, 217-222. doi:10.1017/S1743921323000066

[17] 2023. Danehkar, A., Radiatively Cooling Superwinds in Ultracompact HII Regions, In: *Proceedings of the IAU Symposium 373: Resolving the Rise and Fall of Star Formation in Galaxies*, *IAU Symp.*, 373, 25-27. doi:10.1017/S1743921322003994

[16] 2023. Danehkar, A., Oey, M. S., and Gray, W. J., Hydrodynamic Simulations and Time-dependent Photoionization Modeling of Starburst-driven Superwinds, In: *Proceedings of the IAU Symposium 362: Predictive Power of Computational Astrophysics*, *IAU Symp.*, 362, 64-69. doi:10.1017/S1743921322001570

[15] 2023. Danehkar, A., Silicon K-edge Dust Properties of Neutron Star Low-mass X-ray Binaries, In: *Proceedings of the IAU Symposium 363: Neutron Star Astrophysics at the Crossroads*, *IAU Symp.*, 363, 342-344. doi:10.1017/S174392132200045X

[14] 2022. Danehkar, A., Impact of Suprathermal and Beam Electrons on Nonlinear Electrostatic Waves in an Electron-Positron Plasma. In: *Proceedings of the 48th European Physical Society Conference on Plasma Physics*, *EPS Conference Proceedings*, 46A, P2b.406, 2010. doi:10.6084/m9.figshare.20346747

[13] 2021. Danehkar, A., Oey, M. S., and Gray, W. J., Non-equilibrium Photoionization and Hydrodynamic Simulations of Starburst-driven Outflows. *J. Phys.: Conf. Ser.*, 2028, 012013. doi:10.1088/1742-6596/2028/1/012013

[12] 2021. Danehkar, A., Oey, M. S., and Gray, W. J., Conditions for Superwind Classes of Super Star Clusters. In: *Focus on AAS 237*, *Res. Notes AAS*, 5, 82. doi:10.3847/2515-5172/abf4b7

[11] 2016. Danehkar, A., and Parker, Q. A., Orientation of Galactic Bulge Planetary Nebulae toward the Galactic Center, In: *Proceedings of the IAU Symposium 312: Star Clusters and Black Holes in Galaxies across Cosmic Time*, *IAU Symp.*, 312, 128–130. doi:10.1017/S1743921315007681

[10] 2015. Danehkar, A., Steffen, W., and Parker, Q. A., Kinematical Properties of Planetary Nebulae with WR-type Nuclei, In: *Proceedings of the 12th Asia-Pacific Regional IAU Meeting*, *Publ.Korean Astron.Soc.*, 30, 163–167. doi:10.5303/PKAS.2015.30.2.163

[9] 2015. Danehkar, A., Wesson, R., Karakas, A. I. and Parker, Q. A., Physical and Chemical Properties of Planetary Nebulae with WR-type Nuclei, In: *Proceedings of the 12th Asia-Pacific Regional IAU Meeting (APRIM)*, *Publ.Korean Astron.Soc.*, 30, 159–161. doi:10.5303/PKAS.2015.30.2.159

[8] 2014. Danehkar, A., Kourakis, I. and Hellberg, M. A., Electron-acoustic solitons in an electron-beam plasma system with kappa-distributed electrons, In: *Plasma Sciences (ICOPS), IEEE 41st International Conference on High-Power Particle Beams (BEAMS)*, Id. 7012747. doi:10.1109/PLASMA.2014.7012747

[7] 2013. Danehkar, A., Frew, D. J., De Marco, O., and Parker, Q. A., A search for Type Ia supernova progenitors: the central stars of the planetary nebulae NGC 2392 and NGC 6026. In: *Proceedings of the IAU Symposium 281: Binary Paths to the Explosions of type Ia Supernovae*, *IAU Symp.*, 281, 221–222. doi:10.1017/S1743921312015074

[6] 2012. Danehkar, A., Frew, D. J., Parker, Q. A., and De Marco, O., Photoionization models of the Eskimo nebula: evidence for a binary central star?, In: *Proceedings of the IAU Symposium 282: From Interacting Binaries to Exoplanets, Essential Modeling Tools*, *IAU Symp.*, 282, 470–471. doi:10.1017/S1743921311028134

[5] 2012. Danehkar, A., Frew, D. J., De Marco, O., and Parker, Q. A., Photoionization modeling of the Galactic planetary nebulae Abell 39 and NGC 7027. In: *Proceedings of the IAU Symposium 283: Planetary Nebulae: an Eye to the Future*, *IAU Symp.*, 283, 340–341. doi:10.1017/S1743921312011325

[4] 2011. Saini, N. S., Danehkar, A., Hellberg, M. A., and Kourakis, I., Large-amplitude electron-acoustic solitons in a dusty plasma with kappa-distributed electrons. In: *Proceedings of the Sixth International Conference on the Physics of Dusty Plasmas*, *AIP Conf.Proc.*, 1397, 357–358. doi:10.1063/1.365984

[3] 2011. Danehkar, A., Saini, N. S., Hellberg, M. A., and Kourakis, I., Electron beam–plasma interaction in a dusty plasma with excess suprathermal electrons. In: *Proceedings of the Sixth International Conference on the Physics of Dusty Plasmas*, *AIP Conf.Proc.*, 1397, 305–306. doi:10.1063/1.3659815

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on Plasma Physics, *EPS Conference Proceedings*, 34A, P2.410, 2010. ADS doi:10.6084/m9.figshare.4774570

[1] 2009. Bizdadea, C., Cioroianu, E. M., Danehkar, A., Iordache, M., Saliu, S. O., and Sararu, S. C., BF Models in Dual Formulations of Linearized Gravity, In: *Proceedings of the Physics Conference TIM-08*, *AIP Conf.Proc.*, 1131, 29–35. doi:10.1063/1.3153449

Meeting Abstracts

[17] 2024. Danehkar, A., Decomposing X-ray Variability in Seyfert I AGN with Principal Component Analysis. In: *IAUGA Meeting 32*, *General Assembly International Union Meeting*, 32, 2023. ADS

[16] 2024. Danehkar, A., Supermassive Black Hole Spins in Seyfert I AGN via Principal Component Analysis. In: *APS April Meeting*, *Bulletin of the American Physical Society*, KK02.00002. ADS APS

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[21] 2024. Relativistic X-ray Reflection in Radio-quiet AGN as Revealed with Principal Component Analysis, AAS Summer 243rd Meeting (in-person), New Orleans, LA, USA, January 8.

[20] 2022. Time-dependent Numerical Modeling of Thermally Driven Stellar Winds, IAU Symposium 370: Winds of Stars and Exoplanets (in-person), Busan, Korea, August 11. YouTube doi:10.6084/m9.figshare.25029785

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[17] 2022. Bayesian X-ray Spectral Analysis of Black Hole Spins in Seyfert I AGN, AAS Summer 240th Meeting (in-person), Pasadena, CA, USA, June 14. doi:10.6084/m9.figshare.25024931

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Colloquium and Invited Talks

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[15] 2019. Simulations of Superwind Suppression in Super Star Clusters, Galaxy Group Meeting, University of Michigan,

Ann Arbor, MI, USA, November 25. doi:10.6084/m9.figshare.13699429

[14] 2019. Relativistic Compact Outflows in Radio-quiet AGN, Extreme Astrophysics Group, University of Michigan, Ann Arbor, MI, USA, October 31. doi:10.6084/m9.figshare.13699300

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[2] 2009. Electrostatic solitary waves in a plasma with suprathermal electrons, Annual IMPRS-APS Meeting, Garching, Germany, November 27.

[1] 2009. Propagation of electron-acoustic excitations in the presence of suprathermal background electrons, CPP Project Seminar, Queen's University Belfast, UK, September 30. doi:10.6084/m9.figshare.13698991

Conference Posters

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[26] 2024. Principal Component Analysis of X-ray Variations in the Hard X-ray Emitting Symbiotic Binary RT Cru, APS April Meeting (virtual), Sacramento, CA, USA, April 5. doi:10.6084/m9.figshare.26121658

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[22] 2022. Black Hole Spins from Relativistic Reflection Modeling of Accretion Disks in Radio-quiet AGN, General Assembly IAU Focus Meeting 1, Busan, Korea, August 8–11.

[21] 2022. UV Diagnostics of Radiatively Cooling Superwinds in Super Star Clusters, General Assembly IAU Focus Meeting 4, Busan, Korea, August 8–11. doi:10.6084/m9.figshare.25024709

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Public Outreach

[4] 2023. *Fermi Bubbles, where did these gigantic bubbles come from?*, Educator for TED-Ed Lesson, YouTube.

[3] 2023. *Morphologies of Planetary Nebulae around Wolf-Rayet Stars*, Subject Matter Expert, NASA Community College Network (NCCN), SETI Institute (remote class visit), January 12.

[2] 2021. *Webb-O-Lanterns and More*, Subject Matter Expert & Speaker for NASA's James Webb Space Telescope Community Events, North Liberty Library, North Liberty, IA, USA (remote via Zoom), October 28.

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