Curriculum Vitae

Ashkbiz "Ash" Danehkar

Contact Information

Address	Eureka Scientific Inc., 2452 Delmer St Suite 100, Oakland, CA 94602
E-Mail	danehkar [at] eurekasci [dot] com, ashkbiz [dot] danehkar [at] gmail [dot] com
Web	danehkar.net, danehkar.github.io
ORCID	orcid.org/0000-0003-4552-5997
Phone	+1 (617) 955-0606

Personal Information

Citizenship	Australian, US Permanent Resident

Research Interests

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

Employment

2022–present	Scientist II (Principal Investigator), 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

Education

2014	PhD, Physics and Astronomy, Macquarie University, Sydney, Australia
2009	MS, Plasma Physics (with distinction), Queen's University Belfast, UK
2007	MS, Computational and Electrical Engineering, University of Rostock, Germany

Grants and Funds

2024	NASA *Fermi* Theory Program ($75k; PI: Danehkar): "Tracing the History and Origin of the Fermi and eROSITA Bubbles using Time-dependent RHD Simulations"
2024	NASA *NICER* GO Program ($42k; 80NSSC23K1098 PI: Danehkar): "Monitoring the Nearest Tidal Disruption Event Candidate IGR J12580+0134"
2022–2024	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)
2022	Marie Curie Alumni Association (MCAA) 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; £25k)
2008	Marie Curie Early Stage Researcher Scholarship (MRTN-CT-2004-005104; €16k)

Academic Service Activities

2021, 2022	Session Chair and Chambliss Award Judge, 237th & 240th AAS Meeting
2022	Distributed Peer *Reviewer* for ESO Telescopes (Period 111)
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, 2020	*Reviewer* for NASA Postdoctoral Program (NPP)
2017, 2019	*Review Panelist* for NASA's Astrophysics Data Analysis Program (ADAP)
2011–present	*Referee* for ApJ, AJ, Ap&SS, Phys.Plasmas, JGR Sp.Phys., MPLA, Universe, etc. 90 verified reviews and 9 verified editor records in *Web of Science* (publons.com/a/843927)
2018–2021	*Guest Editor* for 2 Special Issues in Universe & Front.Phys.

Teaching and Mentoring Experience

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	Teaching Assistant, MIT Physics 'Holographic Duality" (PHY 8.871; taught by Prof. Hong Liu)
2015	Learning Management System Specialist, Laureate International Universities, Sydney, Australia:
2010–2012	Teaching Assistant, Macquarie University, Department of Physics and Astronomy

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

2023/B	(PI) Gemini North 8.1-m Telescope (Queue 8 hrs on Band 3), GMOS Proposal 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), GMOS Proposal 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), GMOS Proposal 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

2022	IAU Symposia 370 & 373, Busan, South Korea
2022	AAS Summer 240$^{\text{th}}$ Meeting, Pasadena, CA, USA
2022	EAS Annual Meeting, Valencia, Spain
2021	IAUS 362: Predictive Power of Computational Astrophysics (Virtual)
2021	Asymmetrical Post-Main-Sequence Nebulae 8 (Virtual)
2021	APS April Meeting (Virtual), USA
2021	AAS Winter 237$^{\text{th}}$ Virtual Meeting, USA

Professional Development

2021	Higher Education Teaching Certificate, Harvard University (Derek Bok Center)
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:	31
Leading Author Refereed Papers:	25
h-index:	14
List of Publications:	All records on ADS (orcid:0000-0003-4552-5997)

[31] 2023. Oey, M. S., Sawant, A. N., Danehkar, A. and Silich, S., Smith, L. J., Melinder, J., Leitherer, C., Hayes, M., Jaskot, A. E., Calzetti, D., Chu, Y.-H., James, B. L. and Oestlin, G. Nebular C IV 1550 Imaging of the Metal-Poor Starburst Mrk 71: Direct Evidence of Catastrophic Cooling, *ApJ*, accepted. arXiv:2310.13751 [astro-ph.GA]

[30] 2022. Danehkar, A., Oey, M. S., and Gray, W. J. Catastrophic Cooling in Superwinds. III. Non-equilibrium 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

[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

[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

[17] 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

[16] 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

[15] 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

[14] 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

[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. 2011. 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

[2] 2010. Sultana, S., Danehkar, A., Saini, N. S., Hellberg, M. A., and Kourakis, I. Effect of superthermality on nonlinear electrostatic modes in plasmas. In: *Proceedings of the 37th European Physical Society Conference 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

[13] 2022. Danehkar, A. Chemical Abundances of Planetary Nebulae around Hydrogen-deficient Stars. In: *EAS Meeting 2022*, *European Astronomical Society Annual Meeting*, SS16, 1270. ADS

[12] 2022. Danehkar, A. Probing Supermassive Black Hole Spins through Reflection Modeling of Accretion Disks. In: *EAS Meeting 2022*, *European Astronomical Society Annual Meeting*, SS12, 1264. ADS

[11] 2022. Danehkar, A. Hydrodynamic Simulations of Large-scale AGN-driven Outflows. In: *EAS Meeting 2022*, *European Astronomical Society Annual Meeting*, S6, 1258. ADS

[10] 2022. Danehkar, A. Bayesian X-ray Spectral Analysis of Black Hole Spins in Seyfert I AGN. In: *AAS Meeting 240*, *Bulletin of the American Astronomical Society*, 54, 230.02. ADS

[9] 2022. Danehkar, A. Black hole spins in radio-quiet type I active galaxies: Markov chain Monte Carlo based analysis. In: *APS April Meeting*, *Bulletin of the American Physical Society*, S17.00045. ADS APS

[8] 2021. Danehkar, A. Positron-acoustic solitons in an electron-positron plasma with beam electrons and kappa-distributed electrons. In: *APS Division of Plasma Physics Meeting*, *Bulletin of the American Physical Society*, JP11.00003. ADS APS doi:10.6084/m9.figshare.17125547

[7] 2021. Danehkar, A. Electron Beam-Plasma Interaction in an Electron-Positron Plasma System with Kappa-Distributed Electrons, In: *Plasma Sciences (ICOPS), 48th IEEE International Conference on*, Id. 9588478. ADS doi:10.1109/ICOPS36761.2021.9588478

[6] 2021. Boissay-Malaquin, R., Danehkar, A., Marshall, H., and Nowak, M. Chandra/HETG and NuSTAR Observations of the Quasar PDS 456 and its Ultra-fast Outflow Components. In: *AAS Meeting 238*, *Bulletin of American Astronomical Society*, 53, 224.02. ADS

[5] 2021. Danehkar, A. Hard X-ray emitting symbiotics: candidates for type Ia supernova progenitors. In: *APS April Meeting*, *Bulletin of the American Physical Society*, Z09.00006. ADS APS doi:10.6084/m9.figshare.14669499

[4] 2021. Danehkar, A., Oey, M. S., and Gray, W. J. Emission Lines from Superwinds of Super Star Clusters. In: *AAS Meeting 237*, *Bulletin of the American Astronomical Society*, 53, 228.04. ADS doi:10.6084/m9.figshare.13720114

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[19] 2022. Conditions for Cool Superwinds in Massive Star-forming Regions, IAU Symposium 373: Resolving the Rise and Fall of Star Formation in Galaxies (e-Talk), Busan, Korea, August 10. YouTube

[18] 2022. Hydrodynamic Simulations of Large-scale AGN-driven Outflows, European Astronomical Society Annual Meeting (remotely), Valencia, Spain, June 27. YouTube

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

[16] 2022. Black hole spins in radio-quiet type I active galaxies: Markov chain Monte Carlo based analysis, APS April Meeting (e-Talk), New York, USA, April 11. YouTube

[15] 2021. Chemical Compositions of [WR] Planetary Nebulae based on IFU Observations, Evolved Stars and their Circumstellar Environments, SOFIA Science Center (Online Workshop), December 15. YouTube doi:10.6084/m9.figshare.17700830

[14] 2021. Hydrodynamic Simulations and Time-dependent Photoionization Modeling of Starburst-driven Superwinds, IAU Symposium 362: Predictive Power of Computational Astrophysics (Virtual), November 8. YouTube doi:10.6084/m9.figshare.17125607

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[12] 2021. Non-equilibrium Photoionization and Hydrodynamic Simulations of Starburst-driven Outflows, 4th Workshop on Numerical Modeling in MHD and Plasma Physics (Virtual), October 13. doi:10.6084/m9.figshare.16820926

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[5] 2020. Paths to a Unified AGN Outflow Model via Computational Relativity, Challenges and Innovations in Computational Astrophysics - II (ChaICA-II; Virtual), November 20. doi:10.6084/m9.figshare.13699591

[4] 2020. Tendex and Vortex Lines around Spinning Supermassive Black Holes, 30th Midwest Relativity Meeting (Virtual), University of Notre Dame, IN, USA, October 23. doi:10.6084/m9.figshare.13699531

[3] 2019. Active Galactic Nuclei: Laboratory for Gravitational Physics, 29th Midwest Relativity Meeting, Grand Valley State University, Grand Rapids, MI, USA, October 4. doi:10.6084/m9.figshare.13699240

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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

[13] 2019. Suppressed Superwinds in Super Star Clusters via Hydrodynamic Simulations, Post-Doc Colloquium, University of Michigan, Ann Arbor, MI, USA, September 5. doi:10.6084/m9.figshare.13699186

[12] 2019. Ultra-Fast Outflows in Seyfert I AGN, Galaxy Group Meeting, University of Michigan, Ann Arbor, MI, USA, March 11. doi:10.6084/m9.figshare.13699114

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[10] 2017. Low-ionization Envelopes in NGC 5189: Spatially-resolved HST Observations, CfA Postdoc Symposium, Harvard CfA, Cambridge, MA, USA, October 20. doi:10.6084/m9.figshare.13699090

[9] 2016. Photoionization Modeling of Warm Absorbing Outflows in Active Galactic Nuclei, CfA Postdoc Symposium, Harvard CfA, Cambridge, MA, USA, October 7. doi:10.6084/m9.figshare.13699069

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[6] 2015. Insights into the Morphology of Planetary Nebulae from 3D Spectroscopy, CfA Postdoc Symposium, Harvard CfA, Cambridge, MA, USA, November 20. doi:10.6084/m9.figshare.13699018

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[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

[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

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[20] 2022. Measuring Black Hole Spins in Radio-quiet type I AGN, 23rd International Conference on General Relativity and Gravitation (Virtual), July 3–8.

[19] 2022. Probing Supermassive Black Hole Spins through Reflection Modeling of Accretion Disks, European Astronomical Society Annual Meeting, Valencia, Spain, June 27– July 1.

[18] 2022. Chemical Abundances of Planetary Nebulae around Hydrogen-deficient Stars, European Astronomical Society Annual Meeting, Valencia, Spain, June 27– July 1. doi:10.6084/m9.figshare.20346729

[17] 2022. Impact of Suprathermal and Beam Electrons on Nonlinear Electrostatic Waves in an Electron-Positron Plasma, 48th EPS Conference on Plasma Physics (Virtual), June 27– July 1. doi:10.6084/m9.figshare.20346747

[16] 2022. Hydrodynamic Simulations of Starburst-driven Superwinds and Superbubbles, Computational Astrophysics in the ngVLA Era, Flatiron Institute, New York, USA, June 7–12. doi:10.6084/m9.figshare.20346666

[15] 2022. Black hole spins in radio-quiet type I active galaxies: Markov chain Monte Carlo based analysis, APS April Meeting, New York, USA, April 9–12. APS doi:10.6084/m9.figshare.20346633

[14] 2021. Silicon K-edge dust properties of neutron star low-mass X-ray binaries, IAU Symposium 363: Neutron Star Astrophysics at the Crossroads (Virtual), Nov 29–Dec 3. doi:10.6084/m9.figshare.17125601

[13] 2021. Positron-acoustic solitons in an electron-positron plasma with beam electrons and kappa-distributed electrons, 63rd Annual Meeting of the APS Division of Plasma Physics, Pittsburgh, PA, USA, Nov 8–12. APS doi:10.6084/m9.figshare.17125547

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Public Outreach

[1] 2021. *Webb-O-Lanterns and More*, Subject Matter Expert & Speaker for NASA's Webb Space Telescope Community Events, North Liberty Library, North Liberty, IA, USA (Virtual), October 28.

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