SHANE W. DAVIS

Dept. of Astronomy, U. of Virginia, P.O. Box 400325, Charlottesville, VA 22904-4325, (434) 924-4898

EDUCATION

University of California, Santa Barbara, CA, 2006
Ph.D., Physics

Carnegie Mellon, Pittsburgh, PA, 2000
B.S., Physics, with University Honors

EMPLOYMENT

Associate Professor, Sep. 2020 - present
Assistant Professor, Aug. 2014 - Aug. 2020
Department of Astronomy, University of Virginia, Charlottesville, VA

Senior Research Associate, Sep. 2012 - July 2014
Postdoctoral Fellow, Sep. 2010 - Aug. 2012
Canadian Institute of Theoretical Astrophysics, University of Toronto, Toronto, ON

Postdoctoral Fellow, Sep. 2006 - Aug. 2010
School of Natural Sciences, Institute for Advanced Study, Princeton, NJ

Graduate Research and Teaching Assistant, Sep. 2000 - Aug. 2006
Department of Physics, University of California, Santa Barbara, CA

Undergraduate Research and Teaching Assistant, Sep. 1998 - Aug. 2000
Department of Physics, Carnegie Mellon, Pittsburgh, PA

HONORS AND AWARDS

All-University Teaching Award, U. of Virginia, 2019

Kavli Frontiers of Science Fellow, NAS, 2016, 2018, 2022

Mead Honored Faculty, U. of Virginia, 2016

Alfred P. Sloan Research Fellowship, 2015

Beatrice D. Tremaine Award, CITA, 2012

Chandra Fellowship, NASA, 2006

Phi Beta Kappa and Phi Kappa Phi Honor Societies, 2000

Barry M. Goldwater Scholarship, 1999

REFEREED PUBLICATIONS

h-index=40, total citations=6300, normalized citations=1710 (ADS, August 2024)

71. *Spectral calculations of 3D RMHD simulations of super-Eddington accretion onto a stellar-mass black hole*
Mills, B. S., **Davis, S. W.**, Jiang, Y.-F. & Middleton, M., 2024, ApJ, in press

70. *Pre-peak Emission in Tidal Disruption Events*
Huang, X., **Davis, S. W.**, & Jiang, Y.-F., 2024, ApJ, in press

69. *Continuum emission from within the plunging region of black hole discs*
Mummery, A, Ingram, A., **Davis, S.**, & Fabian, A., 2024, MNRAS, 531, 366

68. *Time-dependent AGN disc winds - I. X-ray irradiation*
Dyda, S., **Davis, S. W.**, & Proga, D. 2024, MNRAS, 530, 5143

67. *Refraction of Line and Continuum Light in Exoplanet Atmospheres*
Arita-Escalante, J., Arras, P., & **Davis, S. W.**, 2023, ApJ, 957, 93

66. *Spin measurement of 4U 1543-47 with Insight-HXMT and NICER from its 2021 outburst. A test of accretion disk models at high luminosities*
Yorgancioglu, E. S., Bu, Q. C., Santangelo, A., Tao, L., **Davis, S. W.**, Vahdat, A., Kong, L. D., Pirano, S., Zhou, M., & Zhang, S. N., 2023, A&A, 677, A79

65. *A Bright First Day for Tidal Disruption Events*
Huang, X., **Davis, S. W.**, & Jiang, Y.-F., 2023, ApJ, 953, 117

64. *An Extension of the Athena++ Code Framework for Radiation-magnetohydrodynamics in General Relativity Using a Finite-solid-angle Discretization*
White, C. J., Mullen, P. D., Jiang, Y.-F., **Davis, S. W.**, Stone, J. M., Morozova, V., & Zhang, L., 2023, ApJ, 949, 103

63. *Global Three-Dimensional Radiation Magnetohydrodynamic Simulations of Accretion onto a Stellar Mass Black Hole at Sub- and Near-critical Accretion Rate*s
Huang, J., Jiang, Y-F., Feng, H., **Davis, S. W.**, Stone, J. M. & Middleton, M., 2023, ApJ, 945, 57

62. *Ice Age: Chemodynamical Modeling of Cha-MMS1 to Predict New Solid-phase Species for Detection with JWST*
Jin, M., Lam, K. H., McClure, M. K., van Scheltinga, J. T. Li, Z.-Y., Boogert, A., Herbst, E., **Davis, S. W.** & Garrod, R. T., 2022, ApJ, 935, 133

61. *A Novel Solution for Resonant Scattering Using Self-consistent Boundary Conditions*
McClellan, B. C., **Davis, S. W.**, & Arras, P., 2022, ApJ, 934, 37

60. *Cosmic-Ray-driven Multiphase Gas Formed via Thermal Instability*
Huang, X. Jiang, Y.-F. & **Davis, S. W.**, 2022, ApJ, 931, 140

59. *Combined Hydrodynamic and Gas-Grain Chemical Modeling of Hot Cores I: 1-D simulations*
Barger, C. J.; Lam, K. H.; Garrod, R. T.; Li, Z.-H.; **Davis, S. W.** & Herbst, E., A&A, 651, 43

58. *The Launching of Cosmic Ray Driven Outflows*
Huang, X. & **Davis, S. W.**, 2022, MNRAS, 511, 5125

57. *The black hole spin in GRS 1915+105, revisited*
Mills, B. S., **Davis, S. W.** & Middleton, M. J., ApJ, 2021, ApJ, 914, 6

56. *MHD Simulations of AGN Disk and Jets*
Davis, S. W. & Tchekhovskoy, A., 2020, ARA&A, 58, 407

55. *Time Dependent Radiation Hydrodynamics on a Moving Mesh*
Chang, P., **Davis, S. W.**, & Jiang, Y.-F., MNRAS, 2020, MNRAS, 493, 5397

54. *Dusty Cloud Acceleration with Multiband Radiation*
Huang, X., **Davis, S. W.**, & Zhang, D., 2020, ApJ, 893, 50

53. *Covrariant Radiative Transfer for Black Hole Spacetimes*
Davis, S. W. & Gammie, C. F., 2020, ApJ, 888, 94

52. *Global Radiation Magneto-hydrodynamic Simulations of Sub-Eddington Accretion Disks around Supermassive Black Holes*
Jiang, Y.-F., Blaes, O. M., Stone, J. M., & **Davis, S. W.**, 2019, ApJ, 885, 144

51. *Super-Eddington Accretion Disks around Supermassive black Holes*
Jiang, Y.-F., Stone, J. M., & **Davis, S. W.**, 2019, ApJ, 880, 67

50. *Spectral Hardening in Black Hole Accretion: Giving Spectral Modelers an f*
Davis, S. W. & El-Abd, S., 2019, ApJ, 874, 23

49. *Dusty Cloud Acceleration by Radiation Pressure in Rapidly Star-Forming Galaxies*
Zhang, D., & **Davis, S. W.**, Jiang, Y.-F., & Stone, J. M., 2018, ApJ, 854, 110

48. *Radiation Hydrodynamic Simulations of Dust-driven Winds*
Zhang, D., & **Davis, S. W.**, 2017, ApJ, 839, 54

47. *A Broadband X-Ray Spectral Study of the Intermediate-mass Black Hole Candidate M82 X-1 with NuSTAR, Chandra, and Swift*
Brightman, M., Harrison, F. A., Barret, D., **Davis, S. W.**, Furst, F., Madsen, K. K., Middleton, M., Miller, J. M., Stern, D., Tao, L., Walton, D. J., 2016, ApJ, 829, 28

46. *Iron Opacity Bump Changes the Stability and Structure of Accretion Disks in Active Galactic Nuclei*
Jiang, Y.-F., **Davis, S. W.**, & Stone, J. M., 2016, ApJ, 827, 10

45. *X-ray polarimetry with the Polarization Spectroscopic Telescope Array (PolSTAR)*
Krawczynski, H. S., Stern, D., Harrison, F. A., et al. (+52 authors, with **Davis, S. W.** listed alphabetically), 2016, Astroparticle Physics, 75, 8

44. *Radiation Feedback in ULIRGS: Are Photons Movers and Shakers?*
Davis, S. W., Jiang, Y.-F., Stone, J. M., & Murray, N., 2014, ApJ, 796, 107

43. *A Global Thee Dimensional Radiation Magnetohydrodynamic Simulation of Super-Eddington Accretion Disks*
Jiang, Y.-F., Stone, J. M., & **Davis, S. W.**, 2014, ApJ, 796, 106

42. An Algorithm for Radiation Magnetohydrodynamics Based on Solving the Time-dependent Transfer Equation
Jiang, Y.-F., Stone, J. M., & **Davis, S. W.**, 2014, ApJS, 213, 7

41. *Dynamics of warped accretion discs*
Tremaine, S. & **Davis, S. W.**, 2014, MNRAS, 441, 1408

40. *Radiation Magneto-hydrodynamic Simulations of the Formation of Hot Accretion Disk Coronae*
Jiang, Y.-F., Stone, J. M. & **Davis, S. W.**, 2014, ApJ, 784, 169

39. *Line Driven Winds and the UV Turnover in AGN Accretion Disks*
Laor, A. & **Davis, S. W.**, 2014, MNRAS, 438, 3024

38. *The Effects of Irradiation on the Cloud Evolution in Active Galactic Nuclei*
Proga, D., Jiang, Y.-F., **Davis, S. W.**, Stone, J. M., & Smith, D., 2014, ApJ, 780, 51

37. *On the Thermal Stability of Radiation Dominated Disks*
Jiang, Y.-F., Stone, J. M. & **Davis, S. W.**, 2013, ApJ, 778, 65

36. *Saturation of the MRI in Strongly Radiation Dominated Accretion Disks*
Jiang, Y.-F., Stone, J. M. & **Davis, S. W.**, 2013, ApJ, 767, 148

35. *Non-linear Evolution of Rayleigh-Taylor Instability in a Radation Supported Atmosphere*
Jiang, Y.-F., **Davis, S. W.** & Stone, J. M., 2013, ApJ, 763, 102

34. *The Eye of the Storm: Light from the Inner Plunging Region of Black Hole Accretion Disks*
Zhu, Y., **Davis, S. W.**, Narayan, R., Kulkarni, A., Penna, R. A., & McClintock, J. E., 2012, MNRAS, 424, 2504

33. *Intrinsic Disc Emission and the Soft X-ray Excess in AGN*
Done, C., **Davis, S. W.**, Jin, C., Blaes, O. M., and Ward, M., 2012, MNRAS, 420, 1848

32. *A Godunov Method for Multidimensional Radiation Magnetohydrodynamics based on a variable Eddington tensor*
Jiang, Y.-F., Stone, J. M., & **Davis, S. W.**, 2012, ApJS, 199, 14

31. *A Radiation Transfer Solver for Athena using Short Characteristics*
Davis, S. W., Stone, J. M., & Jiang, Y.-F., 2012, ApJS, 199, 9

30. *The Extreme Spin of the Black Hole in Cygnus X-1*
Gou, L., McClintock, J. E., Reid, M. J., Orosz, J. A., Steiner, J. F., Narayan, R., Xian, J., Remillard, R. A., Arnaud, K. A., & **Davis, S. W.**, 2011, ApJ, 742, 85

29. *Cold Accretion Disks and Lineless Quasars*
Laor, A., & **Davis, S. W.**, 2011, MNRAS, 417, 681

28. *Measuring Black Hole Spin by the Continuum-Fitting Method: Effect of Deviations from the Novikov-Thorne Disc Model*
Kulkarni, A. K., Penna, R. F., Shcherbakov, R. V., Steiner, J. F., Narayan, R., McClintock, J. E., Sadowski, A., Zhu, Y., **Davis, S. W.**, & McKinney, J. C., 2011, MNRAS, 414, 1183

27. *Measuring the Spins of Accreting Black Holes*
McClintock, J. E., Narayan, R., **Davis, S. W.**, Gou, L., Kulkarni, A., Orosz, J. A., Penna, R. F., Remillard, R. A., Steiner, J. F. 2011, Classical and Quantum Gravity, 28, 114009

26. *The Cool Accretion Disk in ESO 243-49 HLX-1: Further Evidence of an Intermediate Mass Black Hole*
Davis, S. W., Narayan, R., Zhu, Y., Barret, D., Farrell, S. A., Godet, O., Servillat, M., & Webb, N. A., 2011, ApJ, 734, 111

25. *The X-Ray Polarization Signature of Quiescent Magnetars: Effect of Magnetospheric Scattering and Vacuum Polarization*
Fernández, R. & **Davis, S. W.**, 2011, ApJ, 730, 131

24. *The Radiative Efficiency of Accretion Flows in Individual AGN*
Davis, S. W. & Laor, A., 2011, ApJ, 728, 98

23. *Erratum: Precise Measurement of the Spin Parameter of the Stellar-Mass Black Hole M33 X-7*
Liu, J., McClintock, J. E., Narayan, R., **Davis, S. W.**, & Orosz, J. A. 2010, ApJ, 719, 109

22. *Testing Accretion Disk Structure with Suzaku Data of LMC X-3*
Kubota, A., Done, C., **Davis, S. W.**, Dotani, T., Mizuno, T., & Ueda, Y., 2010, ApJ, 714, 860

21. *Sustained Magnetorotational Turbulence in Local Simulations of Stratified Disks with Zero Net Magnetic Flux*
Davis, S. W., Stone, J. M., & Pessah, M. E. 2010, ApJ, 713, 52

20. *The Effects of Magnetic Fields and Inhomogeneities on Accretion Disk Spectra and Polarization*
Davis, S. W., Blaes, O. M., Hirose, S., & Krolik, J. H. 2009, 703, 569

19. *A Determination of the Spin of the Black Hole Primary in LMC X-1*
Gou, L., McClintock, J. E., Liu, J., Narayan, R., Steiner, J. F., Remillard, R. A., Orosz, J. A., **Davis, S. W.**, Ebisawa, K., & Schlegel, E. M. 2009, ApJ, 701, 1076

18. *The Eddington Limit in Cosmic Rays: An Explanation for the Observed Faintness of Starbursting Galaxies*
Socrates, A., **Davis, S. W.**, & Ramirez-Ruiz, E. 2008, ApJ, 687, 202

17. *Angular Momentum Transport in Accretion Disks and its Implications for Spin Estimates in Black Hole Binaries*
Done, C, & **Davis, S. W.** 2008, ApJ, 683, 389

16. *Precise Measurement of the Spin Parameter of the Stellar-Mass Black Hole M33 X-7*
Liu, J., McClintock, J. E., Narayan, R., **Davis, S. W.**, & Orosz, J. A. 2008, ApJL, 679, 37

15. *The UV Continuum of Quasars: Models and SDSS Spectral Slopes*
Davis, S. W., Woo, J.-H., & Blaes, O., M. 2007, ApJ, 668, 682

14. *Black Hole Spin in GRS 1915+105*
Middleton, M., Done, C., Gierlinski, M., & **Davis, S. W.** 2006, MNRAS, 373, 1004

13. *The Spin of the Near-Extreme Kerr Black Hole GRS 1915+105*
McClintock, J. E., Shafee, R., Narayan, R., Remillard, R. A., **Davis, S. W.**, & Li, L.-X. 2006, ApJ, 652, 518

12. *Ultraluminous X-ray Sources Powered by Radiatively Efficient Two-Phase Super-Eddington Accretion onto Stellar Mass Black holes*
Socrates, A., & **Davis, S. W.** 2006, ApJ, 651, 1049

11. *Testing Accretion Disk Theory in Black Hole X-ray Binaries*
Davis, S. W., Done, C. & Blaes, O. M. 2006, ApJ, 647, 525

10. *Magnetic pressure support and accretion disk spectra*
Blaes, O. M., **Davis, S. W.**, Hirose, S., Krolik, J. H., & Stone, J. M. 2006, ApJ, 645, 1402

9. *A Grid of Relativistic, non-LTE Accretion Disk Models for Spectral Fitting of Black Hole Binaries*
Davis, S. W., & Hubeny, I. 2006, ApJS, 164, 530

8. *Estimating the Spin of Stellar-Mass Black Holes via Spectral Fitting of the X-ray Continuum*
Shafee, R., McClintock, J. E., Narayan, R., **Davis, S. W.**, Li, L.-X., & Remillard, R. A. 2005, ApJ, 636, 113

7. *The Effects of Photon Bubble Instability in Radiation-Dominated Accretion Disks*
Turner, N. J., Blaes, O. M., Socrates, A., Begelman, M. C., & **Davis, S. W.** 2005, ApJ, 624, 267

6. *Relativistic Accretion Disk Models of High State Black Hole X-ray Binary Spectra*
Davis, S. W., Blaes, O. M., Hubeny, I., & Turner, N. J., 2005, ApJ, 621, 327

5. *Multiwavelength Observations of Radio Galaxy 3C 120 with XMM-Newton*
Ogle, P. M., **Davis, S. W.**, Antonucci, R. R. J, Colbert, J. W., Malkan, M. A., Page, M. J., Sasseen, T. P., & Tornikoski, M. 2005 ApJ, 618, 139

4. *Turbulent Comptonization in Black Hole Accretion Disks*
Socrates, A., **Davis, S. W.**, & Blaes O. 2004, ApJ, 601, 405

3. *The origin of the Fe K features in Markarian 205 and Markarian 209*
Page, M. J., **Davis, S. W.**, & Salvi, N. J. 2003, MNRAS, 343, 1241-1247

2. *The X-ray spectrum of the Seyfert 1 galaxy Mrk 766: Dusty Warm Absorber or Relativistic Emission Lines?*
   Mason, K. O., Branduardi-Raymont, G., Ogle, P. M., Page, M. J., Puchnarewicz, E. M., Behar, E., Cordova, F. A., **Davis, S.**, Maraschi, L., McHardy, I. M., O'Brien, P. T., Priedhorsky, W. C., & Sasseen, T. P. 2003, ApJ 582, 95

1. *Cluster-based Monte Carlo Simulation of Ferrofluids*
   Davis, S. W., McCausland, W., McGahagan, H. C., Tanaka, C. T., & Widom, M. 1999, Phys. Rev. E, 59, 2424

GRANTS AND RESEARCH SUPPORT

PI or **co-PI** on numerous large computing allocations from NSF XSEDE, NASA HEC, DOE INCITE, and NSF ACCESS. Total allocations exceeding several hundred million CPU core-hours and over a millions GPU hours since 2015.

PI, NSF AAG, $298K, "Collaborative Research: Radiation Magnetohydrodynamics of Tidal Disruption Events" (1 Sep 2023 - 31 Aug 2026)

co-I, NSF AAG, $510K, "Dynamical and chemical modeling of low-mass star-forming cores" (1 July 2022 - 30 June, 2025)

co-PI, NASA Theoretical and Comptuational Astrophysics Networks, $448K (UVa subaward) "Global models of accretion and outflows in astrophysical disks: A new DAWN" (1 June 2021 - 31 May 2024)

PI, NSF AAG, $243K, "Collaborative Research: Spectral and Radiation Hydrodynamic Models of Photospheric Radius Expansion X-ray Bursts" (1 Aug 2021 - 31 July 2024)

co-PI, NASA LISA Preparatory Science, $9K (UVa subaward) "Electromagnetic and Gravitational Wave Signatures of LISA Massive Black Hole Binaries" (15 May 2019 - 14 May 2022)

PI, NASA ATP, $334K, "Spectral Models of X-ray Binaries and Ultraluminous X-ray Sources from Radiation Magnetohydrodynamics Simulations" (1 Jun 2018 - 31 May 2024)

PI, NSF AAG, $359K, "The Physics of Star Formation Feedback and Molecular Cloud Destruction" (1 Sep 2016 - 31 Aug 2019)

co-I, NASA ATP, $426K, "Coupled hydrodynamic and chemical/spectral modeling of high-mass star-forming cores" (1 Feb 2018 - 31 Jan 2021)

co-I, NASA ATP, $386K "Exoplanetary MHD Outflows Driven by EUV Heating, Lyman alpha Radiation Forces and Stellar Tides" (1 Jun 2018 - 31 May 2021)

PI, $50K, Alfred P. Sloan Research Fellowship (Sep. 1, 2015 - Aug. 31, 2017)

PI, $20K, Virginia Space Grant Consortium, New Investigator Award (1 Jun 2016 - 31 May 2017)

COLLOQUIA, INVITED TALKS, AND SEMINARS (2015-PRESENT)

Invited Review, Extreme Accretion Events in Supermassive black holes, COSPAR, Busan, Korea, July 19-20, 2024

Invited Review, Spectral/Timing Properties of AGN: Theory and Observations, COSPAR, Busan, Korea, July 14-15, 2024

Invited Talk, ICERM Workshop on Solving the Boltzmann Equation for Neutrino Transport in Relativistic Astrophysics, Providence RI, July 8-12, 2024

Invited Talk, ISSI Workshop on Accretion disks: the first 50 years, Bern, Switzerland, June 17-21, 2024

Invited Talk, The Event Horizon and Beyond - Celebrating 50 Years of Narayan, Cambridge, MA, June 11-13, 2024

Invited Participant, CCA Radiation Transfer Workshop, Flatiron Institute, NY, Dec. 12-14, 2023

Invited Review, Black Holes on Broadway, Flatiron Institute, NY, Dec. 4-7, 2023

Invited Lecturer, Center for Computational Astrophysics Fluid Dynamics Summer School, Flatiron Institute, NY, Aug. 6-11, 2023

Athena++ Users and Developers Meeting, Flatiron Institute, NY, May 8-12, 2023

Invited Talk, AGN Santa Fe: Where are the Objects in AGN Disks?, Santa Fe, Mar. 22-24, 2023

Invited Workshop Participant, Overcoming disconnects in understanding of accreting black holes, Lorentz Center, Leiden, Netherlands, Jan. 23-27, 2023

Invited Talk, Black Hole Accretion Workshop, Charleston, SC, Aug. 8-11, 2022

Invited Talk, NBIA workshop Radiation Transfer in Astrophysics, Copenhagen, Denmark, June 6-10, 2022,

Session Organizer, Chinese-American Kavli Frontiers of Science Symposium, Irvine, CA, July 8-10, 2022

Discussion Leader, Building Bridges: Towards a Unified Picture of Stellar and Black Hole Binary Accretion and Evolution, KITP, Santa Barbara, CA, March 14-17, 2022

Invited participant, New paradigms for radiatively efficient accretion disks", Center for Computational Astrophysics, Flatiron Institute, NYC, NY, Dec. 6-9, 2021

Discussion Leader, BNS/BH-NS Workshop, Rochester, NY (remote), July 12-17, 2021

Astronomy Seminar, Technion, Haifa, Israel, (remote) Jan. 27, 2021

Center for Computational Relativity and Gravitation Seminar, Rochester Institute of Technology, Rochester, NY, Feb. 28, 2020

Astronomy Colloquium, U. of Michigan, Ann Arbor, MI, Nov. 21, 2019

Astrophysics Seminar, Michigan State U., East Lansing, MI, Nov. 20 2019

Invited talk, Quasars in Crisis, Edinburgh, UK, Aug 7, 2019

Invited talk and SOC member, Accretion Signatures of the Earliest Black Holes in the Universe, Princeton, NJ, Apr. 4, 2019

Center for Relativistic Astrophysics Seminar, Georgia Tech, Atlanta, GA, Mar. 14, 2019

Invited review, Radiative signatures from the cosmos, Paris, France, Oct. 27, 2018

Session organizer, Kavli Frontiers Meeting, Nanjing, China, Oct. 18, 2018

Invited talk, Chandra Workshop on Accretion in Stellar Systems, Boston, MA, Aug. 10, 2018

Invited talk, COSPAR Sesssion: The Extreme Physics of Eddington and Super Eddington Accretion onto Compact Objects, Pasadena, CA, July, 20, 2018

Astronomy Colloquium, Durham U., Durham, UK, Jan. 24, 2018

Astronomy Seminar, U. of Southampton, Southampton, UK, Jan. 22, 2018

Anton Pannekoek Institute Colloquium, U. of Amsterdam, Amsterdam, Netherlands, Jan. 17, 2018

DARK Seminar, Niels Bohr Institute, Copenhagen, Denmark, Jan. 16, 2018

Niels Bohr International Academy Astropartical Seminar, Niels Bohr Institute, Copenhagen, Denmark, Jan. 15, 2018

Astronomy Seminar, U. of Waterloo, Waterloo, Canada, Sep. 14, 2017

Cosmology Seminar, Perimeter Institute, Waterloo, Canada, Sep. 13, 2017

Invited Talk, EWASS 2017, Prague, Czech Republic, June 29, 2017

Invited Talk, AGN Driven Winds, Haifa, Israel, May 24, 2017

Physics Colloquium, James Madison, U., Harrisonburg, VA, Mar. 23, 2017

Physics Colloquium, U. of Wisconsin-Milwaukee, Milwaukee, WI, Mar. 9, 2017

Astrophysics Seminar, Johns Hopkins U., Baltimore, MD, Sep. 8, 2016

Invited Talk, Simulations and Modelling of Relativistic MHD Accretion Disks, Oxford, UK, July, 11, 2016

Invited Talk, Stellar Remnants at the Junction: Comparing Accreting White Dwarfs, Neutron Stars, and Black Holes, Junction, TX, USA, May 5, 2016

Special Seminar, U. of Bern, Bern, Switzerland, Feb. 29, 2016

Informal Seminar, Institute for Advanced Study, Princeton, NJ, USA, Nov. 19, 2015

Invited Talk, The Physics of Supermassive Black Hole Formation and Feedback, Annapolis, MD, USA, Oct. 13, 2015

Astronomy Colloquium, U. of California, Los Angeles, CA, USA, Mar. 11, 2015

Invited Talk, Compact Objects as Astrophysical and Gravitational Probes, Leiden, Netherlands, Feb. 2, 2015

Astronomy Colloquium, Caltech, Pasadena, CA, USA, Oct. 8, 2015

High Energy Seminar, Max Planck Institute for Astrophysics, Garching, Germany, Aug. 29, 2014

Cosmology Seminar, Max Planck Institute for Astrophysics, Garching, Germany, Aug. 26, 2014

NATIONAL/INTERNATIONAL SERVICE

Peer Reviewer for A&A, ApJ, ApJL, CQGra, Nature, Nature Astronomy, MNRAS, Physical Review D, PASP, Gemini TAC, National Science Center Poland, South Carolina Established Program to Stimulate Competitive Research, US-Israel Binational Science Foundation, U.K. STFC

Panel Reviewer for NASA (5 times) and National Science Foundation (5 times)

External Thesis Committee Member: Yucong Zhu (Harvard), Edwin Chan (Johns Hopkins), Benny Tsang (U. of Texas), Shyam Menon (Australia National University), Tom Kwan (U. of Hong Kong, Masters), Lorenzo Ennoggi (Rochester Institute of Technology)

TEACHING AND SERVICE (U. OF VIRGINIA)

UVa Personnel Supervised: 2 postdoctoral associates, 4 graduate students, 22 graduate dissertation committees, and 28 undergraduate researchers

Semester Courses Taught: High Energy Astrophysics (5); Intro to Astrophysics I; Intro. to Stars, Galaxies, and the Universe; Black Holes (10), Computational Astronomy/Astrophysics (1)

Committee Assignments (Astronomy): Director of Undergraduate Programs, Graduate Admissions Committee co-chair, VITA Director, Associate Department Chair, Prizes Committee, Colloquium

committee, Computing Committee, Plan for the Future Committee, BS Majors Advisors, BA Majors Advisor, Bridge Progam Admission Committee, Astronomy Minors Advisor, Promotion to Tenure Committee

Committee Assignments (External): Promotion to Tenure Committee (Physics), Hiring Committee for Associate Vice President of Research Computing

OUTREACH AND DIVERSITY PROMOTION (U. OF VIRGINIA)

Public Talks, McCormick Observatory Public Night 2014-present (annually)

Research Mentor (4 students to date) in UVa-Spelman Collaboration and VA-NC Alliance Summer Research Program

Speaker, Building Leaders for Advancing Science and Technology (BLAST), Charlottesville, 2018, 2019, 2021, 2022, 2024

Public Talks, Charlottesville Astornomical Society, Apr. 2017, Feb 2020

Speaker, Girls Exploring the Universe, Charlottesville, July 2017