

CV for A. Ptak

NASA/GSFC X-ray Astrophysics Branch (Code 662)

Current Position

2010-present Research Astrophysicist, NASA/GSFC

Current duties:

Acting Director of HEASARC

NASA Athena Project Scientist

HST Deputy Project Scientist for Operations

GSFC technical officer for JHU-GSFC cooperative agreement

Previous Positions

2018-2020 NuSTAR Mission Scientist

Dec 2018 - March 2019 Acting Deputy Director of Astrophysics, NASA/GSFC

2001-2010 Associate Research Scientist, Johns Hopkins University

1997-2001 Postdoctoral Research Associate, Carnegie Mellon University

Scientific Interests

The X-ray properties of starburst, LINER, low-luminosity AGN, and AGN galaxies. The evolution of these types of galaxies over time, and the contribution of galaxies to the X-ray background. The physics of the accretion and starburst processes driving the X-ray emission from galaxies. Pipeline-processing of large data sets, with emphasis on observations of galaxies and advanced statistical techniques.

Recent Refereed Publications

1. Lambrides, E. et al. 2023, Uncovering a Massive $z \sim 7.65$ Galaxy Hosting a Heavily Obscured Radio-Loud QSO Candidate in COSMOS-Web, ApJ, submitted
2. Garfoli, K. et al. 2023, Modeling the High-Energy Ionizing Output from Simple Stellar and X-ray Binary Populations, ApJ, submitted
3. Rossland, S. et al. 2023, Measuring the Cosmic X-ray Background in 3-20keV with Straylight from NuSTAR, AJ, 166, 20

4. Barret, D. et al. 2023, The Athena X-ray Integral Field Unit: a consolidated design for the system requirement review of the preliminary definition phase, *Experimental Astronomy*, 55, 373
5. Madsen, K. et al, 2022, Simulations of the ATHENA performance verification testing at XRCF, SPIE, 12181
6. Smith, R., et al. 2022, Arcus: exploring the formation and evolution of clusters, galaxies, and stars, SPIE, 12181
7. Yang, J. et al., 2022, Young Black Hole and Neutron Star Systems in the Nearby Star-forming Galaxy M33: The NuSTAR ViewApJ, 930,63
8. Brickhouse, N., et al. 2022, An Arcus view of stellar space weather, AN, 3432
9. Vulic, N. et al, 2022, The eROSITA Final Equatorial-Depth Survey (eFEDS). Presenting the demographics of X-ray emission from normal galaxies, *A&A*, 661, 16
10. Doore, K. et al. 2021, On the Impact of Inclination-Dependent Attenuation on Derived Star-Formation Histories: Results from Disk Galaxies in the GOODS Fields, *ApJ*, 923, 26
11. Kovlakas, K. et al. 2021, The Heraklion Extragalactic Catalogue (HECATE): a value-added galaxy catalogue for multimessenger astrophysics, *MNRAS*, 506, 1896
12. Tzanavaris, P., Yaqoob, T., LaMassa, S., Ptak, A., & Yukita, M., Are Compton-thin AGNs Globally Compton Thin?, *ApJ*, 922, 85
13. Fuerst, F. et al. 2021, Long-term pulse period evolution of the ultraluminous X-ray pulsar NGC 7793 P13, *A&A*, 651, 75
14. Kovlakas, K. et al., 2020, A census of ultraluminous X-ray sources in the local Universe, *MNRAS*, 598, 4790
15. Masini, A., et al. 2020, The Chandra Deep Wide-field Survey: A New Chandra Legacy Survey in the Boötes Field. I. X-Ray Point Source Catalog, Number Counts, and Multiwavelength Counterparts, *ApJS*, 251, 2

16. Garofali, K., et al. 2020, On the X-Ray Spectral Energy Distributions of Star-forming Galaxies: The 0.3-30 keV Spectrum of the Low-metallicity Starburst Galaxy VV 114, *ApJ*, 903, 79
17. Hodges-Kluck, E., et al. 2020, A 60 kpc Galactic Wind Cone in NGC 3079, *ApJ*, 903, 79
18. The next-generation X-ray galaxy survey with eROSITA, Basu-Zych, A. et al. *MNRAS*, 498, 1651
19. Marchesi, S., et al. 2020, Mock catalogs for the extragalactic X-ray sky: simulating AGN surveys with Athena and with the AXIS probe, *A&A*, 642, 184
20. Lehmer, B., et al. 2020, X-Ray Binary Luminosity Function Scaling Relations in Elliptical Galaxies: Evidence for Globular Cluster Seeding of Low-mass X-Ray Binaries in Galactic Field, *ApJS*, 248, 31
21. LaMassa, S. et al. 2019, NuSTAR Uncovers an Extremely Local Compton-thick AGN in NGC 4968, *ApJ*, 887, 173
22. Dal Canton, T. et al. 2019, Detectability of Modulated X-Rays from LISA's Supermassive Black Hole Mergers, *ApJ*, 886, 146
23. Lazzarini, M. et al. 2019, Neutron Stars and Black Holes in the Small Magellanic Cloud: The SMC NuSTAR Legacy Survey, *ApJ*, 884, 2
24. Tzanavaris, P. et al. 2019, Broad Band X-ray Constraints on the Accreting Black Hole in Quasar 4C 74.26, *ApJ*, 885, 62
25. Jones, M., et al. 2019, Evolution of Black Hole and Galaxy Growth in a Semi-numerical Galaxy Formation Model, *ApJ*, 881, 110
26. Lehmer, B. et al. 2019, X-Ray Binary Luminosity Function Scaling Relations for Local Galaxies Based on Subgalactic Modeling, *ApJS*, 243, 3
27. Brightman, M. et al. 2019, A \sim 60-day super-orbital period originating from the ultraluminous X-ray pulsar in M82, *ApJ*, 873, 115

28. Younes, G. et al. 2019, NuSTAR Hard X-Ray View of Low-luminosity Active Galactic Nuclei: High-energy Cutoff and Truncated Thin Disk, *ApJ*, 870, 73
29. Brightman, M. et al. 2018, A Long Hard-X-Ray Look at the Dual Active Galactic Nuclei of M51 with NuSTAR, *ApJ*, 867, 110
30. Vulic, N. et al., 2018, Black Holes and Neutron Stars in Nearby Galaxies: Insights from NuSTAR, *ApJ*, 864, 150
31. Larzzarini, M. et al. 2018, Young Accreting Compact Objects in M31: The Combined Power of NuSTAR, Chandra, and Hubble, *ApJ*, 862, 28
32. Walton, D. et al. 2018, Super-Eddington accretion on to the neutron star NGC 7793 P13: Broad-band X-ray spectroscopy and ultraluminous X-ray sources, *MNRAS*, 473, 4360
33. Eufrasio, R., et al. 2017, On the Spatially Resolved Star Formation History in M51 I: Hybrid UV+IR Star Formation Laws and IR Emission from Dust Heated by Old Stars, *ApJ*, 851,10
34. Lehmer, B., et al. 2017, On the Spatially Resolved Star-Formation History in M51 II: X-ray Binary Population Evolution, *ApJ*, 851,11
35. Smith, R., et al. 2017, Arcus: exploring the formation and evolution of clusters, galaxies, and stars, *SPIE*, 10397, 11
36. Jones, M. et al. 2017, Do You See What I See? Exploring The Consequences Of Luminosity Limits In Black Hole-Galaxy Evolution Studies, *ApJ*, 843, 125
37. Walton, D., et al. 2017, The Broadband Spectral Variability of Holmberg IX X-1, *ApJ*, 839, 105
38. Yukita, M. et al. 2017, Identification of the Hard X-Ray Source Dominating the $E > 25$ keV Emission of the Nearby Galaxy M31, 838, 47
39. LaMassa, S., et al. 2017, Chandra Reveals Heavy Obscuration and Circumnuclear Star Formation in Seyfert 2 Galaxy NGC 4968, *ApJ*, 835, 91

40. Fuerst, F., et al. 2016, Discovery of Coherent Pulsations from the Ultraluminous X-Ray Source NGC 7793 P13, *ApJ*, 831, 14
41. Brenneman, L., et al. 2016, The evolution of structure and feedback with Arcus, *SPIE*, 9905, 18
42. Smith, R. et al. 2016, Arcus: the x-ray grating spectrometer explorer, *SPIE*, 9905, 7
43. Maccarone, T. et al. 2016, Demonstrating the likely neutron star nature of five M31 globular cluster sources with Swift-NuSTAR spectroscopy, *MNRAS*, 458, 3633
44. Yukita, M. et al. 2016, A Hard X-Ray Study of the Normal Star-forming Galaxy M83 with NuSTAR, *ApJ*, 824, 107
45. Basu-Zych, A. et al. 2016, Exploring the Overabundance of ULXs in Metal- and Dust-poor Local Lyman Break Analogs, *ApJ*, 818, 140
46. Brightman, M. et al. 2016, Spectral and temporal properties of the ultra-luminous X-ray pulsar in M82 from 15 years of Chandra observations and analysis of the pulsed emission using NuSTAR, *ApJ*, 816, 60
47. Teng, S. et al. 2015, A NuSTAR Survey of Nearby Ultraluminous Infrared Galaxies, *ApJ*, 814, 56
48. Gaskin, J. et al. 2015, The X-ray Surveyor Mission: a concept study, *SPIE*, 9601, 0J
49. Lehmer, B. et al. 2015, The 0.3-30 keV Spectra of Powerful Starburst Galaxies: NuSTAR and Chandra Observations of NGC 3256 and NGC 3310, *ApJ*, 806, 126
50. Ptak, A. et al. 2015, A Focused, Hard X-ray Look at Arp 299 with NuSTAR, *ApJ*, 800, 104
51. Rana, V. et al. 2015, The Broadband XMM-Newton and NuSTAR X-ray Spectra of Two Ultraluminous X-ray Sources in the Galaxy IC 342, *ApJ*, 799, 121

52. Wik, D. et al. 2014, Spatially Resolving a Starburst Galaxy at Hard X-ray Energies: NuSTAR, Chandra, and VLBA Observations of NGC 253, *ApJ*, 797, 79
53. Walton, D. et al. 2014, Broadband X-Ray Spectra of the Ultraluminous X-Ray Source Holmberg IX X-1 Observed with NuSTAR, XMM-Newton, and Suzaku, *ApJ*, 793, 21
54. Gandi, P. et al. 2014, NuSTAR Unveils a Compton-thick Type 2 Quasar in Mrk 34, *ApJ*, 792, 117
55. Lehmer, B. et al. 2014, The X-Ray Luminosity Functions of Field Low-mass X-Ray Binaries in Early-type Galaxies: Evidence for a Stellar Age Dependence, *ApJ*, 789, 52
56. LaMassa, S., et al. 2014, Delving Into X-ray Obscuration of Type 2 AGN, Near and Far, 787, 61
57. Maccarone, T. et al. 2014, A new candidate Wolf-Rayet X-ray binary in NGC 253, *MNRAS*, 439, 3064
58. Teng, S. et al. 2014, NuSTAR Reveals an Intrinsically X-ray Weak Broad Absorption Line Quasar in the Ultraluminous Infrared Galaxy Markarian 231, *ApJ*, 785, 19
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67. Harrison, F. et al. 2013, The Nuclear Spectroscopic Telescope Array (NuSTAR) High-energy X-Ray Mission, *ApJ*, 770, 103
68. Tremmel, M. et al. 2013, Modeling the Redshift Evolution of the Normal Galaxy X-Ray Luminosity Function, *ApJ*, 766, 19
69. LaMassa, S., Heckman, T., Ptak, A., & Urry, C. M. 2013, On the Star Formation-AGN Connection at $z < 0.3$, *ApJ*, 765, 33
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71. Braito, V. et al. 2013, Decoupling absorption and continuum variability in the Seyfert 2 NGC 4507, *MNRAS*, 428, 2516
72. Jia, J., Ptak, A., Heckman, T., Braito, V., & Reeves, J. 2012, A Chandra Observation of the Ultraluminous Infrared Galaxy IRAS 19254-7245 (the Superantennae): X-Ray Emission from the Compton-thick Active Galactic Nucleus and the Diffuse Starburst, *ApJ*, 759, 41
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