

## Publication List


35. Davis, B. L.\*, M. Ali-Dib\*, Y. Zheng\*, Z. Jin\*, K. Zhang, & A. V. Macciò (2025) "Causal evidence for the primordality of colours in trans-Neptunian objects," *MNRAS*, **543**, L34 \*These authors contributed equally to this work.
34. Khan, F. M., B. L. Davis, A. V. Macciò, & K. Holley-Bockelmann (2025) "Where Have All the Little Red Dots Gone? Supermassive Black Hole Binary Dynamics and Its Impact on Galaxy Properties," *ApJL*, **986**, L1
33. Jin, Z., M. Pasquato\*, B. L. Davis\*, T. Deleu, Y. Luo, C. Cho, P. Lemos, L. Perreault-Levasseur, Y. Bengio, X. Kang, A. V. Maccio, & Y. Hezaveh (2025) "Causal Discovery in Astrophysics: Unraveling Supermassive Black Hole and Galaxy Coevolution," *ApJ*, **979**, 212 \*These authors contributed equally to this work.
32. Waterval, S., A. V. Macciò, T. Buck, A. Obreja, C. Cho, Z. Jin, B. L. Davis, K. L. Dixon, & X. Kang (2024) "HELLO project: high-z evolution of large and luminous objects," *MNRAS*, **533**, 1463
31. Davis, B. L., A. W. Graham, R. Soria, Z. Jin, I. D. Karachentsev, V. E. Karachentseva, & E. D'Onghia (2024) "Identification of Intermediate-mass Black Hole Candidates among a Sample of Sd Galaxies," *ApJ*, **971**, 123
30. Amaro-Seoane, P., . . . B. L. Davis, et al. (2023) "Astrophysics with the Laser Interferometer Space Antenna," *Living Reviews in Relativity*, **26**, 2
29. Davis, B. L. & Z. Jin (2023) "Discovery of a Planar Black Hole Mass Scaling Relation for Spiral Galaxies," *ApJL*, **956**, L22
28. Fusco, M. S., B. L. Davis, J. Kennefick, D. Kennefick, & M. S. Seigar (2022) "Probing the low-mass end of the black hole mass function via a study of faint local spiral galaxies," *Universe*, **8**, 649
27. Shields, D., B. Boe, C. Pfountz, B. L. Davis, M. Hartley, R. Miller, Z. Slade, M. S. Abdeen, D. Kennefick, & J. Kennefick (2022) "Spirality: A Novel Way to Measure Spiral Arm Pitch Angle," *Galaxies*, **10**, 100
26. Hon, D. S.-H., A. W. Graham, B. L. Davis, & A. Marconi (2022) "Disc cloaking: Establishing a lower limit to the number density of local compact massive spheroids/bulges and the potential fate of some high-z red nuggets," *MNRAS*, **514**, 3410
25. Abdeen, S., B. L. Davis, R. Eufrasio, D. Kennefick, J. Kennefick, R. Miller, D. Shields, E. B. Monson, C. Bassett, & H. O'Mara (2022) "Evidence in favour of density wave theory through age gradients observed in star formation history maps and spatially resolved stellar clusters," *MNRAS*, **512**, 366
24. Sahu, N., A. W. Graham, & B. L. Davis (2022) "The (Black Hole Mass)-(Spheroid Stellar Density) Relations:  $M_{BH}-\mu$  (and  $M_{BH}-\Sigma$ ) and  $M_{BH}-\rho$ ," *ApJ*, **927**, 67
23. Sahu, N., A. W. Graham, & B. L. Davis (2022) "The Morphology-dependent Black Hole - Host Galaxy Correlations: A Consequence of Physical Formation Processes," *AcAT*, **3**, 39
22. Graham, A. W., R. Soria, B. L. Davis, M. Kolehmainen, T. Maccarone, J. Miller-Jones, C. Motch, & D. A. Swartz (2021) "Central X-Ray Point Sources Found to Be Abundant in Low-mass, Late-type Galaxies Predicted to Contain an Intermediate-mass Black Hole," *ApJ*, **923**, 246
21. Graham, A. W., R. Soria, B. C. Ciambur, B. L. Davis, & D. A. Swartz (2021) "Potential Black Hole Seeding of the Spiral Galaxy NGC 4424 via an Infalling Star Cluster," *ApJ*, **923**, 146
20. Davis, B. L. & A. W. Graham (2021) "Refining the mass estimate for the intermediate-mass black hole candidate in NGC 3319," *PASA*, **38**, E030
19. Sahu, N., A. W. Graham, & B. L. Davis (2020) "Defining the (Black Hole)-Spheroid Connection with the Discovery of Morphology-dependent Substructure in the  $M_{BH}-n_{sph}$  and  $M_{BH}-R_{e,sph}$  Diagrams: New Tests for Advanced Theories and Realistic Simulations," *ApJ*, **903**, 97
18. Abdeen, S., D. Kennefick, J. Kennefick, R. Miller, D. W. Shields, E. B. Monson, & B. L. Davis (2020) "Determining the co-rotation radii of spiral galaxies using spiral arm pitch angle measurements at multiple wavelengths," *MNRAS*, **496**, 1610
17. Sahu, N., A. W. Graham, & B. L. Davis (2019) "Revealing Hidden Substructures in the  $M_{BH}-\sigma$  Diagram, and Refining the Bend in the  $L-\sigma$  Relation," *ApJ*, **887**, 10
16. Davis, B. L., A. W. Graham, & F. Combes (2019) "A Consistent Set of Empirical Scaling Relations for Spiral Galaxies: The  $(v_{max}, M_{DM})-(\sigma_0, M_{BH}, \phi)$  Relations," *ApJ*, **877**, 64
15. Sahu, N., A. W. Graham, & B. L. Davis (2019) "Black Hole Mass Scaling Relations for Early-type Galaxies. I.  $M_{BH}-M_{*,sph}$  and  $M_{BH}-M_{*,gal}$ ," *ApJ*, **876**, 155

14. Miller, R., D. Kennefick, J. Kennefick, M. Shameer Abdeen, E. Monson, R. T. Eufrasio, D. W. Shields, & B. L. Davis (2019) "Investigating the Origins of Spiral Structure in Disk Galaxies through a Multiwavelength Study," *ApJ*, **874**, 177
13. Graham, A. W., R. Soria, & B. L. Davis (2019) "Expected intermediate-mass black holes in the Virgo cluster - II. Late-type galaxies," *MNRAS*, **484**, 814
12. Davis, B. L., A. W. Graham, & E. Cameron (2019) "Black Hole Mass Scaling Relations for Spiral Galaxies. I.  $M_{BH}-M_{*,sph}$ ," *ApJ*, **873**, 85
11. Davis, B. L., A. W. Graham, & E. Cameron (2018) "Black Hole Mass Scaling Relations for Spiral Galaxies. II.  $M_{BH}-M_{*,tot}$  and  $M_{BH}-M_{*,disk}$ ," *ApJ*, **869**, 113
10. Davis, B. L., A. W. Graham, & M. S. Seigar (2017) "Updating the (supermassive black hole mass)-(spiral arm pitch angle) relation: a strong correlation for galaxies with pseudobulges," *MNRAS*, **471**, 2187
9. Koliopanos, F., B. C. Ciambur, A. W. Graham, N. A. Webb, M. Coriat, B. Mutlu-Pakdil, B. L. Davis, O. Godet, D. Barret, & M. S. Seigar (2017) "Searching for intermediate-mass black holes in galaxies with low-luminosity AGN: a multiple-method approach," *A&A*, **601**, A20
8. Mutlu-Pakdil, B., M. S. Seigar, & B. L. Davis (2016) "The Local Black Hole Mass Function Derived from the  $M_{BH}-P$  and the  $M_{BH}-n$  Relations," *ApJ*, **830**, 117
7. Pour-Imani, H., D. Kennefick, J. Kennefick, B. L. Davis, D. W. Shields, & M. Shameer Abdeen (2016) "Strong Evidence for the Density-wave Theory of Spiral Structure in Disk Galaxies," *ApJL*, **827**, L2
6. Davis, B. L., D. Kennefick, J. Kennefick, K. B. Westfall, D. W. Shields, R. Flatman, M. T. Hartley, J. C. Berrier, T. P. K. Martinsson, & R. A. Swaters (2015) "A Fundamental Plane of Spiral Structure in Disk Galaxies," *ApJL*, **802**, L13
5. Davis, B. L. (2015) "Logarithmic Spiral Arm Pitch Angle of Spiral Galaxies: Measurement and Relationship to Galactic Structure and Nuclear Supermassive Black Hole Mass," *University of Arkansas*, PhDT
4. Seigar, M. S., B. L. Davis, J. Berrier, & D. Kennefick (2014) "Constraining Dark Matter Halo Profiles and Galaxy Formation Models Using Spiral Arm Morphology. II. Dark and Stellar Mass Concentrations for 13 Nearby Face-on Galaxies," *ApJ*, **795**, 90
3. Davis, B. L., J. C. Berrier, L. Johns, D. W. Shields, M. T. Hartley, D. Kennefick, J. Kennefick, M. S. Seigar, & C. H. S. Lacy (2014) "The Black Hole Mass Function Derived from Local Spiral Galaxies," *ApJ*, **789**, 124
2. Berrier, J. C., B. L. Davis, D. Kennefick, J. D. Kennefick, M. S. Seigar, R. S. Barrows, M. Hartley, D. Shields, M. C. Bentz, & C. H. S. Lacy (2013) "Further Evidence for a Supermassive Black Hole Mass-Pitch Angle Relation," *ApJ*, **769**, 132
1. Davis, B. L., J. C. Berrier, D. W. Shields, J. Kennefick, D. Kennefick, M. S. Seigar, C. H. S. Lacy, & I. Puerari (2012) "Measurement of Galactic Logarithmic Spiral Arm Pitch Angle Using Two-dimensional Fast Fourier Transform Decomposition," *ApJS*, **199**, 33

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