Paul McMillan

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+46 46 22 27312 ⋄ paul@astro.lu.se

EDUCATION

University of Leicester, Department of Physics and Astronomy 2003-2006
PhD in Theoretical Astrophysics, awarded 2007
Thesis title: *Numerical simulations of galaxy interaction*
Supervisor: Prof Walter Dehnen
Included three-month Marie Curie host fellowship at Marseille Observatory, Université de Provence

University of Cambridge 1999-2003
BA and MSci in Natural Sciences (Physics)
First Class

RESEARCH EMPLOYMENT

Lund Observatory, Lund University 2023
Senior lecturer

· Position held in the Division of Astrophysics, Department of Physics.

Lund Observatory, Lund University 2014 - 2022
Senior research fellow; Associate professor

· Qualified as docent (associate professor, roughly equivalent to German habilitation), 2019.
· Primarily funded by grants won as PI from the Swedish Research Council.

University of Oxford 2006 - 2014
Post-Doctoral Researcher

· Position at the Rudolf Peierls Centre for Theoretical Physics, supported by STFC and ERC grants.

TEACHING EXPERIENCE

Lund University

· Course responsible and lecturer, Statistical Methods in Astrophysics, Masters level course, 2017–.
· Course responsible and coordinator, Bachelors degree projects in Astronomy, 2020–.
· Course responsible and main teacher, Galactic Dynamics, PhD course, 2016–.
· Supervisor, PhD students: Daniel Mikkola 2017–, Eero Vaher 2019–, Simon Alinder 2021– (co-supervisor).
· Supervisor, Masters thesis (two-year): Edvin Zigmanovic (defended 2016); Daniel Mikkola (def. 2017); Hyerin Jang (def. 2021); Jesper Nielsen (co-supervisor, def. 2021); Viktor Jonsson (2022–).
· Supervisor, Bachelors thesis (one-semester): Timmy Ejdetjärn; John Wimarsson; Calin Jilavu; Markus Strickert; Alma Bergström.
· Examiner, Master & Bachelor theses: 2016–.

University of Oxford

· Non-Stipendiary Lecturer, Merton College. Cosmology, General Relativity and Fluid Dynamics, Bachelors level. Responsible for in-college teaching and examination in these subjects, 2006–14.
· Expert assessor for MPhys projects, 2009.

Other

- PhD thesis examination committees: Andrea Chiappo, Emanuel Gafton (Stockholm University, 2019); Klemen Čotar (University of Ljubljana, 2020), Eric Corrigan (Lund University, 2021), Amelie Stokholm (Aarhus University, 2022), Linn Eriksson (Lund University, 2022). Reserve: Simona Peroni, Giorgi Kokaia (Lund University, 2020); Pau Ramos (University of Barcelona, 2020).
- Temporary supervision of visiting PhD students: Yanqiong Zhang (Shanghai, 2016), Jennifer Wojno (AIP, 2017), Alfred Castro-Ginard (Barcelona, 2020).
- 2013: Invited lecturer in dynamical modelling, "International Gaia School", UNAM, Mexico City.
- 2003–2005: Undergraduate seminar tutor, University of Leicester.

Teaching qualifications

- "Readership course", Lund University, three week full time course, 2017. Preparation for appointment as docent (associate professor), including training in research supervision.
- "Learning and teaching in higher education – theory and practice", Lund University, three week full time course, 2018.

GRANTS AND AWARDS

Grants as PI

(N.B. 12 SEK ≈ £1)

- Vetenskapsrådet (Swedish Research Council) project grant 'The disturbed Milky Way', 3 440 000 SEK, November 2021.
- Vetenskapsrådet (Swedish Research Council) project grant 'Determining the gravitational field of the Milky Way with Gaia data', 3 440 000 SEK, October 2017.
- Walter Gyllenberg foundation grant from the Royal Physiographic Society of Lund, for computing resources and academic visitors, 260 000 SEK, December 2014.
- Swedish National Infrastructure for Computing grants for high-performance computing resources, total 150 000 hr, 2017-2019.

Grants as Co-I

- Swedish National Space Agency grant, 'The extended Gaia mission', 5 553 000 SEK, December 2020.
- Swedish National Space Agency grant, 'Astrophysical space research using Gaia', 5 593 000 SEK, December 2017.

Awards

- Lund University students' award for outstanding teaching contribution in education, 2021.
- M. Sparke Scholarship and G. Crewdson Prize, Girton College, 2003.
- B. Bodichon Scholarship and J. C. Gamble Prize, Girton College, 2001.
- J. B. Buckley Scholarship and L. Adib Prize, Girton College, 2000.

RESEARCH ACCOMPLISHMENTS

Produced widely used models of the Milky Way gravitational potential from a Bayesian analysis of observation and theoretical data (McMillan 2011, 2017 – over 1000 citations).

Section coordinator and Magellanic Cloud data analysis for Gaia science demonstration papers (Gaia collaboration et al., 2020, 2018). Member of the Gaia astrometric solution team. RAVE survey 'builder', reflecting my work on the survey's infrastructure. Member of the 4MOST and PLATO survey teams.

Demonstrated how to constrain the structure and dynamics of the Milky Way from surveys of stars in the Galactic disc (McMillan & Binney 2013). This work applied dynamical modelling techniques that I pioneered (McMillan & Binney 2008), and has since been applied to major surveys (e.g., Piffl, Binney, McMillan et al 2014).

70 refereed publications in major astrophysical journals, with over 20 000 citations. Of these, I am first or only author of 16 papers, which have over 1 700 citations.

OTHER RESPONSIBILITIES

ESO Observing Programmes Committee Panel member (co-chair 2021; Panel member 2020).

Steering group member, Lund Observatory (2020–21).

Member of institutionens grundutbildningsnämnd (department basic education board), Physics and Astronomy, Lund University (2022–).

Referee or reviewer: Gaia Editorial Board, MNRAS, ApJ, A&A, Phys. Rev. Lett., Phys. Rev D., AJ, Swiss National Supercomputing Centre, Agence Nationale de la Recherche (ANR), National Research and Development Agency of Chile.

OTHER EXPERIENCE

Conference SOC chair: "Big Questions Dark Matter Workshop," Lund University, April 2017

Conference SOC member: "The science of Gaia and future astrometry challenges", Lund University, August 2017; "For All" meetings, Lund Observatory, February 2016/17/18.

Invited conference speaker (selected): IAU general assembly, Honolulu, 2015 (invited review); Danish National Astronomy meeting, Faaborg, 2018 (keynote speaker); Astronomdagarna, Chalmers (2022); "Linking the Galactic and Extragalactic", NSW Australia (2022); Gaia DR3 Scientific Verification Workshop, Ringberg (2019); Blaauw workshop, Groningen (2018); "Thin, Thick Dark discs", Ascona (2017); Nordic Planetarium Association biennial meeting, Lund (2017); "The Chemical Evolution of Galaxies", MIAPP (2016); "Stellar streams in the Local Universe", Ringberg (2015); 7th Korean Astrophysics Workshop on Dynamics of Disk Galaxies (2013); "News from the Dark" workshop, Montpellier (2013).

Invited speaker (selected): University of Cambridge, UCL (MSSL), Lund University, University of Amsterdam, MPIA Heidelberg.

Outreach: Regular public talks and talks to school groups. Contributor to podcast "The Meridian". Voiceover and editing of ESA outreach videos for Gaia data release 3. Contributor to planetarium show 'Enorma avstånd'. Helped organise exhibit at the 2014 Royal Society Summer Science Exhibition.

Member: International Astronomical Union, Royal Astronomical Society.

Publication List - Paul McMillan

Lund Observatory ⋄ paul@astro.lu.se

23988 total citations ⋄ 1793 citations as first author

Key Publications

1. "The disturbed outer Milky Way disc", **Paul McMillan**, Petersson, J., Tepper-Garcia, T., Bland-Hawthorn, J., Antoja, T., Chemin, L., et al., 2022, MNRAS, 516, 4988. *(Citations to date 7)*
2. "Gaia Early Data Release 3. The Galactic anticentre", Gaia Collaboration, Antoja, T., **Paul McMillan**, Kordopatis, G., Ramos, P., Helmi, A., et al., 2021, A&A, 649, A8. *(Citations to date 52)*
3. "The Sixth Data Release of the Radial Velocity Experiment (RAVE). II. Stellar Atmospheric Parameters, Chemical Abundances, and Distances", Steinmetz, M., Guiglion, G., **Paul McMillan**, Matijevič, G., Enke, H., Kordopatis, G., et al., 2020, AJ, 160, 83. *(Citations to date 71)*
4. "Radial migration and vertical action in N-body simulations", Mikkola, D., **Paul McMillan** & Hobbs, D., 2020, MNRAS, 495, 3295. *(Citations to date 9)*
5. "Distances and parallax bias in Gaia DR2", Schönrich, R., **Paul McMillan** & Eyer, L., 2019, MNRAS, 487, 3568. *(Citations to date 129)*
6. "Gaia Data Release 2. Kinematics of globular clusters and dwarf galaxies around the Milky Way", Gaia Collaboration, Helmi, A., van Leeuwen, F., **Paul McMillan**, Massari, D., Antoja, T., et al., 2018, A&A, 616, A12. *(Citations to date 478)*
7. "Improved distances and ages for stars common to TGAS and RAVE", **Paul McMillan**, Kordopatis, G., Kunder, A., Binney, J., Wojno, J., Zwitter, T., et al., 2018, MNRAS, 477, 5279. *(Citations to date 45)*
8. "Understanding inverse metallicity gradients in galactic discs as a consequence of inside-out formation", Schönrich, R. & **Paul McMillan**, 2017, MNRAS, 467, 1154. *(Citations to date 79)*
9. "The mass distribution and gravitational potential of the Milky Way", **Paul McMillan**, 2017, MNRAS, 465, 76. *(Citations to date 535)*
10. "Torus mapper: a code for dynamical models of galaxies", Binney, J. & **Paul McMillan**, 2016, MNRAS, 456, 1982. *(Citations to date 33)*
11. "Analysing surveys of our Galaxy - II. Determining the potential", **Paul McMillan** & Binney, J., 2013, MNRAS, 433, 1411. *(Citations to date 37)*
12. "Extending the Hyades", **Paul McMillan**, 2013, MNRAS, 430, 3276. *(Citations to date 22)*
13. "Mass models of the Milky Way", **Paul McMillan**, 2011, MNRAS, 414, 2446. *(Citations to date 612)*
14. "Models of our Galaxy - II", Binney, J. & **Paul McMillan**, 2011, MNRAS, 413, 1889. *(Citations to date 110)*
15. "The uncertainty in Galactic parameters", **Paul McMillan** & Binney, J., 2010, MNRAS, 402, 934. *(Citations to date 227)*
16. "Disassembling the Galaxy with angle-action coordinates", **Paul McMillan** & Binney, J., 2008, MNRAS, 390, 429. *(Citations to date 68)*

Other Publications

17. "New stellar velocity substructures from Gaia DR3 proper motions", Mikkola, D., **Paul McMillan** & Hobbs, D., 2023, MNRAS, 519, 1989.

18. "Kinematic analysis of the Large Magellanic Cloud using Gaia DR3", Jiménez-Arranz, ; Romero-Gómez, M., Luri, X., **Paul McMillan**, Antoja, T., Chemin, L., et al., 2023, A&A, 669, A91. *(Citations to date 1)*

19. "Gaia Early Data Release 3. The celestial reference frame (Gaia-CRF3)", Gaia Collaboration, Klioner, S., Lindegren, L., Mignard, F., Hernández, J., Ramos-Lerate, M., et al. (including **Paul McMillan**), 2022, A&A, 667, A148. *(Citations to date 9)*

20. "Gaia Data Release 3: Summary of the content and survey properties", Gaia Collaboration, Vallenari, A., Brown, A., Prusti, T., de Bruijne, J., Arenou, F., et al. (including **Paul McMillan**), 2022, arXiv:2208.00211. *(Citations to date 156)*

21. "Gaia Data Release 3: Reflectance spectra of Solar System small bodies", Gaia Collaboration, Galluccio, L., Delbo, M., De Angeli, F., Pauwels, T., Tanga, P., et al. (including **Paul McMillan**), 2022, arXiv:2206.12174. *(Citations to date 3)*

22. "Gaia Data Release 3: Mapping the asymmetric disc of the Milky Way", Gaia Collaboration, Drimmel, R., Romero-Gomez, M., Chemin, L., Ramos, P., Poggio, E., et al. (including **Paul McMillan**), 2022, arXiv:2206.06207. *(Citations to date 16)*

23. "Gaia Data Release 3: Pulsations in main sequence OBAF-type stars", Gaia Collaboration, De Ridder, J., Ripepi, V., Aerts, C., Palaversa, L., Eyer, L., et al. (including **Paul McMillan**), 2022, arXiv:2206.06075. *(Citations to date 10)*

24. "Gaia Data Release 3: A Golden Sample of Astrophysical Parameters", Gaia Collaboration, Creevey, O., Sarro, L., Lobel, A., Pancino, E., Andrae, R., et al. (including **Paul McMillan**), 2022, arXiv:2206.05870. *(Citations to date 6)*

25. "Gaia Data Release 3: The extragalactic content", Gaia Collaboration, Bailer-Jones, C., Teyssier, D., Delchambre, L., Ducourant, C., Garabato, D., et al. (including **Paul McMillan**), 2022, arXiv:2206.05681. *(Citations to date 9)*

26. "Gaia Data Release 3: Stellar multiplicity, a teaser for the hidden treasure", Gaia Collaboration, Arenou, F., Babusiaux, C., Barstow, M., Faigler, S., Jorissen, A., et al. (including **Paul McMillan**), 2022, arXiv:2206.05595. *(Citations to date 46)*

27. "Gaia Data Release 3: Chemical cartography of the Milky Way", Gaia Collaboration, Recio-Blanco, A., Kordopatis, G., de Laverny, P., Palicio, P., Spagna, A., et al. (including **Paul McMillan**), 2022, arXiv:2206.05534. *(Citations to date 12)*

28. "The velocity distribution of white dwarfs in Gaia EDR3", Mikkola, D., **Paul McMillan**, Hobbs, D. & Wimarsson, J., 2022, MNRAS, 512, 6201. *(Citations to date 4)*

29. "The VMC survey - XLVIII. Classical cepheids unveil the 3D geometry of the LMC", Ripepi, V., Chemin, L., Molinaro, R., Cioni, M., Bekki, K., Clementini, G., et al. (including **Paul McMillan**), 2022, MNRAS, 512, 563. *(Citations to date 6)*

30. "A barred Milky Way surrogate from an N-body simulation", Tepper-Garcia, T., Bland-Hawthorn, J., Vasiliev, E., Athanassoula, E., Gerhard, O., Quillen, A., et al. (including **Paul McMillan**), 2021, arXiv:2111.05466. *(Citations to date 9)*

31. "Milky Way spiral arms from open clusters in Gaia EDR3", Castro-Ginard, A., **Paul McMillan**, Luri, X., Jordi, C., Romero-Gómez, M., Cantat-Gaudin, T., et al., 2021, A&A, 652, A162. *(Citations to date 27)*

32. "All-sky visible and near infrared space astrometry", Hobbs, D., Brown, A., Høg, E., Jordi, C., Kawata, D., Tanga, P., et al. (including **Paul McMillan**), 2021, ExA, 51, 783. *(Citations to date 12)*

33. "Gaia Early Data Release 3. The Gaia Catalogue of Nearby Stars", Gaia Collaboration, Smart, R., Sarro, L., Rybizki, J., Reylé, C., Robin, A., et al. (including **Paul McMillan**), 2021, A&A, 649, A6. *(Citations to date 138)*

34. "Gaia Early Data Release 3. Parallax bias versus magnitude, colour, and position", Lindegren, L., Bastian, U., Biermann, M., Bombrun, A., de Torres, A., Gerlach, E., et al. (including **Paul McMillan**), 2021, A&A, 649, A4. *(Citations to date 372)*

35. "Gaia Early Data Release 3. The astrometric solution", Lindegren, L., Klioner, S., Hernández, J., Bombrun, A., Ramos-Lerate, M., Steidelmüller, H., et al. (including **Paul McMillan**), 2021, A&A, 649, A2. *(Citations to date 508)*

36. "Gaia Early Data Release 3. Summary of the contents and survey properties", Gaia Collaboration, Brown, A., Vallenari, A., Prusti, T., de Bruijne, J., Babusiaux, C., et al. (including **Paul McMillan**), 2021, A&A, 649, A1. *(Citations to date 1977)*

37. "Gaia Early Data Release 3. Acceleration of the Solar System from Gaia astrometry", Gaia Collaboration, Klioner, S., Mignard, F., Lindegren, L., Bastian, U., **Paul McMillan**, et al., 2021, A&A, 649, A9. *(Citations to date 57)*

38. "Gaia Early Data Release 3. Structure and properties of the Magellanic Clouds", Gaia Collaboration, Luri, X., Chemin, L., Clementini, G., Delgado, H., **Paul McMillan**, et al., 2021, A&A, 649, A7. *(Citations to date 64)*

39. "The RAdial Velocity Experiment (RAVE): Parameterisation of RAVE spectra based on convolutional neural networks", Guiglion, G., Matijevič, G., Queiroz, A., Valentini, M., Steinmetz, M., Chiappini, C., et al. (including **Paul McMillan**), 2020, A&A, 644, A168. *(Citations to date 11)*

40. "The Sixth Data Release of the Radial Velocity Experiment (RAVE). I. Survey Description, Spectra, and Radial Velocities", Steinmetz, M., Matijevič, G., Enke, H., Zwitter, T., Guiglion, G., **Paul McMillan**, et al., 2020, AJ, 160, 82. *(Citations to date 71)*

41. "Kinematics with Gaia DR2: the force of a dwarf", Carrillo, I., Minchev, I., Steinmetz, M., Monari, G., Laporte, C., Anders, F., et al. (including **Paul McMillan**), 2019, MNRAS, 490, 797. *(Citations to date 37)*

42. "Voyage 2050 White Paper: All-Sky Visible and Near Infrared Space Astrometry", Hobbs, D., Brown, A., Høg, E., Jordi, C., Kawata, D., Tanga, P., et al. (including **Paul McMillan**), 2019, arXiv:1907.12535. *(Citations to date 13)*

43. "Radial abundance gradients in the outer Galactic disk as traced by main-sequence OB stars", Bragança, G., Daflon, S., Lanz, T., Cunha, K., Bensby, T., **Paul McMillan**, et al., 2019, A&A, 625, A120. *(Citations to date 14)*

44. "4MOST Consortium Survey 4: Milky Way Disc and Bulge High-Resolution Survey (4MIDABLE-HR)", Bensby, T., Bergemann, M., Rybizki, J., Lemasle, B., Howes, L., Kovalev, M., et al. (including **Paul McMillan**), 2019, Msngr, 175, 35. *(Citations to date 16)*

45. "4MOST: Project overview and information for the First Call for Proposals", de Jong, R., Agertz, O., Berbel, A., Aird, J., Alexander, D., Amarsi, A., et al. (including **Paul McMillan**), 2019, Msngr, 175, 3. *(Citations to date 244)*

46. "4MOST Consortium Survey 3: Milky Way Disc and Bulge Low-Resolution Survey (4MIDABLE-LR)", Chiappini, C., Minchev, I., Starkenburg, E., Anders, F., Gentile Fusillo, N., Gerhard, O., et al. (including **Paul McMillan**), 2019, Msngr, 175, 30. *(Citations to date 21)*

47. "Gaia Data Release 2. Variable stars in the colour-absolute magnitude diagram", Gaia Collaboration, Eyer, L., Rimoldini, L., Audard, M., Anderson, R., Nienartowicz, K., et al. (including **Paul McMillan**), 2019, A&A, 623, A110. *(Citations to date 118)*

48. "Spiral arm crossings inferred from ridges in Gaia stellar velocity distributions", Quillen, A., Carrillo, I., Anders, F., **Paul McMillan**, Hilmi, T., Monari, G., et al., 2018, MNRAS, 480, 3132. *(Citations to date 45)*

49. "Gaia Data Release 2. The celestial reference frame (Gaia-CRF2)", Gaia Collaboration, Mignard, F., Klioner, S., Lindegren, L., Hernández, J., Bastian, U., et al. (including **Paul McMillan**), 2018, A&A, 616, A14. *(Citations to date 143)*

50. "Gaia Data Release 2. Observations of solar system objects", Gaia Collaboration, Spoto, F., Tanga, P., Mignard, F., Berthier, J., Carry, B., et al. (including **Paul McMillan**), 2018, A&A, 616, A13. *(Citations to date 69)*

51. "Gaia Data Release 2. Observational Hertzsprung-Russell diagrams", Gaia Collaboration, Babusiaux, C., van Leeuwen, F., Barstow, M., Jordi, C., Vallenari, A., et al. (including **Paul McMillan**), 2018, A&A, 616, A10. *(Citations to date 618)*

52. "Gaia Data Release 2. The astrometric solution", Lindegren, L., Hernández, J., Bombrun, A., Klioner, S., Bastian, U., Ramos-Lerate, M., et al. (including **Paul McMillan**), 2018, A&A, 616, A2. *(Citations to date 1586)*

53. "Gaia Data Release 2. Mapping the Milky Way disc kinematics", Gaia Collaboration, Katz, D., Antoja, T., Romero-Gómez, M., Drimmel, R., Reylé, C., et al. (including **Paul McMillan**), 2018, A&A, 616, A11. *(Citations to date 314)*

54. "Gaia Data Release 2. Summary of the contents and survey properties", Gaia Collaboration, Brown, A., Vallenari, A., Prusti, T., de Bruijne, J., Babusiaux, C., et al. (including **Paul McMillan**), 2018, A&A, 616, A1. *(Citations to date 6391)*

55. "Correlations between age, kinematics, and chemistry as seen by the RAVE survey", Wojno, J., Kordopatis, G., Steinmetz, M., **Paul McMillan**, Binney, J., Famaey, B., et al., 2018, MNRAS, 477, 5612. *(Citations to date 12)*

56. "Simple Distance Estimates for Gaia DR2 Stars with Radial Velocities", **Paul McMillan**, 2018, RNAAS, 2, 51. *(Citations to date 24)*

57. "Coma Berenices: The First Evidence for Incomplete Vertical Phase-mixing in Local Velocity Space with RAVE—Confirmed with Gaia DR2", Monari, G., Famaey, B., Minchev, I., Antoja, T., Bienaymé, O., Gibson, B., et al. (including **Paul McMillan**), 2018, RNAAS, 2, 32. *(Citations to date 19)*

58. "Gaia DR2 Confirms that Candidate Thorne-Żytkow Object HV 2112 is in the Small Magellanic Cloud", **Paul McMillan** & Church, R., 2018, RNAAS, 2, 18. *(Citations to date 3)*

59. "Is the Milky Way still breathing? RAVE-Gaia streaming motions", Carrillo, I., Minchev, I., Kordopatis, G., Steinmetz, M., Binney, J., Anders, F., et al. (including **Paul McMillan**), 2018, MNRAS, 475, 2679. *(Citations to date 45)*

60. "Climbing the cosmic ladder with stellar twins in RAVE with Gaia", Jofré, P., Traven, G., Hawkins, K., Gilmore, G., Sanders, J., Mädler, T., et al. (including **Paul McMillan**), 2017, MNRAS, 472, 2517. *(Citations to date 12)*

61. "Gaia Data Release 1. Testing parallaxes with local Cepheids and RR Lyrae stars", Gaia Collaboration, Clementini, G., Eyer, L., Ripepi, V., Marconi, M., Muraveva, T., et al. (including **Paul McMillan**), 2017, A&A, 605, A79. *(Citations to date 90)*

62. "The selection function of the RAVE survey", Wojno, J., Kordopatis, G., Piffl, T., Binney, J., Steinmetz, M., Matijevič, G., et al. (including **Paul McMillan**), 2017, MNRAS, 468, 3368. *(Citations to date 35)*

63. "Gaia Data Release 1. Open cluster astrometry: performance, limitations, and future prospects", Gaia Collaboration, van Leeuwen, F., Vallenari, A., Jordi, C., Lindegren, L., Bastian, U., et al. (including **Paul McMillan**), 2017, A&A, 601, A19. *(Citations to date 87)*

64. "RAVE stars in K2. I. Improving RAVE red giants spectroscopy using asteroseismology from K2 Campaign 1", Valentini, M., Chiappini, C., Davies, G., Elsworth, Y., Mosser, B., Lund, M., et al. (including **Paul McMillan**), 2017, A&A, 600, A66. *(Citations to date 33)*

65. "On the metallicity dependence of the [Y/Mg]-age relation for solar-type stars", Feltzing, S., Howes, L., **Paul McMillan** & Stonkutė, E., 2017, MNRAS, 465, L109. *(Citations to date 53)*

66. "The Radial Velocity Experiment (RAVE): Fifth Data Release", Kunder, A., Kordopatis, G., Steinmetz, M., Zwitter, T., **Paul McMillan**, Casagrande, L., et al., 2017, AJ, 153, 75. *(Citations to date 381)*

67. "The Gaia mission", Gaia Collaboration, Prusti, T., de Bruijne, J., Brown, A., Vallenari, A., Babusiaux, C., et al. (including **Paul McMillan**), 2016, A&A, 595, A1. *(Citations to date 4069)*

68. "Gaia Data Release 1. Astrometry: one billion positions, two million proper motions and parallaxes", Lindegren, L., Lammers, U., Bastian, U., Hernández, J., Klioner, S., Hobbs, D., et al. (including **Paul McMillan**), 2016, A&A, 595, A4. *(Citations to date 617)*

69. "Gaia Data Release 1. Summary of the astrometric, photometric, and survey properties", Gaia Collaboration, Brown, A., Vallenari, A., Prusti, T., de Bruijne, J., Mignard, F., et al. (including **Paul McMillan**), 2016, A&A, 595, A2. *(Citations to date 1713)*

70. "Gaia Data Release 1. Pre-processing and source list creation", Fabricius, C., Bastian, U., Portell, J., Castañeda, J., Davidson, M., Hambly, N., et al. (including **Paul McMillan**), 2016, A&A, 595, A3. *(Citations to date 88)*

71. "Chemical separation of disc components using RAVE", Wojno, J., Kordopatis, G., Steinmetz, M., **Paul McMillan**, Matijevič, G., Binney, J., et al., 2016, MNRAS, 461, 4246. *(Citations to date 36)*

72. "GaiaNIR: Combining optical and Near-Infra-Red (NIR) capabilities with Time-Delay-Integration (TDI) sensors for a future Gaia-like mission", Hobbs, D., Høg, E., Mora, A., Crowley, C., **Paul McMillan**, Ranalli, P., et al., 2016, arXiv:1609.07325. *(Citations to date 37)*

73. "Identification of globular cluster stars in RAVE data - I. Application to stellar parameter calibration", Anguiano, B., Zucker, D., Scholz, R., Grebel, E., Seabroke, G., Kunder, A., et al. (including **Paul McMillan**), 2015, MNRAS, 451, 1229. *(Citations to date 20)*

74. "The Gaia-ESO Survey: a quiescent Milky Way with no significant dark/stellar accreted disc", Ruchti, G., Read, J., Feltzing, S., Serenelli, A., **Paul McMillan**, Lind, K., et al., 2015, MNRAS, 450, 2874. *(Citations to date 51)*

75. "The rich are different: evidence from the RAVE survey for stellar radial migration", Kordopatis, G., Binney, J., Gilmore, G., Wyse, R., Belokurov, V., **Paul McMillan**, et al., 2015, MNRAS, 447, 3526. *(Citations to date 68)*

76. "Constraining the Galaxy's dark halo with RAVE stars", Piffl, T., Binney, J., **Paul McMillan**, Steinmetz, M., Helmi, A., Wyse, R., et al., 2014, MNRAS, 445, 3133. *(Citations to date 158)*

77. "New distances to RAVE stars", Binney, J., Burnett, B., Kordopatis, G., **Paul McMillan**, Sharma, S., Zwitter, T., et al., 2014, MNRAS, 437, 351. *(Citations to date 95)*

78. "In the thick of it: metal-poor disc stars in RAVE", Kordopatis, G., Gilmore, G., Wyse, R., Steinmetz, M., Siebert, A., Bienaymé, O., et al. (including **Paul McMillan**), 2013, MNRAS, 436, 3231. *(Citations to date 67)*

79. "The Radial Velocity Experiment (RAVE): Fourth Data Release", Kordopatis, G., Gilmore, G., Steinmetz, M., Boeche, C., Seabroke, G., Siebert, A., et al. (including **Paul McMillan**), 2013, AJ, 146, 134. *(Citations to date 295)*

80. "Analysing surveys of our Galaxy - I. Basic astrometric data", **Paul McMillan** & Binney, J., 2012, MNRAS, 419, 2251. *(Citations to date 32)*

81. "The solar neighbourhood in angle coordinates: the Hyades moving group", **Paul McMillan**, 2011, MNRAS, 418, 1565. *(Citations to date 27)*

82. "The dangers of deprojection of proper motions", **Paul McMillan** & Binney, J., 2009, MNRAS, 400, L103. *(Citations to date 11)*

83. "Initial conditions for disc galaxies", **Paul McMillan** & Dehnen, W., 2007, MNRAS, 378, 541. *(Citations to date 90)*

84. "The haloes of merger remnants", **Paul McMillan**, Athanassoula, E. & Dehnen, W., 2007, MNRAS, 376, 1261. *(Citations to date 17)*

85. "Halo evolution in the presence of a disc bar", **Paul McMillan** & Dehnen, W., 2005, MNRAS, 363, 1205. *(Citations to date 36)*