# DANNY HORTA DARRINGTON | CV

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## RESEARCH INTERESTS

Galactic archaeology: accretion history of the Milky Way and its stellar halo; the Galactic bulge; Galactic structure and dark matter; chemical tagging; Galactic dynamics and the Milky Way bar; Galactic chemical evolution; first stars
Galaxy formation: mass assembly of galaxies, stellar populations, dwarf galaxies and near-field cosmology, globular clusters
Stellar evolution: stellar nucleosynthesis, origin of the elements, stellar age dating, Exoplanet host star characterisation
Statistics and machine learning: data-driven methods for astronomy; data mining large surveys; foundation models for astronomy; Bayesian statistical inferences

## APPOINTMENTS

**Marie Skłodowska-Curie Actions Fellow**, Institute for Astronomy, University of Edinburgh, UK (March 2025 — present)
**Flatiron Research Fellow**, Centre for Computational Astrophysics, Flatiron Institute, New York, USA (September 2022 — February 2025)

## EDUCATION

**Liverpool John Moores University, Liverpool, UK (October 2018 — August 2022)**
*PhD, Astrophysics*
*Thesis title: Unveiling the mass assembly history of the Milky Way from its stellar halo (Link)*
*Thesis advisor: Ricardo P. Schiavon*
**Northumbria University, Newcastle, UK (2014-2018)**
*Master of Physics with Astrophysics (MPhys), 2017-2018* **Grade: 1$^{st}$ class honours**
*Bachelor of Physics with Astrophysics (BSc), 2014-2017* **Grade: 1$^{st}$ class honours**

## GRANTS & FELLOWSHIPS

Total: EUR $\approx 660,000$ USD
**Marie Skłodowska-Curie Asctions (MSCA) fellowship**, $\sim 250,000$ EUR
**Flatiron Research Fellowship** (Flatiron Institute, New York), 2022-2025, $\sim 300,000$ USD
**STFC/LJMU PhD studentship** (STFC, UK), 2018-2022, $\sim 50,000$ GBP
**SDSS Early Career Travel Fund Grant**, 2019, 1,000 USD
**LJMU PGR Travel Fund Grant**, 2019, 350 GBP
**COST Workshop Participation Grant**, 2019, 450 EUR

## AWARDS & HONOURS

International Astronomical Union PhD thesis prize, 2022, $\sim 2,000$ EUR
**LJMU best PhD thesis prize** 2022, 100 GBP
**ESO Hypatia Colloquium**, 2022

## PROFESSIONAL SERVICES

**International survey collaborations**
- I am an active member of two of the largest Milky Way high-resolution spectroscopic surveys – *SDSS-V* and *WEAVE* surveys. I was also an active member of the *SDSS-IV* survey.
2025 – present: *SDSS-V* survey external participant (granted thanks to my contributions to

leadership in the survey, equal to $\sim 250,000$ USD buy-in. Allows me and two students to have access to the data and collaboration).
2022 – present: Magellanic Genesis group co-chair (The group manages $\sim 20$ astronomers)
2022 – present: Committee On INclusiveness in SDSS co-chair (COINS is a committee in the international Sloan Digital Sky Collaboration that ensures the collaboration and its members foster an inclusive and equal opportunity environment. It manages $\sim 300$ astronomers)
2025 – present: Active member, *WEAVE* spectroscopic survey
2018 – 2024: Active member, *SDSS-IV/APOGEE* spectroscopic survey

**International simulations collaborations**
- I am an active member of three high-resolution cosmological simulations collaborations – *DREAMS*, *FIRE*, and the *E-MOSAICS* simulations.
2024 – present: Active member, *DREAMS* cosmological simulations
2022 – present: Active member, *FIRE-2* cosmological simulations
2020 – present: Active member, *E-MOSAICS* cosmological simulations

**Public code**
I have worked heavily on developing new machine-learning and statistical methods and tools for modelling and digesting the vast amount of Milky Way survey data. The *Lux* method I developed is designed to quickly and efficiently derive spectroscopic, astrometric, or photometric measurements of objects (e.g., stars, planets, galaxies) from noisy astronomical measurements; it is also designed to perform label transfer, and paint on properties of an object observed using one instrument onto those observed using another. The code associated with this *Lux* model can be found *here*.

**Public catalogues**
I have worked on constructing useful value added catalogues both for Milky Way survey data and cosmological simulations. The catalogue of star particles belonging to accretion events in the *FIRE*-2 cosmological simulations that I created has served extremely useful both for my research and for $\sim 5$ follow-up studies (proprietary to the *FIRE-2* collaboration). I have also contributed significantly to the construction of the *SDSS-IV/APOGEE* legacy Milky Way globular cluster value added catalogue. This globular cluster star member catalogue can be found *here*.

## TEACHING, & ADVISING EXPERIENCE

**Mentored/Supervised students:**
**Mauro Cabrera** (Universidad de la República, Uruguay, PhD, 2024–present): Primary supervisor on a project focused on measuring the dynamical warp in the Milky Way's disc (article in prep)
**Furkan Akbaba** (Instanbul University, PhD, 2024–present): Primary supervisor on a project focused on modelling chemical gradients in the Milky Way's thick disc (article in prep)
**Akshara Viswanathan** (Groningen, PhD → CITA fellow at U. Victoria, 2023-2025): Primary research mentor. Article in A&A on modelling the birth of the Milky Way disc using *Gaia* XP data
**Oscar Jimenez Arranz** (UBarcelona, PhD → Postdoc at U. Lund, 2023-2025): Primary research mentor. Article in A&A on mapping the vertical structure of the LMC with *Gaia-SDSS-V* data
**Jasjeev Singh** (UPenn-Undergrad, 2023-2025): Research mentor on a project on understanding the dynamical structure of stellar halo populations in different dark matter cosmologies in the *FIRE* simulations
**Laura Fernandes** (LJMU-Masters, 2022-2023): Research mentor. Article in MNRAS on examining the chemical compositions of Milky Way satellite galaxies and stellar halo populations.
**Jamie Day** (LJMU-Masters, 2022-2023): Research mentor on a project comparing the chemical compositions of Milky Way globular clusters and stellar halo populations
**Anne Xie** (ANU-Masters, 2021-2022): Research mentor on a project statistically modelling the chemical-dynamical properties of Milky Way stellar halo stars
**Vanessa Brown** (CUNY-Masters, 2022-2024): Life/career mentor via the CUNY-CCA programme

**Stan Munro** (UoEdinburgh-Senior Honours, 2026): Research mentor on a project searching for extra-Galactic planets in the Milky Way
**Fin Renton** (UoEdinburgh-Senior Honours, 2026): Research mentor on a machine-learning project attempting to find unidentifiable lines in stellar spectra
**Thomas Clark** (UoEdinburgh-Senior Honours, 2026): Research mentor on a project performing chemical-dynamical cartography of the Milky Way disc

**Teaching roles:**
**Senior Demonstrator**, *Practical Astrophysics*, 2nd year undergraduate class, Liverpool John Moores University, 2019-2020 & 2020-2021
**Teaching Assistant**, *Stellar Physics*, 3rd year undergraduate class, Liverpool John Moores University, 2020-2021
**Teaching Assistant**, *Astrophysical Concepts*, 1st year undergraduate class, Liverpool John Moores University, 2021-2022
**Teaching Assistant**, *Introduction to Astrophysics*, 1st year undergraduate class, Liverpool John Moores University, 2018-2019

**Conference and workshop organiser:** (* *demark international conferences*)
*Clouds over Pyrenees** (SOC), Benasque, Spain, September 2026
*Resolving the missing details of the Milky Way's accretion history** (SOC), EAS special session, Switzerland, July 2026
*Clouds over Yellowstone** (SOC), Montana State University, June 2025
*SDSS-V collaboration meeting** (SOC chair), NMSU, New Mexico, June 2024
*Milky Clouds over Manhattan** (SOC chair), Flatiron Institute, February 2024
*SDSS-V collaboration meeting** (LOC chair), Flatiron Institute, July 2023
*Streams across sims* (LOC and SOC), Flatiron Institute, April 2023

**Outreach:**
*Guest lecturer*, Mills Observatory amateur astronomy club, November 2025
*Outreach initiative with spanish speaking men at MDC Brooklyn prison*, November 2024
*Outreach initiative with spanish speaking women at MDC Brooklyn prison*, March 2024
*Outreach lecture at the Brisbane amateur astronomy club*, May 2021
*Astroweek*, LJMU, March 2019

**Academic service**
**Journal Referee**: Nature, ApJ, A&A, MNRAS, New Astronomy Reviews
**Observing/Computing Proposal Referee**: Gemini, DiRAC
**COINS seminar series**: Organised and led an online seminar series on EDI topics
**SDSS-V Gotham meetings**: Organised and led in person meetings at the Flatiron Institute for *SDSS-V* members in the New York area on a bi-monthly basis
**Magellanic Genesis *SDSS-V* meetings**: Organise and lead online meetings for this working group every two weeks
**COINS *SDSS-V* meetings**: Organise and lead online meetings for COINS every two weeks

## SELECTED TALKS

**Summary:** Delivered **58 oral presentations** in total, including 16 invited seminars/colloquiums, 6 invited keynote/plenary talks, 22 contributed talks, 14 invited lunch/coffee talks
60. **Invited Keynote**, *The Milky Way in the era of large-scale stellar surveys*, Florence, Italy, March 2026
59. **Invited Seminar**, *A glimpse into the Milky Way's distant past*, Istanbul University, Turkey, March 2026
58. **Invited Colloquium**, *The Galaxy in a new light: new models for new data*, Liverpool John Moores University, UK, November 2025

57. **Invited Colloquium**, *Simple foundation models for astronomy: an example case with Lux*, University of Livertpool, UK, November 2025
56. **Invited Colloquium**, *The Milky Way in motion: using chemical abundances for dynamical inference*, National Astronomical Observatory of Japan, Japan, October 2025
55. **Invited Seminar**, *The Milky Way in motion: using chemical abundances for dynamical inference*, Lund University, Sweeden, September 2025
54. **Contributed talk**, "*Stellar mergers or truly young?*", EAS, Cork, June 2025
53. **Contributed talk**, "*Lux: a generative, multi-output, latent variable model*", EAS, Cork, June 2025
52. **Invited talk**, "*Old but gold: Globular clusters and Galactic assembly*", EAS, Cork, June 2025
51. **Contributed talk**, "*Lux: a generative, multi-output, latent variable model*", IAU: AI for astrophysics, Greece, June 2025
50. **Invited Colloquium**, *Galaxy formation with one Galaxy: The Milky Way as a Rosetta Stone*, Kapteyn Institute, Netherlands, April 2025
49. **Contributed talk**, *"Lux: a generative, multi-task, spectral model"*, Astroinformatics, Chile, November 2024
48. **Invited keynote**, *"The accretion history of the Galaxy via field and globular cluster populations"*, IAU 395, Brazil, November 2024
47. **Invited colloquium**, *"A glimpse into the Milky Way's distant past"*, University of Michigan, USA, October 2024
46. **Invited Colloquium**, *"A glimpse into the Milky Way's distant past"*, University of Hawaii, USA, September 2024
45. **Invited colloquium**, *"A glimpse into the Milky Way's distant past"*, NRC HAA, Canada, September 2024
44. **Invited colloquium**, *"A glimpse into the Milky Way's distant past"*, University of Victoria, Canada, September 2024
43. **Invited IAU PhD prize talk**, *"IAU general assembly"* Cape Town, South Africa, August 2024
42. **Contributed talk**, *"Waves in the Milky Way disc"* meeting, Shanghai, China, August 2024
41. **Contributed talk**, *"New methods for galactic dynamics"* meeting, Ringberg Castle, Germany, July 2024
40. **Contributed talk**, *"The Milky Way assembly tale"* meeting, Bologna, Italy, May 2024
39. **Invited coffee talk**, *"Stellar mergers or truly young?"* UT Austin, Italy, April 2024
38. **Contributed seminar**, *"The Milky Way is not an island"* meeting, Sesto, Italy, January 2024
37. **Invited colloquium**, *"The Milky Way as a test-bed for galaxy formation"*University of Delaware, USA, October 2023
36. **Contributed talk**, *"The early mass assembly history of the Milky Way"* scientific meeting, Cambridge, UK, September 2023
35. **COINS plenary**, *"SDSS-V collaboration meeting"*, New York, USA, August 2023
34. **Contributed talk**, *"SDSS-V collaboration meeting"*, New York, USA, August 2023
33. **Contributed talk**, *"UK GA workshop"* workshop, Liverpool, UK, July 2023
32. **Contributed talk**, *"Galactic bars"* conference, Granada, Spain, July 2023
31. **Lunch seminar**, University of Cambridge, UK, May 2023
30. **Invited seminar**, *"Friends of Friends"* conference, Córdoba, Argentina, April 2023
29. **Contributed talk**, *"IAU Symposium 377: From JWST to the Milky Way"* conference, Kuala Lumpur, February 2023
28. **Invited Keynote talk**, *"S-PLUS Mini-workshop on Galactic Structure"* conference, remote, December 2022
27. **Contributed talk**, *"Linking the Galactic and Extragalactic"* conference, Wollongong, Australia, November 2022
26. **Lunch talk**, Edinburgh, UK, November 2022
25. **Invited talk**, University of Queensland, virtual, July 2022
24. **Invited seminar**, University of Bologna, virtual, June 2022

23. **ESO Hypathia Colloquium**, virtual, June 2022
22. **Invited talk**, Durham University, March 2022
21. **CfA Seminar**, Harvard University, February 2022
20. **Plenary talk**, *Astronomical Society of Australia meeting* (ASA), August 2021
19. **Contributed talk**, EAS 2021, July 2021
18. **Invited seminar**, University of Sydney, April 2021
17. **Invited seminar**, University of New South Wales, April 2021
16. **Invited seminar**, Macquarie University, April 2021
15. **Contributed talk**, *"Penn Dynamics Research Symposium"*, April 2021
14. **Contributed seminar**, *ECR Astronomers in Australia Seminar Series*, April, 2021, (Link)
13. **Invited seminar**, University of St. Andrews, March 2021
12. **Contributed talk**, *"Streams 21" conference*, Flatiron Institute (New York), February 2021
11. **Contributed talk**, *"Milky Way Gaia Workshop on the Galactic Centre and Inner Galaxy"*, Heidelberg, Germany, February 2021
10. **Invited lunch talk**, Australian National University, Australia, December 2020
9. **Contributed talk**, *"Linking the Galactic and Extragalactic"* conference, Wollongong, Australia, November 2020 (Link)
8. **Invited lunch talk**, University of Queensland, Australia, November 2020
7. **ARI research talks**, Liverpool John Moores University, UK, October 2020
6. **Invited journal club talk**, *Dynamics group at CCA*, New York, September 2020
5. **Invited lunch talk**, University of Birmingham, UK, August 2020
4. **Invited lunch talk**, University of Cambridge, UK, August 2020
3. **Contributed talk**, SDSS-IV/V Collaboration Meeting, New York, July 2020
2. **ARI research talks**, Liverpool John Moores University, UK, October 2019
1. **Contributed talk**, SDSS-IV Collaboration Meeting, Ensenada, Mexico, June 2019

## PRESS COVERAGE HIGHLIGHTS

Research highlight in Nature Astronomy, *"Demographics of the inner Milky Way"*, Link
Research highlight in Nature Astronomy, *"Excavating a Galactic tomb"*, Link
Article in Sky & Telescope, "*Astronomers Discover Galactic "Fossil" inside the Milky Way"*, Link
Article in Forbes magazine, "*We've found an ancient 'fossil Galaxy' inside our Milky Way, say scientists"*, Link
Article in The Independent, "*Fossil Galaxy" found hidden in the Milky Way"*, Link
Interview on "Principio de incertidumbre", Canal Extremadura, Spanish News (2020), *"Heracles, un fósil galáctico en el interior de la Vía Láctea"*, Link
Invited contribution to *"The Magellanic Clouds Newsletter "* (MC News), Link

## SKILLS

**Programming**
*jax/jaxOPT*: for machine-learning/statistical modelling
*NumPyro/Emcee*: for probabilistic statistical modelling
*Python*: for data-driven modelling, interpretation of data, visualisation
*LaTeX*: for contextualising results leading towards scientific publications in journals; for preparing and disseminating teaching material
*Microsoft Teams/Word/Excel/PowerPoint*: for delivering and marking teaching material
*HTML*: for development of personal website
**Languages**
*Native*: English, Spanish, Catalan
*Beginner*: Portuguese, Italian

## REFERENCES

*Contact details of three academic referees*

1- **David W. Hogg**, New York University/Flatiron Institute CCA, dhogg@flatironinstitute.org

2- **Ricardo P. Schiavon**, Liverpool John Moores University, r.p.schiavon@ljmu.ac.uk

*Contact details for additional referees*

3- **Adrian M. Price-Whelan**, Flatiron Institute CCA, aprice-whelan@flatironinstitute.org

4- **Melissa K. Ness**, Australian National University, mkness@gmail.com

5- **Sergey E. Koposov**, University of Edinburgh, Sergey.Koposov@ed.ac.uk

6- **Kathyn V. Johnston**, Columbia University, kvj@astro.columbia.edu

7- **Nate Bastian**, DIPC-Liverpool John Moores University, nbastian78@googlemail.com

## PUBLICATIONS

### Summary

**Total number of publications:** 69; 19 first/second-author; citations: $> 4,000$ ($> 650$ as first author); ADS h-index: 23 (11 as first author) as of March 16, 2026.
**Please see ADS library for full publication list**

### First/second author papers ([†] lists papers as primary research mentor)

18. **Horta, D.** Price-Whelan, A. M., Koposov, S. E., et al., *The Milky Way's circular velocity curve measured with element abundance gradients*, accepted and in press ApJ (arXiv:2601.18876)
.17. **Horta, D.** & Ness, M. K., *Hydrostatic and explosive $\alpha$-element chemical abundances of Milky Way globular clusters, halo substructures, and satellite galaxies* (2025), MNRAS (arXiv:2506.08079) [**cited: 2**]
[†]16. Viswanathan, A., **Horta, D.**, et al., *A slow spin to win – the gradual evolution of the proto-Galaxy to the old disc* (2025), A&A (arXiv:2411.12165) [**cited: 11**]
15. **Horta, D.**, Price-Whelan, A. M., Hogg, D. W., et al. *Lux: A generative, multi-output, latent-variable model for astronomical data with noisy labels* (2025), AJ [**cited: 6**]
[†]14. Jiménez-Arranz, O., **Horta, D.**, et al., *Vertical structure and kinematics of the LMC disc from SDSS/Gaia* (2025), A&A (arXiv:2501.04616) [**cited: 14**]
13. **Horta, D.**, Petersen, M., Peñarrubia, J. *Disentangling the Galaxy's Gordian knot: evidence from APOGEE – Gaia for a knotted and slower bar in the Milky Way*, (2025) MNRAS (arXiv:2402.07986) [**cited: 18**]
12. **Horta, D.** & Schiavon, R.P *Modelling the density and mass of the Milky Way's proto-galaxy components with APOGEE-Gaia* (2025), MNRAS (arXiv:2410.16374)[**cited: 9**]
11. **Horta, D.**, Schiavon, R.P., *On the mass assembly history of the Milky Way: clues from its stellar halo* (2024), Space Science Journal (invite only), Springer (arXiv:2404.16939) [**cited: 4**]
10. **Horta, D.**, Lu, Yuxi., Ness, M. K., Lisanti, M., Price-Whelan, A. M., *Stellar mergers or truly young? Intermediate-Age Stars on Highly-Radial Orbits in the Milky Way's Stellar Halo* (2024), ApJ (arXiv:2403.09777) [**cited: 19**]
9. **Horta, D.**, Price-Whelan, A., Hogg, D.W., et al. *Orbital torus imaging: Measurements of acceleration, density, and dark matter across the Galaxy disk measured from element abundances* (2024), ApJ (arXiv:2312.07664) [**cited: 17**]
8. **Horta, D.**, Cunningham, E.C., Sanderson, R.E., et al. *The proto-galaxy of Milky Way-mass halos in the FIRE simulations* (2024), MNRAS, (arXiv:2307.15741) **[cited: 29]**
7. **Horta, D.**, Cunningham, E.C., Sanderson, R.E., et al. *The observable properties of galaxy accretion events in Milky Way-like galaxies in the FIRE-2 cosmological simulations* (2023), ApJ, (arXiv:2211.05799) [**cited: 26**]
6. **Horta, D.**, Schiavon, R.P., Mackereth, J.T., et al. *The chemical characterisation of halo substructure in the Milky Way based on APOGEE* (2023), MNRAS, (arXiv:2204.04233)[**cited: 153**]
5. **Horta, D.**, Ness, M., Rybizki, J., Schiavon, R.P., et al. *Neutron-capture elements record the ordered chemical evolution of the disc over time* (2022), MNRAS (arXiv:2111.01809)[**cited: 20**]
4. **Horta, D.**, Mackereth, J.T., Schiavon, R.P., et al. *The Contribution of N-Rich stars to the Galactic Stellar Halo Using APOGEE Red Giants* (2021), MNRAS, (arXiv:2008.01097) [**cited: 51**]
3. **Horta, D.**, Meghan Hughes, Joel Pfeffer, et al. *Linking Globular Cluster Formation at Low and High Redshift Through the Age-Metallicity Relation in E-MOSAICS* (2021), MNRAS, (arXiv:2010.10522) [**cited: 29**]
2. **Horta, D.**, Schiavon, R.P., Mackereth, J.T., et al. *Evidence from APOGEE for the presence of a major building block of the halo buried in the inner Galaxy* (2021), MNRAS, (arXiv:2007.10374) [**cited: 210**]
1. **Horta, D.**, Schiavon, R.P. Mackereth, J.T. et al., *The Chemical Compositions of Ac-*

*creted and in situ Galactic Globular Clusters According to SDSS/APOGEE* (2020), MNRAS, (arXiv:2001.03177) [**cited: 96**]

***Under review***

1. Nidever, D., **Horta, D.**, et al., *Overview of The SDSS-V Magellanic Genesis Survey*, under review in ApJ (draft available upon request)

**Co-authored publications: significant contributions**

17. Kisku, S., Schiavon, R. P., Font, A. S., Mason, A. C., **Horta, D.,** et al., *Measuring and modelling the Splash with APOGEE/Gaia and ARTEMIS* (2025), MNRAS (arXiv:2507.15944)
16. Anguiano, B., Mitschang, A. W., Kirihara, T., Hirai, Y., **Horta, D.,** et al., *Tidal Debris Candidates from the  Centauri Accretion Event and Its Role Building Up the Milky Way Halo* (2025), MNRAS (arXiv:2505.08353)
15. Folsom, D., Lisanti, M., Necib, L., **Horta, D.,** et al., *Cosmological predictions for minor axis stellar density profiles in the inner regions of Milky Way-mass galaxies* (2025), ApJ (arXiv:2410.03627)
14. Lucey, M., Sanderson, R., **Horta, D.,** et al., *Cosmological predictions for minor axis stellar density profiles in the inner regions of Milky Way-mass galaxies* (2025), ApJ (arXiv:2408.02723)
13. Price-Whelan, A., Hunt, J. A., **Horta, D.,** et al., *Data-driven Dynamics with Orbital Torus Imaging: A Flexible Model of the Vertical Phase Space of the Galaxy*, (2025), ApJ (arXiv:2401.07903)
12. Filion, C, Petersen, M., **Horta, D** et al. *Counterculture Stars: Slow and Retrograde Stars with Low-Alpha Disk Abundances* (2025), ApJ, arXiv
10. Widrow, L.M., Hogg, D.W., **Horta, D** et al. *An Equilibrium Model of the Galaxy Determined by Element Abundance Gradients*, ApJ
9. Lucey, M., Sanderson, R., **Horta, D** et al. *Cosmological predictions for minor axis stellar density profiles in the inner regions of Milky Way-mass galaxies* (arXiv:2410.03627)
8. Donlon, T., Newberg, H. J., Sanderson, R., (**incl. Horta, D**) et al. *The Debris of the "Last Major Merger" is Dynamically Young* (arXiv:2310.09376)
7. Schiavon, R.P., Phillips, S., Myers, N., **Horta, D.**, et al. *The APOGEE Value Added Catalogue of Galactic globular cluster stars*, MNRAS, (arXiv:2310.07764)
6. Fernandez, L., Mason, A., **Horta, D**., et al. *A comparative analysis of the chemical compositions of Gaia-Enceladus/Sausage and Milky Way satellites using APOGEE*, MNRAS, (arXiv:2301.01302)
5. Taylor, D., Mason, A.C., Schiavon, R.P., **Horta, D**, et al. *Is Terzan 5 the remnant of a building block of the Galactic bulge? Evidence from APOGEE*, MNRAS, (arXiv:2204.01753)
4. Ness, M.K., Wheeler, A.J., McKinnon, K., **Horta, D.,** et al. *The homogeneity of the star formation environment of the Milky Way disk over time* ApJ, (arXiv:2109.05722)
3. Buder, S., Lind, K., Ness, M.K., Feulliet, D.K., **Horta, D.,** et al. *The GALAH Survey: Chemical tagging and chrono-chemodynamics of accreted halo stars with GALAH+ DR3 and Gaia eDR3*, MNRAS, (arXiv:2109.04059)
2. Hasselquist, S., Hayes. C.R., Lian, J., Weinberg, D.H., Zasowski, G., **Horta, D.,** et al. *APOGEE chemical abundance patterns of the massive Milky Way satellites*, ApJ, (arXiv:2109.05130)
1. Kisku, S.S., Schiavon, R.P., **Horta, D**., et al, *An enquiry on the origin of N-rich stars in the inner Galaxy based on APOGEE chemical compositions* (2021), MNRAS, (arXiv:2102.06720)

**Co-authored publications: other**

23. Li, J., Rix, H.W., Ting, Y.S., **(incl. Horta, D.,)** et al., *Variations in the Milky Way's Stellar Mass Function at [Fe/H] ¡ -1* , (2026), in press in ApJ (arXiv:2601.19522)
22. Lu, Y., Garver, B., Nidever, D., **(incl. Horta, D.,)** et al., *Stellar Birth Radii in the LMC: Insights into Chemodynamics, Radial Migration, and Star Formation Across the Disk*, (2025), in press in ApJ (arXiv:2511.02231)
21. Liptrott, A., Schiavon, R P., Mason, Andrew C., **(incl. Horta, D.,)** et al., *Is Liller 1 a building block of the Galactic bulge? – Evidence with APOGEE*, (2025), MNRAS (arXiv:2510.07411)
20. Ouer, M., Loebmann, S., Price-Whelan, A. M., **(incl. Horta, D.,)** et al., *OTI on FIRE: Testing*

*the Efficacy of Orbital Torus Imaging to Recover the Galactic Potential* (2025), ApJ (arXiv:2505.05590)
19. Lu, Yuxi., Isabel, L., Sayeed, M., **(incl. Horta, D.,)** et al., *Evidence of Truly Young high-α Dwarf Stars*, under review in ApJ (arXiv:2410.02962)
18. Hasselquist, S., Hayes, C.R., Griffith, E., **(incl. Horta, D.,)** et al., *2-process Model and Residual Abundance Analysis of the Milky Way Massive Satellites*, under review in ApJ (arXiv:2408.10393 )
17. Arora, A., Sanderson, R.E., Chakrabarti, S., (**incl. Horta, D**) et al. *The imprint of dark matter on the Galactic acceleration field*, arXiv:2406.12957
16. Rix, HW., Chandra, V., Zasowski, G., (**incl. Horta, D**) et al. *The Extremely Metal Rich Knot of Stars at the Heart of the Galaxy*, arXiv:2406.01706
15. Hackshaw, Z., Hawkins, K., Fillion, C., **Horta, D**., et al. *[X/Fe] Marks the Spot: Mapping Chemical Azimuthal Variations in the Galactic Disk with APOGEE*, arXiv:2405.18120
14. Sales-Silva, J. V., Cunha, K., Smith, V. V., (**incl Horta, D**)., et al. *A Perspective on the Milky Way Bulge Bar as Seen from the Neutron-capture Elements Cerium and Neodymium with APOGEE*, arXiv:2402.14898
13. Mead, J., Ness, M.K., Andersson, E., (**incl Horta, D**)., et al. *Measuring Dwarf Galaxy Intrinsic Abundance Scatter with Mid-resolution Spectroscopic Surveys: Calibrating APOGEE Abundance Errors*, arXiv:2403.04833
12. Ji, Alexander P., Curtis, Sanjana., Storm, Nicholas., (**incl. Horta, D**) et al. *Spectacular nucleosynthesis from early massive stars*, arXiv:2401.02484
11. Hunt, J.A., Price-Whelan, A., Johnston, K.V., (**incl. Horta, D**) et al. *Radial phase spirals in the Solar neighbourhood*, MNRAS
10. Garavito-Camargo, N., Price-Whelan, A., Samuel, Jenna., (**incl. Horta, D**) et al. *On the co-rotation of Milky Way satellites: LMC-mass satellites induce apparent motions in outer halo tracers* (arXiv:2311.11359)
9. Loaiza-Tacuri, V., Cunha, K., Souto, D., (**incl. Horta, D**) et al. *Chemical abundances of the young inner-disc open cluster NGC 6705 observed by APOGEE: sodium-rich and not α-enhanced* MNRAS
8. McKenzie, M., Yong, D., Marino, A. F. (**incl. Horta, D**) et al. *The complex stellar system M 22: confirming abundance variations with high precision differential measurements*, MNRAS
7. Cunningham, E.C., Sanderson, R.E., Johnston, K.V., (**incl. Horta, D**) et al. *Reading the CARDs: the Imprint of Accretion History in the Chemical Abundances of the Milky Way's Stellar Halo*, ApJ, (arXiv:2110.02957)
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