Jasleen Matharu

Cosmic Dawn Center (DAWN), Niels Bohr Institute, University of Copenhagen, Jagtvej 128, DK-2200, Copenhagen N, Denmark
jasleen.matharu@nbi.ku.dk | https://jkmatharu.github.io

Research Interests

Galaxy Evolution • Space-based Slitless Spectroscopy • Galaxy Clusters • High-Redshift Galaxies • Star Formation • Quenching • Galaxy Growth • Cosmic Reionisation

Computer Languages

Python • Object Oriented Programming • bash • git • LaTeX • HTML • Markdown • reStructuredText

Specialised Skills

Grism Redshift & Line Analysis Software (Grizli)
- Creator, Author and Editor of "Grizli for Dummies", a guide to using Grizli (part of official Grizli documentation).

GALFIT
- Experienced in two-dimensional model fitting of galaxy light profiles with GALFIT.

Professional Appointments

DAWN Fellow
Cosmic Dawn Center, Niels Bohr Institute, University of Copenhagen
Sep 2022 - present

The First High Resolution View of Galaxy Evolution in the Earliest Galaxies with JWST Slitless Spectroscopy

Postdoctoral Research Associate
Department of Physics & Astronomy, Texas A&M University
Sep 2019 - present

Formation and Evolution of Galaxies and Cosmic Reionisation
- Supervisors: Prof. Casey Papovich & Prof. Robert Kennicutt

Education

Institute of Astronomy, University of Cambridge
Cambridgeshire, UK
Oct 2015 - Jul 2019 Awarded: 30th Nov 2019

PhD Astronomy
- Thesis title: *A Study on Quenching and Galaxy Growth in $z \sim 1$ Clusters using HST WFC3 Grism Observations*
- Primary Supervisor: Dr. Adam Muzzin
- Primary Supervisor (Cambridge): Prof. Paul C. Hewett
- Secondary Supervisor (Cambridge): Dr. Matthew Auger

University College London (UCL)
Gower Street, London, UK
Sep 2011 - Aug 2015

MSci Astrophysics (First Class Honours)
- Masters Project: *Testing Cosmic Microwave Background Delensing*
- Primary Supervisor (nominal): Prof. Hiranya Peiris
- Secondary Supervisor: Dr Aurélien Benoit-Lévy

Professional Experience

Peer Review

2021- Referee for *Monthly Notices of the Royal Astronomical Society, The Astrophysical Journal*
2020- Referee for *Astronomy & Astrophysics*

Proposal Review

Cycle 2 External Reviewer for *JWST* observing proposals
Cycle 9 Reviewer for ALMA observing proposals
2022B NOIRLab Time Allocation Committee Member (Extragalactic Astronomy)
2021B Referee for *Gemini* observing proposals
Cycle 29 External Reviewer for *Hubble Space Telescope* observing proposals
Cycle 8 Reviewer for ALMA observing proposals

Publication Statistics

Last updated 1st Nov 2023

- Refereed first author publications: 5, total citations: 95
- Refereed total publications: 30, total citations: 794
- H-index: 15

Publications

Refereed

Roper, W.J., Lovell C.C., Vijayan, A.P., Irodotou, D., Kuusisto, J.K., **Matharu, J.**, Seeyave, L.T.C., Thomas, P.A. and Wilkins, S.M. 2023, "First Light and Epoch Reionisation Simulations (FLARES) IX: The Physical Mechanisms Driving Compact Galaxy Formation and Evolution". Submitted to *Monthly Notices of the Royal Astronomical Society*, Volume 526, Issue 4, Pages 6128–6144.

Oesch, P.A., Brammer, G., Naidu, R.P., Bouwens, R.J., Chisholm, J., Illingworth, G.D., Matthee, J., Nelson, E., Qin, Y., Reddy, N., Shapley, A., Shivaei, I., van Dokkum, P., Weibel A., Whitaker, K., Wuyts, S., Covelo-Paz, A., Endsley, R., Fudamoto, Y., Lin, J., Magee, D., Marchesini, D., Maseda, M., Mason, C., **Matharu, J.**, Meyer, R.A., Neufeld, C., Prieto Lyon, G., Schaerer, D., Sharma, R., Shuntov, M., Smit, R., Stefanon, M., Wyithe, J.S.B. and Xiao, M. 2023 "The JWST FRESCO survey: legacy NIRCam/grism spectroscopy and imaging in the two GOODS fields". Published in *Monthly Notices of the Royal Astronomical Society*, Volume 525, Issue 2, Pages 2864–2874.

Noirot, G., Desprez, G., Asada, Y., Sawicki, M., Estrada-Carpenter, V., Martis, N., Sarrouh, G.T.E., Strait, V., Abraham, R., Bradač, M., Brammer, G., Iyer, K., MacFarland, S., **Matharu, J.**, Mowla, L., Muzzin, A., Pacifici, C., Ravindranath, S., Willott, C.J., Albert, L., Doyor, R., Hutchings, J.B. and Rowlands, N. 2023 "The first large catalogue of spectroscopic redshifts in Webb's first deep field, SMACS J0723.3-7327". Published in *Monthly Notices of the Royal Astronomical Society*, Volume 525, Issue 2, Pages 1867–1884.

Werner, S.V., Hatch, N.A., **Matharu, J.**, Gonzalez, A.H., Bahé, Y.M., Mei, S., Noirot, G. and Wylezalek, D. 2023 "Intracluster light in the core of $z \sim 2$ galaxy proto-clusters". Published in *Monthly Notices of the Royal Astronomical Society*, Volume 523, Issue 1, Pages 91–104.

Estrada-Carpenter, V., Papovich, C., Momcheva, I., Brammer, G., Simons, R.C., Cleri, N.J., Giavalisco, M., **Matharu, J.**, Trump, J.R., Weiner, B. and Ji, Z. 2023 "CLEAR: The Morphological Evolution of Galaxies in the Green Valley". Published in *The Astrophysical Journal*, Volume 951, Issue 2, id.115.

Shen, L., Papovich, C., Yang, G., **Matharu, J.** + CEERS Collaboration 2023 "CEERS: Spatially Resolved UV and Mid-infrared Star Formation in Galaxies at $0.2 < z < 2.5$: The Picture from the Hubble and James Webb Space Telescopes". Published in *The Astrophysical Journal*, Volume 950, Issue 1, id.7.

Strait, V., Brammer, G., Muzzin, A., Desprez, G., Asada, Y., Abraham, R., Bradač, M., Iyer, K.G, Martis, N., Mowla, L., Noirot, G., Sarrouh, G.T.E., Sawicki, M., Willott, C., Gould, K.M.L., Grindlay, T., **Matharu, J.** and Rihtaršič, G. 2023 "An Extremely Compact, Low-mass Galaxy on its Way to Quiescence at $z = 5.2$". Published in *The Astrophysical Journal Letters*, Volume 949, Issue 2, id.L23.

Simons, R.C., Papovich, C., Momcheva, I., Brammer, G., Estrada-Carpenter, V., Finklestein, S.L., Gosmeyer C.M., **Matharu, J.**, Trump, J.R., Backhaus, B.E., Cheng, Y., Cleri, N. J., Ferguson, H.C., Finlator, K., Giavalisco, M., Ji, Z., Jung, I., Lotz, J.M., O'Brien, R., Skelton, R.E., Tilvi, V. and Weiner, B. 2023 "CLEAR: Survey Overview, Data Analysis, and Products". Published in *The Astrophysical Journal Supplement Series*, Volume 266, Issue 1, id.13.

Matharu, J., Muzzin, A., Sarrouh, G.T.E., Brammer, G., Abraham, R., Asada, Y., Bradač, M., Desprez, G., Martis, N., Mowla, L., Noirot, G., Sawicki, M., Strait, V., Willott, C.J., Gould, K.M.L., Grindlay, T. and Harshan A.T. 2023 "A First Look at Spatially Resolved Balmer Decrements at $1.0 < z < 2.4$ from JWST NIRISS Slitless Spectroscopy". Published in *The Astrophysical Journal Letters*, Volume 949, Issue 1, id.L11.

Cleri, N.J., Yang, G., Papovich, C., Trump, J.R., Backhaus, B.E., Estrada-Carpenter, V., Finklestein, S.L., Giavalisco, M., Hutchison, T.A., Ji, Z., Jung, I., **Matharu, J.**, Momcheva, I., Olivier, G.M., Simons, R.C. and Weiner, B. 2023 "CLEAR: High-ionization [Ne V] λ3426 Emission-line Galaxies at $1.4 < z < 2.3$". Published in *The Astrophysical Journal*, Volume 948, Issue 2, id.112.

Trump, J.R., Arrabalo Haro, P., C., Simons, R.C. et al inc. **Matharu, J.** 2023 "The Physical Conditions of Emission-line Galaxies at Cosmic Dawn from JWST/NIRSpec Spectroscopy in the SMACS 0723 Early Release Observations". Published in *The Astrophysical Journal*, Volume 945, Issue 1, id.35.

Cramer, W.J, Noble, A.G., Massingill, K., Cairns, J., Clements, D.L., Cooper, M.C., Demarco, R., **Matharu, J.**, McDonald, M., Muzzin, A., Nantais, J., Rudnick, G., Übler, H., van Kampen, E., Webb, T.M.A., Wilson, G. and Yee, H.K.C. 2023 "A Large-scale Kinematic Study of Molecular Gas in High-z Cluster Galaxies: Evidence for High Levels of Kinematic Asymmetry". Published in *The Astrophysical Journal*, Volume 944, Issue 2, id.213.

Zavala, J.A., Buat, V., Casey, C.M., + CEERS Collaboration inc. **Matharu, J.** 2023 "Dusty Starbursts Masquerading as Ultra-high Redshift Galaxies in JWST CEERS Observations". Published in *The Astrophysical Journal Letters*, Volume 943, Issue 2, id.L9.

Backhaus, B.E., Bridge, J.S., Trump, J.R., Cleri, N. J., Papovich, C., Simons, R.C., Momcheva, I., Holwerda, B.W., Ji, Z., Jung, I. and **Matharu, J.** 2023 "CLEAR: Spatially Resolved Emission Lines and Active Galactic Nuclei at $0.6 < z < 1.3$". Published in *The Astrophysical Journal*, Volume 943, Issue 1, id.37.

Finklestein, S.L., Bagley, M.B., Arrabalo Haro, P. + CEERS Collaboration inc. **Matharu, J.** 2022 "A Long Time Ago in a Galaxy Far, Far Away: A Candidate z $\sim$ 12 Galaxy in Early JWST CEERS Imaging". Published in *The Astrophysical Journal Letters*, Volume 940, Issue 2, id.L55.

Papovich, C., Simons, R.C., Estrada-Carpenter., V., **Matharu, J.**, Momcheva, I., Trump, J.R., Backhaus, B.E., Brammer, G.B., Cleri, N. J., Finklestein, S.L., Giavalisco, M., Ji, Z., Jung, I., Kewley, L.J., Nicholls, D.C., Pirzkal, N., Rafelski, M. and Weiner B. 2022 "CLEAR: The Ionization and Chemical-Enrichment Properties of Galaxies at $1.1 < z < 2.3$". Published in *The Astrophysical Journal*, Volume 937, Issue 1, id.22.

Matharu, J., Papovich, C., Momcheva, I., Simons, R.C., Brammer, G.B., Ji, Z., Backhaus, B.E., Cleri, N. J., Estrada-Carpenter., V., Finklestein, S.L., Finlator, K., Giavalisco, M., Jung, I., Muzzin, A., Pillepich, A., Trump, J.R., Weiner, B. 2022 "CLEAR: The Evolution of Spatially Resolved Star Formation in Galaxies between $0.5 \lesssim z \lesssim 1.7$ using Hα Emission Line Maps". Published in *The Astrophysical Journal*, Volume 937, Issue 1, id.16.

Jung, I., Papovich, C., Finklestein, S.L., Simons, R.C., Estrada-Carpenter, V., Backhaus, B.E., Cleri, N. J., Finlator, K., Giavalisco, M., Ji, Z., **Matharu, J.**, Momcheva, I., Straughn, Amber N. and Trump, J.R. 2021, "CLEAR: Boosted Lyman-Alpha Transmission of the Intergalactic Medium in UV bright Galaxies". Published in *The Astrophysical Journal*, Volume 933, Issue 1, id.87.

Tan, V. Y. Y., Muzzin, A., Marsan, Z.C., Sok, V., Alcorn, L.Y., **Matharu, J.**, Shipley, H., Marchesini, D., Nedkova, K.V., Martis, N., van der Wel, A. and Whitaker, K.E. 2022, "Resolved stellar mass profiles of galaxies in the Hubble Frontier Fields". Published in *The Astrophysical Journal*, Volume 933, Issue 1, id.30.

Cleri, N. J., Trump, J.R., Backhaus, B.E., Momcheva, I., Papovich, C., Simons, R.C., Weiner, B., Estrada-Carpenter. V., Finklestein, S.L., Giavalisco, M., Ji, Z., Jung, I., **Matharu, J.**, Martinez, F. III. and Sturm, M.R. 2020, "CLEAR: Paschen-Beta Star Formation Rates and Dust Attenuation of Low Redshift Galaxies". Published in *The Astrophysical Journal*, Volume 929, Issue 1, id.3.

Backhaus, B.E., Trump, J.R., Cleri, N. J., Simons, R.C, Papovich, C., Momcheva, I., Estrada-Carpenter., V., Finklestein, S.L., **Matharu, J.**, Ji, Z., Weiner, B., Giavalisco, M. and Jung, I. 2021, "CLEAR: Emission Line Ratios at Cosmic High Noon". Published in *The Astrophysical Journal*, Volume 926, Issue 2, id.161.

Matharu, J., Muzzin, A., Brammer, G.B., Nelson, E.J., Auger, A.W., Hewett, P.C., van der Burg, R.F.J., Balogh, M., Demarco, R., Marchesini, D., Noble, A.G., Rudnick, G., van der Wel, A., Wilson, G. and Yee, H.K.C. 2021. "HST/WFC3 grism observations of $z \sim 1$ clusters: Evidence for rapid outside-in environmental quenching from spatially resolved H-Alpha maps". Published in *The Astrophysical Journal*, Volume 923, Issue 2, id.222.

Simons, R.C, Papovich, C., Momcheva, I., Trump, J.R., Brammer, G.B., Estrada-Carpenter., V., Backhaus, B.E., Cleri, N. J., Finklestein, S.L., Giavalisco, M., Ji, Z., Jung, I., **Matharu, J.** and Weiner, B. 2020. "CLEAR: The Gas-Phase Metallicity Gradients of Star-Forming Galaxies at $0.6 < z < 2.6$". Accepted for Publication in *The Astrophysical Journal*, arXiv:2011.03553.

Balogh, M., van der Burg, R.F.J., Muzzin, A., Rudnick, G., Wilson, G., Webb, K., Biviano, A., Boak, K., Cerulo, P., Chan, J.C.C., Cooper, M.C., Gilbank, D.G., Gwyn, S., Lidman, C., **Matharu, J.**, McGee, S.L., Old, L., Pintos-Castro, I., Reeves, A.M.M., Shipley, H., Vulcani, B., Yee, H.K.C., Alonso, M.V., Bellhouse, C., Cooke, K.C., Davidson, A., De Lucia, G., Demarco, R., Drakos, N., Fillingham, S.P., Finoguenov, A., Forrest, B., Golledge, C., Jablonka, P., Garcia, D.L., McNab, K., Muriel, H., Nantais, J.B., Noble, A., Parker, L.C., Petter, G., Poggianti, B.M., Townsend, M., Valotto, C., Webb, T., and Zaritsky, D. 2021, "The GOGREEN and GCLASS Surveys: First Data Release". Published in *Monthly Notices of the Royal Astronomical Society*, Volume 500, Issue 1, Pages 358–387.

Ni, Q., Brandt, W. N., Yang, G., Leja, J., Chen, C. -T. J., Luo, B., **Matharu, J.**, Sun, M., Vito, F., Xue, Y. Q., Zhang, K., 2020, "Revealing the relation between black-hole growth and host-galaxy compactness among star-forming galaxies". Published in *Monthly Notices of the Royal Astronomical Society*, Volume 500, Issue 4, Pages 4989–5008.

Estrada-Carpenter, V., Papovich, C., Momcheva, I., Brammer, G.B., Simons, R., Bridge, J., Cleri, N., Ferguson, H., Finklestein, S.L., Giavalisco, M., Jung, I., **Matharu, J.**, Trump, J. and Weiner, B. 2020, "CLEAR II: Evidence for Early Formation of the Most Compact Quiescent Galaxies at High Redshift". Published in *The Astrophysical Journal*, Volume 898, Issue 2, article id. 171.

Matharu, J., Muzzin, A., Brammer, G.B., van der Burg, R.F.J., Auger, M.W., Hewett, P.C., van der Wel, A., van Dokkum, P., Chan, J.C.C., Demarco, R., Marchesini, D., Nelson, E.J., Noble, A.G. and Wilson, G. 2020, "HST/WFC3 grism observations of $z \sim 1$ clusters: evidence for evolution in the mass–size relation of quiescent galaxies from poststarburst galaxies". Published in *Monthly Notices of the Royal Astronomical Society*, Volume 493, Issue 4, Pages 6011–6032.

Matharu, J., Muzzin, A., Brammer, G.B., van der Burg, R.F.J., Auger, M.W., Hewett, P.C., van der Wel, A., van Dokkum, P., Balogh, M., Chan, J.C.C., Demarco, R., Marchesini, D., Nelson, E.J., Noble, A.G., Wilson, G. and Yee, H.K.C. 2019, "HST/WFC3 grism observations of $z \sim 1$ clusters: The cluster versus field stellar mass–size relation and evidence for size growth of quiescent galaxies from minor mergers". Published in *Monthly Notices of the Royal Astronomical Society*, Volume 484, Issue 1, Pages 595–617.

Noble, A.G., Muzzin, A., McDonald, M., Rudnick, G., **Matharu, J.**, Cooper, M.C., Demarco, R., Lidman, C., Nantais, J., van Kampen, E., Webb, T.M.A., Wilson, G. and Yee, H.K.C. 2019, "Resolving CO(2-1) in $z \sim 1.6$ Gas-Rich Cluster Galaxies with ALMA: Rotating Molecular Gas Disks with Possible Signatures of Gas Stripping". Published in *The Astrophysical Journal*, Volume 870, Issue 2, article id. 56.

Software

Matharu, Jasleen, & Brammer, Gabriel. (2022). Updated Configuration files for JWST NIRISS Slitless Spectroscopy (1.0). Zenodo. https://doi.org/10.5281/zenodo.7628094

Brammer, G., Strait, V., **Matharu, J.** and Momcheva, I., 2022. "Grizli". Published on Zenodo. DOI: 10.5281/zenodo.6672538.

Brammer, G., Strait, V., **Matharu, J.** and Momcheva, I., 2022. "Grizli". Published on Zenodo. DOI: 10.5281/zenodo.6672538.

Brammer, Gabe and **Matharu, Jasleen**, 2021. "Grizli: Release 2021". Published on Zenodo. DOI: 10.5281/zenodo.5012699.

In Review

Shen, L., Papovich, C., **Matharu, J.**, Pirzkal, N., Hu, W., Backhaus, B.E., Bagley, M.B., Cheng, Y., Cleri, N.J., Finkelstein, S.L., Huertas-Company, M., Giavalisco, M., Grogin, N.A. Jung, I., Kartaltepe, J.S., Koekemoer, A.M., Lotz, J.M., Maseda, M.V., Pérez-González, P., Rotheberg, B., Simons, R.C., Tacchella, S., Williams, C.C. and Yung, L.Y.A., 2023, "NGDEEP Epoch 1: Spatially Resolved H-Alpha Observations of Disk and Bulge Growth in Star-Forming Galaxies at $z \sim 0.6 - 2.2$ from JWST NIRISS Slitless Spectroscopy". Submitted to *The Astrophysical Journal*, arXiv:2310.13745.

Nelson, E., Brammer, G., Giménez-Arteaga, C., Oesch, P.A., Übler, H., de Graaff, A., **Matharu, J.**, Naidu, R.P., Shapley, A., Whitaker, K.E., Wisnioski, E., Förster-Schreiber, N.M., Smit, R., van Dokkum, P., Chisholm, J., Giovinazzo, E., Illingworth, G., Covelo Paz, A., Price, S.H., Endsley, R., Hartley, A., Gibson, J., Labbe, I., Maseda, M.V., Matthee, J., Reddy, N.A., Shivaei, I., Weibel, A., Wuyts, S., Xiao, M., Alberts, S., Baker, W.M., Bunker, A.J., Cameron, A.J., Charlot, S., Eisenstein, D.J., Ji, Z., Johnson, B.D., Jones, G.C., Maiolino, R., Robertson, B., Sandles, L., Suess, K.A., Tacchella, S., Williams C.C. and Witstok, J., 2023, "FRESCO: An extended, massive, rapidly rotating galaxy at z=5.3". Submitted to *The Astrophysical Journal*, arXiv:2310.06887.

Desprez, G., Martis, N., Asada, Y., Sawicki, M., Willott, C.J., Muzzin, A., Abraham, R.G, Bradač, M., Brammer, G., Estrada-Carpenter, V., Iyer, K., **Matharu, J.**, Mowla, L., Noirot, G., Sarrouh, G.T.E., Strait, V., Gledhill, R. and Rihtaršič, G. 2023, "ΛCDM not dead yet: massive high-z Balmer break galaxies are less common than previously reported". Submitted to *Monthly Notices of the Royal Astronomical Society*, arXiv:2310.03063.

Asada, Y., Sawicki, M., Abraham, R., Bradač, M., Brammer, G., Desprez, G., Estrada-Carpenter, V., Iyer, K., Martis, N., **Matharu, J.**, Mowla, L., Muzzin, A., Noirot, G., Sarrouh, G.T.E., Strait, V., Willott, C.J. and Harshan, A 2023, "Bursty star formation and galaxy-galaxy interactions in low-mass galaxies 1 Gyr after the Big Bang". Submitted to *Monthly Notices of the Royal Astronomical Society*, arXiv:2310.02314.

Bradač, M., Strait, V., Mowla, L., Iyer, K.G., Noirot, G., Willott, C., Brammer, G., Abraham, R., Asada, Y., Desprez, G., Estrada-Carpenter, V., Harshan, A., Martis, N.S., **Matharu, J.**, Muzzin, A., Rihtaršič, G., Sarrouh, G.T.E. and Sawicki, M. 2023, "Star Formation at the Epoch of Reionization with CANUCS: The ages of stellar populations in MACS1149-JD1". Submitted to *The Astrophysical Journal Letters*, arXiv:2308.13288.

Bagley, M.B., Pirzkal, N., Finkelstein, S.L., + NGDEEP Collaboration inc. **Matharu, J.** 2023, "The Next Generation Deep Extragalactic Exploratory Public (NGDEEP) Survey". Submitted to *The Astrophysical Journal*, arXiv:2302.05466.

Presentation Statistics

- 4 Colloquia, 1 invited Conference talk, 6 invited seminars
- 6 Contributed conference talks, 16 contributed seminars, 1 poster

Presentations

Colloquia

[Invited] 23rd Sep 2022. *Revealing how Star Formation and Quenching proceed in High Redshift Galaxies with Spatially Resolved Space-based Slitless Spectroscopy*. Saint Mary's University, Halifax, Canada.

[COVID-19][Invited][Given in-person] 6th Jun 2022. *Revealing how Star Formation and Quenching proceed in High Redshift Galaxies with Spatially Resolved Space-based Slitless Spectroscopy*. University of Oxford, Oxfordshire, UK.

[COVID-19][Invited] 22nd Oct 2021. *Revealing how Galaxy Growth, Star Formation and Quenching Proceed in High Redshift Galaxies with Spatially Resolved Space-based Slitless Spectroscopy*. University of Louisville, Kentucky, USA.

[COVID-19][Invited][Given in-person] 16th Sep 2021. *Revealing how Galaxy Growth, Star Formation and Quenching Proceed in High Redshift Galaxies with Spatially Resolved Space-based Slitless Spectroscopy*. Steward Observatory/NSF NOIR Lab, University of Arizona, Tucson, Arizona, USA.

Conference Talks & Presentations

10th Jul 2023. *The First High Resolution View of Galaxy Evolution in the Earliest Galaxies with JWST Slitless Spectroscopy*. European Astronomical Society Annual Meeting 2023, Kraków, Poland.

[Invited] 23rd Jun 2023. *Galaxy Evolution with Space-based Slitless Spectroscopy: Past, Present and Roman*. Roman Science Inspired By Emerging JWST Results, Space Telescope Science Insitute (StScI), Baltimore, USA.

[COVID-19] 17th Jun 2021. *The Role of Galaxy Clusters in Shaping the Size Growth and Quenching of Galaxies*. Galaxy Cluster Formation II Workshop, European Southern Observatory, Garching, Germany and Harvard-Smithsonian Centre for Astrophysics, Cambridge, USA.

[COVID-19] 18th May 2021. *Spatially resolved star formation in different environments between* $0.5 < z < 1.7$ *with HST WFC3 slitless spectroscopy*. Multi-Object Spectroscopy for Statistical Measures of Galaxy Evolution Workshop, Space Telescope Science Institute, Baltimore, USA.

[COVID-19] 15th Jan 2021. *The Role of Galaxy Clusters in Shaping the Size Growth and Quenching of Galaxies*. 237th Meeting of the American Astronomical Society, virtually anywhere.

[COVID-19] 1st Jul 2020. *The cluster vs. field stellar mass–size relation at* $z \sim 1$*: implications for galaxy size growth and quenching*. European Astronomical Society Annual Meeting 2020, Leiden, The Netherlands (virtual conference).

10th Feb 2020. *The cluster vs. field stellar mass–size relation at* $z \sim 1$*: implications for galaxy size growth and quenching*. Aspen Winter Conference: Galaxy Quenching and Transformation Throughout Cosmic Time, Aspen Center for Physics, Aspen, Colorado, USA.

Jun 2017. *Galaxy Evolution & the Mass–Size Relation in* $z \sim 1$ *Clusters*. Galaxy Evolution Across Time Conference, Paris, France.

Seminars

[Invited] 26th Jan 2023. *Revealing how Star Formation and Quenching proceed in High Redshift Galaxies with Spatially Resolved Space-based Slitless Spectroscopy*. Max Planck Institute for Astronomy, Heidelberg, Germany.

[Invited] 16th Nov 2022. *Revealing how Star Formation and Quenching proceed in High Redshift Galaxies with Spatially Resolved Space-based Slitless Spectroscopy*. Leiden Observatory, Leiden University, Leiden, The Netherlands.

[Invited] 6th Oct 2022. *The First High Resolution View of Galaxy Evolution in the Earliest Galaxies with JWST Slitless Spectroscopy*. Cake Talk, The Cosmic DAWN Center, Niels Bohr Institute, University of Copenhagen, Copenhagen, Denmark.

[COVID-19][Invited] 24th Jun 2022. *Revealing how Star Formation and Quenching proceed in High Redshift Galaxies with Spatially Resolved Space-based Slitless Spectroscopy*. Seminar, Arizona State University, Tempe, USA.

[COVID-19][Given in-person] 25th Apr 2022. *Revealing how Star Formation and Quenching proceed in High Redshift Galaxies with Spatially Resolved Space-based Slitless Spectroscopy*. Seminar, University of California, San Diego, USA.

[COVID-19] 29th Sep 2021. *Revealing how Galaxy Growth, Star Formation and Quenching proceed in High Redshift Galaxies with Spatially Resolved Space-based Slitless Spectroscopy*. Seminar, University of Nottingham, UK.

[COVID-19] 21st Sep 2021. *Revealing how Galaxy Growth, Star Formation and Quenching proceed in High Redshift Galaxies with Spatially Resolved Space-based Slitless Spectroscopy*. Extragalactic Group Seminar, University of Edinburgh, UK.

[COVID-19] 9th Sep 2021. *Revealing how Galaxy Growth, Star Formation and Quenching Proceed in High Redshift Galaxies with Spatially Resolved Space-based Slitless Spectroscopy*. School of Physical Sciences Seminar, The Open University, Milton Keynes, UK.

[COVID-19][Invited] 26th Feb 2021. *Tracing star formation in galaxies using spatially resolved H-Alpha emission line maps*. Joint Nuclear and Astrophysics Seminar, Texas A&M University, College Station, TX, USA.

[COVID-19][Invited] 25th Jan 2021. *The Role of Galaxy Clusters in Shaping the Size Growth and Quenching of Galaxies*. Extragalactic/Cosmology Seminar, University of Texas at Austin, TX, USA.

[COVID-19][Invited] 21st Sep 2020. *The Role of Galaxy Clusters in Shaping the Size Growth and Quenching of Galaxies*. Mitchell Institute Seminar, Mitchell Institute for Fundamental Physics and Astronomy, Texas A&M University, College Station, TX, USA.

[COVID-19] 17th Aug 2020. *New results from spatially resolved studies with space-based slitless spectroscopy*. Texas A&M Astrosymposium, Mitchell Institute for Fundamental Physics and Astronomy, Texas A&M University, College Station, TX, USA.

[COVID-19] 31st Jul 2020. *The cluster vs. field stellar mass–size relation at $z \sim 1$: implications for galaxy size growth and quenching*. Lunch talk, Space Telescope Science Institute, Baltimore, USA.

Oct 2019. *Understanding Environmental Quenching at High-redshift*. Extragalactic Lunch, Mitchell Institute for Fundamental Physics and Astronomy, Texas A&M University, College Station, TX, USA.

[Invited] Jun 2019. *The cluster vs. field stellar mass–size relation at $z \sim 1$: implications for galaxy size growth and quenching*. CLEAR Collaboration meeting, Space Telescope Science Institute, Baltimore, USA.

Oct 2018. *The cluster vs. field stellar mass–size relation at $z \sim 1$: implications for galaxy size growth with decreasing redshift*. Dunlap tea, Dunlap Institute for Astronomy & Astrophysics, University of Toronto, Canada.

Oct 2018. *The cluster vs. field stellar mass–size relation at $z \sim 1$: implications for galaxy size growth with decreasing redshift*. Astrophysics Brown Bag Lunch talk, MIT Kavli Institute for Astrophysics and Space Research, Cambridge, USA.

Oct 2018. *The cluster vs. field stellar mass–size relation at $z \sim 1$: implications for galaxy size growth with decreasing redshift*. Lars Hernquist's group meeting, Harvard-Smithsonian Center for Astrophysics, Cambridge, USA.

Oct 2018. *The cluster vs. field stellar mass–size relation at $z \sim 1$: implications for galaxy size growth with decreasing redshift*. ITC Lunch, Institute for Theory and Computation, Harvard-Smithsonian Center for Astrophysics, Cambridge, USA.

Oct 2018. *The cluster vs. field stellar mass–size relation at $z \sim 1$: implications for galaxy size growth with decreasing redshift*. Lunch talk, Yale University, New Haven, USA.

Oct 2018. *The cluster vs. field stellar mass–size relation at $z \sim 1$: implications for galaxy size growth with decreasing redshift*. Lunch talk, Space Telescope Science Institute, Baltimore, USA.

Sep 2018. *The cluster vs. field stellar mass–size relation at $z \sim 1$: implications for galaxy size growth with decreasing redshift*. Lunch talk, University of Nottingham, Nottingham, UK

Sep 2018. *The cluster vs. field stellar mass–size relation at $z \sim 1$: implications for galaxy size growth with decreasing redshift*. Lunch talk, Leiden Observatory, Leiden, The Netherlands.

Feb 2017. *The shut down of star formation in galaxies at $z \sim 1$: obtaining direct evidence for its environmental dependence*. Seminar, Institute of Astronomy, Cambridge, UK.

Teaching Experience

4th Oct 2023	Guest Lecturer, ASTRO101: Astrophysics and Cosmology "Galaxy Evolution with JWST", Undergraduates, 1.5 hours, University of Copenhagen.
Nov 2019-Feb 2020	**Co-Chair of Central Texas James Webb Space Telescope (JWST) Workshops Comittee**, Remotely attended a week-long Masterclass on the James Webb Space Telescope at the Space Telescope Science Institute, Co-organised two all-day JWST Proposal Planning Workshops with hands-on exercises at UT Austin and Texas A&M University.
2016-2017	Maths IA Supervisor, Undergraduates, 34 hours, Churchill College, University of Cambridge

Observing Proposals

Cycle 3	**Co-I**, (PI: Willott), James Webb Space Telescope GTO #4527, *CANUCS: The CAnadian NIRISS Unbiased Cluster Survey*	*6.0 hrs 52,000 USD*
Cycle 2	**Co-I**, (PIs: Glazebrook & Brammer), James Webb Space Telescope GO #3383, *JWST Wide Area 3D Parallel Survey*	*615.0 hrs 635,866 USD*
Cycle 8	**Co-I**, (PI: Noble), Atacama Large Millimeter/submillimeter Array 2021.1.01257.S, *Toward a Spatially-resolved Molecular Kennicutt-Schmidt Law in High-z Cluster Galaxies with ALMA*	*21 hrs 100,000 USD*
Cycle 8	**Co-I**, (PI: Noble), Atacama Large Millimeter/submillimeter Array 2021.1.01002.S, *Detailed Gas Kinematics and Morphologies of the Highest-redshift Jellyfish Galaxy Candidates at z=1.6*	*21.6 hrs 100,000 USD*
Cycle 8	**Co-I**, (PI: Simons), Atacama Large Millimeter/submillimeter Array 2021.1.01188.S, *CO Kinematics at Cosmic Noon: Timing the Redistribution of Metals Around Galaxies*	*23.1 hrs 100,000 USD*
Cycle 29	**Co-I**, (PI: Cleri), Hubble Space Telescope AR #16609, *Peering Through The Dust: Paschen-beta Indicators of Star Formation and Dust Attenuation*	*136,000 USD*
Cycle 1	**Co-I**, (PIs: Finkelstein & Papovich), James Webb Space Telescope GO #2079, *The Webb Deep Extragalactic Exploratory Public (WDEEP) Survey: Feedback in Low-Mass Galaxies from Cosmic Dawn to Dusk*	*121.8 hrs 1,056,190 USD*
Cycle 28	**Co-I**, (PI: Noble), Hubble Space Telescope GO #16300, *Toward a Spatially-resolved Kennicutt-Schmidt Law in High-redshift Cluster Galaxies: the Interplay Between Molecular Gas, Star Formation, and Stellar Mass with ALMA and HST*	*18 orbits 1,800,000 USD*
Cycle 28	**Co-I**, (PI: Simons), Hubble Space Telescope AR #16151, *On The Rapid Evolution of Galaxy Metallicity Gradients: A Bridge Between Theory and Observations*	*130,000 USD*
2020A	**Co-I**, (PI: Muzzin), Gemini North Telescope GN-2020A-Q-214, *Towards a Deeper Understanding of Galaxy Quenching: First Measurement of the Stellar Kinematics of Poststarburst Galaxies in Clusters at* $z \sim 1$	*18.18 hrs 44,950 USD*

Observing Experience

Roque de los Muchachos Observatory, William Herschel Telescope — *5 nights, May 2017*

- PAUCam, assisted Nina Hatch

Awards

Oct 2018	**Churchill College Travel Grant Award**, Talks Tour to present PhD work, Nottingham (UK), Leiden (The Netherlands), Baltimore, New Haven, Cambridge (USA) and Toronto (Canada)	*£ 250*
May 2017	**Churchill College Travel Grant Award**, Conference on Galaxy Evolution Across Time, Paris (France)	*£ 250*
Oct 2015	**Science and Technology Facilities Council (STFC) Quota Award**, to undertake research in Astrophysics at the Institute of Astronomy, Cambridge for up to 3.5 years	

Professional Development & Outreach

Service

June 2023-	**Executive Committee Member on the JWST Wide Area 3D Parallel Survey Team**, make strategic decisions, set policy matters, oversea distribution of science topics and technical tasks, manage NASA budget allocation.
Apr 2021-Feb 2022	**[COVID-19] Astronomy Postdoc Representative**, Attend Faculty Meetings, push for Diversity, Equity & Inclusion initiatives, Delegate tasks/responsibilities amongst Astronomy Postdocs.
Jun-Aug 2020	**[COVID-19] Lead organiser of Texas A&M University's Astrosymposium 2020**, Prepared schedule for all-day virtual conference, Moderated and supported other organisers during the conference.
May 2020-	**[COVID-19] Creator, Author and Editor of *Grizli for Dummies* – a guide to using Grizli**, Open source such that other users can contribute to it, since Grizli is in active development.

Outreach

May 2020	**[COVID-19]** Astronomy on Tap Bryan/College Station Virtual Edition #24, 25 minute talk on *Our Place in the Universe*, livestreamed on YouTube. College Station, TX, USA
Jul 2018	Gave two lectures on the topic of *Our Place in the Universe* and the workings of the the Northumberland Telescope to two groups of local and overseas students aged between 13 - 14 and 15 - 18. Institute of Astronomy, University of Cambridge, UK
Mar 2016	Organised an activity for the Cambridge Science Festival where by children can "build" a galaxy. Institute of Astronomy, University of Cambridge, UK

Referees

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