Nikko J. Cleri · Curriculum Vitae · cleri@tamu.edu · orcid.org/0000-0001-7151-009X · Website: tx.ag/cleri

Nikko J. Cleri | CV

- Position: PhD Student at Texas A&M University
- Research: Emission-Line Galaxies, Galaxy Evolution, Starburst Galaxies, High-Redshift Galaxies, Star Formation Rates and Histories, Dust Attenuation, Active Galactic Nuclei

Summary

Nikko J. Cleri is a PhD candidate in astronomy at Texas A&M University. He currently studies emission-line galaxies with a focus on rest-frame UV/optical spectra of high-redshift galaxies. He primarily uses data from *JWST* and *HST*, and is a member of the CEERS (Cosmic Evolution Early Release Science), NGDEEP (Next Generation Deep Extragalactic Exploratory Public Survey), and CLEAR (CANDELS Lyman-α Emission at Reionization) collaborations. He is also very active in mentoring and outreach initiatives, currently serving as the coordinator for Texas A&M's Mentoring and Advising Graduates in an Inclusive Community (MAGIC) program.

Education

2021 - Present **Ph.D. Astronomy** — Texas A&M University

- Advisor: Casey Papovich
- Associate Advisors: Robert C. Kennicutt, Justin Spilker

2019 - 2021 **M.S. Physics** — University of Connecticut

- Advisor: Jonathan R. Trump
- Associate Advisors: Cara Battersby and Gerald V. Dunne
- Thesis: *CLEAR: Paschen-β Star Formation Rates and Dust Attenuation in Low Redshift Galaxies*

2015 - 2019 **B.S. Physics | Mathematics Minor** — University of Connecticut

- Advisor: Gerald V. Dunne
- Undergraduate Research: *Resurgent Trans-Series for Non-Integrable Deformations of Painleve II*

Academic and Professional Appointments

2021-	**Graduate Student** (Advisor: Prof. Casey Papovich)	TAMU
2021	**Research Technician** (Advisor: Prof. Jonathan Trump)	UConn
2019-21	**Graduate Student** (Advisor: Prof. Jonathan Trump)	UConn
2017-20	**Research Assistant** (Advisor: Prof. Gerald Dunne)	UConn
2018	**NSF REU Student** (Advisor: Prof. Louis Strigari)	TAMU

Awarded Proposals and and Grants - Total Value: >$135k

Principal Investigator — 1

2021 **HST Cycle 29** - AR 16609: *Peering Through the Dust: Paschen-beta Indicators of Star Formation and Dust Attenuation* — ~$136k

Co-Investigator — 1

2023 **Gemini**: *GS-2023A-Q-136: Optical Spectroscopy of JWST ERO Galaxies* (PI: Backhaus) — 20 hours

Honors and Awards

2022	**Texas Space Grant Consortium Graduate Fellow** - $5K	TAMU
2018	**NSF REU** - $5K	TAMU
2016	**Dean's List** - College of Liberal Arts and Sciences	UConn
2015-19	**Governor's Scholarship** - $8.5K/yr	UConn

2015 **Community Service Scholarship** - $1K UConn

Teaching Experience - Cumulative Enrollment: 361

2019-21 **TA** - PHYS 1501: Physics for Engineers I - Cumulative Enrollment: 253 UConn
2021 **TA/CA** - PHYS 1025: Introduction to Astronomy - Cumulative Enrollment: 108 UConn

Professional Service

2021- **Referee** - Astrophysical Journal (ApJ)

Outreach

2022- **Volunteer** - Gateway to Graduate School TAMU
2022- **Demonstrator** - Physics and Engineering Festival TAMU
2022 **High School Research Reviewer** - Lumiere TAMU
2021- **Presenter** - Astronomy on Tap BCS 'In the News' TAMU
2021-22 **Treasurer** - Astronomy on Tap BCS TAMU
2021- **Pen-Pal** - Letters to a Pre-Scientist TAMU
2018 **Volunteer** - Mitchell Institute Star Party Group TAMU
2014- **Member** - Booth Memorial Astronomical Society, Stratford, CT

Mentoring

2022- **Coordinator** - Mentoring and Advising Graduates in an Inclusive Community (MAGIC) TAMU
2022- **Mentor** - Mentoring and Advising Graduates in an Inclusive Community (MAGIC) TAMU
2017-18 **Mentor** - UConn Undergraduate Peer Mentoring UConn

Societies and Organizations

2023 **LSSTC Data Science Fellowship Program** Auditor
2018 **American Astronomical Society** Member
2018 **American Physical Society** Member
2018 **American Institute of Physics** Member
2015 **Society of Physics Students** Member

Technical Skills and Programming Languages

Programming **Fluent** - Python, LaTeX
Familiar - SQL, Julia, C++, R, IDL, Mathematica, MATLAB
Astronomy **Fluent** - grizli, Cloudy
Familiar - PyNeb, DS9, IRAF

Observing Experience

2023 **W.M. Keck Observatory** - LRIS 3 nights
2018 **McDonald Observatory** 4 nights

Publications

Summary

- Refereed: 21, Submitted: 9
- Papers as Lead/Significant Author: 8
- Total Citations: 572, H-Index: 12, Reads: >15000 (from NASA ADS, updated May 2023)

Lead/Co-Lead Author 4

- **Cleri, N. J.**, Olivier, G. M., Hutchison T. A., et al. 2023, *Using [Ne V]/[Ne III] to Understand the Nature of Extreme-Ionization Galaxies*, arXiv e-prints, arXiv:2301.07745
- **Cleri, N. J.**, Yang, G., Papovich, C, et al. 2022, *CLEAR: High-Ionization [Ne V] λ3426 Å Emission-line Galaxies at $1.4 < z < 2.3$*, arXiv e-prints, arXiv:2209.06247.
- **Cleri, N. J.**, Trump, J. R., Backhaus, B. E., et al. 2022, *CLEAR: Paschen-β Star Formation Rates and Dust Attenuation of Low Redshift Galaxies*, ApJ, 929, 3
- **Cleri, N. J.**, Dunne, G. V., 2020, *Resurgent Trans-Series for Non-Integrable Deformations of Painleve II*, Journal of Physics A: Mathematical General, 53, 355203

Significant Author 4

- Larson, R.L., Finkelstein,S.L., Kocevski, D.D., Hutchison, T.A., Trump, J.R., Arrabal Haro, P., Bromm, V., **Cleri, N.J.**, et al. submitted, *A CEERS Discovery of an Accreting Supermassive Black Hole 570 Myr after the Big Bang: Identifying a Progenitor of Massive z > 6 Quasars*, arXiv e-prints, arXiv:2303.08918.
- Backhaus, B.E., Bridge J.S., Trump, J.R., **Cleri, N.J.**, et al. submitted, *CLEAR: Detecting Low-Luminosity Active Galactic Nuclei at $0.6 < z < 1.3$ via Spatially Resolved Hubble Space Telescope Grism Emission Line Ratios*, ApJ, 943, 37.
- Prescott, M.K.M., Finlator, K.M., **Cleri, N.J.**, et al. 2022, *Using Multiple Emission Line Ratios to Constrain the Slope of the Dust Attenuation Law*, ApJ, 928, 71
- Backhaus, B.E., Trump, J.R., **Cleri, N.J.**, et al. 2022, *CLEAR: Emission Line Ratios at Cosmic High Noon*, ApJ, 926, 161

Co-Author 22

- Jung, I., et al. 2023, *CEERS: Diversity of Lyman-Alpha Emitters during the Epoch of Reionization*, arXiv e-prints, arXiv:2304.05385.
- Arrabal Haro, P., et al. 2023, *Spectroscopic confirmation of CEERS NIRCam-selected galaxies at $z \simeq 8 - 10$*, arXiv e-prints, arXiv:2304.05378.
- Yang, G., et al. 2023, *CEERS Key Paper VI: JWST/MIRI Uncovers a Large Population of Obscured AGN at High Redshifts*, arXiv e-prints, arXiv:2303.11736.
- Simons, R.C., et al. 2023, *CLEAR: Survey Overview, Data Analysis and Products*, arXiv e-prints, arXiv:2303.09570.
- Papovich, C., et al. 2023 submitted, *CEERS Key Paper IV: Galaxies at $4 < z < 9$ are Bluer than They Appear – Characterizing Galaxy Stellar Populations from Rest-Frame ~ 1 micron Imaging*, arXiv e-prints, arXiv:2301.00027.
- Kocevski, D.D., et al. 2023 submitted, *Hidden Little Monsters: Spectroscopic Identification of Low-Mass, Broad-Line AGN at $z > 5$ with CEERS*, arXiv e-prints, arXiv:2302.00012.
- Jung, I, et al. 2022 submitted, *New $z > 7$ Lyman-alpha Emitters in EGS: Evidence of an Extended Ionized Structure at $z \sim 7.7$*, arXiv e-prints, arXiv:2212.09850.
- Finkelstein, S.L.. et al. 2022 submitted, *CEERS Key Paper I: An Early Look into the First 500 Myr of Galaxy Formation with JWST*, arXiv e-prints, arXiv:2211.05792. [Author XXX of XXX]
- Perez-Gonzalez, P.G.. et al. 2022 submitted, *CEERS Key Paper V: A triality on the nature of HST-dark galaxies*, ApJL, 946, L16. [Author XXX of XXX]
- Guo, Y. et al. 2022 submitted, *First Look at z > 1 Bars in the Rest-Frame Near-Infrared with JWST Early CEERS Imaging*, arXiv e-prints, arXiv:2210.08658. [Author XXX of XXX]
- Kocevski, D. et al. 2022 submitted, *CEERS Key Paper III: The Resolved Host Properties of AGN at 3 < z < 5 with JWST*, arXiv e-prints, arXiv:2208.14480. [Author XXX of XXX]
- Rose, C. et al. 2022 submitted, *Identifying Galaxy Mergers in Simulated CEERS NIRCam Images using Random Forests*, ApJ, 942, 54. [Author XXX of XXX]

- Zavala, J. et al. 2022 submitted, *Dusty starbursts masquerading as ultra high redshift galaxies in JWST observations*, ApJL, 943, L9. [Author XXX of XXX]
- Constantin, L. et al. 2022, *Expectations of the size evolution of massive galaxies at* $3 \leq z \leq 6$ *from the TNG50 simulation: the CEERS/JWST view*, ApJ, 946, 71. [Author 8 of 18]
- García-Argumánez, A. et al. 2023, *Probing the earliest phases in the formation of massive galaxies with simulated HST+JWST imaging data from Illustris*, ApJ, 944, 3. [Author 16 of 23]
- Finkelstein, S.L. et al. 2022 submitted, *A Long Time Ago in a Galaxy Far, Far Away: A Candidate* $z \sim 14$ *Galaxy in Early JWST CEERS Imaging*, ApJL, 940, L55. [Author 52 of 114]
- Trump, J.R. et al. 2022 submitted, *The Physical Conditions of Emission-Line Galaxies at Cosmic Dawn from JWST/NIRSpec Spectroscopy in the SMACS 0723 Early Release Observations*, ApJ, 945, 35. [Author 24 of 65]
- Matharu, J. et al. 2022 submitted, *CLEAR: The Evolution of Spatially Resolved Star Formation in Galaxies between* $0.5 \leq z \leq 1.7$ *using H*α *Emission Line Maps*, ApJ, 937, 16. [Author 8 of 17]
- Papovich, C. et al. 2022 submitted, *CLEAR: The Ionization and Chemical-Enrichment Properties of Galaxies at* $1.1 < z < 2.3$ ApJ, 937, 22. [Author 9 of 18]
- Jung, I. et al. 2022, *CLEAR: Boosted Ly*α *Transmission of the Intergalactic Medium in UV bright Galaxies*, ApJ, 933, 87 [Author 7 of 14]
- Simons, R. C. et al. 2021, *CLEAR: The Gas-Phase Metallicity Gradients of Star-Forming Galaxies at* $0.6 < z < 2.6$, ApJ, 923, 203 [Author 8 of 14]
- Estrada-Carpenter, V. et al. 2020, *CLEAR II: Evidence for Early Formation of the Most Compact Quiescent Galaxies at High Redshift*, ApJ, 880, 2 [Author 7 of 14]

Presentations

Research Presentations — 9

12 January 2023	*High-Ionization [Ne V] Emission-Line Galaxies at Cosmic Noon and the Epoch of Reionization* at AAS 241st Meeting, Seattle, Washington, USA	Poster
2 December 2022	*Using [Ne V] to Constrain the Sources of Highly-Energetic Photoionization Across Cosmic Time: Exploring the "Mystery of Neon" with HST and JWST* at Texas A&M University, College Station, Texas, USA	Talk
18 August 2022	*Extreme High-Ionization Emission-Line Galaxies at Cosmic Noon and the Epoch of Reionization: Exploring the "Mystery of Neon" with HST and JWST* at Texas A&M University, College Station, Texas, USA	Talk
22 July 2022	*The Evolution of Spectroscopy from HST to JWST: Implications for the Epoch of Reionization* at Texas A&M University, College Station, Texas, USA	Talk
14 June 2022	*HST Grism Observations of Paschen-Line Star-Formation and Dust Attenuation: A Precursor to the JWST Era* at AAS 240th Meeting, Pasadena, California, USA	Poster
27 August 2021	*Paschen-*β *Star Formation Rates and Dust Attenuation with HST and JWST* at Texas A&M Astrosymposium, College Station, Texas, USA	Talk
13 January 2021	*CLEAR: Paschen-*β *Star Formation Rates and Dust Attenuation in Low Redshift Galaxies* at AAS 237th Meeting, Virtual	Poster
9 January 2019	*Modeling* ^{8}*B Solar Neutrino Detection with CE*ν*NS* at AAS 233rd Meeting, Seattle, Washington, USA	Poster
1 August 2018	*Modeling* ^{8}*B Solar Neutrino Detection with CE*ν*NS* at TAMU Undergraduate Research Poster Session, College Station, Texas, USA	Poster

Outreach and Professional Development Presentations — 5

11 November 2022	*Data Visualization in Astronomy: More Important than the Science Itself?* at Texas A&M University, College Station, Texas, USA	Talk
29 July 2022	*How to Get Into Grad School* at Texas A&M University, College Station, Texas, USA	Panel
2 June 2022	*Data Visualization in Astronomy: More Important than the Science Itself?* at Texas A&M University, College Station, Texas, USA	Talk
2 June 2022	*Matplotlib: The Champion of Plotting in Python* at Texas A&M University, College Station, Texas, USA	Workshop
1 June 2022	*pandas: Your Best Friend for Data Analysis in Python* at Texas A&M University, College Station, Texas, USA	Workshop

References

PhD Advisor **Prof. Casey J. Papovich** Texas A&M

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M.S. Advisor **Prof. Jonathan R. Trump** UConn

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B.S. Advisor **Prof. Gerald V. Dunne** UConn

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