

# Grace Margaret Olivier

## Curriculum Vitae

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### Employment

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Texas A&M University, Postdoctoral Researcher 2022-present

### Education

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The Ohio State University, Advisor: Laura Lopez

Ph.D., Astronomy 2022

M.S., Astronomy 2021

Case Western Reserve University

B.S., Astronomy, B.S., Physics, *Magna Cum Laude* 2016

### Awards

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Distinguished University Fellow, The Ohio State University 2016-2017, 2021-2022

Jason J. Nassau Prize, Case Western Reserve University 2016

Albert A. Michelson Prize, Case Western Reserve University 2015

University Scholarship, Case Western Reserve University 2012-2016

### Publications

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[ads](#) [ORCID](#)

#### First Author

1. [A Multiwavelength Study of the Massive Colliding Wind Binary WR 20a: A Possible Progenitor for Fast-Spinning LIGO Binary Black Hole Mergers](#)  
Olivier, G.M., Lopez, L.A., Auchettl, K., Rosen, A.L., Batta, A., Neugent, K.F., Ramirez-Ruiz, E., Jayasinghe, T., Vallety, P.J., Rowan, D.M., 2022, submitted to ApJ, arxiv:2212.02514
2. [Characterizing Extreme Emission Line Galaxies II: A Self-Consistent Model of Their Ionizing Spectrum](#)  
**Olivier, G.M.**, Berg, D.A., Chisholm, J., Erb, D.K., Pogge, R.W., Skillman, E.D., 2021, submitted to ApJ, arXiv:2109.06725
3. [Evolution of Stellar Feedback in HII Regions](#)  
**Olivier, G.M.**, Lopez, L.A., Rosen, A.L., Nayak, O., Reiter, M., Krumholz, M.R., Bolatto, A.D., 2021, ApJ, 908, 68, arXiv:2009.10079

#### Significant Contribution

4. [TEMPLATES: Direct Abundance Constraints for Two Lensed Lyman-Break Galaxies](#)  
Welch, B.D., **Olivier, G.M.**, Hutchison, T.A., Rigby, J.R., Berg, D.A., et al., 2024, submitted to ApJ, arxiv:2401.13046
5. [TEMPLATES: A Robust Outlier Rejection Method for JWST/NIRSpec Integral Field Spectroscopy](#)  
Hutchison T.A., Welch, B.D., Rigby, J.R., **Olivier, G.M.**, Birkin, J.E., et al., 2023, submitted to PASP, arxiv:2312.12518
6. [Using \[Ne V\]/\[Ne III\] to Understand the Nature of Extreme-ionization Galaxies](#)

Cleri, N.J., **Olivier, G.M.**, Hutchison, T.A., Papovich, C., Trump, J.R., et al., 2023 ApJ, 953, 10, arxiv:2301.07745

### Coauthor

7. [Detection of Diffuse Hot Gas Around the Young, Potential Superstar Cluster H72.97-69.39](#)  
Webb, T.L., Rodriguez, J.A., Lopez, L.A., Rosen, A.L., Lancaster, L., et al. incl. **Olivier, G.M.**, 2024, submitted to ApJ
8. [JWST Early Release Science Program TEMPLATES: Targeting Extremely Magnified Panchromatic Lensed Arcs and their Extended Star formation](#)  
Rigby, J.R., Vieira, J.D., Phadke, K.A., Hutchison, T.A., Welch, B., et al. incl **Olivier, G.M.**, 2023, submitted to ApJ
9. [JWST's TEMPLATES for Star Formation: The First Resolved Gas-phase Metallicity Maps of Dust-obscured Star-forming Galaxies at  \$z \sim 4\$](#)   
Birkin, J.E., Hutchison, T.A., Welch, B., Spilker, J.E., Aravena, M., et al. incl. **Olivier, G.M.**, 2023, ApJ, 958, 64
10. [Spatial variations in aromatic hydrocarbon emission in a dust-rich galaxy](#)  
Spilker, J.S., Phadke, K.A., Aravena, M., Archipley, M., Bayliss, M.B., et al. incl. **Olivier, G.M.**, 2023, Nature, 618, 7966, 798
11. [CLEAR: High-ionization \[Ne V\] 3426 Emission-line Galaxies at  \$1.4 < z < 2.3\$](#)   
Cleri, N.J., Yang, G., Papovich, C., Trump, J.R., Backhaus, B.E., et al. incl. **Olivier, G.M.**, 2023, ApJ, 948, 112
12. [Characterizing Extreme Emission Line Galaxies I: A Four-Zone Ionization Model for Very-High-Ionization Emission](#)  
Berg, D.A., Chisholm, J., Erb, D.K., Skillman, E.D., Pogge, R.W., **Olivier, G.M.**, 2021, ApJ, 922, 170
13. [The Wind beneath My Wings. I. Spectral Types and Multiplicity of the Central Stars Supporting Stellar Bow Shock Nebulae](#)  
Chick, W.T., Kobulnicky H.A., Schurhammer, D.P., Andrews, J.E., Povich, M.S., Buser, E.R., Dixon, D.M., Lindman, M.J., Munari, S.A., **Olivier, G.M.**, Sorber, R.L., Wernke, H.N., 2020, ApJS, 251, 29
14. [Temperature and Metallicity Gradients in the Hot Gas Outflows of M82](#)  
Lopez, L.A., Mathur, S., Nguyen, D.D., Thompson, T.A., **Olivier, G.M.**, 2020, ApJ, 904, 152, arXiv:2006.08623
15. [Intense C IV and He II Emission in  \$z \sim 0\$  Galaxies: Probing High-energy Ionizing Photons](#)  
Berg, D.A., Chisholm, J., Erb, D.K., Pogge, R.W., Henry, A., **Olivier, G.M.**, 2019, ApJL, 878, L3, arXiv:1905.06434
16. [A Comprehensive Search for Stellar Bowshock Nebulae in the Milky Way: A Catalog of 709 Mid-infrared Selected Candidates](#)  
Kobulnicky, H.A., Chick, W.T., Schurhammer, D.P., Andrews, J.E., Povich, M.S., Munari, S.A., **Olivier, G.M.**, Sorber, R.L., Wernke, H.N., Dale, D.A., Dixon, D.M., 2016, ApJS, 227, 18, arXiv:1609.02204

## Observing and Data Analysis Experience

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Wyoming Infrared Observatory, Mt. Jelm, Wyoming - 2.3-meter, lead observer 6 nights,  
assistant observer 10 nights

X-ray Imaging with Chandra Interactive Analysis of Observations (CIAO)

X-ray Spectroscopy with XSPEC

Optical Spectroscopy Reduction with MODS pipeline

Radiative Transfer Modeling with Hyperion

Photoionization Modeling with CLOUDY

## Outreach/Service

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| 1. TAMU Astronomy Seminar Organizer  | 2022-present |
| 2. CCAPP Code of Conduct Taskforce   | 2021         |
| 3. Graduate Admissions Interviewer   | 2021         |
| 4. Demographics of OSU AstroCoffee Participation, OSU Diversity Journal Club | 11/2019      |
| 5. Science Olympiad Test Creation, Proctoring, and Grading                   | 2016, 2019   |
| 6. AstroCamp Observing Telescope Operator                                    | 2015         |
| 7. Science Olympiad Test Grading   | 2014         |

## Presentations

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### Invited Talks

- Arthur M. Wolfe Symposium, San Diego, CA, 03/2024**  
Resolving ISM Metallicity in Gravitationally Lensed Galaxies with JWST
- UV Galaxies Conference, Reykjavik, Iceland, 07/2023**  
Exploring the Sources of Ionizing Photons in CLASSY Galaxies with Photoionization Modeling
- Exgal/Cosmology Seminar, University of Texas at Austin, 10/2022**  
Exploring the Production of High-Energy Photons with Reionization-Era Analogue Galaxies
- Extragalactic Group, TAMU, 09/2022**  
Pre-Supernova Stellar Feedback: from the Milky Way to Reionization Part 2
- Astronomy Seminar, TAMU, 09/2022**  
Pre-Supernova Stellar Feedback: from the Milky Way to Reionization Part I
- 19<sup>th</sup> Divisional Meeting of the High Energy Astrophysics Division, Pittsburgh, PA, 03/22**  
Exploring the Production of High-Energy Photons with Reionization-Era Analogue Galaxies
- Science Seminar, University of Wisconsin-Madison, 2/2022**  
Evolution of Stellar Feedback from Reionization to The Milky Way: A Diverse Toolset of Imaging, Spectroscopy, and Modeling for Understanding the Impact of Massive Stars
- Galaxy Group, University of Michigan, 1/2022**  
Evolution of Stellar Feedback from Reionization to The Milky Way: A Diverse Toolset of Imaging, Spectroscopy, and Modeling for Understanding the Impact of Massive Stars
- Seminar Series, Harvard Center for Astrophysics, 10/2021**  
Evolution of Stellar Feedback from Reionization to The Milky Way: A Diverse Toolset of Imaging, Spectroscopy, and Modeling for Understanding the Impact of Massive Stars

10. **Galaxy Club, Space Telescope Science Institute, 10/2021**  
Evolution of Stellar Feedback from Reionization to The Milky Way: A Diverse Toolset of Imaging, Spectroscopy, and Modeling for Understanding the Impact of Massive Stars
11. **RSAA Seminar, Australia National University, 10/2021**  
Evolution of Stellar Feedback from Reionization to The Milky Way: A Diverse Toolset of Imaging, Spectroscopy, and Modeling for Understanding the Impact of Massive Stars
12. **Papovich Group, Texas A&M University, 10/2021**  
Characterizing Extreme Emission Line Galaxies II: A Self-Consistent Model of Their Ionizing Spectrum
13. **CCAPP Seminar, The Ohio State University, 09/2021**  
Evolution of Stellar Feedback from Reionization to The Milky Way: A Diverse Toolset of Imaging, Spectroscopy, and Modeling for Understanding the Impact of Massive Stars
14. **Ringberg ISM Seminar Series, 09/2021**  
Evolution of Stellar Feedback from Reionization to The Milky Way: A Diverse Toolset of Imaging, Spectroscopy, and Modeling for Understanding the Impact of Massive Stars
15. **Exgal/Cosmology Seminar, University of Texas at Austin, 09/2021**  
Evolution of Stellar Feedback from Reionization to The Milky Way: A Diverse Toolset of Imaging, Spectroscopy, and Modeling for Understanding the Impact of Massive Stars
16. **Astrophysics Colloquium, University of Melbourne, 09/2021**  
Evolution of Stellar Feedback from Reionization to The Milky Way: A Diverse Toolset of Imaging, Spectroscopy, and Modeling for Understanding the Impact of Massive Stars
17. **Star Formation and ISM Rendezvous Series, Princeton, 02/2021**  
Evolution of Stellar Feedback in HII Regions

#### **Contributed Talks**

18. **Recipes to Regulate Star Formation at All Scales, STScI, Baltimore, MD, 04/2024**  
Resolved Metallicity and Stellar Population Maps at  $z \sim 1-2$ : Implications for Stellar Models
19. **TEMPLATES F2F Meeting, Urbana-Champaign, IL, 07/2023**  
Cloudy Modeling the SGAS Sources with Stellar Populations from KCWI
20. **A Holistic View of Stellar Feedback and Galaxy Evolution, Ascona, Switzerland, 07/2022**  
Evolution of Stellar Feedback in HII Regions
- ~~21. **239<sup>th</sup> American Astronomical Society Meeting, Salt Lake City, UT 01/2022 CANCELED**  
A Self-Consistent Model of The Ionizing Spectrum in Extreme Emission Line Galaxies~~
22. **Linking the Milky Way and Nearby Galaxies, Helsinki, Finland, 06/2019**  
Evolution of Feedback in HII Regions
23. **CLOUDY Workshop, Lexington, KY, 05/2019**  
Extreme UV Emission in Local Analogues of Reionization-Era Galaxies
24. **The Olympian Symposium, Mt. Olympus, Greece, 05/2018**  
Evolution of Feedback in HII Regions
25. **Supernova Remnants Workshop, Copenhagen, Denmark, 07/2017**  
Feedback in HII Regions

#### **Posters**

26. **The Olympian Symposium, Mt. Olympus, Greece, 05/2018**  
Evolution of Feedback in HII Regions
27. **231st American Astronomical Society Meeting, National Harbor, MD, 01/2018**

