


<b>Total number of publications</b> - first author: 8 ; co-author: 27; h-index:16; ORCID:0000-0002-8472-3649
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## first author


### Submitted: 1


2024 **Marcotulli L.**; Connor T., Banados E., Boorman P., Migliori G. et al., B.W. Grefenstette, E. Momjian, A. Siemiginowska, D. Stern, S. Belladitta, C. C. Cheung, A. Fabian, Y. Khusanova, C. Mazzucchelli, S. Rojas-Ruiz, C. M. Urry  
*NuSTAR observations of a varying-flux quasar in the Epoch of Reionization*  
 The Astrophysical Journal Letters (submitted)


### Published: 7

2024 **Marcotulli L.**; Ajello M., et al. & *HEX-P Collaboration*  
 The High Energy X-ray Probe (HEX-P): the most powerful jets through the lens of a superb X-ray eye  
 Frontiers in Astronomy and Space Sciences, Vol. 11, Id. 1290057  
doi: [10.3389/fspas.2024.1290057](https://doi.org/10.3389/fspas.2024.1290057) 

2022 **Marcotulli L.**  
*Shock waves spark blazing light from black holes*  
 Nature, Volume 611, Issue 7937, p.673-674  
doi: [10.1038/d41586-022-03768-4](https://doi.org/10.1038/d41586-022-03768-4)   
**Comment:** *I was invited to write this publication as part of Nature News and Views. The piece highlights the first results of the IXPE mission on blazar science and its target audience is the broader scientific community.*

2022 **Marcotulli L.**; Ajello M., Paliya S. V., Urry M., Oh K., Koss M., *BASS Collaboration*  
*Swift-BAT blazars and their jets thorough cosmic time*  
 The Astrophysical Journal, Vol. 940, Issue 1, id.77, 25 pp. 25  
doi: [10.3847/1538-4357/ac937f](https://doi.org/10.3847/1538-4357/ac937f) 

2022 **Marcotulli L.**; Karwin C., Ajello M., Sheng Y., *Fermi-LAT Collaboration*  
*Bridging the gap - Fermi-LAT sources at 20-200 MeV*  
 37th ICRC Proceedings  
doi: [10.22323/1.395.0610](https://doi.org/10.22323/1.395.0610)   
**Comment:** *although this publication has not been peer reviewed, it presents our preliminary analysis of the 20-200 MeV catalog. I am currently co-advising a graduate student (S. Joffre) to finish this work and submit the paper for peer review.*

2020 **Marcotulli L.**, Di Mauro, M.; Ajello, M.  
*Source-count Distribution of Gamma-Ray Blazars*  
 The Astrophysical Journal, Vol. 896, Issue 1, Id. 6, pp. 13  
doi: [10.3847/1538-4357/ab8cbd](https://doi.org/10.3847/1538-4357/ab8cbd) 

- 2020 **Marcotulli L.**, Paliya, V.; Ajello, M.; Kaur, A.; Marchesi, S. et al.  
*NuSTAR Perspective on High-redshift MeV Blazars*  
 The Astrophysical Journal, Vol. 889, Issue 2, Id. 164, pp. 15  
doi: [10.3847/1538-4357/ab65f5](https://doi.org/10.3847/1538-4357/ab65f5) 
- 2017 **Marcotulli L.**, Paliya, V. S.; Ajello, M.; Kaur, A.; Hartmann, D. H. et al.  
*High-redshift Blazars through NuSTAR Eyes*  
 The Astrophysical Journal, Vol. 839, Issue 2, Id. 96, pp. 9  
doi: [10.3847/1538-4357/aa6a17](https://doi.org/10.3847/1538-4357/aa6a17) 

## co-authored publications

### Student papers: 7





The following publications are the result of the outstanding work of students (undergraduate and graduate) whom I had the pleasure to mentor/co-advise during my PhD and current postdoc. My contributions are summarized for each of them below.

#### Submitted


- 2024 Krishna, A.; **Marcotulli, L.** ; Urry, M.  
*Investigating the Effect of Variability on Blazar Evolution*  
 The Astrophysical Journal (submitted)  
**Main contribution:** *ungraduate student (A. Krishna) main advisor; developped the project and supervised the student progress; provided context for discussion and co-wrote the paper.*



#### Published

- 2024 Rajguru, G.; **Marcotulli, L.** ; Ajello, M.; A. Tramacere  
 XMM–NuSTAR Observation and Multiwavelength SED Modelling of Blazar 4FGL J1520.8–0348  
 The Astrophysical Journal, Vol. 965, Issue 2, Id. 112, pp. 8  
doi: [10.3847/1538-4357/ad3236](https://doi.org/10.3847/1538-4357/ad3236)   
**Main contribution:** *graduate student (G. Rajguru) co-advisor on X-ray data analysis and SED modeling; provided context for discussion and co-wrote the paper*
- 2022 Rajagopal, M.; **Marcotulli, L.** ; Labrie K.; Marchesi S.; Ajello, M.  
*Identifying the 3FHL Catalog. VI. Results of the 2019 Gemini Optical Spectroscopy*  
 The Astrophysical Journal, Vol. 165, Issue 2, Id.42, pp. 10  
doi: [10.3847/1538-3881/aca1be](https://doi.org/10.3847/1538-3881/aca1be)   
**Main contribution:** *graduate student (M. Rajagopal) co-advisor; performed broadband SED modeling of the source; provided context for discussion and co-wrote the paper*

- 2020 Silver, R.; Marchesi, S.; **Marcotulli, L.** ; Kaur, A.; Rajagopal, M.; Ajello, M.  
*Identifying the 3FHL Catalog. IV. Swift Observations of Unassociated Fermi-LAT 3FHL Sources*  
The Astrophysical Journal, Vol. 902, Issue 1, Id. 23, pp. 9  
**doi:** [10.3847/1538-4357/abb317](https://doi.org/10.3847/1538-4357/abb317)   
**Main contribution:** *graduate student (R. Silver) mentor on X-ray data analysis, provided feedback for the science case and proof read the paper*
- 2020 Rajagopal, M.; **Marcotulli, L.** ; Ajello, M.; Kaur, A.; Paliya, V.; Hartmann, D.  
*NuSTAR Observations and Multiwavelength Modeling of the High-redshift BL Lacertae Object 4FGL J2146.5-1344*  
The Astrophysical Journal, Vol. 889, Issue 2, Id. 102, pp. 7  
**doi:** [10.3847/1538-4357/ab6226](https://doi.org/10.3847/1538-4357/ab6226)   
**Main contribution:** *graduate student co-advisor (M. Rajagopal); performed broadband SED modeling of the source; provided context for discussion and co-wrote the paper*
- 2019 Zhao, X.; Marchesi, S.; Ajello, M.; **Marcotulli, L.** ; Cusumano, G. et al.  
*Compton-thick AGNs in the NuSTAR Era. II. A Deep NuSTAR and XMM-Newton View of the Candidate Compton-thick AGN in NGC 1358*  
The Astrophysical Journal, Vol. 889, Issue 2, Id. 102, pp. 7  
**doi:** [10.3847/1538-4357/aaf1a0](https://doi.org/10.3847/1538-4357/aaf1a0)   
**Main contribution:** *graduate student (X. Zhao) mentor on X-ray data analysis, provided feedback for the science case and proof read the paper*
- 2017 Marchesi, S.; Tremblay, L.; Ajello, M.; **Marcotulli, L.** ; Paggi, A. et al.  
*Chandra and NuSTAR Follow-up Observations of Swift-BAT-selected AGNs*  
The Astrophysical Journal, Vol. 848, Issue 1, Id. 53, pp. 12  
**doi:** [10.3847/1538-4357/aa8ee6](https://doi.org/10.3847/1538-4357/aa8ee6)   
**Main contribution:** *undergraduate student (L. Tremblay) mentor on X-ray data analysis, provided feedback for the science case and proof read the paper*

**Collaborative papers: 13**  
**Published**

- 2024 Boorman, P. et al. (incl. **Marcotulli L.**) & HEX-P Collaboration  
*The High Energy X-ray Probe (HEX-P): The Circum-nuclear Environment of Growing Supermassive Black Holes*  
Frontiers in Astronomy and Space Sciences, Vol. 11, Id. 1335459  
**doi:** [10.3389/fspas.2024.1335459](https://doi.org/10.3389/fspas.2024.1335459)   
**Main contribution:** *provided feedback for the science case and proof read the paper*


- 2024 P. Peñil, J. Otero-Santos, M. Ajello, S. Buson, A. Domínguez, **L. Marcotulli**, N. Torres-Albà, J. Becerra González, J.A. Acosta-Pulido  
Multiwavelength Variability Analysis of Fermi-LAT Blazars  
Monthly Notices of the Royal Astronomical Society, Volume 529, Issue 2, pp.1365-1385  
**doi:** [10.1093/mnras/stae594](https://doi.org/10.1093/mnras/stae594) 
- Main contribution:** *produced the optical/UV long-term light-curves for the sources; wrote parts of the paper; provided feedback for the science case; proof read the paper*
- 2024 Brighman, M. et al. (incl. **Marcotulli L.**) & HEX-P Collaboration  
The High Energy X-ray Probe (HEX-P): Sensitive broadband X-ray observations of transient phenomena in the 2030s  
Frontiers in Astronomy and Space Sciences, vol. 10, id. 1292656  
**doi:** [10.3389/fspas.2023.1292656](https://doi.org/10.3389/fspas.2023.1292656) 
- Main contribution:** *provided feedback for the science case and proof read the paper*
- 2023 P. Peñil, J.R. Westernacher-Schneider, A. Domínguez, S. Buson, J. Otero-Santos, **L. Marcotulli**, N. Torres-Albà, J. Zrake  
Multiwavelength Analysis of Fermi-LAT Blazars with High-Significance Periodicity: Detection of a Long-Term Rising Emission in PG 1553+113  
Monthly Notices of the Royal Astronomical Society, Volume 527, Issue 4, pp.10168-10184  
**doi:** [10.1093/mnras/stad3246](https://doi.org/10.1093/mnras/stad3246) 
- Main contribution:** *produced the optical/UV long-term light-curves for the sources; wrote parts of the paper; provided feedback for the science case; proof read the paper*
- 2023 M. Negro; M. Crnogorčević; E. Burns; E. Charles; **L. Marcotulli**; Regina Caputo  
A Cross-correlation Study between IceCube Neutrino Events and the FERMI Unresolved Gamma-Ray Sky  
The Astrophysical Journal, Vol.951, Issue 1, Id. 83, pp. 14  
**doi:** [10.3847/1538-4357/acd172](https://doi.org/10.3847/1538-4357/acd172) 
- Main contribution:** *produced the  $\gamma$ -ray blazar simulations of the population used as a main part of the analysis; wrote part of the paper; provided feedback for the science case and proof read the paper*
- 2019 Domínguez, A.; Wojtak, R.; Finke, J.; Ajello, M.; Helgason, K.; Prada, F.; Desai, A.; Paliya, V.; **Marcotulli, L.**; Hartmann, D. H.  
A New Measurement of the Hubble Constant and Matter Content of the Universe Using Extragalactic Background Light  $\gamma$ -Ray Attenuation  
The Astrophysical Journal, Vol. 885, Issue 2, Id. 137, pp. 7  
**doi:** [10.3847/1538-4357/ab4a0e](https://doi.org/10.3847/1538-4357/ab4a0e) 
- Main contribution:** *major contributor for the Fermi-LAT proposal that funded the project; provided feedback for the science case and proof read the paper*

- 2019 Paliya, Vaidehi S.; Koss, M.; Trakhtenbrot, B.; Ricci, C.; Oh, K.; Ajello, M.; Stern, D.; Powell, M. C.; Urry, C. M.; Harrison, F.; Lamperti, I.; Mushotzky, R.; **Marcotulli, L.**; Mejía-Restrepo, J.; Hartmann, D.  
*BAT AGN Spectroscopic Survey. XVI. General Physical Characteristics of BAT Blazars*  
The Astrophysical Journal, Vol. 881, Issue 2, Id. 154, pp. 12  
**doi:** [10.3847/1538-4357/ab2f8b](https://doi.org/10.3847/1538-4357/ab2f8b)   
**Main contribution:** *provided feedback for the science case and proof read the paper*
- 2019 Paliya, Vaidehi S.; Ajello, Marco; **Marcotulli, Lea**; Tomsick, John et al.  
*Supermassive black holes at high redshifts*  
Astro 2020 - Decadal Survey  
**doi:** [arXiv:1903.06106](https://arxiv.org/abs/1903.06106)   
**Main contribution:** *major contributor for writing this white paper*
- 2019 Marchesi, S.; Ajello, M.; Zhao, X.; **Marcotulli, L.**; Baloković, M. et al.  
*Compton-thick AGNs in the NuSTAR Era. III. A Systematic Study of the Torus Covering*  
The Astrophysical Journal, Vol. 872, Issue 1, Id. 8, pp. 19  
**doi:** [10.3847/1538-4357/aafbeb](https://doi.org/10.3847/1538-4357/aafbeb)   
**Main contribution:** *NuSTAR data analysis of the sources*
- 2019 Paliya, Vaidehi S.; Ajello, M.; Ojha, R.; Angioni, R.; Cheung, C. C.; Tanada, K.; Pursimo, T.; Galindo, P.; Losada, I. R.; Siltala, L.; Djupvik, A. A.; **Marcotulli, L.**; Hartmann, D. H.  
*Detection of a Gamma-Ray Flare from the High-redshift Blazar DA 193*  
The Astrophysical Journal, Vol. 871, Issue 2, Id. 211, pp. 12  
**doi:** [10.3847/1538-4357/aafa10](https://doi.org/10.3847/1538-4357/aafa10)   
**Main contribution:** *provided feedback for the science case and proof read the paper*
- 2018 Marchesi, S.; Ajello, M.; **Marcotulli, L.**; Comastri, A.; Lanzuisi, G.; Vignali  
*Compton-thick AGNs in the NuSTAR Era*  
The Astrophysical Journal, Vol. 854, Issue 1, Id. 49, pp. 16  
**doi:** [10.3847/1538-4357/aaa410](https://doi.org/10.3847/1538-4357/aaa410)   
**Main contribution:** *NuSTAR data analysis of the sources; wrote part of the paper; provided feedback for the science case and proof read the paper*
- 2017 Paliya, Vaidehi S.; **Marcotulli, L.**; Ajello, M.; Joshi, M.; Sahayanathan, S.; Rao, A. R.; Hartmann, D.  
*General Physical Properties of CGRaBS Blazars*  
The Astrophysical Journal, Vol. 851, Issue 1, Id. 33, pp. 23  
**doi:** [10.3847/1538-4357/aa98e1](https://doi.org/10.3847/1538-4357/aa98e1)   
**Main contribution:** *provided feedback for the science case and proof read the paper*

2016 Ajello, M.; Ghisellini, G.; Paliya, V. S.; Kocevski, D.; Tagliaferri, G.; Madejski, G.; Rau, A.; Schady, P.; Greiner, J.; Massaro, F.; Baloković, M.; Bühler, R.; Giomi, M.; **Marcotulli, L.**; D'Ammando, F.; Stern, D.; Boggs, S. E.; Christensen, F. E.; Craig, W. W.; Hailey, C. J. Harrison, F. A.; Zhang, W.  
*NUSTAR, SWIFT, AND GROND OBSERVATIONS OF THE FLARING MEV BLAZAR PMN J0641–0320*  
 The Astrophysical Journal, Vol. 826, Issue 1, Id. 76, pp. 9  
**doi:** [10.3847/0004-637X/826/1/76](https://doi.org/10.3847/0004-637X/826/1/76)   
**Main contribution:** *provided feedback for the science case and proof read the paper*

### **Collaborations papers: 7**

The following publications are the result of several members of the collaborations I am part of. Unless otherwise specified, my main contribution has been to provide scientific feedback to the main authors and proof-read the paper.


2023 The COSI Collaboration  
*The Compton Spectrometer and Imager*  
**doi:** [10.48550/arXiv.2308.12362](https://doi.org/10.48550/arXiv.2308.12362) 

2023 The COSI Collaboration  
*The cosipy library: COSI's high-level analysis software*  
**doi:** [10.48550/arXiv.2308.11436](https://doi.org/10.48550/arXiv.2308.11436) 

2022 The AMEGO-X Collaboration  
*All-sky Medium Energy Gamma-ray Observatory eXplorer mission concept*  
 Journal of Astronomical Telescopes, Instruments, and Systems, Volume 8, id. 044003  
**doi:** [10.1117/1.JATIS.8.4.044003](https://doi.org/10.1117/1.JATIS.8.4.044003) 

2021 Ajello M., et al.  
*Gamma Rays from Fast Black-hole Winds*  
 The Astrophysical Journal, Vol. 921, Issue 2, Id. 144, pp. 14  
**doi:** [10.3847/1538-4357/ac1bb2](https://doi.org/10.3847/1538-4357/ac1bb2) 

2020 The Fermi-LAT Collaboration  
*Fermi Large Area Telescope Fourth Source Catalog*  
 The Astrophysical Journal, Vol. 247, Issue 1, Id. 33, pp. 37  
**doi:** [10.3847/1538-4365/ab6bcb](https://doi.org/10.3847/1538-4365/ab6bcb) 

- 2018      The Fermi-LAT Collaboration  
*A gamma-ray determination of the Universe's star formation history*  
Science, Vol. 362, Issue 6418, pp. 1031-1034  
**doi:** [10.1126/science.aat8123](https://doi.org/10.1126/science.aat8123) 
- 2017      Ackermann M., et al.  
*Gamma-Ray Blazars within the First 2 Billion Years*  
The Astrophysical Journal, Vol. 837, Issue 1, Id. L5, pp. 8  
**doi:** [10.3847/2041-8213/aa5fff](https://doi.org/10.3847/2041-8213/aa5fff) 