

Orion Guiffreda

CONTACT INFORMATION

Location: Stamford, CT

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RESEARCH INTERESTS

Gamma ray bursts, galactic transients, active galactic nuclei, starburst galaxies

EDUCATION

May 2023

B.S. in Astronomy

University of Maryland, College Park, MD

GPA: 3.70/4.00 | President's Scholarship Recipient

RESEARCH & WORK EXPERIENCE

Aug. 2023 –

Present

Image Processing & Photometry Pipeline for PRIME Telescope

Postbaccalaureate Researcher at NASA Goddard Space Flight Center

Advisor: Alexander Kuttyrev, Ph.D., Department of Astronomy

Constructed FITS image processing and photometry pipeline for the near infrared PRIME telescope.

Published multiple GCN Circulars and ATels reporting photometric measurements of transient afterglows.

Feb. 2023 –

May 2023

UV Scattered Light in M82 Starburst

Astronomy Research Assistant at UMD

Advisor: Sylvain Veilleux, Ph.D., Department of Astronomy

Conducted photometric analysis of HST FITS images.

Removed stellar emission and analyzed UV scattering in M82 cone through reprojection and calculation of correction factors in four filters.

Created images utilized in accepted HST proposal for Cycle 31.

Jan. 2023 –

May 2023

Teaching Assistant – ASTR121: Introductory Astrophysics II lab

Astronomy Undergraduate Teaching Assistant at UMD

Professor: Stuart Vogel, Professor Emeritus, Department of Astronomy

Taught weekly two-hour lab periods for freshman and sophomore students.

Provided guidance and support to students for formal labs and lab reports.

Graded 8 biweekly, 15-page lab reports, 24 bi-weekly pre-lab assignments, and 8 bi-weekly peer review assignments.

Jan. 2023	ZTF Survey Development for Observational Astronomy Astronomy Research Assistant at UMD <i>Advisor: Melissa Hayes-Gehrke, Ph.D., Department of Astronomy</i> Developed non-native features using the ZTF online survey, including object-type query and multi-light curve download. Improved data-collecting efficiency and ease of use for users of ZTF online survey.
Aug. 2021 – Dec. 2021, Aug. 2022 – Dec. 2022	Teaching Assistant – ASTR310: Observational Astronomy lab Astronomy Undergraduate Teaching Assistant at UMD <i>Professor: Melissa Hayes-Gehrke, Ph.D., Department of Astronomy</i> Taught weekly two-hour lab periods for junior and senior students. Provided guidance and support to students for formal labs and research projects. Graded 30 weekly in-class assignments and 15 labs, along with 30 midterms and final exams.
June 2021 – Aug. 2021	Observational Astronomy Class Development <i>Advisor: Melissa Hayes-Gehrke, Ph.D., Department of Astronomy</i> Queried, analyzed, and compared image data and light curves from IRSA in various surveys (2MASS, PTF, ZTF). Developed 10-page lab manual for current use in observational astronomy class. Adapted class materials and learning goals from iPTF to ZTF online survey.

CONFERENCE TALKS & PRESENTATIONS

Jan. 2025	AAS245 iPoster Session iPoster presentation on the current state of development for the PRIME image processing and photometric pipeline, along with future goals: “ <i>Taming Transients through the Development of a Photometric Pipeline by PRIME Telescope</i> ”, 360.02
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PUBLICATIONS

General Coordinates Network Circulars & Astronomer’s Telegrams

- [1] **Guiffreda, O.**, Durbak, J., Kutyrev, A. S., Troja, E., De, K., and Cenko, S. B. *General Coordinates Network*, **35633**, 25 January, 2024.
- [2] **Guiffreda, O.**, Durbak, J., Kutyrev, A. S., Troja, E., De, K., and Cenko, S. B. *General Coordinates Network*, **35708**, 02 February, 2024.
- [3] **Guiffreda, O.**, De, K., Durbak, J., Kutyrev, A. S., Troja, E., and Cenko, S. B. *Astronomer’s Telegram*, **16499**, 03 March, 2024.
- [4] **Guiffreda, O.**, Durbak, J., Kutyrev, A. S., Troja, E., De, K., and Cenko, S. B. *General Coordinates Network*, **35956**, 18 March, 2024.

- [5] **Guiffreda, O.**, Durbak, J., Troja, E., Hamada, R., Nagano, T., Kutyrev, A. S., Suzuki, D., Sumi, T., De, K., and Cenko, S. B. *General Coordinates Network*, **36306**, 25 April, 2024.
- [6] **Guiffreda, O.**, Durbak, J., Kutyrev, A. S., Troja, E., De, K., Cenko, S. B., and Atri, S. *General Coordinates Network*, **37118**, 09 August, 2024.
- [7] **Guiffreda, O.**, Durbak, J., Kutyrev, A. S., Troja, E., De, K., Cenko, S. B., and Atri, S. *General Coordinates Network*, **37153**, 12 August, 2024.
- [8] **Guiffreda, O.**, Atri, S, Durbak, J., Kutyrev, A. S., Troja, E., De, K., and Cenko, S. B. *General Coordinates Network*, **37212**, 21 August, 2024.
- [9] Atri, S., Durbak, J., **Guiffreda, O.**, Kutyrev, A. S., Troja, E., De, K., and Cenko, S. B. *General Coordinates Network*, **37250**, 23 August, 2024.
- [10] **Guiffreda, O.**, Durbak, J., Atri, S., Kutyrev, A. S., Troja, E., De, K., and Cenko, S. B. *General Coordinates Network*, **37303**, 26 August, 2024.
- [11] Durbak, J., Troja, E., Atri, S., Kutyrev, A. S., **Guiffreda, O.**, De, K., and Cenko, S. B. *General Coordinates Network*, **37323**, 28 August, 2024.
- [12] Durbak, J., **Guiffreda, O.**, Atri, S., Kutyrev, A. S., Troja, E., De, K., and Cenko, S. B. *General Coordinates Network*, **37700**, 03 September, 2024.
- [13] Durbak, J., **Guiffreda, O.**, Atri, S., Kutyrev, A. S., Troja, E., De, K., and Cenko, S. B. *General Coordinates Network*, **37712**, 04 September, 2024.
- [14] Durbak, J., **Guiffreda, O.**, Atri, S., Kutyrev, A. S., Troja, E., and Cenko, S. B. *General Coordinates Network*, **37730**, 07 October, 2024.
- [15] **Guiffreda, O.**, Durbak, J., Atri, S., Kutyrev, A. S., Troja, E., De, K., and Cenko, S. B. *General Coordinates Network*, **37736**, 08 October, 2024.
- [16] Durbak, J., **Guiffreda, O.**, Atri, S., Kutyrev, A. S., Troja, E., and Cenko, S. B. *General Coordinates Network*, **38121**, 07 November, 2024.
- [17] Durbak, J., **Guiffreda, O.**, Kutyrev, A. S., Troja, E., and Cenko, S. B. *General Coordinates Network*, **38227**, 15 November, 2024.
- [18] Durbak, J., **Guiffreda, O.**, Kutyrev, A. S., Troja, E., and Cenko, S. B. *General Coordinates Network*, **38274**, 19 November, 2024.
- [19] Durbak, J., Troja, E., **Guiffreda, O.**, Kutyrev, A. S., and Cenko, S. B. *General Coordinates Network*, **38384**, 29 November, 2024.
- [20] **Guiffreda, O.**, Durbak, J., Troja, E., Kutyrev, A. S., and Cenko, S. B. *General Coordinates Network*, **39670**, 11 March, 2025.
- [21] **Guiffreda, O.**, Durbak, J., Troja, E., Kutyrev, A. S., and Cenko, S. B. *General Coordinates Network*, **39705**, 13 March, 2025.
- [22] Elkabir, M., **Guiffreda, O.**, Durbak, J., Passaleva, N., Troja, E., Kutyrev, A. S., and Cenko, S. B. *General Coordinates Network*, **40251**, 28 April, 2025.
- [23] Passaleva, N., **Guiffreda, O.**, Durbak, J., Elkabir, M., Troja, E., Kutyrev, A. S., and Cenko, S. B. *General Coordinates Network*, **40624**, 03 June, 2025.
- [24] Passaleva, N., **Guiffreda, O.**, Durbak, J., Elkabir, M., Troja, E., Kutyrev, A. S., and Cenko, S. B. *General Coordinates Network*, **40626**, 04 June, 2025.

HONORS / AWARDS / GRANTS

2018	University of Maryland President's Scholarship
2018-2022	University of Maryland Dean's List
2023	Outstanding Undergraduate Teaching Assistant Award

MEMBERSHIPS / AFFILIATIONS

2018 – May	AstroTerps – University of Maryland Astronomical Society
2023	

RELATED COURSEWORK

Calculus I-III, Mechanics (with lab), Electricity & Magnetism (with lab), Waves & Optics (with lab), Modern Physics, Introductory Astrophysics, Observational Astronomy (with lab), Radio Astronomy, Galaxies, Stellar Astrophysics, Quantum Mechanics, Statistical Thermodynamics.

SKILLS / CERTIFICATIONS

Extensive knowledge of Python, MATLAB, SAO Image DS9, Markdown, Microsoft Suite, Apple Suite. Intermediate knowledge of LaTeX & Ubuntu.