Orion Guiffreda

CONTACT INFORMATION

Location: Stamford, CT   Phone: +1 (203) 895 0292   Email: oriogui@umd.edu

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 Kutyrev, 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
	Advisor: Melissa Hayes-Gehrke, Ph.D., Department of Astronomy
	   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
	Professor: Melissa Hayes-Gehrke, Ph.D., Department of Astronomy
	   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
	Advisor: Melissa Hayes-Gehrke, Ph.D., Department of Astronomy
	   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	**AAS 245 iPoster Session** iPoster presentation on the current state of development for the PRIME image processing and photometric pipeline, along with future goals: "*Taming Transients through the Development of a Photometric Pipeline by PRIME Telescope*", **360.02**
June 2025	**AAS 246 iPoster Session** iPoster presentation on the history of reported transient events by PRIME, along with outlining improvements accomplished since AAS245 in the continued development for the PRIME pipeline and updated prospective goals: "*Visiting the Transient Zoo: Exploring Near Infrared Transient Counterparts and the Ongoing Photometric Pipeline Development by PRIME Telescope*", **303.02**

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 2023	AstroTerps – University of Maryland Astronomical Society

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.