Contact

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Professional Experience

01/04/2022 – Present	CosmicLeap **Postdoctoral Research Fellow** at the School of Physics, Department of Astrophysics and Space Physics, Trinity College Dublin, Dublin, Ireland in the group of Prof. Kate Maguire.

Education

17/03/2021	**Ph.D.** in Astronomy and Space Sciences at Ege University, Izmir, Turkey Dissertation: *"Long-term light variations of Type-Ia Supernovae"* Supervisor: Prof. Belinda Kalomeni
21/07/2015	**M.Sc.** in Astrophysics, Particle Physics and Cosmology at University of Barcelona, Barcelona, Spain Dissertation: *"Gaia photometric science alerts from Montsec Observatory"* Supervisor: Dr. José Manuel Carrasco Martínez
02/07/2014	**B.Sc.** in Physics at Izmir Institute of Technology, Izmir, Turkey

Collaborations and Research Visits

February 2025 – Present	The La Silla Schmidt Southern Survey (LS4)
April 2022 – Present	The Zwicky Transient Facility (ZTF)
April 2022 – Present	Public ESO Spectroscopic Survey of Transient Objects (ePESSTO+)
January 2019 – January 2020	**Visiting PhD Researcher**, Department of Astronomy, Kyoto University, Japan, supervised by Prof. Keiichi Maeda.
September 2014 – Present	Gaia Photometric Science Alerts (GSA)

Grants and Awards

2018	**TÜBİTAK 2214-A** International Research Fellowship for PhD Students, The Scientific and Technological Research Council of Turkey (21600 USD) "*Awarded for a research stay at Kyoto University during PhD studies.*"
2018	**TÜBİTAK 2211-C** National PhD Scholarship for Priority Fields, The Scientific and Technological Research Council of Turkey "*Full-term PhD scholarship in priority research areas.*"

Teaching and Supervision

October 2023 – Present	**Supervisor**, Trinity College Dublin, Ireland I have supervised undergraduate research projects of two students. Senan O'Reardon is now pursuing the M.Sc. / P.Grad.Dip in Energy Science at Trinity College Dublin, while the other student entered the private sector. A third undergraduate project is currently ongoing.
September 2017 – July 2018	**Adjunct Instructor**, Yaşar University, Turkey I taught first-year physics laboratory courses (Classical Mechanics and Electricity & Magnetism) to engineering students across all departments.

July 2017 – January 2018	**Pedagogical Formation**, Ege University, Turkey Certified qualification in teaching methodology and classroom practice for secondary and higher education, followed with a half-semester teaching at high schools.

Awarded Telescope Time

I have been awarded over 2000 hours of observing time, including >300 hours as Principal Investigator and >1,800 hours as co-Investigator, across photometric and spectroscopic programs on international facilities. In addition to awarded time, I have on-site observing experience totalling 15 nights at Okayama Observatory, Japan, and 2 nights at Calar Alto Observatory, Spain.

Photometry

>300h (PI), >1800h (co-I)	**TJO**, Montsec Observatory, Spain
3-year long-term program (PI)	**T60**, TÜBİTAK National Observatory, Turkey

Spectroscopy

40h (PI), >150h (co-I)	**SPRAT/IO:O**, Liverpool Telescope, Observatorio del Roque de los Muchachos, Spain
25h (PI)	**FORS2**, VLT/UT1, Cerro Paranal Observatory, ESO, Chile
25h (co-I)	**XSHOOTER**, VLT/UT3, Cerro Paranal Observatory, ESO, Chile

Technical Skills

Imaging and Spectroscopy

Optical imaging data reduction and processing for TJO (MEIA2-3), NTT (EFOSC), TUG (T60)

Optical spectra reduction and processing for VLT (FORS2), NTT (EFOSC), LT (SPRAT), NOT (ALFOSC), Gemini (GMOS)

Software and Tools

Python (AstroPy, NumPy, SciPy, Matplotlib, SNcosmo), IRAF, ds9, and Pypeit

Scientific Service and Leadership

2024 – 2025	**Seminar Organiser**, Astrophysics Department, Trinity College Dublin
2024 – Present	**Co-lead**, ZTF SN Ia Cosmology working group
2025 – Present	Scientific peer review for Liverpool Telescope Proposals

Invited and Contributed Talks

July 2025	**Cosmic Lighthouses: Astrophysical and Cosmological Challenges with Type Ia Supernovae, Cambridge, UK** Title: “From Bright to Faint: Tracing the Continuous Diversity of SNe Ia with ZTF”
January 2025	**Dublin Institute for Advanced Studies, Dublin, Ireland** Title: “Linking Type Ia Supernova Characteristics to Their Host Galaxies with ZTF DR2”
January 2025	**UK&Ireland Transient Science Meeting, Oxford, UK** Title: “Type Ia Supernovae Diversity and Host Environment with ZTF SN Ia DR2”

June 2024	**2024 Zwicky Transient Facility Team Meating, Stockholm, Sweden** Title: "Spectral Diversity of SNe Ia from The Zwicky Transient Facility Data Release 2"
December 2022	**ZTF SN Ia/cosmo Workshop, Berlin, Germany** Title: "ZTF DR2 Type Ia Supernovae from Low Mass Galaxies"

Publications

33 publications (4 first author, 3 second/third author, 26 co-author) **h-index** (from ADS):12

First Author:

1. **Burgaz, U. et al.**, *"ZTF SN Ia DR2 follow-up: Exploring the origin of the Type Ia supernova host galaxy step through Si II velocities"*, arXiv (2025)
2. **Burgaz, U. et al.**, *"ZTF SN Ia DR2: Properties of the low-mass host galaxies of Type Ia supernovae in a volume-limited sample"*, A&A, 694, A13 (2025).
3. **Burgaz, U. et al.**, *"ZTF SN Ia DR2: The spectral diversity of Type Ia supernovae in a volume-limited sample*", A&A, 694, A9 (2025).
4. **Burgaz, U. et al.**, *"Light-curve properties of SN 2017fgc and HV SNe Ia"*, MNRAS, 502, 4112 (2021).

Second/Third Author:

1. Harvey, L., Maguire, K., **Burgaz, U.** et al., *"ZTF SN Ia DR2: High-velocity components in the Si IIλ6355"*, 695, A264 (2025).
2. Senzel, R., Maguire, K., **Burgaz, U.** et al., *"ZTF SN Ia DR2: An environmental study of Type Ia supernovae using host galaxy image decomposition"*, A&A, 694, A14 (2025).
3. Dimitriadis, G., **Burgaz, U.** et al., *"ZTF SN Ia DR2: The diversity and relative rates of the thermonuclear supernova population"*, A&A, 694, A10 (2025).

All other articles in refereed journals:

1. Merc, J. et al. (including **Burgaz, U.**), *"Is the symbiotic recurrent nova T CrB late? Recent photometric evolution and comparison with past pre-outburst behaviour"*, MNRAS, 541, L14 (2025).
2. Kenworthy, W. D. et al. (including **Burgaz, U.**), *"ZTF SN Ia DR2: Improved SN Ia colors through expanded dimensionality with SALT3+"*, A&A, 697, A125 (2025).
3. Ban, M. et al. (including **Burgaz, U.**), *"AT2021uey: A planetary microlensing event outside the Galactic bulge"*, A&A, 697, A57 (2025).
4. Pylypenko, U. et al. (including **Burgaz, U.**), *"Constraining Lens Masses in Moderately to Highly Magnified Microlensing Events from Gaia"*, arXiv:2504.11546, submitted to A&A (2025)
5. Ginolin, M. et al. (including **Burgaz, U.**), *"ZTF SN Ia DR2: Environmental dependencies of stretch and luminosity for a volume-limited sample of 1000 type Ia supernovae"*, A&A, 695, A140 (2025)
6. Howil, K. et al. (including **Burgaz, U.**), *"Uncovering the invisible: A study of Gaia18ajz, a candidate black hole revealed by microlensing"*, A&A, 694, A94 (2025)
7. Deckers, M. et al. (including **Burgaz, U.**), *"ZTF SN Ia DR2: Secondary maximum in type Ia supernovae"*, A&A, 694, A12 (2025)
8. Terwel, Jacco H. et al. (including **Burgaz, U.**), *"ZTF SN Ia DR2: Searching for late-time interaction signatures in Type Ia supernovae from the Zwicky Transient Facility"*, A&A, 694, A11 (2025)
9. Carreres, B. et al. (including **Burgaz, U.**), *"ZTF SN Ia DR2: Peculiar velocities' impact on the Hubble diagram"*, A&A, 694, A8 (2025)
10. Aubert, M. et al. (including **Burgaz, U.**), *"ZTF SN Ia DR2: Exploring SN Ia properties in the vicinity of under-dense environments"*, A&A, 694, A7 (2025)
11. Ruppin, F. et al. (including **Burgaz, U.**), *"ZTF SN Ia DR2: Impact of the galaxy cluster environment on the stretch distribution of Type Ia supernovae"*, A&A, 694, A6 (2025)

12. Popovic, B. et al. (including **Burgaz, U.**), *"ZTF SN Ia DR2: Evidence of changing dust distribution with redshift using type Ia supernovae"*, A&A, 694, A5 (2025)
13. Ginolin, M. et al. (including **Burgaz, U.**), *"ZTF SN Ia DR2: Colour standardisation of type Ia supernovae and its dependence on the environment"*, A&A, 694, A4 (2025)
14. Amenouche, M. et al. (including **Burgaz, U.**), *"ZTF SN Ia DR2: Simulations and volume-limited sample"*, A&A, 694, A3 (2025)
15. Rigault, M. et al. (including **Burgaz, U.**), *"ZTF SN Ia DR2: Study of Type Ia supernova light-curve fits"*, A&A, 694, A2 (2025)
16. Rigault, M. et al. (including **Burgaz, U.**), *"ZTF SN Ia DR2: Overview"*, A&A, 694, A1 (2025)
17. Kim, Young-Lo et al. (including **Burgaz, U.**), *"How Accurate are Transient Spectral Classification Tools?— A Study Using 4646 SEDMachine Spectra"*, PASP, 136, 114501 (2024)
18. Maskoliūnas, M. et al. (including **Burgaz, U.**), *"Lens Mass Estimate in the Galactic Disk Extreme Parallax Microlensing Event Gaia19dke"*, AcA, 74, 77 (2024)
19. Liu, C. et al. (including **Burgaz, U.**), *"SN 2022joj: A Peculiar Type Ia Supernova Possibly Driven by an Asymmetric Helium-shell Double Detonation"*, ApJ, 958, 178 (2023)
20. Kawabata, M. et al. (including **Burgaz, U.**), *"Intermediate luminosity type Iax supernova 2019muj with narrow absorption lines: Long-lasting radiation associated with a possible bound remnant predicted by the weak deflagration model"*, PASJ, 73, 1295 (2021)
21. Tampo, Y. et al. (including **Burgaz, U.**), *"Spectroscopic and photometric observations of dwarf nova superoutbursts by the 3.8 m telescope Seimei and the Variable Star Network"*, PASJ, 73, 753 (2021)
22. Nakaoka, T. et al. (including **Burgaz, U.**), *"Calcium-rich Transient SN 2019ehk in a Star-forming Environment: Yet Another Candidate for a Precursor of a Double Neutron-star Binary"*, ApJ, 912, 30 (2021)
23. Szegedi-Elek, E. et al. (including **Burgaz, U.**), *"Gaia 18dvy: A New FUor in the Cygnus OB3 Association"*, ApJ, 899, 130 (2020)
24. Kawabata, M. et al. (including **Burgaz, U.**), *"SN 2019ein: New Insights into the Similarities and Diversity among High-velocity Type Ia Supernovae"*, ApJ, 893, 143 (2020)
25. Wyrzykowski, Ł. et al. (including **Burgaz, U.**), *"Full orbital solution for the binary system in the northern Galactic disc microlensing event Gaia16aye"*, A&A, 633, A98 (2020)
26. Kangas, T. et al. (including **Burgaz, U.**), *"Gaia16apd - a link between fast and slowly declining type I superluminous supernovae"*, MNRAS, 469, 1246 (2017)