Tobias Géron

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Research interests: Time-Domain Astronomy, Stellar Astrophysics, Galaxy Evolution, Machine Learning, Software Development, Citizen Science

Work Experience

[Nov 2023 – Current]   **Postdoctoral Fellow | University of Toronto | Toronto, Canada**
I am a Canadian Rubin Postdoctoral Fellow at the Dunlap Institute of Astronomy and Astrophysics, University of Toronto. In addition to research, I develop software tools to facilitate science within the Transients and Variable Stars Collaboration of Rubin LSST.

Education

[Sep 2019 – May 2023]   **PhD in Astrophysics | University of Oxford | Oxford, United Kingdom**
Thesis title: *Strongly and weakly barred galaxies in Galaxy Zoo*
Advisors: Prof. Chris Lintott and Dr. Rebecca Smethurst

[Sep 2018 – Sep 2019]   **MSc in Astrophysics | University of St Andrews | St Andrews, United Kingdom**
Master thesis: *Mapping dark matter in MaNGA post-starburst galaxies*
Advisors: Dr. Anne-Marie Weijmans and Dr. Vivienne Wild

[Dec 2016 – Jul 2018]   **MSc in Bioscience Engineering | Ghent University | Ghent, Belgium**
Master thesis: *Natural killer cell-mediated delivery of nanoparticles as a new revolutionary approach to cancer immunotherapy*
Advisor: Prof. Koen Raemdonck and Prof. Daisy Vanrompay

[Aug 2016 – Dec 2016]   **Exchange Student | Yonsei University | Seoul, South Korea**

[Sep 2013 – Aug 2016]   **BSc in Bioscience Engineering | University of Antwerp | Antwerp, Belgium**
Bachelor Thesis: *Optimization of high-content microscopy methods to research cell-cycle dependent distribution of protein complexes in laminopathy models*
Advisor: Prof. Winnok De Vos

Summary of Research Activities

Publications	4 first author; 114 total citations	Talks and presentations	5 invited talks
	25 co-author; 1,517 total citations		23 contributed talks
Teaching and Mentoring	2 courses taught		
	9 students supervised		

Leadership & Service

[Sep 2025 – Current]   Catalyst Postdoctoral Alliance Lead | LSST Discovery Alliance
[Sep 2025 – Current]   Postdoc Representative of the Training and Mentoring Committee | University of Toronto
[Sep 2025 – Current]   Hogg Distinguished Visitorship Committee | University of Toronto
[Sep 2025 – Nov 2025]   SOC for LSST-DA Catalyst Symposium | LSST Discovery Alliance
[Feb 2025 – Mar 2025]   Dunlap Instrumentation Summer School Admissions Committee | University of Toronto
[Nov 2023 – Current]   Peer reviewer for ApJ and MNRAS

Selected Awards & Grants

[Jan 2025]   Haverford's Early Career Scholarship
[Sep 2019 – May 2023]   Oxford Physics Endowment for Graduates Scholarship
[Sep 2019 – May 2023]   Saven European Scholarship
[Sep 2019]   Dean's List Award for Academic Excellence
[Aug 2016 – Dec 2016]   ASEM-DUO Fellowship

Teaching Experience

[Jul 2025 – Aug 2025]   Stars and Galaxies (AST201) | Head Instructor | University of Toronto | Toronto, Canada
This was an undergraduate course aimed at non-science majors, with 196 students enrolled. I led a team of six teaching assistants. I scored particularly well in my teaching evaluations for quality of instruction and student enthusiasm for the course. My overall score (4.7/5) was notably higher than the divisional average (4.2/5). Full course evaluations are available upon request.

[Jan 2025]   Programming in Astronomy (AST104) | Guest Lecture | Haverford College | Haverford, Pennsylvania, USA

[Jul 2024 – Aug 2024]   Stars and Galaxies (AST201) | Co-Instructor | University of Toronto | Toronto, Canada

Examples of student feedback can be found here[1], and full teaching evaluations are available upon request.

Supervising & Mentoring Experience

[Sep 2025 – Current]   Brian Aziz | Undergraduate Research Project | University of Toronto
[Sep 2025 – Current]   Keir Maloney | Undergraduate Research Project | University of Toronto
[Jan 2025 – Current]   Nasser Mohammed | PhD Mentee | University of Toronto
[May 2025 – Current]   Maëlle Magnan | Summer Undergraduate Research Project | University of Toronto
[Jul 2025 – Aug 2025]   Jadaya Henry-Richards | High School Internship | University of Toronto
[Jul 2025 – Aug 2025]   Fadumo Abokor | High School Internship | University of Toronto
[July 2024 – Aug 2025]   Tessa Pearlstein | Co-supervisor for Senior Thesis Project | Haverford College
[Sep 2024 – Apr 2025]   Aaryan Thusoo | Undergraduate Research Project | University of Toronto
[Feb 2024 – Sep 2024]   Petra Mengistu | Co-supervisor for Senior Thesis Project | Haverford College

Observing Experience

[23 Sep 2022 – 27 Sep 2022]   Roque de los Muchachos Observatory | La Palma, Spain
[25 Mar 2019 – 31 Mar 2019]   Teide Observatory | Tenerife, Spain
[Sep 2018 – Sep 2019]   St Andrews University Observatory | St Andrews, United Kingdom

List of Publications

First author publications

Géron, T., et al. 2025, ApJ, 987, 74: *GZ CEERS: Bar fractions up to $z \sim 4.0$*

Géron, T., et al. 2024, ApJ, 973, 129: *The Effects of Bar Strength and Kinematics on Galaxy Evolution: Slow Strong Bars Affect Their Hosts the Most*

Géron, T., et al. 2023, MNRAS, 521, 1775: *Galaxy Zoo: Kinematics of strongly and weakly barred galaxies*

Géron, T., et al. 2021, MNRAS, 507, 4389: *Galaxy Zoo: stronger bars facilitate quenching in star-forming galaxies*

Second or third author publications

McClure, R. L., **Géron, T.**, D'Onghia, E., et al. submitted: *Secular Attrition of Classical Bulges by Stellar Bars*

Smethurst, R. J., Simmons, B. D., **Géron, T.**, et al. 2025, MNRAS, 539, 1359: *Galaxy Zoo JWST: up to 75 per cent of discs are featureless at $3 < z < 7$*

Walmsley, M., **Géron, T.**, Kruk, S., et al. 2023, MNRAS, 526, 4768: *Galaxy Zoo DESI: Detailed Morphology Classifications for 8.7m Galaxies in the DESI Legacy Imaging Surveys*

Walmsley, M., Smethurst, R. J., **Géron, T.**, et al. 2022, MNRAS, 509, 3966: *Galaxy Zoo DECaLS: Detailed visual morphology measurements from volunteers and deep learning for 314 000 galaxies*

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[1] https://tobiasgeron.github.io/teaching_overview.html

Student-led publications

Mengistu, P., Masters, K. L., **Géron, T.**, et al. submitted: *The effects of bar strength and kinematics on galaxy evolution II: The global and local impacts of slow-strong bars*

Puczek, N., **Géron, T.**, Smethurst, R. J., et al. submitted: *Bars in low-density environments rotate faster than bars in dense regions*

Magnan, M., **Géron, T.**, Garland, I. L., et al. 2025, RNAAS, 9, 341: *Strong Bars, Strong Inflow: The Effect of Bar Strength on Gas Inflow*

Pearlstein, T., Masters, K. L., **Géron, T.** 2025, RNAAS, 9, 236: *Measuring Bar and Spiral Arm Pattern Speeds in MaNGA Barred Spiral Galaxies*

Co-author publications

de Ugarte Postigo, A., et al. submitted: *HI and CO spectroscopy of the unusual host of GRB 171205A: A grand design spiral galaxy with a distorted HI field*

Garland, I. L., et al. submitted: *The complex relationships between AGN, bars and bulges*

Huertas-Company, M., et al. submitted: *Euclid Quick Data Release (Q1), A first look at the fraction of bars in massive galaxies at z<1*

Huertas-Company, M., et al. submitted: *COSMOS-Web: The emergence of the Hubble Sequence*

Walmsley, M., et al. submitted: *Euclid Quick Data Release (Q1): First visual morphology catalogue*

Walmsley, M., et al. submitted: *Scaling Laws for Galaxy Images*

Fahey, M. J., et al. 2025, MNRAS, 537, 3511: *Structural decomposition of merger-free galaxies hosting luminous AGNs*

O'Ryan, D., et al. 2025, MNRAS, 539, 2967: *Time-scales for the effects of interactions on galaxy properties and SMBH growth*

Thöne, C. C., et al. 2024, A&A, 690, A66: *The host of GRB 171205A in 3D: A resolved multiwavelength study of a rare grand-design spiral GRB host*

Garland, I. L., et al. 2023, MNRAS, 522, 221: *The most luminous, merger-free AGNs show only marginal correlation with bar presence*

O'Ryan, D., et al. 2023, ApJ, 948, 40: *Harnessing the Hubble Space Telescope Archives: A Catalog of 21,926 Interacting Galaxies*

Abdurro'uf, et al. 2022, ApJS, 259, 35: *The Seventeenth Data Release of the Sloan Digital Sky Surveys: Complete Release of MaNGA, MaStar, and APOGEE-2 Data*

Garma-Oehmichen, L., et al. 2022, MNRAS, 517, 5660: *SDSS IV MaNGA: Bar pattern speed in Milky Way Analogue galaxies*

Porter-Temple, R., et al. 2022, MNRAS, 515, 3875: *Galaxy And Mass Assembly: Galaxy Zoo spiral arms and star formation rates*

Smethurst, R. J., et al. 2022, MNRAS, 510, 4126: *Quantifying the poor purity and completeness of morphological samples selected by galaxy colour*

Smith, D., et al. 2022, MNRAS, 517, 4575: *Galaxy And Mass Assembly: galaxy morphology in the green valley, prominent rings, and looser spiral arms*

Walmsley, M., et al. 2022, MNRAS, 513, 1581: *Practical galaxy morphology tools from deep supervised representation learning*

List of Talks

[7 January 2026]   American Astronomical Society Winter Meeting 2026 | Phoenix, Arizona, USA
Talk: DETECT: A pipeline to quantify detection thresholds in Rubin

[20 Nov 2025]   LSST-DA Member Representatives Meeting | Tucson, Arizona, USA
Invited talk: DETECT: A pipeline to quantify detection thresholds in Rubin

[16 Oct 2025]   CanDIAPL Collaboration Meeting | University of Waterloo | Waterloo, Ontario, Canada
Talk: DETECT: A pipeline to quantify detection thresholds in Rubin

[16 Oct 2025]   Canadian Rubin Fellows Meeting | University of Waterloo | Waterloo, Ontario, Canada
Talk: Looking for pre-SN variability: first in ATLAS, now in Rubin

[14 Oct 2025]   GEESE-ON | University of Waterloo | Waterloo, Ontario, Canada
Talk: Galaxy zoo with JWST

[3 Jun 2025]   Canadian Astronomical Society Annual Meeting 2025 | Saint Mary's University | Halifax, Ontario, Canada
Talk: Galaxy Zoo CEERS: Bar fractions up to $z \sim 4$

[20 May 2025]   Shaping the Future of Time-Domain Astronomy with LSST | Centro Brasileiro de Pesquisas Físicas | Rio de Janeiro, Brazil
Talk: Quantifying detection thresholds using Rubin pipelines to constrain pre-SN variability

[28 Mar 2025]   Astroseminar | Carnegie Mellon University | Pittsburgh, Pennsylvania, USA
Invited talk: The effects of bar kinematics and bar strength on galaxy evolution

[25 Mar 2025]   TVS Software Workshop | Virtual
Talk: Constraining pre-SN variability by quantifying detection thresholds using the Rubin pipelines

[19 Mar 2025]   Galaxy Zoo Team Meeting | Bern, Switzerland
Talk: GZ CEERS: Bar fractions up to $z \sim 4.0$ (and the challenges along the way...)

[19 Feb 2025]   Astroseminar | University of Waterloo | Waterloo, Ontario, Canada
Invited talk: The effects of bar kinematics and bar strength on galaxy evolution

[30 Jan 2025]   Public Talk | Haverford College | Haverford, Pennsylvania, USA
Invited talk: GZ CEERS: Bar fractions up to $z \sim 4.0$

[28 Jan 2025]   Galaxy Group Talk | Haverford College | Haverford, Pennsylvania, USA
Talk: The effects of bar kinematics and bar strength on galaxy evolution

[23 Jan 2025]   AstroCoffee | Johns Hopkins University | Baltimore, Maryland, USA
Talk: The effects of bar strength and kinematics on galaxy evolution: Slow strong bars affect their hosts the most

[23 Jan 2025]   GREENS Talk | Space Telescope Science Institute | Baltimore, Maryland, USA
Talk: GZ CEERS: Bar fractions up to $z \sim 4.0$

[21 Jan 2025]   Galaxies and AGN Seminar | Space Telescope Science Institute | Baltimore, Maryland, USA
Talk: The effects of bar kinematics and bar strength on galaxy evolution

[14 Jan 2025]   American Astronomical Society Winter Meeting 2025 | National Harbor, Maryland, USA
Talk: GZ CEERS: Bar fractions up to $z \sim 4.0$

[6 Jan 2025]   CEERS Telecon | Virtual
Talk: GZ CEERS: Bar fractions up to $z \sim 4.0$

[10 Sep 2024]   TASTY Talk | University of Toronto | Toronto, Canada
Talk: The impact of bar kinematics on star formation in strongly and weakly barred galaxies

[13 Jun 2024]   American Astronomical Society Meeting 2024 | Madison, Wisconsin, USA
Talk: The kinematics of strong and weak bars: strong and slow bars affect their hosts the most

[3 Apr 2024]   Galaxy Zoo Team Meeting | Bern, Switzerland
Talk: Bars in JWST

[22 Feb 2024]   Galaxy Zoo Telecon | Virtual
Talk: The effects of bar strength and kinematics on galaxy evolution

[16 Feb 2024]   FOEs Meeting | University of Toronto | Toronto, Canada
Talk: Introduction to Rubin LSST

[6 Mar 2023]   Lancaster Seminar | Lancaster University | Lancaster, United Kingdom
Talk: Kinematics of strongly and weakly barred galaxies

[9 Aug 2022]   International Astronomical Union General Assembly 2022 | Busan, South Korea
E-talk: Stronger bars facilitate quenching in star-forming galaxies

[22 Nov 2021]   MaNGA SciCon Seminar | Virtual
Talk: Stronger bars facilitate quenching in star-forming galaxies

[9 Nov 2021]   St Andrews Lunch Seminar | University of St Andrews | Virtual
Invited talk: Stronger bars facilitate quenching in star-forming galaxies

[20 Nov 2020]   Galaxy Zoo Telecon | Virtual
Talk: Galaxy Zoo: only the strongest bars contribute to quenching in star-forming galaxies

[17 Nov 2020]   Oxford Hitchhikers Seminar | University of Oxford | Virtual
Talk: Bars in Galaxy Zoo (and Oxford)