O. Grace Telford, PhD

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Education

University of Washington

Ph.D. in Astronomy with Specialization in Advanced Data Science — 2019

Thesis: "Using Metals and Stars to Constrain Galaxies' Past Gaseous Inflows and Outflows"
Advisors: Julianne Dalcanton and Jessica Werk
Data science coursework: machine learning, database management, data visualization

M.S. in Astronomy — 2014

University of Pittsburgh

B.S. in Physics and Astronomy — 2013

B.S.E. in Bioengineering with Concentration in Signals & Imaging — 2013

Academic Positions

Rutgers University

Postdoctoral Associate — 2019 –

University of Washington

NSF Graduate Research Fellow — 2016 – 2019
NSF Big Data IGERT Fellow — 2014 – 2016
Teaching Assistant — 2013 – 2014

University of Pittsburgh

Undergraduate Researcher in Physics & Astronomy — 2010 – 2013
Undergraduate Researcher at the Simulation & Medical Technology Center — 2009 – 2012

National Solar Observatory

NSF REU Student — 2010

Awarded Grants and Telescope Time

PI of *Hubble Space Telescope* Cycle 29 Program GO-16767 — 2021
32 orbits; $363k (pending approval)

PI of NASA Keck Observatory Semester 2021B Program — 2021
1 night; $12k Data Award

PI of South African Large Telescope Semester 2021-2 Program (4.6 hours) — 2021

Co-I of ALMA Cycle 8 Program (14.9 hours) — 2021

Co-I of *James Webb Space Telescope* Cycle 1 Program GO-1617 (35.7 hours) — 2021

PI of *Hubble Space Telescope* Cycle 28 Program AR-16155 — 2020
$158k Awarded Funding

Co-I of *Hubble Space Telescope* Cycle 28 Program AR-16144 — 2020

Co-I of NASA Keck Observatory Semester 2020B Program (1 night) 2020
Co-I of Gemini Observatory Semester 2020B Program (13.7 hours) 2020
Co-I of *Hubble Space Telescope* Cycle 27 Program GO-16048 (13 orbits) 2019

Selected Talks

Invited Seminar Talks:

Princeton University Galread Seminar March 2021
UC Santa Cruz Cosmology-Galaxy-IGM Seminar November 2020
McMaster University Astrophysics Seminar April 2020
UT Austin Extragalactic Seminar February 2019
Caltech Astronomy Tea Talk December 2018
Columbia University Astronomy Seminar October 2018

Conference Talks:

Special Session on Early ULLYSES Results at AAS #239 (**Invited**) January 2022
Baltimore Wind Workshop (**Invited**) August 2021
SAZERAC (Conference on the Epoch of Reionization) June 2021
IAU Symposium 361: Massive Stars Near and Far (Virtual Preview) May 2021
The Rise of Metals and Dust in Galaxies October 2020
Astrophysical Frontiers in the Next Decade and Beyond June 2018

Teaching & Mentoring

Research Advisor to Undergraduate Students:

Avery Kiihne (Rutgers) – Chambliss Award Honorable Mention at AAS #238 2019 – 2021
Olivia Petry, Travis Mandeville (UW Pre-Major in Astronomy Program) 2017 – 2018

Instructor for Courses and Workshops:

Rutgers *James Webb Space Telescope* Proposal Tools Workshop (**lead organizer**) 2020
Software Carpentry Workshops (taught Python, Linux, Git, and GitHub) 2017 – 2018
TA for undergraduate courses: Introduction to Astronomy, The Planets 2013 – 2014

Professional Service & Inclusion Work

External Reviewer for *Hubble Space Telescope* 2020 – 2021
LOC member for Rutgers APS Conference for Undergraduate Women in Physics 2021
Founding co-organizer of Rutgers Physics Equity & Inclusion Journal Club 2020 – 2021
Active member and presenter at UW Astronomy EquiTea discussion group 2014 – 2018
Referee for Astronomy & Astrophysics 2016 – 2017
Speaker on REU applications for UW Pre-Major in Astronomy Program 2015 – 2017

Refereed Publications

Summary statistics from ADS (October 2021):
9 astrophysics papers with an h-index of 6 and 2829 total citations

First-Author Papers (4):

"Far-Ultraviolet Spectra of Main-Sequence O Stars at Extremely Low Metallicity"
Telford, O. G., Chisholm, J., McQuinn, K., and Berg, D. 2021, in press at ApJ, arXiv:2109.06885

"Mass-to-Light Ratios of Spatially Resolved Stellar Populations in M31"
Telford, O. G., Dalcanton, J., Williams, B., Bell, E., Dolphin, A., Durbin, M., and Choi, Y. 2020, ApJ, 891, 32

"Spatially Resolved Metal Loss from M31"
Telford, O. G., Werk, J., Dalcanton, J., and Williams, B. 2019, ApJ, 877, 120

"Exploring Systematic Effects in the Relation between Stellar Mass, Gas Phase Metallicity, and Star Formation Rate"
Telford, O. G., Dalcanton, J., Skillman, E., and Conroy, C. 2016, ApJ, 827, 35

Contributing-Author Papers (6 = 5 astrophysics + 1 computer science):

"Star Formation Histories from Spectral Energy Distributions and Color-Magnitude Diagrams Agree: Evidence for Synchronized Star Formation in Local Volume Dwarf Galaxies over the Past 3 Gyr"
Olsen, C., Gawiser, E., Iyer, K., McQuinn, K., Johnson, B., **Telford, O. G.**, Wright, A., Broussard, A., and Kurczynski, P. 2021, ApJ, 913, 45

"Gaussian Mixture Models Use-Case: In-Memory Analysis with Myria"
Maas, R., Hyrkas, J., **Telford, O. G.**, Balazinska, M., Connolly, A., and Howe, B. 2015 *Proceedings of the 3rd Very Large Databases Workshop on In-Memory Data Management*
(NB: this computer science paper is not reflected in ADS statistics. 11 citations.)

"CANDELS Visual Classifications: Scheme, Data Release, and First Results"
Kartaltepe, J. ***et al.*** 2015, ApJS, 221, 11

"The host galaxies of X-ray selected active galactic nuclei to z = 2.5: Structure, star formation, and their relationships from CANDELS and Herschel/PACS"
Rosario, D., ***et al.*** 2015, A&A, 573, A85

"CANDELS: The Cosmic Assembly Near-infrared Deep Extragalactic Legacy Survey – The Hubble Space Telescope Observations, Imaging Data Products, and Mosaics"
Koekemoer, A., ***et al.*** 2013, ApJS, 197, 36

"CANDELS: The Cosmic Assembly Near-infrared Deep Extragalactic Legacy Survey"
Grogin, N., ***et al.*** 2013, ApJS, 197, 35