

Emily M. Silich
email: esilich@astro.caltech.edu
phone: (563) 663 - 9308

Education

California Institute of Technology (Caltech) Astrophysics, second-year PhD student	2021 -
University of Iowa Astronomy, BS Physics, BS Mathematics, minor Major GPA: 4.0 <i>with University Honors, High Distinction, Honors in Astronomy, Phi Beta Kappa</i>	2017 - 2021

Research

Graduate Research Assistant Division of Physics, Mathematics and Astronomy, Caltech	2021 -
Undergraduate Research Assistant Department of Physics & Astronomy, University of Iowa	2017 - 2021
Research Intern X-ray Astrophysics Laboratory, NASA Goddard Space Flight Center	Summer 2020
Student Researcher Canada-Norway Student Sounding Rocket Program (CaNoRock)	Winter 2019

Publications (selected)

1. **E.M. Silich**, K. Jahoda, L. Angelini, P. Kaaret, A. Zajczyk, D.M. LaRocca, R. Ringuette, and J. Richardson, “A Search for the 3.5 keV Line from the Milky Way’s Dark Matter Halo with HaloSat”, 2021, The Astrophysical Journal, 916, 2.
2. A. Zajczyk, P. Kaaret, D. LaRocca, W. Fuelberth, H.C. Gulick, K. Jahoda, D.L. Kirchner, R. McCurdy, W.T. Robison, and **E. Silich**, “On-ground calibration of the HaloSat science instrument”, J. Astron. Telesc. Instrum. Syst. 6(4), 044005 (2020).
3. **E.M. Silich**, P. Kaaret, A. Zajczyk, D.M. LaRocca, J. Bluem, R. Ringuette, K. Jahoda, and K.D. Kuntz, “Global X-Ray Properties of the Vela and Puppis A Supernova Remnants”, 2020, The Astronomical Journal, 160, 1.
4. P. Kaaret, A. Zajczyk, D.M. LaRocca, R. Ringuette, J. Bluem, W. Fuelberth, H. Gulick, K. Jahoda, T.E. Johnson, D.L. Kirchner, D. Koutroumpa, K.D. Kuntz, R. McCurdy, D.M. Miles, W.T. Robison, and **E.M. Silich**, “HaloSat - A CubeSat to Study the Hot Galactic Halo”, 2019, The Astrophysical Journal, 884, 2.

Teaching

Ay 122c: (High Energy) Astronomical Measurements & Instrumentation	Graduate TA //	Winter 2022
Ay 127: Astrophysical Cosmology	Graduate TA //	Fall 2022
PHYS 1611: Introductory Physics I	Undergraduate TA //	Spring 2020
PHYS 1512: College Physics II	Undergraduate TA //	Spring 2020

Fellowships & Awards (selected)

NSF Graduate Research Fellowship (GRFP)	2022
Wallace L. W. Sargent Graduate Fellowship (Caltech)	2021 - 2022
Chambliss Astronomy Achievement Student Awards - Honorable Mention	2021
University of Iowa Dare to Discover	2021
Barry Goldwater Scholar	2020

James A. Van Allen Award (Ulowa)	2020
John Mather Nobel Scholar (NASA/GSFC)	2020
Western Dubuque High School Young Accomplished Alumni	2020
APS Division of Astrophysics (DAP) Travel Grant	2020
Manuel Paul & Abraham Chinitz Liberal Arts & Sciences Scholarship (Ulowa)	2019 - 2020, 2020 - 2021
NASA Iowa Space Grant Consortium Research Fellowship	2018 - 2019, 2019 - 2020
Myrtle K. Maier Scholarship (Ulowa)	2019 - 2020
Rhodes Dunlap Award for Excellence in the First/Second Year (Ulowa)	2018 - 2019, 2019 - 2020
ICRU Academic Year Research Fellowship	2018 - 2019, 2019 - 2020
Charles A. Wert Summer Research Fund (Ulowa)	2019
UI Department of Physics & Astronomy Poster Prize	2018, 2019
ICRU Summer Research Fellowship	2018
UI Old Gold Scholarship	2017 - 2021
UI Top Scholars Award	2017 - 2021
UI Academic Success Scholarship	2017 - 2021
CLAS Undergraduate Scholarship (Ulowa)	2018 - 2019
Stanley Merit-Based Study Abroad Scholarship (Ulowa)	2019
Ann Morse Study Abroad Grant (Ulowa)	2019
Iowa Abroad Scholarship	2019
President's List, University of Iowa	2020 - 2021
Dean's List, University of Iowa	2017 - 2021

Academic Presentations (selected)

Invited talks & papers presented at scientific meetings:

1. Galaxy Cluster Discussion Group Meeting – Center for Astrophysics, Harvard & Smithsonian “*Characterizing the dynamics of galaxy cluster mergers with multi-wavelength observations and hydrodynamical simulations*”, Virtual. November 2022.
2. 240th American Astronomical Society (AAS) Meeting, “*Characterizing the dynamics of galaxy cluster mergers with multi-wavelength observations and hydrodynamical simulations*”, Pasadena, CA. June 2022.
3. University of Iowa Department of Physics & Astronomy Awards Colloquium, “*A Search for the 3.5 keV Line from the Milky Way’s Dark Matter Halo with HaloSat*”, Virtual. April 2021.
4. University of Iowa Department of Physics & Astronomy Colloquium, “*A Search for Dark Matter with HaloSat*”, Virtual. October 2020.
5. Gulf Coast Undergraduate Research Symposium, “*HaloSat Observations of the Vela and Puppis A Supernova Remnants*”, Virtual. October 2020.
6. NASA/GSFC Code 660 Intern Presentation Symposium, “*A Search for Dark Matter with HaloSat*”, Virtual. August 2020.
7. Iowa Space Grant Consortium Student Research Symposium, “*HaloSat Observations of the Vela and Puppis A Supernova Remnants*”, Virtual. April 2020.
8. Conference for Undergraduate Women in Physical Sciences, “*HaloSat Observations of the Vela and Puppis A Supernova Remnants*”, Lincoln, NE. November 2019.
9. HaloSat Science Meeting, “*HaloSat Observations of the Vela and Puppis A Supernova Remnants*”, Iowa City, IA. November 2019.
10. University of Iowa Astrophysics & Space Physics Seminar, “*HaloSat Observations of the Vela and Puppis A Supernova Remnants*”, Iowa City, IA. October 2019.

Poster presentations:

1. STScI Galaxy Clusters 2022: Challenging Our Cosmological Perspectives, “*Characterizing the dynamics of galaxy cluster mergers with multi-wavelength observations and hydrodynamical simulations*”, Virtual. April 2022.
2. 237th American Astronomical Society (AAS) Meeting, “*A Search for Dark Matter with HaloSat*”, Virtual. January 2021.
3. American Physical Society (APS) April Meeting, “*HaloSat Observations of the Vela and Puppis A Supernova Remnants*”, Virtual. April 2020.
4. Iowa Space Grant Consortium Student Research Symposium, “*HaloSat Observations of the Vela and Puppis A Supernova Remnants*”, Virtual. April 2020.
5. APS Conference for Undergraduate Women in Physics, “*HaloSat Observations of the Vela and Puppis A Supernova Remnants*”, Minneapolis, MN. January 2020.
6. ICRU Fall Undergraduate Research Festival, “*HaloSat Observations of the Vela and Puppis A Supernova Remnants*”, Iowa City, IA. November 2019.
7. ICRU Fall Undergraduate Research Festival, “*HaloSat: a CubeSat Mission in Search of Missing Baryons*”, Iowa City, IA. November 2018.
8. Conference for Undergraduate Women in Physical Sciences, “*HaloSat: a CubeSat Mission in Search of Missing Baryons*”, Lincoln, NE. October 2018.

Computer Skills

Languages	Python, R, HTML
Applications	Xspec/PyXspec, L ^A T _E X, CIAO/Sherpa, IRAF/dsimulator, SLURM, Keck Remote Observing Software (DEIMOS, LRIS), SpecPro, Pypelt, CASA
Operating Systems	macOS, Linux, Windows

Outreach

Astronomy on Tap – Los Angeles	Volunteer & telescope operator	//	2022 -
Caltech stargazing lectures & public observing	Telescope operator	//	2022 -
Gabrielino High School physics classrooms	Guest lab assistant & speaker	//	2021 -
Astrobites	Guest author	//	2021
Iowa Center for Research by Undergraduates	Research ambassador	//	2020 - 2021
Society of Physics Students	Vice president & secretary	//	2017 - 2021
Van Allen Observatory public observing	Volunteer & telescope operator	//	2017 - 2021
Drexler Middle School FIRST Lego League	Team mentor	//	2018