Dr. Michele L. Silverstein, Ph.D.

mlsilverstein@proton.me | Rockville, MD 20850 | (908) 591-4874 | US Citizen | https://michelesilverstein.com

PROFESSIONAL SUMMARY

Ph.D. astrophysicist with a strong foundation in quantitative analysis and software development. Over 8 years of experience analyzing complex scientific datasets, optimizing data pipelines, and coordinating interdisciplinary research projects. Skilled in Python programming, scientific communication, and stakeholder engagement. Proven ability to extract insights from large datasets and lead collaborative, data-driven projects from inception to publication. Favorably passed a full scope background investigation; no clearance granted due to Post-Doc program restrictions.

TECHNICAL SKILLS

- ✧ **Core Competencies:** Data analysis, scientific research, project management, communication
- ✧ **Programming & Tools:** Python, IDL, Git, Bash, SQL, LaTeX, Microsoft 365, VSCode, Google Colab, prompt engineering for large language models (LLMs), MacOS, Linux, Windows
- ✧ **Data & Modeling:** Large dataset analysis, data visualization, raw data reduction and processing
- ✧ **Workshops:** Developed and documented installable data visualization software, available on GitHub: https://bit.ly/OrbitVis, during the “Code/Astro 2025” software engineering workshop

SOFT SKILLS AND OTHER

- ✧ **Soft Skills:** Award-winning communication, oral presentations, team coordination, documentation, mentorship, critical thinking, problem solving, networking, cultural intelligence, stakeholder management, team and cross-disciplinary collaboration, 38+ presentations, scientific outreach
- ✧ **Awards and Publications:** 2 best presentation awards, 18 peer-reviewed publications (2 first-author), 1 telescope operation manual (co-author), 4 grants and 9 observing proposals as principal investigator, 9 grants/observing proposals as co-investigator
- ✧ **Other**: Favorably passed a full scope background investigation

EDUCATION

Ph.D., Astronomy, M.S., Physics	Georgia State University, Atlanta, GA	August 2019, May 2016
B.A., Physics	Cornell University, Ithaca, NY	May 2012

PROFESSIONAL EXPERIENCE

U.S. Naval Research Laboratory, Washington, D.C. 2023 - 2025

National Research Council Research Associate

- Developed, coordinated, and executed the optical branch of a 1.5-year astronomy research project by identifying and collaborating with experts, writing software to analyze online data, and interpreting results from a combined suite of datasets.
- Led sample creation and vetting for a radio data mining project, leading to the discovery of unprecedented radio emission from low-mass stars.
- Selected best-candidate observing programs for NASA and the LCO Global Telescope Network by evaluating the scope, risks, and costs of dozens of research project proposals.
- Organized and hosted 19 speakers for the astronomy seminar series by inviting speakers, coordinating the schedule, spearheading IT, and navigating federal Navy paperwork.

University of Maryland, Baltimore County & NASA, Greenbelt, MD 2022 - 2023
Postdoctoral Research Associate

- Performed and published scientific research in the Astronomical Journal by leading and coordinating a research team of 27 global collaborators, spanning entry to senior career levels.
- Analyzed ground-based time-series photometry data to holistically characterize a unique star.
- Guided a high school student through his first research experience by mentoring him in planet data mining and modeling, while supporting him in science communication competitions.

NASA Goddard Space Flight Center, Greenbelt, MD 2019 - 2022
NASA Postdoctoral Program Fellow

- Performed and published scientific research in the Astronomical Journal by leading and coordinating global research teams of up to 51 collaborators at a variety of career stages.
- Derived key parameters for the Goddard flares program by deploying my automated software for low-mass stars and calibrating space-based telescope data.
- Reduced barriers to productivity and performance throughout the workforce by partnering with leadership to fund housing for interns and optimize hiring practices.
- Collected stakeholder data by developing surveys for the NASA community and leading group discussions.
- Identified outstanding business process problems by collecting and analyzing workforce data and recommended solutions to NASA Goddard senior staff.

Georgia State University & RECONS Institute, Atlanta, GA 2012 - 2019
Graduate Researcher

- Derived and analyzed fundamental properties of ~1600 low-mass stars in a uniform, consistent method by mining local and online databases, acquiring and processing new data, and developing automated software in IDL and Python. Achieved doctoral degree.
- Performed data mining and applied data visualization methodology to place constraints on debris disks around nearby GKM stars. Achieved master's degree.
- Developed an unprecedented stellar dataset by performing six months of on-site and remote observing using three telescopes.
- Modeled data using software written in multiple coding languages to fit orbits and derived first-ever parallax distance estimates for dozens of nearby stellar systems.

Georgia State University, Atlanta, GA 2015 - 2018
SMARTS Graduate Fellow (Telescope Manager)

- Re-optimized data pipelines, performed engineering tests, and modernized and updated the documentation for commissioning of a new camera control system.
- Managed data by screening, validating, and storing telescope observations monthly as they were acquired. Logged data quality in a database that included notes on problematic data.
- Expanded utility of software to additional facilities by optimizing data processing pipelines for multiple configurations and settings.
- Coordinated and scheduled scientists traveling from around the world to use the telescope while accounting for their scientific, cost, and timeline requirements and serving as point of contact.
- Completed a three-year, multi-facility, 400-star observing program faster than the projected timeline by leading scheduling, acquiring data on-site, tracking the development of deliverables, and accounting for quality requirements and schedule change risks.