

# Christopher Sheridan

☎ (410) 259-1577 ✉ christopher.sheridan2@mail.mcgill.ca 💻 christopher-sheridan.github.io

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CURRENT INSTITUTION	McGill University/Trottier Space Institute 3550 Rue University, Office 030 Montreal, QC H3A 0C6	
RESEARCH INTERESTS	Supermassive black holes, active galactic nuclei, and relativistic jets; X-ray variability and spectroscopy, multi-wavelength analysis; multiple star systems and eclipsing binaries; late-stage stars and black hole progenitors.	
EDUCATION	<b>McGill University, Montréal, QC, Canada</b> PhD (Thesis), Physics Supervisor: Dr. Daryl Haggard	May 2030 (Expected)
	<b>Villanova University, Villanova, PA, USA</b> B.S. Astronomy & Astrophysics Minors in Physics and Mathematics <i>Magna Cum Laude</i> - GPA 3.79/4.0	May 2024
RESEARCH EXPERIENCE	<b>X-ray Variability in the Core and Jet of M87</b> Advisor: Dr. Joey Neilsen, Villanova University	2021–Present
	<ul style="list-style-type: none"><li>Modeled X-ray spectra of M87's core and relativistic jet using spectral analysis software (ISIS)</li><li>Spearheaded advancement upon past X-ray modeling of M87; contributed refined model to the X-ray portion of the EHT Multiwavelength Working Group broadband SED model of M87</li><li>Paper to be submitted to the Astrophysical Journal in preparation</li></ul>	
	<b>Calibrating the Binary Population Through Stellar Population Synthesis</b> Advisor: Dr. Andrej Prša, Villanova University	2024–2025
	<ul style="list-style-type: none"><li>Developed synthetic populations of binary star systems and subsets of eclipsing binaries using custom prescriptions</li><li>Used machine learning to optimize prescriptions for underlying binary populations by comparing with the Kepler EB Catalog</li><li>Presented results at 245th AAS Meeting</li></ul>	
	<b>Variability in Red Supergiant Stars: Long and Short Period Analysis</b> Advisor: Dr. Edward Guinan, Villanova University	2021
PROFESSIONAL MEMBERSHIPS	<ul style="list-style-type: none"><li>Conducted period analysis on archival photometry of 22 red supergiant stars</li><li>Drew conclusions on the Period-Luminosity Relationship in red supergiants</li><li>Presented results at 240th AAS Meeting</li></ul>	
	<b>Event Horizon Telescope Collaboration</b> - Member	2025–Present
	<ul style="list-style-type: none"><li>Multi-wavelength Working Group</li><li>Non-horizon/AGN Working Group</li></ul>	
	<b>American Physical Society</b> - Member	2024–Present
SKILLS	<b>Sigma Pi Sigma Physics Honor Society</b> - Member	2024–Present
	<b>American Astronomical Society</b> - Member	2022–Present
	<b>Languages &amp; Software:</b> Python, Bash, L <sup>A</sup> T <sub>E</sub> X, Linux, HEAsoft, ISIS Interactive Spectral Interpretation Software, CIAO, emcee	
	<b>Packages:</b> NumPy, Matplotlib, pandas, scipy, astropy	

PUBLICATIONS	EHT Multiwavelength Working Group et al. (incl. <b>Sheridan, C.</b> ), <i>Broadband Multi-wavelength Properties of M87 during the 2018 EHT Campaign and a Very High Energy Flaring Episode</i> , 2024, <i>Astronomy &amp; Astrophysics</i> , 692, 140
PUBLICATIONS IN PREP.	<b>Sheridan, C.</b> , Neilsen, J., Markoff, S., Haggard, D., Nowak, M., <i>X-ray Variability in the Core and Jet of M87</i> , in prep.
CONFERENCE PROCEEDINGS	<p><u>Poster</u>: <b>Sheridan, C.</b> &amp; Prša, A., <i>Calibrating the Binary Population Through Stellar Population Synthesis</i>, 2025, American Astronomical Society, 245, 249.08</p> <p><u>Poster</u>: <b>Sheridan, C.</b>, Neilsen, J., Haggard, D., Markoff, S., &amp; Nowak, M., <i>X-ray Variability and the Spectrum of M87</i>, 2024, American Astronomical Society, 243, 110.03</p> <p><u>Poster</u>: <b>Sheridan, C.</b>, <i>Stars on the Verge: Analyzing Long-term Photometry of Galactic Red Supergiant SN-II Progenitors</i>, 2022, American Astronomical Society, 240, 204.11</p> <p><u>Poster</u>: Guinan, E. et al. (incl. <b>Sheridan, C.</b>), <i>Betelgeuse After the Fall - Analysis of 185-yrs of Photometry</i>, 2022, American Astronomical Society, 240, 415.03</p>
CONTRIBUTED TALKS	<b>Sheridan, C.</b> and Neilsen, J., <i>X-ray Variability and the Spectrum of M87</i> , 2023, AstroPhilly '23, Villanova University.
FELLOWSHIPS & AWARDS	<p><b>Donald G. Hurst Fellowship</b>, McGill University 2025 \$8,860 CAD, Awarded for academic and research excellence in Physics.</p> <p><b>Phi Sigma Pi National Honor Fraternity - Villanova Chapter</b> 2021–2024 <i>Alumnus, Chapter Initiate Advisor (2023), Executive Board Member.</i></p> <p><b>Undergraduate Research Fellowship</b>, Villanova University. 2021 \$3,500 USD, Summer research grant, awarded as freshman</p> <p><b>Edwin F. Bailey Scholarship</b>, Villanova University. 2021 \$10,000 USD, Awarded to top underclassman in Astrophysics Department.</p>
RESEARCH POSITIONS	<p><b>Research Assistant</b>, Villanova University Sept. 2024– May 2025 Advisor: Dr. Andrej Prša</p> <p><b>Undergraduate Research Assistant</b>, Villanova University Summer 2023 Advisor: Dr. Joey Neilsen (cont. from Summer 2022)</p> <p><b>Undergraduate Research Assistant</b>, Villanova University Summer 2022 Advisor: Dr. Joey Neilsen</p>
ADDITIONAL EXPERIENCE	<p><b>Teaching Assistant</b> McGill University 2025–Present <i>PHYS251: Honors Classical Mechanics, PHYS186: Astrobiology</i></p> <p><b>Contracted STEM Tutor</b> - Teacher Time To Go 2024–2025 <i>Individually tutored 20+ high-school students in STEM courses</i></p> <p><b>Mendel Science Experience Tutor</b> - Villanova University 2023–2024 <i>Individual tutoring for students in introductory astronomy courses</i></p> <p><b>Villanova Observatory Attendant</b> - Villanova University 2021–2024 <i>Gave tours of observatory facilities, educated visitors on astronomical events of interest, gained experience operating telescopes</i></p> <p><b>Teaching Assistant</b> - Villanova University 2021–2024 <i>MSE2101: Life in the Universe, MSE2102: Planetary Skies, MSE2103: How Old is the Universe?</i></p>

OUTREACH &  
SERVICE

**McGill Sea to Space**, General Volunteer September 2025  
*Helped run day-long event engaging young learners from the Montréal community, educating on basic physics topics*

**Phi Sigma Pi National Honor Fraternity**, Chapter Initiate Advisor 2023  
*Oversaw induction of 60 new members into the Chapter, ensuring an inclusive and equitable environment in coordination with Chapter DEI Advisor*

**Phi Sigma Pi National Honor Fraternity**, NOVA dance Captain 2023  
*Led Chapter fundraising efforts in contribution to NOVA dance, an annual year-long Villanova fundraising campaign supporting families of those battling childhood cancer*

**Phi Sigma Pi National Honor Fraternity**, Volunteer 2021–2024  
*Participated in and organized numerous volunteering and fundraising events at Villanova University and in the surrounding community*

REFERENCES

**Dr. Daryl Haggard**, Associate Professor of Physics  
McGill University, (514) 398-6497, [daryl.haggard@mcgill.ca](mailto:daryl.haggard@mcgill.ca)

**Dr. Joey Neilsen**, Associate Professor of Physics  
Villanova University, (610) 519-6497, [joseph.neilsen@villanova.edu](mailto:joseph.neilsen@villanova.edu)

**Dr. Andrej Prša**, Professor of Astronomy & Astrophysics  
Villanova University, (610) 519-4822, [aprsa@villanova.edu](mailto:aprsa@villanova.edu)

**Dr. Edward Guinan**, Professor of Astronomy & Astrophysics  
Villanova University, (610) 519-4823, [edward.guinan@villanova.edu](mailto:edward.guinan@villanova.edu)