

# ARIEL CHITAN

PhD candidate at Western University studying the dynamical evolution and growth of supermassive black hole systems using N-body and hydrodynamical simulations.

## ACADEMIC QUALIFICATIONS

### PHD IN ASTRONOMY (EXPECTED 2028)

Western University, London ON  
Research focuses on the dynamical evolution of multi-black hole systems, with applications to gravitational wave sources and active galactic nuclei.

### M2 - INTERNATIONAL RESEARCH TRACK

Observatoire de Paris-Meudon  
Thesis: "Massive Black Hole Triplets in the Obelisk simulation"

### MPHIL. PHYSICS

Thesis: "The Evolution of Triple Black Hole Systems: the Influence of Mass, Distance and Spin"

### BACHELOR OF SCIENCE

University of the West Indies, St. Augustine  
Double Major: Physics and Mathematics

## SELECTED AWARDS AND SCHOLARSHIPS

- Canada Graduate Research Scholarship - Doctoral (2026)
- Roger Migneron Memorial Travel Award (2026)
- Dr. Kaylie Green Women in Astronomy Graduate Scholarship (2026)
- Experiential Learning Fund Award (2024)
- International Mobility Grant (2022)

Total competitive funding secured: > \$120,000

## SKILLS

- Programming: Python (NumPy, SciPy, Astropy), Fortran, MATLAB, Bash
- Scientific computing: N-body simulations, hydrodynamics, numerical methods
- Tools: Git, Linux, HPC environments

## SELECTED CONFERENCE PARTICIPATION

- Invited Talk, Phantom Users Workshop, Macquarie University, Sydney (2026)
- Poster, Université de Montréal (2026)
- Contributed Talk, CITA@40, Canadian Institute for Theoretical Astrophysics (2026)
- Contributed Talk, CASCA AGM, Toronto (2024)

## PUBLICATIONS

1. **Chitan, A.**, Gallagher, S. C., & Abbassi, S. (2026). Long-term (250 yr) hydrodynamical simulation of the supermassive black hole binary OJ 287. *The Astrophysical Journal*, 998(2). <https://doi.org/10.3847/1538-4357/ae3726>
2. **Chitan, A.**, Myllari, A., & Valtonen, M. (2025). The influence of spin in black hole triplets. *Journal of Astronomy and Computing*, 51. <https://doi.org/10.1016/j.ascom.2025.100933>
3. **Chitan, A.**, Haque, S., & Myllari, A. (2022). Relativistic effects on triple black holes: Burrau's problem revisited. *Monthly Notices of the Royal Astronomical Society*, 509(2), 1919–1928. <https://doi.org/10.1093/mnras/stab3124>

## TEACHING EXPERIENCE

Teaching Assistant, Western University (2023–present)

- Numerical and Mathematical Methods (NMM 1411, 1412)
- Astronomy (ASTRONOM 1021)
- Physics (PHYSICS 1401, 1402; First-Year Labs)
- Delivered tutorials, led lab sessions, graded coursework, and mentored students (~770 hours)