

# Samuel Fielder

📍 University of Victoria, BC, Canada    ✉ samuelfielder@uvic.ca    ☎ +1 780 237 0844    📧 samdf96

## Academic History

- University of Victoria** 2024 to present  
*PhD in Astrophysics - Advisor: Helen Kirk (NRC-HAA)*  
 ◦ Unraveling the effects of non-axisymmetric accretion streamers on the development of early protostellar systems
- University of Victoria** 2021 to 2023  
*MSc in Astrophysics - Advisor: Helen Kirk (NRC-HAA)*  
 ◦ Searching for Substructure and Fragmentation in Starless Cores using ALMA
- University of Alberta** 2013 to 2018  
*BSc in Physics and Astronomy - Advisor: Erik Rosolowsky*  
 ◦ Angular Momentum in Star Formation: A Study on Specific Angular Momentum Estimators using Clump-identified velocity gradients

## Employed Research Experience

- Research Assistant** Edmonton, AB  
*University of Alberta* Sept. 2019 to Dec. 2019  
 ◦ Coordinate and design new experimental method to determine Henry's Law Constant in the case of general  $C_x F_{xx}$  solvents with Radon as solute. Continuation of project into radon purification using new stripping column method, using previously mentioned work as foundation for design work.
- Undergraduate Research Assistant** Edmonton, AB  
*University of Alberta* May 2018 to Aug. 2018  
 ◦ Computing angular momentum regions in gas cloud simulation space using dynamic clump finding algorithms  
 ◦ Exploring acrylic fluorescence in the DEAP-3600 project, by designing and conducting an experiment involving working with PMT signal data along with a Germanium detector signal.

## Publications

- Fielder, S.D., Kirk, H., Dunham, M., Offner, S.S.R. 2024, ApJ, 968, 10  
*An ALMA Search for Substructure and Fragmentation in Starless Cores in Orion B North* ([10.3847/1538-4357/ad3d56](https://doi.org/10.3847/1538-4357/ad3d56) [↗](#))

## Funding And Awards

- \$1,660 CAD - Boehm-Hesser Graduate Research Excellence in Astronomy Award** University of Victoria  
2023
- 2x \$1,500 CAD - University of Victoria Graduate Award** University of Victoria  
2021, 2022

## Conference Talks

- Canadian Astronomical Society Annual Meeting (CASCA)** Toronto, ON  
*Contributed Talk (withdrew): An ALMA View of Star Formation in Aquila* June 2024
- Canadian Astronomical Society Annual Meeting (CASCA)** Penticton, BC  
*Contributed Talk: ALMA Observations of Starless Core Substructure* June 2023

## Conference Posters

- ALMA at 10 Years - Past, Present, and Future** Peurto Varas, Chile  
*e-Poster: ALMA Observations of Starless Core Substructure* ([10.5281/zenodo.10247182](https://doi.org/10.5281/zenodo.10247182) [↗](#)) Dec. 2023

## Public Outreach

- Star Party Public Outreach Talk** DAO, Victoria, BC  
*The Complex World of Radio Astronomy - A Deep Dive on How Stars Form* May 2023
- International Astronomy Day 2023** University of Victoria  
*University of Victoria Site and Lead Manager, Royal Astronomical Society of Canada* Apr. 2023

## Teaching Record

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### Teaching Assistant

Department of Physics and Astronomy

University of Victoria

Sept. 2021 to present

- **Computer Assisted Physics (Phys 248, 49 students)** with Bob Kowalewski (Jan - Apr 2024)  
Prepared and led 1.5hr tutorials; marked assignments and exams.
- **Exploring the Cosmos (Astro 102, 24 students)** with Karun Thanjavur (Jan - Apr 2023)  
Prepared and led 3hr demonstrations of astronomy lab experiments; marked lab reports.
- **Exploring the Cosmos (Astro 102, 28 students)** with Karun Thanjavur (Sep - Dec 2022)  
Prepared and led 3hr demonstrations of astronomy lab experiments; marked lab reports.
- **Computer Assisted Mathematics and Physics (Phys 248, 51 students)** with Falk Herwig (Jan - Apr 2022)  
Prepared and led 1.5hr tutorials; marked assignments and exams.
- **Concepts in Modern Astronomy (Astro 150, 20 students)** with Karun Thanjavur (Jan - Apr 2022)  
Prepared and led 3hr demonstrations of astronomy lab experiments; marked lab reports.
- **Exploring the Cosmos (Astro 102, 20 students)** with Karun Thanjavur (Sep - Dec 2021)  
Prepared and led 3hr demonstrations of astronomy lab experiments; marked lab reports.

### Image Description Specialist

Center for Accessible Learning

University of Victoria

Jan. 2023 to Apr. 2023

- Created image descriptions and alternative course materials for students with visual impairments.

## Student Advocacy

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### Director of Finance

Graduate Student Society

University of Victoria

2023-2024, 2024-2025

- Appointed Committee Chair Roles:
  - Graduate Student Society Appeals Committee (2023 - 2025)
  - Graduate Student Society Finance Committee (2023 - 2025)
  - Mandatory Temporary Medical Insurance Opt Out Appeals Committee (2023 - 2025)
- University of Victoria Committee Appointments:
  - Student Life Grant Committee (2024 - 2025)
  - **Appointment Committee for Director of the Astronomy Research Centre (2024)**
  - Graduate Fee Reduction Appeals Committee (2023 - 2025)
  - Senate Committee on Libraries (2023 - 2024)
  - REACH Awards - Andy Farquarson Committee (2023)

### Graduate Student Representative for Physics and Astronomy

Graduate Student Society

University of Victoria

2022 to 2023

### Executive Board Member (GSS Councillor)

Physics and Astronomy Graduate Student Association

University of Victoria

2022 to 2023