

Adrien Hélias, PhD (he/him)

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DATA SCIENTIST | ASTROPHYSICIST

Website: ahelias-astro.github.io

Quantitative Analysis - Statistical Modelling - Python - SQL Publications: 3 lead, 2 co-author articles

TECHNICAL EXPERTISE

Programming: Python - LaTeX - Matlab - SQL - Git - Linux - Bash - HTML (basic) - C++ (basic)

Data Analysis: Quantitative analysis - Databases - Statistical modelling - Data visualization - Machine Learning

Tools: Microsoft Office Suite - Adobe Illustrator & Photoshop - Da Vinci Resolve - Overleaf - TOPCAT - LLMs

Communication Skills: Public speaking - Scientific writing - Popularization of science

Languages: English - French (native)

PROFESSIONAL EXPERIENCE

DOCTORAL RESEARCHER - WESTERN UNIVERSITY / LONDON, ON, CANADA / 2022-2026

- **Developed and released a Python package (*ocean*)** implementing a new wavelet analysis technique for quantifying variance in irregularly sampled astronomical time series across multiple timescales
- **Designed and executed quantitative analyses** of complex astronomical datasets, applying advanced statistical methods on time series, and machine learning techniques to extract meaningful information and quantify uncertainty
- **Created a research project from scratch** based on a personal idea and **mentored a MSc student** who led the project successfully
- **Communicated quantitative results to specialist and non-specialist audiences** through peer-reviewed publications and presentations at national and international scientific conferences

SCIENCE COMMUNICATOR - CRONYN OBSERVATORY / LONDON, ON, CANADA / 2023-2026

- **Organized** weekly events where I explained astronomy to the general public and school groups of all ages
- **Led** hands-on activities, astronomy demos, and solar/nighttime stargazing with the telescopes

GRADUATE RESEARCHER - QUEEN'S UNIVERSITY / KINGSTON, ON, CANADA / 2022 MCMASTER UNIVERSITY / HAMILTON, ON, CANADA / 2021

- **Performed statistical modelling** of the gas kinematics in dwarf galaxies
- **Analyzed large datasets of galaxies** and identified connections between physical parameters
- **Collaborated with a software developer** on the creation of simulated datasets
- **Presented findings** at a national scientific conference

EDUCATION

PHD, ASTRONOMY - WESTERN UNIVERSITY / CANADA / 2022-2026

MSC, ASTRONOMY - OBSERVATOIRE DE PARIS / FRANCE / 2021-2022

MSC, FUNDAMENTAL PHYSICS - UNIVERSITÉ PARIS-SACLAY / FRANCE / 2019-2022

BSC, PHYSICS - UNIVERSITÉ PARIS-SACLAY / FRANCE / 2017-2020

AWARDS

Teaching Assistant Award of Excellence - Department of Physics & Astronomy, Western University / 2026

Paul & Kathryn Lycett Graduate Scholarship - Department of Physics & Astronomy, Western University / 2024