

Melody Sylvestre

melody.sylvestre@gmail.com

07913 636224 – Bristol

A bilingual (French/English) operational researcher with 9 years of experience in working with data using various programming languages. A committed science communicator who engages with a broad range of audiences via talks, publications, and outreach activities in France and in the UK.

- *Analysed scientific data from space missions and astronomical observatories, using codes in Python, Fortran and IDL.*
- *Presented my results from two large studies of UK imports to data and policy analysts.*
- *Led a scientific observation project with an international team of researchers.*
- *Presented my work to the scientific community in 14 peer-reviewed publications and 20 talks at scientific conferences. 5 years of experience in teaching at university.*
- *Co-founded and organised a science outreach festival for 6 years, co-ordinating volunteers and working with local institutions.*

Employment and Key Experience

Operational Researcher
DEFRA (Civil Service), UK

Mar. 2022 - Present

Data analysis to inform UK's trade and borders policy:

- Conducted a study of 2 large datasets about UK imports using Excel and R. Presented my results to data and policy analysts in a paper and through talks.
- Conducted quality assurance of facts sheets about trade between UK and other countries used by other data and policy analysts.
- Collaborated with data analysts from other teams and other government departments to gather data to address policy questions. Wrote summaries accessible for non-specialists.
- Organised meetings with borders analysts across different governmental departments to share knowledge and good practices. Improved our awareness of the government's priorities by liaising with a cross-governmental borders leadership group.

Postdoctoral Research Associate
University of Bristol, UK

Nov. 2015 – Feb. 2022

Study of Titan's (Saturn's largest moon) atmosphere using both existing Cassini space mission data and proposing new observations:

- Designed an observation project which successfully competed against other proposals and was awarded an all-expenses paid observation trip to the VLT, a premier astronomical observatory in Chile.
- Automated the analysis of a large volume of data using Python and Fortran.
- Presented my results to other researchers through talks at international conferences in Europe and in the US, seminars, and scientific peer-reviewed publications. Designed and delivered lectures to undergraduate and masters students.
- Managed 2 MSc students for their research projects: guidance about data analysis, verbal and written scientific communication.

Astrophysics outreach festival co-founder

(2011-2014; 2018-2019)

De la Plage aux Étoiles, Collioure, France

Co-founded and organised an annual science outreach festival (up to 1000 visitors) for 6 years:

- Successfully applied for grants (€2,500) from the local county council and the French Astronomy and Astrophysics Society.
- Gave public talks and guided tours to a broad audience (children, adults with little background in astrophysics, amateur astronomers).
- Inviting, liaising and organising the accommodation of guest speakers.

PhD Student

Oct. 2012 – Sept. 2015

Paris Observatory – University Pierre et Marie Curie

Study of Saturn's atmosphere with Cassini space mission data and modelling of its climate:

- Data cleaning and analysis using Python, Fortran and IDL codes
- Development of numerical code (Fortran) for a new high-performance climate model of Saturn.
- Teaching assistant (3 years): supervision of practicals about Unix and programming in C and Fortran

Computer skills

- Data analysis and programming: Python, R, Fortran 95, C, IDL and Excel
- Operating systems: Mac OS, Linux/Unix, Windows

Education

- **PhD in Astronomy and Astrophysics**, University Pierre et Marie Curie (now Sorbonne Université, Paris, France), *Summa cum Laude*, 2015
- **Master's degree in Geosciences - Planetary Science**, University Pierre et Marie Curie (Paris, France), 77.5% - *with High Honours*, 2012
- **Master's degree in Astronomy, Astrophysics**, University Pierre et Marie Curie (Paris, France), 65.5% - *with Honours*, 2011
- **Bachelor's degree in Physics**, University Pierre et Marie Curie (Paris, France), *with Honours*, 2009
- **Scientific Baccalauréat (French A-level)**, Lycée Jeanne d'Arc (Colombes, France), *with High Honours*, 2006

Interests/Voluntary Commitments

- Librarian for Bristol A Cappella choir since 2017: management of scores library and of copyright licences
- Hosted outreach events organised by different institutions (e.g., University of Bristol, *We The Curious* (Bristol), Paris Observatory) by giving public talks and guided tours

Languages

- French (native language)
- English (fluent)
- Spanish (basic communication skills)