

LOUIS-ALEXANDRE LOBANOV

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EDUCATION

PhD Geology – Natural History Museum and Birkbeck, University of London; Oct 2025 - 2029

Topic: "Petrologic and geochemical constraints on volcanic eruptions on Amazonian Mars"

Supervisors: Paul Schofield, Chiara Maria Petrone, Eleanor Jennings

Main Skills: **Meteoritics, Igneous Petrology, Geochemistry, and Planetary Geology**

BSc Geology – Birkbeck, University of London; Oct 2021- July 2025

First-Class Degree, Final Grade – **87%**

- Main Skills: **Geochemistry, Petrology, Meteoritics and Fieldwork**

- Level 6 Modules: Planetary Interiors; Comets, Asteroids and Meteorites; Earth Resources and Raw Materials; Advanced Field Techniques

International A-Levels and EPQs – TLC International School; 2021

- International A-Levels: Physics A*, Mathematics A, Economics A*, Accounting A*

- Apolyterion (Cyprus High School Diploma) – 19.8/20

- Extended Project Qualifications Level 3 (A-Level Equivalent) - Dissertations: A*, A*

- Research topic 1: *'How the Holographic Principle Could Solve the Black Hole Information Paradox'*.

- Research topic 2: *'To What Extent Do We Have the Free Will to Control Our Actions?'*

- IGCSEs: Maths A*, English First Language A*, Geography 9, Chemistry 8, Physics 9, Business 9

RESEARCH INTERESTS AND SKILLS

I am interested in using analytical and computational methods to solve problems in Earth and Planetary Sciences with a particular focus on igneous petrology, geochemistry, and meteoritics.

Interests – **Petrology, Meteoritics, Geochemistry, Big Data, Cosmochemistry, Volcanology**

Lab Skills – **SEM/EPMA, micro-Raman Spectroscopy, Optical Petrography, MicroGC**

Computing Skills – **Python, Statistical Analysis, Machine Learning**

Fieldwork Skills – **Mapping, Sampling, Volcanology**

RESEARCH EXPERIENCE

Survey to Unravel the History of an Ultrapotassic Volcano: Torre Alfina (Italy) - Birkbeck, University of London; May 2024 - April 2025

Bachelor's Project, collaboration with Dr. Gianluigi Rosatelli at Chieti-Pescara University

- Supervisor: Dr. Eleanor Jennings

- Main Skills: **EPMA, Mapping, Geochemistry, Igneous Petrology, Independent Research**

- Fieldwork - 3 weeks of geological and volcanological mapping and sampling of Torre Alfina

- Lab work - 2 weeks of Electron Probe Micro-Analyser (EPMA) work at Birkbeck on collected samples

Statistical Analysis of Ungrouped Iron Meteorites - Birkbeck, University of London; August - Oct 2024

Computing Research Project funded by a grant from the Royal Astronomical Society's Paneth Trust.

- Supervisor: Prof. Hilary Downes

- Main Skills: **Python, Statistic Analysis, Cosmochemistry, Meteoritics, Independent Research**

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- Creating a database of Iron Meteorite siderophile trace element data
- Developed software to perform multivariate cluster analysis on Iron Meteorites
- Worked on classifying and forming new clusters within ungrouped iron meteorites
- Abstract as first author presented to the Lunar & Planetary Science Conference (LPSC) 2025
- Oral presentation at the Meteoritical Society Annual Meeting (MetSoc) in Perth, Australia in July 2025 funded by getting a Brian Mason Award.

Organic-Mineral Interaction in Carbonaceous Chondrite Meteorites -

Institute of Planetary Materials, Okayama University, Japan; July - August 2024

Lab-based Research Project - Highly competitive funded internship from Okayama University, Japan

- Supervisor: Dr. Christian Potyszil
- Main Skills: **Raman Spectroscopy, SEM-EDS, Python, Meteoritics, Independent Research**
- Research Focus: Organic-Mineral relationships in CM2 and CI1 Chondrites and understanding the insoluble organic material signature associated with different textures of phyllosilicate matrix.
- Instruments Used: micro-Raman Spectroscopy, SEM-EDS, FTIR, EA-IRMS and SIMS.
- At my own initiative, I developed software to process large quantities of organic Raman spectra enabling treatment of much larger quantities of data than previously possible.
- The results of this research are currently being written-up for publication and I presented a poster at the Meteoritical Society Annual Meeting in Perth, Australia in July 2025 funded by winning a Brian Mason Award.

Geophysics Field Training in Pompeii, Italy in Gravity, Magnetic and GPR Survey - SEG and University of Naples Federico II; October 2023

Field Training and group research project funded by the Society of Exploration Geophysics (SEG)

- Main Skills: **Fieldwork, Geophysics, GPR, Magnetism, Interdisciplinary Collaboration**
- We carried out Ground Penetrating Radar (GPR), Magnetic, Gravimetric, Resistivity, and Electro-magnetic surveys to map the subsurface structures of buildings and to find unexcavated buildings.

Field & Lab Research in Hydrogeochemical and Soil CO₂ Efflux Monitoring for Volcanic Monitoring - INVOLCAN; July - August 2023

Field and Lab Research for the Canarian Institute of Volcanology

- Main Skills: **Volcano Monitoring, Geochemistry, Lab Skills, Gas Geochemistry**
- Performed in-situ pH, temperature, alkalinity, conductivity tests to monitor subterranean degassing
- Instruments used weekly: Micro Gas Chromatography (MicroGC), Quadrupole Mass Spectrometry (QMS), Isotope Ratio Mass Spectrometry (IRMS), Ion Chromatography and titrations to measure the Total Dissolved Inorganic Carbon (TDIC).
- Mapped fumarole temperatures, CO₂, and H₂S in the crater of Mt. Teide

Volcanology Field Research Internship - GeoTenerife; August - September 2022

Field training in Volcanology, Geology, Science Communication and Geophysics.

- Main Skills: **Fieldwork, Volcanology, Science Communication**
- Research Project: Mapping pumice fall deposits to retrace the eruptive history of Tenerife.
- These smaller eruptions show a record of more frequent eruptions in the Las Cañadas complex than previously estimated and may have an impact on revising models of the eruptive history in Tenerife.

OTHER WORK EXPERIENCE

MS Power Platform - Part-time Contracting; October 2022 - July 2023

Consulting in Power Platform on and off on different projects during studies.

- Main Skills: **Data Visualisation, Mobile Applications, HTTP, APIs, Power Platform**
- Developed custom connectors to link external APIs with Power Platform
- Building custom mobile applications with fully developed user interfaces to interact with a database.
- Creating complex visualisations for relational databases that presented the evolution of business data

Algorithm and AI Junior Programmer - DATIVE, France; June - July 2022

Main Skills: **Python, AI, Computer Vision, Programming**

1st Project: Researching ways to reduce the energy consumption of Ski Lifts and Cable Cars

- Modulating speed based on queue and energy efficiency management

- Developed Python algorithms that were implemented at the La Clusaz Ski Station in the Alps

2nd Project: Developed a computer vision application in Python for GERAL Industry.

- Training AI Object Detection models for identifying electronic cards and their components

- Comparing the position of each component to a model and using OCR to check reference codes

- Building a local HTTP server from which to retrieve streams and images from the camera

AWARDS & GRANTS

Aleksander Silberfeld Prize 2025 for Best Final Grade in BSc Geology

Brian Mason Award 2025 from the Meteoritical Society

Birkbeck Travel Award to attend LPSC 2025

BGA Undergraduate Prize for Achievement in Geophysics (at Birkbeck) 2024

Paneth Meteorite Trust Award Undergraduate Research Grant 2024

Best Course Representative of the Year at Birkbeck University 2023

Nominated for Student Event of the Year at Birkbeck University 2024

OUTREACH, VOLUNTEERING & EXTRACURRICULAR ACTIVITIES

President of the Birkbeck Geological & Planetary Science Society – 2021 - 2025

Course Representative at Birkbeck University – 2021-2024

Teaching Director for Model United Nations Team – TLC School; 2021 – 2022

Model United Nations Secretary-General & International Delegate – 2019 - 2021

JA Innovation Camp Entrepreneurial Competition – 3rd place; 2020

Euroscola Conference at the European Parliament – Cyprus Speaker and Elected Chairman
addressing 600 people on the future of Europe and Immigration; 2019

United Kingdom Maths Trust Competition – Gold award & Best in School; 2019

OTHER QUALIFICATIONS

Microsoft Certified **Power Platform App Maker** - PL100

Microsoft Certified **Artificial Intelligence Fundamentals** - AI900

Microsoft Certified **Power Platform Fundamentals** - PL900

Driving License Category B (Car)

LANGUAGES

English and French - Native Speaker

Russian, Greek, and Spanish - Intermediate to Elementary Level

CONFERENCES AND PUBLICATIONS

Unsupervised Machine Learning for the Classification of Iron Meteorites - 2025

<https://www.hou.usra.edu/meetings/metsoc2025/pdf/5010.pdf>

ORG_RAMAN: A New Tool for Processing Organic Raman Spectra - 2025

<https://www.hou.usra.edu/meetings/metsoc2025/pdf/5012.pdf>

Characterizing Ungrouped Iron Meteorites Using Statistical Analysis – 2025

<https://www.hou.usra.edu/meetings/lpsc2025/pdf/1112.pdf>

Groundwater and Soil CO₂ efflux weekly monitoring network for the volcanic surveillance of Tenerife, Canary Islands - 2024

<https://doi.org/10.5194/egusphere-egu24-16290>

An article was published on my poster presentation: <https://blogs.egu.eu/geolog/2024/04/16/whats-beneath-tenerife-innovative-monitoring-techniques-reveal-the-islands-volcanic-activity/>

REFERENCES

Dr Eleanor Jennings – Birkbeck, University of London, UK - e.jennings@bbk.ac.uk

Prof Hilary Downes – Birkbeck, University of London, UK - h.downes@bbk.ac.uk

Dr Christian Potiszil – IPM, University of Okayama, Japan - cpotiszil@okayama-u.ac.jp