Kristiina **Verro**

Polar climate researcher · Stellar/population astrophysicist · IMAU, Utrecht University
Born 30. July 1991 · Nationality: Estonian
Copenhagen, Denmark
kve@dmi.dk | www.kristiinaverro.com/ | KristiinaVerro | 0000-0003-3312-3085

Summary

I am an enthusiastic physicist and data scientist with a PhD in astrophysics, recently transitioned into the field of polar climate research. Equipped with scientific methods, mathematical and computational tools, and analytical skills, I can solve complex problems in a systematic way, in astrophysics, climate science and beyond.

Experience and Education

National Center for Climate Research, Danish Meteorological Institute (DMI).
Copenhagen, Denmark

Polar climate researcher — *2025 -*

- Expert in high spatial resolution regional climate modeling (HCLIM) over polar regions. Focusing on surface processes, such as surface mass balance modelling, snow and ice properties, atmosphere-ocean-ice interactions.

Institute for Marine and Atmospheric Research (IMAU), Utrecht University
Utrecht, The Netherlands

Postdoctoral researcher in polar climate — *2022 - 2025*

- Working with high spatial resolution regional climate models (HCLIM, RACMO) in the Antarctic domain. The aim is to provide new insights into key regional-scale physical and chemical processes in the Antarctic, and polar regions in general.
- My research is conducted within the European PolarRES project.

Kapteyn Astronomical Institute, University of Groningen
Groningen, The Netherlands

PhD in astrophysics — *2017 - 2022*

- Developing the X-shooter Spectral Library (XSL), associated stellar population models and web environment
- Supervisors: Prof. Dr. Scott C. Trager, Prof. Dr. Reynier F. Peletier.
- Key achievements: XSL data release 2, 3 and XSL simple stellar population models.
- Online version of the thesis *The X-shooter Spectral Library and stellar population models*.

Lund University
Lund, Sweden

Master's Degree in astrophysics — *2015 - 2017*

- Dissertation: *Mapping the present-day chemical abundance structure of the Solar neighbourhood: O & Si.* Supervisor: Dr. Thomas Bensby (Lund Observatory).
- Key achievements: stellar parameters and O and Si abundances for 17 B-type stars in the Solar neighbourhood; this work motivated the re-evaluation of atomic data of Si III and Si IV by Atalay et al. (2019).
- I funded my studies with Skype's foreign studies' Master's scholarship and Kristjan Jaak formal studies scholarship.

University of Tartu
Tartu, Estonia

Bachelor's Degree in Physics — *2011 - 2015*

- Dissertation: *The Physical Properties of Nova Remnant Nova Persei 1901* Supervisor: Dr. Tiina Liimets (Tartu Observatory), Dr. Romano L. M. Corradi (Instituto de Astrofísica de Canarias).
- Dissertation was awarded first prize in the national student research competition.
- I did a year of BSc-level geography studies before switching to physics.

Tartu Observatory
Tõravere, Estonia

Technician (0.2) — *2011 - 2017*

- Student member of the Tartu Observatory's Stellar Physics working group.
- Contributed to two publications on the long-term monitoring campaign of outflows of nova remnant GK Per and the symbiotic binary R Aquarii.
- I was awarded the Ernst Julius Öpik scholarship by Tartu Observatory

European Space Astronomy Centre, ESA
Madrid, Spain

Trainee — *June - Sept. 2014*

Tartu Observatory
Tõravere, Estonia

Guide — *Oct. 2014 – June 2015*

Tartu Old Observatory
Tartu, Estonia

Guide and Planetarium Specialist — *July 2013 – Sept. 2013*

Skills

Climate research **Astrophysics**	Polar climate, regional climate models (HCLIM, RACMO), sea ice, snow processes, Antarctica Observational astrophysics, NUV-NIR spectroscopy, data processing and calibration, stellar and galactic physics, stellar atmospheres, stellar population modelling
Programming & software	Python (with various geospatial/climate python libraries [pygdal, Basemap, Cartopy, Geopandas, rasterio] and astronomy libraries/software [e.g AstroPy, PyRAF]), Pearl and Fortran (read/edit), HTML, Git, GDAL, RCAT, CDO, QGIS
OS	MacOS, Linux, Windows
HPC	ECMWF's Atos
Text & graphics	LaTeX, Overleaf, LibreOffice, Microsoft Office, GIMP, Keynote
Languages	English (fluent), Estonian (native), Russian (beginner), Spanish (beginner), Dutch (beginner)
Driving Licence	Cat. B (EU)
Teaching	•Developing, as lecturer's assistant, Astrophysics Bachelor's course, May/June 2024, Utrecht University. •Supervising Bachelor's thesis of C. J. K. Larkin, summer 2021, University of Groningen. •Teaching assistant to *La Palma Observation Trip*, Master's course, spring 2018; *Statistics for Astronomy*, Bachelor's course, autumn 2017, University of Groningen. •Completed *Start to Teach* teacher's training program, University of Groningen, autumn 2017.
Learning	•Able to quickly learn, digest and apply new, difficult concepts and techniques. •Confident in seeking new intense learning opportunities: career change from astrophysics to polar climate research; ESA 2021 astronaut applicant (not successful). •Polar research training: Karthaus Summer School, 2023
Communication	•Presented own research at international conferences, workshops, and collaboration meetings; adapted style and content to the level of knowledge and understanding of others. •Active in public outreach: e.g. part of *Võru maakonna teadusele vunki mano* project in Estonia promoting science and higher education in Võru region. •Currently writing an illustrated children's book on polar research, designed to be accessible to as many non-English speakers as possible. •Worked as a guide in Tartu Observatory and in Tartu Old Observatory.
Collaboration	•Part of the PolarRES project of 17 international institutes. PolarRES aims to study the interactions between the atmosphere, oceans, and sea ice in the Arctic and Antarctic. I was the Vice Chairperson of the PolarRES Early Career Researcher Panel (ECRP, 2022-2023). •Part of HCLIM (Polar and website/outreach working groups). •The X-shooter Stellar Library (XSL) collaboration of 11 research institutes. The collaboration produced the most intricate "library" of spectra of observed stars and stellar population models to date (PhD work).
Volunteering	•Mentee at the United Nations Office for Outer Space Affairs Space4Women mentorship program. The Program matches experienced mentors in the space sector with junior women (mentees) (2023—2024). Mentored by Dr. Yogita Shukla (Wo-Men Geospatial Coterie, Indian Institute of Remote Sensing, Indian Space Research Organization). •Member of Equity, Diversity, and Inclusion (EDI) committee at IMAU (2023 – 2025) •Active member of the scientific community: organising HCLIM working week 2024, PolarRES ECRP Bootcamp and organising EDI initiatives and social activities at IMAU.
Diplomacy	•Created and led the PhD Scholarship ("Experiment") students movement for equality at the University of Groningen, which resulted in a written Manifesto that we delivered to the House of Representatives of the Netherlands. •Candidate for a seat at the University Council at the University of Groningen 2021 elections. •Member (2019-2020) of The Graduate School of Science and Engineering Sounding Board that gives advice to the PhD council and to the Graduate School on PhD-related issues.