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"Science is a Universal Language"

Laura says,

"From the very first time man gazed up at the sky to learning how to heal a broken bone, science has been a fundamental trait of humanity. We are an inquisitive species, and history demonstrates how that curiosity has always driven us to push the envelope further. I have the privilege of a very international background, living in many different countries and learning many languages, but the constant between each environment has always been science. The grammar and foods may change, but gravity or organic molecules do not. Nature is shared by us all, and science is the language we use to understand it.

With my upbringing and education scattered across Finland, France, Spain, and Scotland and the many languages I navigated through, science was always my lighthouse in a new home. And now, through my PhD studies, it has become clear to me that despite our many cultural or linguistic differences, we share a love of science: it is a thread that connects us across the world.

My research focuses on gravitational waves, which ripple across the Universe at scales larger than our planet. To study these, the LIGO-Virgo-KAGRA collaboration has built a growing, global-scale network of detectors without which we could not detect these waves. Specifically, I study lensed gravitational waves, which happens when massive objects like galaxies fall into the travel path of the gravitational waves before they reach us, which result in multiple copies of the same event. Since we can also study these galaxies, the 'lenses', through optical imaging, I use optical telescope data from a variety of instruments and collaborations to learn more about these lensed gravitational waves. My undergraduate background focused on traditional astronomy and astrophysics, so it has been of great use when I combine it with my

current studies in gravitational waves to work towards a multi-messenger approach to better understand this phenomenon.

In more indirect ways too, international collaboration contributes to my work. This past summer, I spent two months travelling in the Netherlands and the UK, and my favorite part between all the seminars, presentations, and collaborative research, was always the hallway chats. Each of these discussions was exciting because of the vastly different experiences we had, differences in current fields, past research, and methodologies, all bringing new contributions and ideas. But they would not have been possible had we not shared the thread of science to connect us, to drive us to understand the Universe better, together.

The scientific community's strength is its worldwide network of people with the shared goal of understanding the world around us, and science is the language we all share within this community. After all, an equation needs no translation. ”

Laura URONEN is a Ph.D. student in Physics. Originally from Finland, she lived in France and Spain before completing her undergraduate studies in Scotland. She is now part of the gravitational wave group at CUHK Department of Physics under Prof. Otto HANNUKSELA's supervision. Her research focuses on gravitational lensing of gravitational waves.