

External Fellows at ESO

In addition to the ESO fellowships, external postdoctoral researchers are hosted at ESO. Here one of them presents herself.

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For as long as I can remember I have been passionate about the night sky. Something about those little lights on the dark background amazed me. Growing up I was always the 'smart' kid who did all her homework and got good grades in maths and physics. But it was more the result of curiosity than being really smart. I've always been eager to learn everything I can about the world, so if 'doing my homework' was the way to do it, I was willing to pay the price. But although I was passionate about the stars, I never considered making a career out of them, simply because I never thought it was possible.

I was born in Caracas, Venezuela, and although there were very good universities there at that time, there was no astrophysics major in the capital. I knew I wanted to study something related to physics but also something that would teach me about natural phenomena. So I chose my second favourite subject (besides stars, of course), volcanoes and hurricanes. So I went for Geophysics Engineering. Something I loved when I was a teenager buying National Geographic magazines with impressive images of volcanoes and tornadoes. My naïve young self thought that, as a geophysicist, I would end up chasing tornadoes (like Helen Hunt in *Twister*) and entering the threatening craters of volcanoes. To my surprise, geophysics in Venezuela is nothing about that and all about oil. So after finishing my engineering studies, I started working at the main oil company in Venezuela. It lasted just one year — I hated it completely. Don't get me wrong, I really enjoyed the career. In fact, it was during my undergrad that I realised that I really loved physics, especially that related to radiation and light. But the oil business just wasn't my thing. It was at that moment when everything in my life began to change very quickly. I needed to make a big decision, one that would mark my life forever. Fortunately for me, it was the right one, but it took a good dose of courage and a lot more of hope.



Feeling miserable in my oil-related job, I decided to look for opportunities to study my true passion, astronomy. At that point, I already knew that the 'conventional path' to astrophysics was to first study physics and then pursue a PhD in astrophysics. OK, that was no longer possible for me, but I didn't let that discourage me. I found that many PhD programmes, particularly one in Mexico, allow students other than physicists to enter; I just needed to pass their three-month training first. So, with a backpack full of dreams and hopes, I quit my job and flew abroad to pursue my dream of becoming an astronomer. Little did I know what I was getting into. It hasn't been easy, but it's definitely been worth it.

I did my Master's and PhD studies in Morelia, Mexico — a beautiful historic city in the central part of Mexico. I was blessed to have amazing supervisors who supported me throughout and gave me the means to go to various observatories around the world for regular observing runs which I completely fell in love with. I still remember the first time I observed completely alone and felt like a real astronomer. I knew then that I had made the right decision. However, the hardest part of my entire PhD was the first three months of training! Learning all the physics necessary for a career in astrophysics, but irrelevant in engineering, in such a

short time was more than a challenge, but if you have the passion and determination, anything is possible.

After my PhD, I found a three-year postdoctoral position in Valparaíso, Chile. There I had the opportunity to visit the most important observatories in the world: Paranal and ALMA. I can't describe the joy and privilege I felt being in these incredible places and making science from them. Getting to know a completely new astronomical community and having a fantastic boss really made my years in Chile very pleasant, despite COVID of course. My mom used to say "every sacrifice brings its reward," so with that in mind, I was ready to dream big again. This time, my goal was a postdoctoral position at ESO. I saw the opportunity and was lucky enough to be considered for the job. I have been an ESO postdoc for a year and a half and it has exceeded all my expectations. I never imagined that I could get such a wonderful position, being from Venezuela, from a non-scientific family. Reflecting on it now, I recognise that the most important part of my journey was the support of the people around me who always believed in me and inspired me to reach for the stars, literally.

At ESO, I am part of the WANDA ERC hosted by Carlo Manara. I've been lucky enough to continue working on the same topic since my PhD: star and planet formation. The main goal of my research at ESO is to study how discs of gas and dust around baby stars evolve in highly irradiated environments to form planetary systems. I make use of spectroscopic observations to characterise the low-mass stars hosting the protoplanetary discs, as well as the winds coming from the disc surface as the result of the ionising radiation from nearby massive OB stars in the region. ALMA observations also hold a very special place in my heart, and I am leading a continuum analysis of a sample of 80 stars in different star-forming regions as part of the ALMA DECO Large Programme aiming at characterising the dust disc radii and morphology. In addition to the amazing science I have the privilege of doing at ESO, the scientific environment and friendly community definitely add invaluable value to my journey, which I can now share with others, especially young kids who dream of the night sky.