Fellows at ESO

Yara Jaffé

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I grew up in Venezuela, a tropical country next to the Caribbean sea where astronomy is not really something people do. I was raised in a family of biologists and poets, and as a child I had interests in both the arts and the sciences. I was not the kind of kid who knew all the constellations by heart (I still do not). In fact, after high-school I was not sure what to study so I applied for all kinds of things like literature, arts, physics and mathematics. I chose physics at the Universidad Simón Bolívar (USB), a very prestigious and beautiful public university on the outskirts of Caracas. By then I had realised I wanted to study the cosmos, but there was not a single astronomer at USB, so during my fifth (and final) year of undergraduate studies, I went to Mérida to do a research thesis at Centro de Investigaciones de Astronomía (CIDA) with A. Katherina Vivas.

I loved meeting astronomers and working at the National Observatory, which, despite having limited resources, was used effectively by the few (now fewer than five!) resident astronomers. At CIDA I did actual research for the first time and loved it. Using RR Lyrae stars, we searched for small galaxies cannibalised by the Milky Way and actually found some! I left that place with a strong desire to go back as a professional astronomer one day. Owing to the increasingly complex political situation in Venezuela over recent years, that has never happened.

After my undergraduate degree in physics (2007) I was encouraged to do a short internship at Goddard Space Flight Center (US National Aeronautics and Space Administration, NASA) to study the outflows of Seyfert galaxies. I was really excited. Despite getting (and paying for) the appropriate visa, when I got there I learned that because Venezuela had become a "designated country", I could not enter NASA until I got special clearance. My boss there did everything he could to get that clearance, and after one month working remotely at the Catholic University of America I finally got in to Goddard, but only to non-restricted areas, and I had to be escorted at all times. Although being escorted was not much fun, NASA was impressive, with hundreds of people working in space sciences, including a Nobel prize laureate. The work I did there, although brief, was fruitful: we wrote a paper, and my grandma got to tell all her friends that I went to NASA.

After that experience, I went back home to pack again and say goodbye to my country and loved ones. This time I was going to the United Kingdom, to do a PhD on galaxy evolution with Alfonso Aragón-Salamanca at the University of Nottingham. The department there was a good match for me because it has strong groups in extragalactic astronomy and cosmology, which is what I wanted to do. The UK was certainly very different from what I had known so far. Basically it was much colder and more expensive, and to my surprise people's accents were not at all like the Queen's. It took some adjustment, but I ended up calling it home, and even marrying a British man. Despite having two scholarships, the tuition fees in the UK were so high for overseas students that I had to work on the side. During my first year I marked coursework, served hotdogs in football stadiums, and did loads of paid psychological tests. It was tough, but the situation improved after I got a studentship at ESO Garching to work with Harald Kuntshner and Piero Rosati for a year.

During the 3.5 years of my PhD I studied different galaxy populations across cosmic environments, mostly using data from the ESO Distant Cluster Survey (EDisCS). In particular, I studied the star formation histories of early-type galaxies in the cores of galaxy clusters, and the effect of environment on late-type galaxies falling into the clusters.

While I was writing up my thesis (2011) I got a job offer from Bianca Poggianti to work at the Astronomical Observatory of Padova on the optical side of the Blind Ultra Deep HI Environmental Survey (BUDHIES). It took almost eight months to get the visa, so I started working remotely and travelling back and forth from Padova to Exeter, where my husband was working at the time. The astronomers at the University of Exeter kindly hosted me during those months. My time in Padova, although intermittent, was very pleasant and inspiring. I enjoyed living in a place with so much (visible) history, and working in a new collaboration with very active researchers. My work with BUDHIES resulted in a series of papers revealing the effect of environment on the removal of HI gas from galaxies.

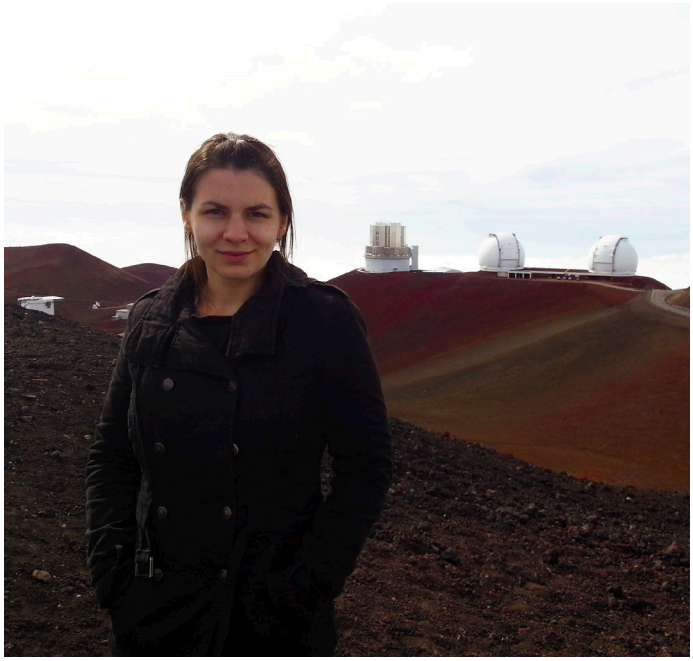
After almost five years in Europe I wanted to go back to Latin America. My husband and I applied to several places and we both got good offers in Concepción (Chile), so we moved there. The three-year fellowship at Universidad de Concepción (UdeC) was great because I had the freedom to

develop my own research projects, and also the visa process was much friendlier. In addition, I had access to the 10 % of Chilean time allocation at all the observatories based in Chile, and I could do outreach in my mother tongue. One of the most important projects I developed at UdeC, together with other postdocs from the theory group, was an orbital study of ram-pressure stripping in clusters using observed and simulated phase-space diagrams. I also got involved in many collaborations, including GASP (GAs Stripping Phenomena), a large ongoing Multi Unit Spectroscopic Explorer (MUSE) programme to study "jellyfish" (notably stripped) galaxies covering a wide range of stellar mass and environment.

At the end of 2015 I moved to Santiago to start an ESO Fellowship with duties in Paranal. At ESO I am a support astronomer for Unit Telescope 4 and a MUSE fellow. I am also involved in the organisation of "Astronomy for everyone" talks in Vitacura and am co-supervising a very bright student who is working on the first GASP results. Working in Paranal has been a unique experience and I find the desert very inspiring. In the past year I have supported a diverse body of observing programmes, and been exposed to cutting-edge astronomical instruments, as well as scientists from all over the world. Although spending 80 nights per year in Paranal can be physically and mentally challenging, it is rewarding to be part of new discoveries in all areas of astronomy. Overall, the experience is helping me become a more complete scientist, for which I am very grateful.

Andra Stroe

I have always been fascinated by the cosmos and for as long as I can remember I wanted to become an astronaut when I grew up. In high school, upon realising that my chances of becoming an astronaut were very slim, I decided to work towards moving people into space, so I participated in a series of space settlement design competitions organised by NASA. For these, I designed habitable space settlements orbiting around the Earth and Mars, and also settlements located on the Moon and Mars.



Andra Stroe

Having a great role model and supporter in my engineer mother, I knew I wanted to become a scientist. My strong interest in all things space-related led me to study physics and astronomy at Jacobs University in Bremen, Germany. During my undergraduate degree, I had the opportunity to gain teaching and research experience, catching a glimpse of what academic life entails. Through my internships, I dabbled in spacecraft design, the physics of the Earth's magnetosphere and optical interferometry. After going observing for an undergraduate course, I was sold on the idea of pursuing a career in observational astrophysics.

Originally wanting to pursue research in the field of black holes during my Master's at the University of Cambridge, I then discovered galaxy clusters. I found them to be great laboratories that brought together many of my interests: galaxies, black holes and diffuse gas. I realised that the best way to really understand the physics of galaxy clusters was by combining multiple types of observations and techniques. Hence I started my PhD at Leiden Observatory in 2011, working on multi-wavelength observations and modelling of merging galaxy clusters.

At Leiden I worked on the physics of shock waves and how they interact with the diffuse intra-cluster medium, and with the star-forming galaxies and active galactic nuclei (AGN) in the clusters, complementing this work with studies of field galaxies. I was fortunate enough to pursue my own research and lead my own projects, which meant travelling a lot to meet collaborators or go to conferences. I had amazing opportunities to visit some of the world's largest, most advanced telescopes, such as the Jansky Very Large Array (VLA), the La Palma Observatories and Mauna Kea. One of the highlights of my trips was being able to walk on one of the 25-metre dishes of the VLA and enjoy the beautiful scenery from an amazing vantage point.

Towards the end of my PhD I became really interested in the evolution of the star formation and gas content of active galaxies. With the advent of the Atacama Millimeter/submillimeter Array (ALMA), and the new instruments on the Very Large Telescope (VLT), this was a perfect time to pursue these topics. Upon finishing my PhD, I was very fortunate to be able to follow this dream at ESO, where I started as a Fellow in 2015. At ESO, I am pursuing research into star formation and AGN activity though large surveys. One of my goals is to find the driver for the enhanced number of spiral galaxies in disturbed and merging clusters. I am also extending my work to high-redshift twins of local merging clusters: high-redshift

protoclusters. I am one of the organisers of the first regular Garching campus meetings on galaxy clusters, as well as of the Wine & Cheese informal seminar series at ESO.

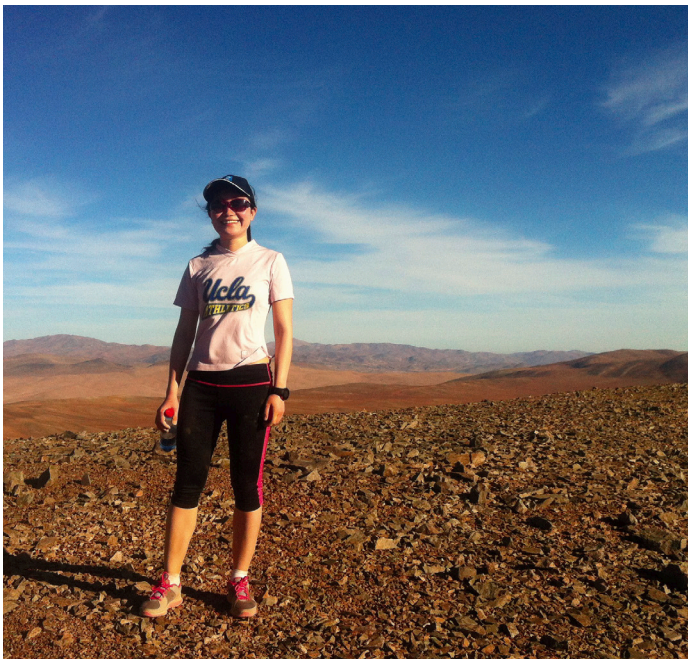
With the amazing support of ESO, and in line with my research interests, I am also organising a conference in 2017 which will bring together, for the first time, experts working on early stages of cluster formation throughout the range of redshifts. Through my duties, I regularly travel to one of the few observatories I had never visited before: the VLT at Paranal. I get to be part of an amazing team of more than 100 people working together to ensure the smooth operations of no fewer than seven telescopes. I am trained to operate the instruments on the Antu telescope (Unit Telescope 1). Adding to my previous observing experience, I have now became acquainted with new observing modes, such as adaptive optics and integral field spectroscopy.

In the future, I am excited about the scientific opportunities provided by the new multiplex spectroscopic instruments coming to Paranal, and the European Extremely Large Telescope and the Square Kilometre Array which will enable us to study galaxies and AGN across time and environment.

Siyi Xu

I grew up in a small town called Kunshan near Shanghai in China. The population is about one million but it is still considered a small town by Chinese standards. I was always quite interested in mathematics and physics — I particularly liked the simple and objective language they use to describe the rules governing the world around us. My first real astronomy experience was seeing the Leonid meteor shower in 2001. That was a spectacular year — I even managed to catch sight of a few shooting stars while staying in the middle of the slightly polluted city.

Then my parents got me a small (~ 20 cm) amateur telescope so I could use it to observe the Moon, Jupiter and Saturn. I had a lot of fun playing with the telescope. I remember that one time, in order to find to a good spot to observe the



Siyi Xu

Moon, I climbed up to the top of the roof. My neighbours thought I was a burglar and they almost called the police.

In China, we are required to decide on a major before going to college. I remember going through the list of majors and astronomy stood out. I thought to myself, “I like physics. I like maths. Astronomy sounds like a cool major!” I decided this without much hesitation. My friends and relatives were all quite shocked about this decision. They did not know what I would do with a degree in astronomy, a major that they had barely heard about; they thought I should go for something more practical like business or accounting instead. To this day, I am still very grateful for my parents’ support. They told me to “choose what I love and love what I choose”. They were always very supportive of my decision.

I ended up majoring in astronomy at Nanjing University. Astronomy is a small department there and we were ~ 30 students in total, roughly one from each province of China. It was fun for me to meet students from all over China. My favourite class was observational astronomy. We had a 1-metre telescope and we used it to measure the atmospheric extinction curve and the period of a variable star, or just to take pretty pictures of other galaxies.

My first real research experience was in the summer of 2009, when I was selected to be part of an exchange programme called CSST (Cross-disciplinary Scholars in Science and Technology). It is a 10-week summer programme run between the University of California, Los Angeles (UCLA) and several Chinese universities. The idea is to bring some junior-year students from China to work on a research project at UCLA. I had a fun time working with Mike Jura, who was an extremely caring advisor and an inspiring scientist. My summer research experience prompted me to continue my studies in the USA and apply to graduate schools there. Another plus was that all PhD programmes in the USA offer both tuition and a stipend. As a result, I would be able to live in a foreign country for a few years and be financially independent as well — I loved that idea!

The graduate school application was rather smooth and I was accepted by a few places. I was very lucky to have the chance to visit a few of them. I was amazed by the interesting experiences that my fellow prospective students had encountered. I remember I asked one prospective student why he decided to do a PhD in astronomy. His answer was something like “I worked in a physics lab for the first year, a chemistry lab the second year, and an astronomy lab the

third year. I loved the astronomy lab the most! That is why I am here!" That was very different from my experience.

In the end, I decided to go to UCLA for graduate school, mostly because I really enjoyed working with Mike. There were so many interesting projects to work on! I think that was one the best decisions I ever made in my life. Plus, Los Angeles had a lot of good Chinese restaurants in case I got homesick.

My main research topic was planetary systems beyond the main sequence stage, particularly around white dwarfs. For my PhD studies, I worked on data from a lot of telescopes, including the Keck Telescope, the Hubble Space Telescope, and the Spitzer Space Telescope. Mike was a superb advisor and he trained me in many aspects of research, from writing proposals, planning the observations (always have a backup plan — or several!) and reducing the data, to publishing the results and presenting them at conferences. I still remember my very first paper: we kept revising the manuscript and the final submitted version ended up being version u (i.e., the 21st version). The accepted version was version z (26). I was seriously concerned about what would happen if we used up all 26 letters! I feel extremely grateful that I had a chance to work with Mike so closely. He is always a source of inspiration and a role model for me. Whenever I encountered a problem, I would ask myself "What would Mike do in this situation?"

I joined ESO in Garching as a fellow in September 2014. I very much enjoy the freedom that I have and the diversity of research done at ESO. There are interesting talks and discussions happening every day. On account of my passion for observational astronomy, I decided to work as a support astronomer at Paranal for my functional duty. So I have the chance to travel to Chile, meet many interesting people, and operate one of the world's best telescopes. The sky there is amazing! Looking into deep space, it constantly reminds me why I am here and why I decided to pursue astronomy in the first place. Most importantly, it has been a really fun journey. I cannot wait to see what the future has in store for me!

Personnel Movements

Arrivals (1 October–31 December 2016)

Europe	
Augustin, Ramona (DE)	Student
Brucalassi, Anna (IT)	Astronomer/CRIRES+ Project Scientist
Chen, Chian-Chou (TW)	Fellow
Darré, Pascaline (FR)	Applied Physicist in Interferometry
Nedelchev, Borislav (BG)	Student
Querejeta, Miguel (ES)	Fellow
Seidel, Matthias (DE)	Electronic Engineer
Zanella, Anita (IT)	Fellow

Chile	
Anderson, Joseph (UK)	Operation Staff Astronomer
Corral Santana, Jesus (ES)	Fellow
Jones, Matias (CL)	Fellow
Leftley, James (UK)	Student
Milli, Julien (FR)	Operation Staff Astronomer
Nurzia, Vittorio (IT)	Telescope System Engineer
Opitom, Cyrielle (BE)	Fellow
Santana Tschudi, Samuel (ES)	Instrumentation Engineer
Yang, Bin (CN)	Operation Staff Astronomer

Departures (1 October–31 December 2016)

Europe	
Béthermin, Matthieu (FR)	Fellow
Faran, Tamar (IL)	Student
Galametz, Maud Muriel (FR)	Fellow
Milligan, Samantha (UK)	Secretary/Assistant
Phan, Duc Thanh (BE)	Software Engineer

Chile	
Colleoni, Franco (CL)	Electronics Engineer
Klement, Robert (CZ)	Student
Martins, Jorge (PT)	Student
Ober, Claudia (CL)	Contract Officer
Orrego, Ernesto (CL)	Administrative Assistant
Razmilic, Jasna (CL)	Executive Assistant