

Staff at ESO

Alistair McPherson

As one of four boys brought up in Scotland, I was always the one with a screwdriver in my hand looking to “fix” something. It seemed inevitable that my love of things mechanical would lead me into engineering and I did this by joining the army, attending Sandhurst and completing a degree in aeromechanical engineering. I then commanded a number of units in the UK, Hong Kong and Germany — both helicopter support units and mechanical workshops — leading my soldiers on operations in Northern Ireland, the Gulf War and Bosnia.

As my career progressed I became more involved in procurement programmes, initially as a member of a French, German and UK project based in Paris and my last job in the army was as the programme manager for the Lynx helicopter fleet. In this job, I was responsible for all engineering, maintenance and airworthiness issues, as well as the procurement of a replacement fleet of some 100 helicopters.

After my job with Lynx, which I really enjoyed for the variety of engineering, leadership and politics, I made the decision to leave the army and seek a

complete change of direction. Whilst looking for another career opportunity, I saw an advertisement for the job of VLT Infrared Survey Telescope (VISTA) project manager at the observatory in Edinburgh. As I read the advert I realised that I had the qualities and experience that they were looking for and applied. The rest is history.

I thoroughly enjoyed this appointment and I learned a great deal about telescopes and how the astronomy community worked. This also gave me an introduction into ESO and, of course, Paranal. So, when I was no longer required on VISTA and there was an opportunity on the European Extremely Large Telescope (E-ELT), I was pleased to come to Garching and join the team at the latter part of phase B.

I have had a varied, interesting and challenging career both in the army and in the world of observatories. Although I still barely scratch the surface of the astronomy side of the work, I am fascinated and motivated by being at the frontline of some pioneering engineering within the E-ELT project. I continue to enjoy the challenges that we face and, according to my wife, I apparently enjoy working



with younger intelligent people. Maybe that keeps me young?

Many challenges lie ahead of us as we move towards E-ELT construction, but as an organisation we can work together to achieve the completion of this vision. I look forward to leading the team which will deliver the reality of the E-ELT.

Fellows at ESO

Maja Vučković

I have been living in Santiago de Chile and working as an ESO Fellow for two years. Of that time I have spent about six months in the Atacama Desert at the Paranal Observatory as a VLT support astronomer. While on Paranal, I am also a Fellow responsible for X-shooter on Unit Telescope 2 (UT2), the unique echelle spectrograph that can obtain a simultaneous spectrum from ultraviolet to near-infrared wavelengths (0.3–2.5 μm). This simultaneous wavelength coverage is a

major advantage for photometrically and spectroscopically variable objects as it allows the various contributors to a spectrum to be disentangled, which is one of the hottest topics of my research at present. While in Santiago, apart from enjoying a “normal life”, I am trying to understand what the hot subdwarf stars do.

I was one of those children who dreamed of becoming an astronomer when they were growing up. My grandma frequently took me from the roof of our vacation house in the mountains as I would often

fall asleep there while watching the stars. I was mesmerised by the night sky, while all her other grandchildren would safely be sleeping in their beds surrounded by their favourite toys. Even though it seems that I have known what I wanted to do since my childhood, the road to where I am now was anything but straightforward, and it took many years.

Thirsty for knowledge during my undergraduate studies of astronomy at the University of Belgrade, my home town, I was totally taken by the observational

astronomy course. The undergraduate studies at my university at the time were based mostly on following courses, passing written and oral exams and at the time I didn't have a clue what research was all about. After the oral exam I went to my professor, Istvan Vince, and told him (more like complained) that I was bored of just studying, solving problems and taking exams, and that I would like to **do** something! He gave me some stellar spectra to reduce. Soon after I found myself at an international conference eagerly presenting a poster with my work and discussing the temperature sensitivity of Mn lines over dinner ... Now I know — that is what research is about.

However, my undergraduate studies were interrupted by the difficult situation in my country (Serbia). Torn by civil wars, decimated by sanctions, hyper-inflation and finally NATO bombing, life took a “parallel path” and I felt the need to contribute to humanity while living through a humanitarian catastrophe. I fully engaged in activism and spent several years as a volunteer in a non-governmental organisation (NGO) taking care of and helping refugees, mainly adolescent girls who had been traumatised by the war and the bombing. In fact my first proposal was not in astronomy at all! It was for a European Union grant to foster the livelihood of girls who had suffered violence, by founding centres in several towns of Serbia which would work to raise awareness, educate society, and improve integration, while also serving as shelters. When the situation in the country stabilised somewhat, I decided it was time for me to continue with my life. I asked myself yet again what it was that I wanted to do, and my mind took me back to the very same roof of my grandma's house ... it was clear that I wanted to continue studying astrophysics!

Asteroseismology, the relatively young branch of astronomy devoted to the study of internal stellar structure on the basis of stellar vibrations, caught my attention. While reading more I found out about the Whole Earth Telescope (WET), a worldwide network of cooperating astronomical observatories linked together to obtain uninterrupted time-series measurements of variable stars. The idea sounded profound to me: that a group of



Maja Vučković

scientists would use the Earth's rotation — the biggest enemy of any asteroseismologist — as a tool to obtain continuous 24-hour light curves in order to derive the fundamental parameters of stars. The headquarters were at Iowa State University (ISU) and I contacted Steve Kawaler, the professor at the Department of Physics and Astronomy and director at the time. He told me what I should do in order to enroll for graduate studies at ISU. Several months later I had my farewell party.

I arrived in Ames, Iowa in August 2001 with my life packed in two suitcases, ready to start my graduate studies in astrophysics. During my first day at the ISU campus I met Steve, who opened the door of science for me. He is one of those professors who can transmit his thrill for science, and stamina for research, to the student, while letting you struggle, but never fall. After a few months I was already observing at the 2.1-metre telescope at the Kitt Peak National Observatory as one of the observing sites for my first WET run. The more I learned about asteroseismology the more I was enchanted by it — the fact that we can “look” into the interiors of stars by studying their pulsations is still what keeps me going.

My strong observing interest resulted in my adopting the small University Observatory, equipped with a Fick 0.6-metre

telescope, for high-speed photometric monitoring of rapidly pulsating subdwarf B (sdB) stars. As soon as the skies had cleared, even if only very late in the night, I'd head off to the Fick Telescope; my friends still joke about the strong correlation between the clear skies and my disappearance from every party!

The research in asteroseismology of sdB stars, during my Masters studies at Iowa, mainly consisted of gathering, analysing and interpreting photometric data in white light. Through this study it became clear to me that the ultimate goal of any asteroseismological study can only be achieved with accurate pulsation frequencies and an unambiguous identification of the oscillation modes. While I was writing up my thesis on PG0014+067, an intriguing pulsating sdB star, Conny Aerts, the professor at the Institute of Astronomy at the University of Leuven, and the world's leading expert on mode identification, came to our department to work with Steve. We discussed my research over a few lunches, she saw my devotion to observing and, in between the lines, gauged my nostalgia for the cobbled streets of European towns. Soon after she returned to Belgium, I received an offer to continue my research on sdB stars with her in Leuven. The University of Leuven had so much to offer: it is one of the oldest universities, is in the middle of Europe, they make one of the best dark chocolates in the world, not to mention all the varieties of beer, AND I could continue studying pulsating sdB stars!!!

I arrived in Leuven in August 2005, with my life packed in two suitcases ready to start my PhD. The Institute of Astronomy (IvS) is a great place to work, the friendliness and the enthusiasm of all the people there quickly made it into my new home. I still have that nostalgic look when I talk about it. Apart from offering me a comfortable research nest, it allowed me to fulfill my thirst for observing. The IvS has a 1.2-metre Mercator Telescope at one of the most beautiful European observing sites on La Palma in the Canary Islands and I spent at least two months per year observing there. Also, observing time is shared with the twin 1.2-metre Euler Telescope at La Silla. I will never forget my first observ-

ing run at the Euler Telescope — it was my first encounter with the southern skies and with the desert. I can't really tell which of the two made the stronger impact on me; but the feeling of peacefulness and fulfillment I felt while observing there is the one I come back to whenever the inevitable question of a (somewhat lost) nomadic, modern-day astronomer "is this all worth it?" comes to my mind.

While studying the origin and evolution of hot sdB stars during my PhD, my research interest naturally expanded into studying close binary stellar evolution, in particular post common envelope ejection systems. Once the PhD was defended, it was time to find a "real" job; I guess for everyone this is a scary moment as all of a sudden you have to get out of your PhD "bubble" and begin your way through life. In the heat of my PhD party a good friend, an ESO Fellow in Chile at the time, started to convince me to apply for the very same job. One of his strongest arguments was "you would love it". He was right!

In April 2010 I arrived in Santiago, this time with my life packed into somewhat more than two suitcases. Again, starting another four-year life cycle, I moved to a different continent, ready for my ESO Fellowship and the new challenges of life.

During my last *turno* at Paranal, I was sitting at the back of UT1 watching the sunset, something I usually do every day while observing there. It is also the point where the day and the night crew meet. But that day I was alone and my thoughts took me far far away, back to one of my high school days. The surprised face of my high school professor appeared in my mind when I had told him that I would study astronomy. He wanted to challenge my choice and simply asked "But why?", as he was sure I would study philosophy. "Because philosophy I know I can do, but astronomy — I am not sure if I am able to?!" I answered.

The sun has set into the Pacific without a green flash yet again, and I hurry to start the observing night. In some ways it felt as if I had just woken up after almost 20 years, in the middle of the desert, behind one of the biggest telescopes, with a clear answer to my childhood question.

Beware of your dreams, they may come true!

Giacomo Beccari

The oldest memory I have of the stars is of Ursa Major. When I was a child, during the summer holidays, I used to sit on the strong shoulders of my father and spend time with him wandering along the beach at night watching the stars. The constellation of Ursa Major was the only one that my father ever knew, but he used to show it to me every night, telling me fantastic stories.... That constellation appeared to my eyes as the most beautiful thing in the sky ... and still does.

I was born in Verona some years ago. I like to see myself moving around with a funny Veronese flavour permeating my personality: that strange mixture of romanticism (Romeo and Juliet as it were), passion and fanaticism (go to a soccer stadium in Verona on Sunday and you will understand), and South Tirolean rationalism. I studied astronomy at the University of Bologna followed by a PhD in astronomy and informatics at the Astronomical Observatory of Teramo. I am proud of seeing myself as a disciple of the glorious Italian school of stellar astrophysics. Even if I do not know much about the constellations, astronomy is for me, as for all the astronomers I have met so far, a passion. To do a colour-magnitude diagram (affectionately called a CMD) can be therapeutic. As an example, I remember in 2010, when the Italian team was badly eliminated from the Football World Cup, I was so depressed that I went to my office and downloaded some images of 47Tuc from the Hubble Space Telescope (HST) archive. I analysed the data and it was only after I saw the beautiful cluster's main sequence in the CMD that I started to breathe again!

After a one year post-doc, I left Italy for a fellowship at ESA/ESTEC, in the Netherlands. It was my first experience of living abroad. I left Italy with a suitcase full of pizza, spaghetti, mamma, Valpolicella, "cornetto e cappuccino, grazie", globular clusters and blue stragglers. Two years later I left ESTEC with a suitcase containing much less spaghetti, but lots of great experiences, memories of nice people,



Giacomo Beccari

new scientific projects, new ideas, a few krocketten, and knowing that science is much more than sitting at the desk in the office analysing data.

I came to ESO as a fellow with the desire to discover how a big astronomical observatory works, what's behind it. In Garching I found a community of excellent scientists and an enthusiastic environment that triggered new collaborations and ideas. I asked to be assigned for my functional duty as support astronomer at the Very Large Telescope (VLT) in Paranal. This experience has been even more exciting than I thought. I will always remember the first time I walked into the Control Room ... UT1, UT2, UT3, UT4... there is no cause for alarm ... VST, VISTA, VLTi ... *mamma mia!* Then walking back ... interferometry, wide-field multi-band surveys, high resolution adaptive optics imaging, multifibre and single object spectroscopy at almost all wavelengths ... on top of hundreds of "there is no cause for alarm". How much science is done in this place in one night? It's magic! But then you walk to the platform and there is the secret.

I am sure that every single person who has had the chance to see this place has been impressed. You are there, the Sun is going down, the sky turns red, and you see these machines, as if from a Kubrick movie or a book by Philip K. Dick, opening their big eyes to a beautiful

sky. This is the secret. Years ago a group of astronomers had a dream ... a desire that, maybe, looked much bigger than themselves. Many people gave a piece of their life for that ... many of them were enthusiastic ... maybe some were not ... many of them were nice and funny ... maybe some were not ... many of them

were devoted ... and others maybe were not. But the desire became a reality. This is being human ... fulfilling a desire that is so big that it flies way above the individual capabilities of those who realise it. Let's be honest: the astronomical community is a funny one ... people looking at galaxies at redshift 10 000, waiting for

that photon coming every ten days, with the aim of discovering the origin of life ... and we do not have any idea of how the Solar System was born. But you are there, the Sun goes down, the stars are coming: there's silence ... there is no cause for alarm ... it's time to do science.

External Fellows at ESO

In addition to the ESO fellowships, a number of external fellows are hosted at ESO and a profile of one of these fellows is presented.

Yiannis Tsamis

It is customary for these profiles to begin with personal recollections. In honour of this tradition, I submit that my links to ESO can be traced back to the early 1980s when, seated on my grandma's lap at home in Greece, I was watching Carl Sagan on our new colour TV set cruising through the Cosmos on a make-shift starship. "E-ELT's home is only a few microparsecs beyond that yellow dwarf star, some billion ewros into the future", I clearly heard him pronounce. Well, there is an element of truth in it though, as then there were no health warnings, conveniently, about the corruptive power of TV on a child's tender soul. An "E-ELT" was perhaps E.T. misspelled and the "ewro", well that's actually "euro" in Maltese according to Wikipedia. Perhaps the euro (or rather the Greek rendering, ευρώ) will become a standard unit in economochaotics theory come the 22nd century.

My more tangible links with ESO can be traced back to winter 2006 when I came to stay as a visitor for two freezing months to work with Jeremy Walsh on VLT FLAMES data of planetary nebulae. I was at the time a postdoc at University College London and I knew Jeremy from

his visit to Meudon during my Gruber Fellowship there in 2004. ESO seemed to me to be definitely different from other academic environments. There was an unlimited supply of free cappuccino to give any high street café a run for its money, an endless list of quality seminars each week, and a formidable array of experts and visitors willing to debate the latest developments in astronomical instrumentation and data analysis. The fact that the place is situated right next to the beer capital of Europe is of course an added bonus: because sometimes astronomy is thirsty work, as was demonstrated in the lively 10 pm discussion sessions at the conference "Mapping Oxygen in the Universe" in Tenerife this May!

At ESO everybody also speaks the language that the papers are written in, which makes it all the easier to blend in no matter where you come from. I had my sights set on Garching since then and applied for an ESO Fellowship, but failed. But failing doesn't matter one bit as long as you succeed in the end, and so we asked Bruno Leibundgut in the spring of 2008 whether ESO would consider me as a candidate for a Marie Curie intra-European (IEF) fellowship. ESO was involved in other FP7 projects, but had not hosted an IEF before. My proposal was some twenty pages long (as these things usually are), and was evaluated and ranked by independent experts along with many others throughout Europe.



Yiannis Tsamis

When the positive results came out (thank you FP7!), I had only just moved to a position at the Instituto de Astrofísica de Andalucía (IAA) in Granada on a Gran Telescopio Canarias (GTC) Consolidider grant to work with Pepe Vílchez, and then parenthood followed soon after. Our young family's time in Granada was great and I would have stayed at the IAA, if the chance to move to ESO on a personal grant had not arisen. It was a difficult moment because the IAA is a wonderful place and the Spanish colleagues are truly excellent and had been very welcoming. I delayed the start of the IEF as much as I could and this gave me time to establish lasting links, and to become involved in Spanish-led projects such as