

FELLOWS AT ESO

NICOLAS BOUCHÉ



I ARRIVED AT ESO Garching in September 2003 as a post-doc under a joint MPA/ESO contract funded by the European Community Research Training

Network (“The physics of the intergalactic medium”) just after graduating from the University of Massachusetts. Since I was little – when Halley’s comet last came around to be precise – I wanted to become an astronomer. Given that I grew up in Belgium I knew about ESO and its state of the art facilities. It was thus a great privilege to start my career at ESO headquarters. Of course my interests as a professional astronomer took me as far as you can from comets. I now study galaxy formation and distant galaxies at redshifts of two to three. More specifically, my thesis was centered on using cross-correlation techniques to measure (and put constraints on) the mass of a class of high-redshift gas clouds, the so-called Damped Lyman-alpha Absorbers.

I was very fortunate that during my stay at ESO, many fellows worked in my field, namely, the field of quasar absorption line systems. This vibrant environment led to new collaborations, many, many helpful discussions and new friendships. I also benefited greatly from the institutions around ESO, the Max-Planck Institut für Astrophysik and the Max-Planck Institut für extraterrestrische Physik where I just started a three year contract. These three institutions are at the forefront of European astronomy, are leading many cutting edge experiments and it’s a great pleasure to be part of it.

Even though, when the fog rolls in for two months at a time, it’s like living in a submarine, Bavaria is a beautiful region with many possibilities centred on the Alps or just in Munich.

ERIC DEPAGNE



I AM AT THE MOMENT right in the middle of my four years contract as a fellow in Chile. I have my duties at Paranal where, as a night astronomer, I do the

observations on UT2 (FLAMES, UVES and FORS1).

Paranal is an incredible place to see. After a two hour drive from Antofagasta, in the middle of the desert, you can see the four telescopes on top of the beheaded mountain. Then, you enter the residencia. And you feel

like being in the jungle! So much humidity, compared to outside!

My scientific work is the understanding of our Galaxy’s childhood. There are mainly two ways to do so. Either you look at very distant extragalactic objects, or you look at very old galactic ones. That’s what I do.

Some low mass stars have atmospheres that are not evolving with time. Thus, by studying the chemical composition of these atmospheres, we have a quite direct access to the material from which these stars were formed. As we suppose that these stars were formed very early after the Big Bang, the chemical composition of these atmospheres puts strong constraints on the Big Bang and the supernovae models. And a striking thing concerning these atmospheres is that at that time, we have been able to detect half of the elements of the periodic table – elements from Hydrogen to Uranium!

MARKUS HARTUNG



IT’S FASCINATING TO sit in the control room, piloting a world-class cutting-edge telescope! A single mouse click and 400 tonnes are moved to point to the

new target. Between the active optics giving the 8-m-primary-dish its optimum shape and a deformable mirror countersteering 500 times per second to correct atmospheric turbulence in real time we finally recover space-like resolution. And the more you look into the details, the more you are amazed that all these systems work reliably together to comprise one of the sharpest eyes with which to explore the universe.

This is about the thrill of being a fellow at the VLT. You probably won’t believe that being a fellow is all fun and games. Well, I admit that the work can be very demanding and stressful, and after a long shift there can be friction. Paranal science operations seems ultra-organized – rules and regulations everywhere. One might forget that they are not there to bother but to help people work together successfully – no doubt about their positive pay back! When I take care of visiting astronomers as part of my fellow’s duties, it is a pleasure to see most of them leaving happy and impressed by the observatory. The team spirit is great, and I really enjoy the privilege of working with such ambitious people from all over the world.

I started as an ESO Paranal fellow with my duty station in Santiago in June 2003. Before, I had been working on my PhD at the MPIA in Heidelberg and had strongly contributed to

the CONICA project. The marriage of this versatile infrared camera with the NAOS adaptive optics system took place in Paris. I spent one year there integrating the instruments before they were shipped to Paranal and commissioned at the fourth VLT telescope. When I joined ESO, I had already worked for several months at Paranal. Then, I did not get a chance to explore Chile, but I hoped in my heart that I would return to catch up with it. And here I am now – with my wife and my (Chilean) son, born last December in Santiago – it’s been a truly exciting experience!

JOCHEN LISKE



FOR MY PHD I decided to be adventurous and exchanged the homely shores of the river Rhine (Bonn) with the sandy beaches of the South Pacific. At the Uni-

versity of New South Wales in Sydney, Australia, I worked on my beach volleyball skills as well as the intergalactic gaseous structures called “quasar absorbers”, which provide a wealth of information on the physical conditions in the early Universe, studying large-scale structure, the radiative environment of powerful quasars and weighing the “normal” matter content of the Universe.

At the end of my PhD in 2001 I moved to the misty shores of the Firth of Forth (Edinburgh) to explore a different area of research and to begin work on the Millennium Galaxy Catalogue, a large-scale survey of local galaxies. When trying to understand how galaxies evolve with time we need to compare today’s galaxies with those in the early Universe. It is particularly important to be able to distinguish the various constituents of galaxies as they are believed to be the result of different formation processes. The Millennium survey provides a detailed picture of (cosmologically speaking) nearby galaxies and hence forms the “today” part of the above comparison.

Last year I moved to the banks of the Mühlbach (ESO) where I am continuing my work both on quasar absorbers and galaxy evolution. I am also supporting SINFONI, a new VLT instrument currently being commissioned. Recently, I got involved with a working group who are considering the use of OWL for an experiment designed to literally watch the Universe change its expansion speed over the timescale of a decade or so! Crazy? Possibly, but great fun! This is the sort of thing that makes ESO a fascinating place. Here you get to see the wheels of astronomy turn and watch the future take shape.