

Real Voices interview: Simon Sheridan

Meet Simon, a space scientist working on the Rosetta mission. Find out why his educational journey was a bit “longer than normal”

What is your job?

I've a couple of jobs with the Open University, based in Milton Keynes. My main job is a Research Scientist, working on different instrumentation that collects data from space missions. My secondary job is as an Associate Lecturer with the Open University. I've taught on a number of courses (Physics, Astronomy, Planetary Sciences and Maths).

What was your career/education path?

I had a typical but longer than normal education path. I went to school in Nottingham and studied GCSEs. I found subjects like maths, science and technology logical but I always struggled with my communication skills such as writing and in any tests/exams. I never seemed to be able to complete everything I needed to in the time available.

It took me several attempts to pass my English language GCSE, but I kept at it and eventually passed after attending night school whilst at sixth-form college.

At college I took Maths, Physics and IT and again I struggled with the written and assessment elements of the courses. I didn't do too well with my exams but managed to get onto a University Foundation course to study Physics at Liverpool.

It was during my first term doing this Foundation course that I was diagnosed with dyslexia and the penny dropped – all of the difficulties I'd previously had made sense. Provisions were put in place, and coping strategies were taught, I was given slightly longer in my exams and I was able to achieve a 2:1 in Physics four years later.

As part of my final-year project I was lucky enough to work at an observatory in Tenerife for a week doing real astronomy. I knew right then that I wanted to be involved in space-related work and that I wanted to study for a PhD. After much soul-searching I decided that, rather than ground-based observing, I wanted to get involved in building instrumentation that would be used in planetary exploration.

ABOUT THIS RESOURCE

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How did you get involved on the Rosetta Project?

After completing my degree, I spotted a PhD studentship being advertised by Professor Colin Pillinger to work on instrumentation for the Rosetta Project at the Open University. That was in 1995. I applied and got the position and even to this day I still think that luck had meant that things just fell into place at the right time.

I started working as part of the team designing the Ptolemy instrument (the Open University's instrument on the Rosetta lander). I was lucky to be involved in the project right from the start – at that time we had a blank piece of paper and I was involved in designing the gas-handling and -processing part of the instrument.

Back then, I was responsible for building prototypes and testing them in the lab. Once we had a final working prototype of the instrument I was responsible for putting the real flight instrument together and testing it prior to delivery to ESA for integration into the lander. I was the last member of the team to handle the instrument when it was attached to the lander.

I'm now involved in operating the instrument, devising experiments and analysing the data that was returned back to Earth during the landing event last year. We operated Ptolemy during the three days of battery power and have received a wealth of data that we are currently using to write scientific papers.

How much biology do you use in your work?

I didn't do much biology – sorry!

You've been working on Rosetta for 20 years now. Tell us how you felt on landing day.

The day of the landing was one of the most amazing days of my life. I don't say this lightly – I have two children and I was there for their births, and those were amazing days, but when we got confirmation that we had data from our instrument during the first bounce and then when more came following the final landing I felt like a father again. My baby, the thing I have spent all of my working life on, was where it was supposed to be and was doing exactly what we had designed it to do.

I can admit that I cried a little. However, it was very bittersweet – Colin Pillinger, my PhD supervisor, the scientist who came up with the idea of Ptolemy in the first place, wasn't around to share in our excitement and joy of the day.

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What's an average day like for you?

There is not really an average day. I arrive at work to a mountain of emails, which, despite me dealing with out of hours on my phone, I never seem to be able to reduce.

We are a small close team. At the moment [March 2015], we are working hard to rewrite all of the extended science experiments to use lower power and shorter time. When the lander wakes up, hopefully in June, it will not have the power we hoped it would have had it landed on the planned landing site. The power available will be much lower, but still enough for it to operate and do more science.

Therefore, a lot of time is now being spent planning, in meetings trying to decide on how to get the most from any additional time we will get.

In addition, I have an amazing lab where all of my 'toys' are. I have mass spectrometers, vacuum systems, comet simulation chambers, Mars simulation chambers – all of which have been built in-house to allow us to perform different experiments. I still love to get into the lab, design experiments and perform them. I often joke that I'm really lucky in that I love my job and that I get paid to play with some amazing toys. However, at the moment I'm not able to spend as much time in the lab as I would like.

After I've finished at work I head home, spend time with my two children, my wife and our dog. When the kids are in bed I then head to my study and put on my lecturer hat. As an Associate Lecturer with the OU I work evenings with my students, remotely over the internet.

What's it like working in a team with so many different areas of expertise?

We are a very close, multidisciplinary team. We have chemists, engineers, physicists and management all working together. I think the team dynamic is what has made our group successful.

There is someone who is an expert in the different fields and being all together, in the same room we can bounce ideas (no matter how crazy at times) off each other and find a solution for any problem that we come up against.

What's next for you in your career?

In addition to Rosetta, there are a number of missions that we are working on, such as a lunar mission to the poles and instrumentation for future Mars missions.

I also have a patent I developed during my PhD for a small, high-performance gas valve. I'm currently working with some UK satellite manufacturers, to see if the valve can be used in future spacecraft

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propulsion systems. This is exciting as it's another application for my work that could be used in space.

What words of advice would you give to someone interested in having a job like yours?

It sounds cheesy, but if you have an idea of what you want to do then you just need to make it happen. Clearly, you will need to study hard, and it's important that you work hard at the key subjects such as science and maths. Anything is possible, but you must be prepared to put in the effort. After that, there is no reason why you cannot achieve your goal. But remember it's all about not giving up. I've had my knock-backs and knock-downs. Just don't give up and your hard work will pay off.

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