Q&A Sarah Crowther

The winner of the 2019 RAS Annie Maunder Medal for Outreach discusses appearing at festivals and on kids' TV. Interview by **Paul Johnson**.

What does the Annie Maunder Medal mean to you?
I was stunned – I had no idea I'd been nominated so I had to read the email three times before I convinced myself it was genuine! We scientists have a duty to share our research and make it interesting and accessible to everyone; if we can inspire even just a few young people to become the next generation of scientists and engineers then we've achieved something worthwhile. I'm delighted to receive this award for the work I (and colleagues at the University of Manchester) do trying to share our research with a wider audience.

"It is nice to see the real world sometimes, rather than through orange-tinted goggles"

What's the most exciting outreach you've done?
The first time I was on *Newsround* on CBBC. It was my first time on TV, on a programme I watched as a child, talking about the Rosetta mission on the day Philae landed on the comet, which in itself was very exciting and captured many people's attention.

What led you from chemistry to planetary science?
A bit of good luck and coincidence. I've always had an interest in space and still want to be an astronaut when I grow up! But at school I didn't know you could study subjects like planetary science at university. I studied chemistry and during my undergrad project and then my PhD I used laser-induced fluorescence to investigate the electronic spectra of small molecules, from which we can determine their rotational and vibrational energy levels. It was a lucky coincidence that a job came up at the University of Manchester that gave me the opportunity to combine skills I'd learnt in my Phd with learning about the solar system. I've found it really interesting, so have stayed in this field. Not many people can go home and say: "Today I zapped a piece of Mars with a laser and looked at the gas that came out!"

What do you enjoy most about your various roles?
The variety – I wouldn't be happy at a desk doing the same thing every day. I like running analyses in the lab, although it can be very frustrating if an instrument isn't working. Then there are days for number crunching and spreadsheets, trying to figure out what the lab data show us. And the public engagement activities are another side. It is easy to focus on our own small area of research and lose the bigger picture, so time out of the lab – putting our research into context and sharing it with others – can only benefit us and make us better researchers. (And it is nice to get out of the lab sometimes, to see the world in real colour rather than through orange-tinted laser goggles!) People who aren't so focused on a particular area of research look at it from a different point of view and can provide insights that we've missed.

What is your greatest achievement so far?
I think completing a PhD is a huge achievement, but it is easy to forget just how big. It is a lot of hard work, not to be underestimated, and you have to do research that no-one has ever done before.

What do you do for fun?
I know this sounds geeky, but I genuinely enjoy outreach events and activities, getting stuck in and getting my hands dirty – sometimes literally, covered head to toe in flour and hot chocolate powder! I enjoy seeing the excitement on peoples' faces, and the look when they discover something they didn't know or when something they didn't understand suddenly makes sense. I'm also quite happy with a good book, or a good film or boxset. I like watching football and have even been known to play myself – badly. And of course everyone enjoys an evening out with friends.

What's your favourite astronomical object?
The Saturn V rocket is pretty amazing! I've been lucky enough to see one at the Johnson Space Centre in Houston, and it is HUGE. That it took people to the Moon 50 years ago, with not even a fraction of the computing power we have in our mobile phones today, was such a big achievement.

What are you looking forward to?
Taking part in the Royal Society Summer Science Exhibition in July. We're working with colleagues from The Open University, Oxford University, Birkbeck University of London and the Natural History Museum on an exhibit called "Living on the Moon". This will commemorate the Apollo anniversary and look forward to lunar research and exploration over the coming years. The Bluedot Festival at Jodrell Bank in July is another highlight, and of course it too will be commemorating the anniversary. ●

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