**6: Maggie Aderin-Pocock**

Maggie - I do target my talk to engage with girls who might not consider careers in science, but also I want to give them a sort of a wide range of options. So science might not be for them and that's fine, but know that there's something out there for them and that they don't have to narrow down their field of view because they think, Oh, women go into these subjects where they can go into any subjects and thrive.

Kat - This is the Suffrage Science podcast: How women are changing science, brought to you by the MRC London Institute of Medical Sciences. I’m Kat Arney and over the coming series we’ll be exploring the journeys of women in science - reflecting on progress we’ve made and the challenges still to be addressed - through conversations with an incredible group of women scientific leaders, who have all received one of the Suffrage Science awards over the past ten years.

We’re hearing from inspirational figures from the world of science like former Chief Medical Officer Sally Davies, computing legend Wendy Hall and climate scientist Tamsin Edwards, so make sure you’ve subscribed to the Suffrage Science Podcast through Apple podcasts, Spotify or wherever you get your podcasts so you don’t miss a single episode.

This time I sat down for a chat with Dr Maggie Aderin-Pocock, one of the leading figures in UK space science and presenter of the iconic Sky at Night TV programme and CBeebies Stargazing.

Maggie was one of the inaugural awardees of the Suffrage Science Engineering and Physical Sciences awards in 2013, in recognition not only of her scientific work but her passion for science communication, education and inclusion.

Her work in science education was recognised in the 2009 New Year Honours when she was awarded an MBE, and last year she won the Institute of Physics William Thomson, Lord Kelvin Medal and Prize for public engagement in physics. Maggie is a talented public speaker, and has delivered lectures all over the place, from the Houses of Parliament to the Women’s Institute and the Royal Institution, and she was ranked the sixth most influential Black Briton by Powerlist.

As a physicist, she’s helped to develop aircraft missile warning systems for the Ministry of Defence and worked on the spectrograph for the Gemini Space Telescope in Chile and satellites designed to measure wind speed to help understand climate change. Yet all the while, as I discovered when we started talking, her gaze has been firmly fixed on the stars.

Maggie - I can't remember a time when I didn't want to get out into space, which sounds a bit odd, but all my life I've been fascinated by what's out there. And to my mind, I think it started with the moon landings, because I was born in 1968, in 1969 the moon landings happened. And although I was too young to remember them, the story goes, I was taking my first small steps as Neil Armstrong was taking his giant leap. So I don't remember the moon landings, but I think they definitely had a profound effect on me because growing up I could hear like, are people going to the moon? I could look out the window and see the moon. And so I thought, yes, yes, that's what I want to do. I want to get out there.

Kat - And then in terms of actually moving towards becoming a scientist, so what were the next steps that you took there?

Maggie - It started with the moon landings, things like the Clangers played a very important role and these sort of little creatures that live out on a planet in space. But for me, I guess the stumbling block is when I actually went to school because all my life I'd been fascinated by space and science and all of that, but I have dyslexia. It's funny, i used to say I just suffer from dyslexia, but I don't see it as suffering anymore. So I have dyslexia. And of course, when you first go to school, it's all about reading and writing. So I went to school and I was put in the remedial class and growing up in a Nigerian family, my father always brought me up - education is so important. You know, before I went to school, my father was saying, so what college of Oxford are you going to go to?

Maggie - So he set the bar pretty high. And so going into school, I felt like a total failure because I wasn't progressing, effectively put in the back of the class with the safety scissors and the glue. So it just didn't add up. But I was lucky that I was one day sitting in a science class and the teacher asked a question and I put my hand up and I was the only one with my hand up. I'm the only one that got the question right. And it's funny, moments like that really just sort of give you confidence because you think, okay, maybe I'm not bad at everything, maybe there is a role for me here. And so through that, I started to engage a little more. But the other challenge is I went to 13 different schools when I was growing up. It's because my parents split up when I was about four years old and sometimes I was with my mom, sometimes I was with my dad. So it meant I moved around a lot, but I think things like this, you can sometimes use it to your advantage. And I remember going to one school and they asked me sort of, what group should I be in? Upper, middle or lower. And I'd worked out for me in my many treks through schools that it's much easier to go down than it is to go up. So I lied and said I should be in the upper stream. So an opportunist at work. But they put me in the upper stream, but I knew I had to work really hard to stay there. And so with lots of support from teachers and family, I was able to stay there. And that sort of led to me getting into sort of an education and then going on to university.

Kat - And in terms of thinking about a career in science, and one of the things we talk about a lot trying to get women and girls into science is that if you can see women who are scientists, see women who are doing these things, it sort of thinks, Oh, I can see myself there. I can do that. But then again, for you being a black woman, going into science in, did you, did you feel that science was something that was for someone like you?

Maggie - It's quite interesting because I think there were different types of people. So one of my role models growing up was Lieutenant Uhura, a fictional character, but an amazing woman. And I got to meet her a few years ago, which blew my mind. And so I think because, all my life I've dreamt about getting into space, it's been the driving force throughout my life. And so, not having many role models in science didn't really put me off also. I think I'm quite stubborn. And the worst thing someone can say to me is, Oh, you can't do that. Oh yeah, bring it on! And it's quite interesting because my father wanted - I've got three siblings, so I'm one of four girls - and my father really wanted a boy. So again, it brought up that "oy oy, I'll be as good as any boy!". And so I think being in a male dominated environment, wasn't going to put me off. I had a love and passion for science and I think things like that can transcend any challenges you face on the way.

Kat - In terms of people who've helped you along the way, have you benefited from particular mentors or support maybe from expected or perhaps slightly unexpected places?

Maggie - Yes. I think I have, there've been all sorts of people who have sort of had an impact on my life. First of all, my father, because he was very much into science. He wanted to come to the UK and study medicine, but he never really got the opportunity. So he was quite science oriented. And when I did sort of make the breakout, was in the top group, we would actually study science together and sort of go to the library as we did in those days and get books. So he had a major impact. And also he used to tell me, "you have some challenges, but even if you have these challenges, you can do it, it might take you longer, but you can get there in the end". And I think for many kids, these things pass over our heads, but as a child, I sort of took that on board and maybe, maybe having a crazy dream isn't so crazy. My mum was another very strong character in my life as she showed me sort of resilience and how to pick yourself up when things go wrong. And these are sort of the key things I sort of continue using today. I've got sort of three wonderful sisters as well. My sister Sue is an actress and I think that it has some of the influence on what I do today and my sister, Hal, she's the person I aspire to be. And she introduced me to science fiction stories and I found reading quite hard, but she'd tell me the stories and I'd think that's amazing. And I want to read that. So she gave me the reason to read, but then outside the family, there've been all sorts of amazing people, teachers at school who gave me extra lessons. One of the challenges - I wasn't diagnosed with dyslexia until I was about 45. I didn't know what the challenge was. I didn't know what the problem was, but lots of teachers sort of gave me extra help and extra support after school and things like that. So yes, there have been a lot of people that have helped.

Kat - So you went on to do physics and mechanical engineering and work at Imperial. So tell me a bit about that time of your life, sort of getting into research and establishing yourself as a scientist in this, I'm going to say probably quite male dominated field?

Maggie - I remember I used to love Imperial College, which is where I studied because as a child, I used to go to the Science Museum and I used to go into the hall of rockets and stuff like that. And then I'd look next door and think that's where the clever people go, you know, wouldn't it be wonderful to go somewhere like that. And so when I got accepted into Imperial, I was so excited. But the cohort for the first year in physics was of the order of about 200 people. But I think of that 200 only five of us were girls. So we definitely started off male dominated. And I think any two of us were black, but it's funny, although I might be sort of the only one of a kind, so the only black woman in this cohort. I don't think it worried me. I just wanted to, I wanted to study the science and I think that's the power of having a crazy goal in mind.

Kat - My sister did physics in Imperial and there, there was always that joke, you know, if you were a woman among all these men, it's like, the odds are good, but the goods are odd.

Maggie - That's a lovely one. And it's funny because I met my husband at Imperial. You can't be that because I think when I was there, the ratio was eight to one, men to women - that's before they got the medical school. So yes.

Kat - And then you've gone from being a researcher to now moving more towards doing media work and being a broadcaster and incredibly, you know, being a presenter on 'The Sky at Night', which is just one of the flagship science programs, certainly flagship space program. So how did you get, how did you get there and, and how did you kind of take on that mantle?

Maggie - It was sort of a long sort of process. One of the things that I found was I'd gone through university, I’d sort of come out the other end, worked in universities and then sort of gone out to enter industry. And I realised that I was finding it very hard to recruit people into my industry. So I was working in space science, and I always thought Space Scientist was a pretty good title.

Kat - Space is cool!

Maggie - And so what I couldn't understand was why more people weren't coming into these subjects and especially girls, because as people who work in STEM can get paid very well, it's a secure job, but I think it felt as if many girls were missing out on this. So I decided I would start going out to schools and speaking to kids and effectively trying to sell it. Because I think, to me, it's, to a certain extent, a PR job and the problem is awareness. People aren't aware of what we do as scientists and we make an impact. We can change the world. And also they do see the relevance when you're sitting in the classrooms or doing trigonometry, it's hard to think that that might get a rover to Mars. So there's trying to show the relevance, trying to show some role models, some fantastic women who have done amazing things. And so just trying to recruit the next generation. So it started with that. And I got some funding from an organization now called the STFC - Science and Technology Facilities Council. And so with that, I started going out to schools and it was very slow going at first.

Maggie - Like I wrote to lots of educational authorities, just like, "Hey, my name's Maggie, I'd love to come to your school". And I got no replies, but eventually I got into a few schools and it sort of escalated from there. And so because I was doing sort of a science communication, I was working with some people at UCL and one day someone suggested that I do a news program. She couldn't make it, she'd been invited onto a news program, and she asked me if I'd like to go instead. I was like, "Oh yeah, sure. Why not? Yeah. Great." And then I thought about it, "what am I going to talk about?" - the weight of it sets in. So I started doing that ,and what I decided I wanted to do is if I did a news program, I wanted to do some sort of live demos, because that's what I do when I go out to schools - I like the ‘hands-on’ science. So I wanted to do demonstrations to bring to life the things I was talking about. And so that's where my first television appearances started. And then it sort of escalated from there. And, Patrick Moore - my predecessor on Sky at Night, he was the longest serving television presenter. So he's presented the same program for 57 years. So I must admit when I stepped into his shoes, I think I was a rabbit in the headlights, but it was a wonderful opportunity.

Kat - Yeah. Those are big, big shoes to fill. And how did it feel? The first one, like, I've really got to prove myself.

Maggie -Yes. One of my challenges, because I have dyslexia, if you get a sort of a script or sort of texts and things like that, I find it hard to memorise. So I have to sort of 'Maggie-fy', that's what I call it, 'Maggie-fy' everything. And so it was sort of a rabbit in the headlights and it was quite daunting and there was some, sort of feedback from the press - "oh it's just the BBC just being politically correct". And that was disappointing because I was highly qualified. I'd done lots of science communication. So I think I could be considered for the role just in my own right. And to see me just as well, well, you know, just a slot in because I'm black was disappointing, but I think I've proved the naysayers wrong. And there might still be a few people saying "she shouldn't be there". But I think the majority of people see me as sort of part of the program now.

Kat - Yeah. You're on the trajectory to national treasure now.

Maggie - That's always been the aspiration.

Kat - Go to space and national treasure! You know, you are so enthusiastic. You're so passionate. It's, it's just a joy to talk to you. But I do want to know, like along the way, have there been any particularly challenging moments where you're like, I'm not sure I can do this. I'm not sure I'm the person for this. How has that felt along the way?

Maggie - Okay. Because it's quite interesting, I keep on mentioning the dyslexia, but I think dyslexics are used to falling down flat in the mud and things going wrong. That's why they're often entrepreneurs. And they sort of go into that line of work because they can sort of, they used to sort of the challenges and the failures and they are used to finding ways around things. And so, yes, there's been a number of times where things haven't gone according to plan, but I think the key to being successful, isn't not failing, but it's working out how to handle the failure and how to pick yourself up afterwards and brush off the mud and lament for a while and then sort of go on and find another route. And there were a few times where I was sitting on it, let's say a Breakfast sofa. I remember one distinctly when I was talking about the Higgs Boson which is quite far off my field. And I remember listening to the introduction and they gave the introduction. I was thinking, okay, that's about all I know about this. Don't say that I was going to use that! And so in situations like that, you learn from that, okay, you don't go too far off piste. I can talk about science in general, but this was quite specific. And so there's been a few moments like that where you're thinking, "okay...". But I think the key is learning. And I also think that having a sort of a big aspiration, like going into space, or what I say is reaching for the stars, no matter what your stars are. I think that really helps because it means that you, you fall over, but you can still see the goal up there. So you get up, brush yourself off and find a way around.

Kat: We’ll come back to Maggie soon. But now it’s time to hear a few words of advice from another Suffrage Science awardee who picked up her award this year, space scientist Gaitee Hussain.

Gaitee - One of the best pieces of advice I received was very early on in my career. Shortly after I'd finished my PhD, I was giving a presentation and afterwards, one of my mentors, Andrea Dupree pointed out that I had a tendency to apologise a lot during my talk and minimize my own results. Getting that bit of feedback allowed me to really re-evaluate what impression I wanted to leave and what I was trying to achieve with the talks that I was giving. I've always been very grateful for that feedback.

Kat: If you’re enjoying this series of the Suffrage Science podcast, please do rate and review us on Apple podcasts, and make sure you’re following on Apple podcasts, Spotify or wherever you get your pods, so you don’t miss a single episode.

Now let’s return to our conversation with Maggie Aderin-Pocock. I asked her to cast her mind back to 2013, and how it felt to be nominated for a Suffrage Science award.

Maggie - It felt amazing because I'd been working, doing outreach and getting out there, but it's just always nice that someone is aware of what you're doing. I do it because I love it. And going out and speaking to kids just gives me such joy. I like to talk about science. I get very excited about science and interacting with kids, they see things from a different perspective, which I think really helps with the science I do because you take things for granted and they sort of bring you back down to earth. So I was doing something I loved. And so to get such recognition for, it was sort of quite phenomenal.

Kat - And a big part of the scheme is then you choose someone to hand your jewellery onto. Unfortunately, you don't get to keep these beautiful pieces. So, with much reluctance, who did you hand yours onto?

Maggie - So I handed mine on to Lucy Green. Lucy is a solar scientist, she's a senior scientist and a fabulous broadcaster. So she seemed like a natural progression because she's out there inspiring everybody to see our local star in a different way and so much more besides, so yes, she was a natural progression and a fantastic communicator.

Kat - The year when you were awarded your, your Suffrage Science award, it was 2013. And we always have a panel discussion at the events. And the theme was, 'Would Nobel Prize-winning physicist Marie Curie have made it as a woman in science today?'. So I'm intrigued with that because there's a bit of me that thinks it's like, yeah, maybe the physical sciences still do have a bit of a problem, but I think, you know, she might well have done it, but then we're still hearing these conversations about particularly women of colour coming through in science. So I do wonder if the question would be like if Marie Curie had been black, would she have made it in science today? I don't know what you'd think about that.

Maggie - The very fact she made it in science at the time... I mean, she won two Nobel prizes and I remember, there was a film called radioactive that came out about her life quite recently. And she was a determined woman. I think she would have definitely made it - I don't think much would have stood in her way. And so I think being black or female, I don't think that would have stopped her because from the film and from what I've heard about her, she was about the science. She had a passion for understanding, and I think that's the sort of thing that can transcend the barriers. So I think she would have definitely made it today,

Kat - But then for people maybe with less of the absolute, you know, dogged determination to give themselves radiation poisoning, do you think some of these barriers are still there for, for women in science and for women of colour in science?

Maggie - Yes. Unfortunately I think there are still some barriers there and the barriers are two-fold though. I think in the past there were people say: "Oh, you're black and female - you can't do science". So there was the external, but I think one of the biggest challenges we face today is almost the internal barriers and the internal barriers are set up by society. When my daughter was growing up - my daughter's 10 years old now, soon to be 11 - but when she was growing up, I'd go to shops and sort of look at toys and there'll be boys' toys - Meccano and engineering, and girls toys - light and fluffy. And we still have this divide. Whereas many boys like fluffy toys and many girls like engineering toys, we should be talking about individuals and not about gender desegregation like that.

Maggie - And I think while that still exists and it's getting better, but while that still exists, we're going to get this polarisation. So I think over the past 14 years, I've spoken to about 350,000 kids - adults as well, but it's mainly kids - and girls have come up to me and said girls don't do physics. And if I do physics, I can only become a physics teacher. And so it's "there have been no great female scientists before". It's showing them the amazing heritage that we have. So I think these setup internal barriers. So girls just think 'I can't do that'. So that's what I like to do, try and get down to these stereotypes. So for black people, but also for our girls as well,

Kat - I'd really love to see more characters in films in books, like who are scientists and almost like it's irrelevant, you know, because that's the sort of the archetype of like Ross in Friends i think was a palaeontologist or something like that. It's like, that's just his job and it's irrelevant. But like science is a job that people do. We're not like weird boffins and spend all day being passionate in the lab about these things. It's like, yeah, that can be some of it, but like it's a job to some extent.

Maggie - It's funny because I've been campaigning for a while to get a space scientist on EastEnders - it's just the character that's important, they just happen to be a space scientist! You know, "how was your day?" "Well, you know - a rough day at the lab", but it's just in passing. But as you say to show scientists as everyday people, because I think people do see us as boffins or in our ivory towers and not connected with society. And I think quite a bit has been done to sort of break down these barriers. Just like Brian Cox standing on a mountain and being passionate about science, showing his enthusiasm about science. I think those things show that we are part of society. We love our work and we're not distinct from society. And that's, I think, been a strong idea for quite some time.

Kat - Scientists are people too.

Maggie - We should make t-shirts

Kat - Regular normal scientist person. It's clear that you've just been an incredibly busy person all your life. How have you managed to fit it all together and having a child as well and doing all the outreach you do, doing the research you do? How, how have you made it work?

Maggie - I think I like being busy. I get a bit twitchy if I'm not. And it's quite interesting because with the lockdowns I was thinking, I spent most of my time going out and giving talks and lectures to people and filming and with the first lockdown that looked as if it was all going to come to an end and so I got a clarinet because I used to play the clarinet, I bought a piano for our home. I thought, okay, this is the time to sort of do some of the things I've been wanting to do. And it was the total opposite. I've been so busy. But I do love that. I mean, with The Sky at Night, we were filming at home, which was amazing fun, challenging, but good fun. And also the technology - doing talks over the internet that has been more successful than I thought it would be. Sometimes I do feel overwhelmed. I've been sitting on a government committee, a government commission, The Commission for Race and Ethnic Disparity, and so that has sort of swept through my life over lockdown and sort of taken over a lot. And of course, I think like with many people, getting the work-life balance with home-schooling as well, it was quite challenging. And one of the things we would do is each of us would sort of go to our computer and my daughter would do her home-schooling. My husband would be having zoom calls and I'll be sort of doing various other things. And then at the end of the day, we'd come down and eat together and then sort of go outside if it was a clear night and do some stargazing, just, just for something that could bring us together. So I think, like many, keeping that balance is quite hard and it's exciting when sort of new work comes in, but at the same time, there's sort of also penalties in terms of, okay, I still haven't done the washing up. So it's a juggling act.

Kat - So you, you are the commissioner for the new Commission on Race and Ethnic Disparities. So what are the kinds of things that you've been looking at there? Because it does feel like there are conversations now that are happening that really probably should have happened sometime ago, but have become unavoidable now.

Maggie - Yes, I think, um, the black lives matter disturbances that happened in July really sort of culminated things. So I think it had brought things into a focus and it's been fascinating because we've been very much data-led and looking at the data, seeing where the disparities are. And of course, many disparities are sort of multifaceted. It's not just one variable that affects people's lives, it's a number of variables. And so it's trying to sort of assess that, look at the variables and work out where there is a residual and if there is a residual, which is race-related, what can we do about that? So it's been a very interesting journey speaking to all sorts of different people, but trying to get to the, sort of the bottom of where the UK is at the moment. But it's quite encouraging because the data is in many places quite positive. So, uh, that works well.

Kat - And it's, you know, ironically we're talking over zoom, you know, we've all been locked down for a year pretty much now, but we've seen through the pandemic, the impact that it's had on particularly black and minority ethnic communities, it's like, it still feels like there's some really knotty problems that we need to get to grips with. You know, not just talking about diversity in science, but like just talking about the whole of society still seems to have these challenges.

Maggie - Yes. We talk about sort of raising the tide for everyone. Good teaching works for everyone. And so it is trying to work out and often with people from ethnic minorities, they can sometimes be in sort of a lower socioeconomic categories. And so how do we raise the tides for everyone, but at the same time, sort of white working class, people might be in that same sort of category. And I think often solutions are universal solutions. We need to make the less affluent part of society, better able through schooling, through opportunity. And so I think that's one of the focuses,

Kat - I guess, in many places in your career, you've been sort of the first woman, the first black person - particularly the first black woman to be in some of the positions that you've had and talking to many of the other women through the podcast. It's like, sometimes you feel like you are the only woman in the room and it would just be nice if there were a couple more people here and we could have, we could just change the norms of what this is like. So are there times in your career where you've really felt like I am just the only person like this here and it's caused friction or problems.

Maggie - There's been a few examples where I've turned up somewhere and it's the stereotype - they've seen a black woman. I remember going up to one of my contractor's offices and I turned up at the security gate and the guy sort of gave me - I wasn't long out of university, and I was sort of wearing a suit and carrying a briefcase and feeling quite grown up now. And he said, "Oh, here are the keys, love. And you start cleaning the offices at the back" because he saw a black woman and he assumed point blank, a black woman must be here to clean. Now there's nothing wrong with being a cleaner, but it's the assumption. And so that's the challenge is taking on that and that stereotype. So I'm trying to break those barriers. And it's also, how do you handle that? Because you can come in guns blazing; "how dare you?", but then what does that say about me? So I try and break them in gently. "Well, actually I'm here to see some of my contractors and assess their work, so could you find so-and-so well, because he's expecting me" because I think that's probably a better way to sort of change the stereotype. If you shout and scream then they're on the defensive and it's sort of, "Oh my goodness, these black women, they come in and they start shouting at me". Whereas if you sort of your own sort of kind and gentle but try and steer them in the right direction. I think that is so far a better way of doing it.

Kat - And as well, I guess some of it is like, when you feel there's, there's a culture that maybe you don't belong in as well.

Maggie - Yeah. And I have had that a few times where it was, it feels like a bit like a boys club. I'm sort of the intruder, you wonder what they say about me, but just say, when I'm not there, it's almost as if I'm the third wheel. And I remember when I started off at the MOD, sometimes there'd be sort of racy pictures on the wall. If you're sitting opposite your boss, and trying to have a conversation with semi-clad women on the wall, it puts you at a disadvantage. I see a lot less of that now. And so there has been quite an evolution in the past 20 years, but it's just the mentality, but no one noticed that that was a problem or perhaps they did and that's why it's changed. But I think you can sometimes feel like an infiltrator. I didn't quite belong, you know, "Maggie, she's a scientist, but yeah, when she's gone, now we can really talk". The thing is that might not have been going on at all because that's sometimes the problem, it's the supposition that I'm in the way.

Kat - And then kind of thinking about the next generation, all the girls that you go and talk to at school, what are your hopes for the next generation of women coming up and maybe going into space science?

Maggie - One of the things I do when I go out to schools is I speak to everyone. And sometimes people want me to speak to the gifted and talented young, the people who are most likely to become scientists. I want to get everybody fired up about science, but I do target my talk to engage with girls who might not consider careers in science. What my goal is, I want them to aim high. So have a crazy dream. Just like I have it. It doesn't matter what it is, but know that they're so much more capable than sometimes people give them credit for, or sometimes they even know themselves. So I want them to be reaching high. Also I want to give them a sort of a wide range of options. So science might not be for them and that's fine, but know that there's something out there for them and that they don't have to narrow down their field of view because they think, "Oh, women go into these subjects". Women can go into any subjects and thrive. So it's just sort of trying to lay out more options. So I think these are the two key messages I like to get out there

Kat - And finally bringing it all kind of back to where you started, your passion has always been space and getting into space. Do you think you're gonna get there? I mean, I'm watching like the SpaceX launches and things like that, and it's suddenly feeling quite tangible that maybe in my lifetime, we'll see, certainly see people go back to the moon, maybe see people on Mars. Do you reckon you're going to get up there?

Maggie - It hasn't been the crazy dream of my life. And I don't know. Actually at the moment there's two things going on. Well there's a Japanese philanthropist. Sorry, I can't say that word. And he is offering to take a group of eight people on one of Elon Musk's spacecraft to fly around the moon and back. So that's a competition that's out there at the moment and I've got to apply. I can't help it. I am a self certified lunatic. I love the moon and I was inspired by the moon landing. So I've got to sign up for that. Also about every 15 years, the European Space Agency will open up the astronaut corps and say, okay, we're looking for new astronauts. And they just about did that again recently. Now I know I'm not very fit - in fact, I'm going through a fitness regime to try and..

Kat - You're going to jog to Mars!

Maggie - I'm out of the age group and I'm not as fit as I should be, but I've still got to apply because it's the crazy dream that drives you on. But as you say, it is an exciting time in terms of commercial space. So there is a sort of a traditional route of going through countries, NASA and the European Space Agency. But at the same time, I like to call it the battle of the billionaires, where guys who sort of grew up with the excitement of the moon landings and stuff like that. They're looking to put their money into space. And so I'm hoping that within my lifetime - one of my crazy ideas is to retire to Mars. So yeah, when I'm 80 and a bit doddery - there's less gravity on Mars and think of the experiments you could do when you have a whole planet to explore. So yeah, it's a bit of a retirement plan now, but I'm still optimistic. I can't help it.

Kat - Thanks very much to Maggie Aderin-Pocock.

Next time I’ll be speaking with computer scientist Carron Shankland about what computer programming used to be like not *that* long ago.

Carron - You really learn something about the tools that you've got in front of you. And I remember buying the computer magazines and typing on the programs and you had to type it all and then you would record it on a tape because it would record all the ones... it took ages to record to the ones and zeros onto the tape in audio so that it could then read them back. It was crazy.

And before we go, here’s a final word from Gaitee Hussain about her hopes for the future

Gaitee - I'd like there to be much more readily available and consistently available support for early career scientists for the needs that they have in terms of childcare, in terms of maternity leave, paternity leave, and also leave for looking after families and when people are ill, which of course is very relevant at the moment. I find that the consistency of coverage across different institutes, even in the same country can vary so wildly that it leads to a lot of insecurity for people at that stage of their career. And that is completely undesirable and makes it difficult for many people to stay in. So I think that's the one area which I would like to see there being significant movement on in the next year,

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