

## 3.11 Interview with Lisa Harvey-Smith

### Angourie [host]

Before I begin, I would like to acknowledge the Wurundjeri People of the Kulin Nation as the traditional custodians of the land on which this work was developed and is presented. I pay my respects to Elders past, present and emerging.

[fade in: plucky theme music with violins, clarinet, piano, and twinkly triangle]

### Angourie [host]

Hello and Welcome back to The Community Library: a podcast, book club and discussion space. I'm your host, Angourie Rice.

[fade out: theme music]

### Angourie [host]

So, as some of you might already know, if you follow me on Instagram, last month I recorded an audiobook titled *Under the Stars: Astrophysics for Bedtime* by Lisa Harvey-Smith. It's an illustrated kids' guide to astrophysics, and I had so much fun recording it. I also learnt a lot! And through this experience, I actually got the opportunity to interview the author, Lisa Harvey-Smith, for this podcast. Lisa is an astrophysicist, author and professor at the University of New South Wales and is based in Australia. In her field of work she looks at the birth and death of stars and supermassive black holes. With a talent for making complicated science seem simple and fun, she is a presenter on the TV show *Stargazing Live*, a guest expert on *The Sky at Night*, and a regular science commentator on TV and radio. She is also an ambassador for the Australian government's Women in STEM initiative, which encourages women and girls to pursue careers in Science, Technology, Engineering and Mathematics. It was an absolute joy and delight to chat to Lisa last week. As well as being interested in art and reading, I also really love science, and so it was really exciting for me to kind of merge these two passions of mine. Lisa and I chatted about stars, about science, about feminism, and also her new book, *The Secret Life of Stars*, which will be out on the 30<sup>th</sup> of September from Thames&Hudson. So, without further ado, here's our conversation.

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**Angourie [host]:** So Lisa thank you so much for joining me and welcome to the Community Library podcast, I am very excited to have you here.

**Lisa [guest]:** Well thanks for having me, it's great to be here.

**Angourie [host]:** I had the privilege of reading your children's book, *Under the Stars*, on audio, and now you are coming out with a new book, called *The Secret Life of Stars*, which I actually have, right here, and I really enjoyed it! And I mean, what's it like publishing a book in the middle of a pandemic? How are you feeling about it?

**Lisa [guest]:** Well it's amazing because I guess people are worried, they're concerned, but they're also spending more time at home, so you know whether it's young people, some people schooling

at home, or you know older people just want a change from TV, it's nice just to curl up with a book. So I think it's really nice for us all to connect in different ways, and I guess that's how I see my writing, is really speaking to someone with a voice and hopefully people will enjoy this as a bit of a distraction from everyday life.

**A:** Definitely. I've actually taken to doing some stargazing myself, so I took your recommendation at the end of the book and I downloaded an app and I've been looking up at the stars. Unfortunately I live in a very light-polluted area so sometimes it's a little harder, but it's been really nice to actually look, essentially into the past, and look up and connect with something outside of the world that you're living in right now.

**L:** Yeah it's lovely. Even in a light-polluted area, you can look at the moon, the moon's just amazing half the time at least, when you can see it, and the planets as well, so it's been a really nice time to kind of share those ideas about the apps people can get on and have a go at stargazing. It doesn't matter where you live, you can do it in the country or the city. That's what I love about it. It's a free hobby, and everyone's involved.

**A:** And that kind of accessibility is a big theme of your books, at least what I got from it, is making astronomy and astrophysics really understandable and easy for anyone.

**L:** That's it. I got into astronomy when I was a little kid and I think, it was one of the things I loved that it was accessible to everyone who wanted to just look up. And anyone can take meaning from the stars in any way that they want, whether it's spiritual or religious, scientific, you know, general interest, beauty, wonder, art, it's everything. It's everything to everyone, and that is what I love about astronomy, it's that kind of cheesy idea that the sky's above all of us. But it's true, it's actually true, and what it gives us is wonder. And we need a lot of that at the moment, I think.

**A:** Yeah, yeah, and it's something that connects everyone, and as you said it's one of those rare things that everyone can look up and think about for free. So you talked about how your love of astronomy began when you were a kid, like, how do you think that's influenced you in your writing and especially writing astrophysics books for kids?

**L:** Yeah, I think I don't approach it, even though I am a professional astrophysicist, and I've spent years doing research and developing huge telescopes for us professional astronomers to use, I actually started as an amateur astronomer. And I think that's important, because I can then communicate as if I don't understand all the concepts that I might have studied at university. I remember what it was like to just look at the stars and just to wonder what was up there and use my imagination, and I think it's really important that we don't lose that imagination and that wonder as adults as well. You know, kids have a wonderful capacity to find joy and excitement in things and if we lose that as grown-ups I think that's such a shame. So writing the children's book *Under the Stars* was particularly enjoyable in that way. Challenging, because you have to get your professional astronomer's brain and switch it off, and your serious professor brain and turn that off as well, but there's a lot of joy there, and there's a lot of excitement. Even with *The Secret Life of Stars*, I tried to replicate that for more of an adult and a young adult audience. So that was a bit of a joy too.

**A:** Yeah, that was one of my favourite things about reading *The Secret Life of Stars*, the analogies that you use and the way that you talk about stars, it's like the stars are people with emotions and relationships, and they're just like us. I loved the passages where you talked about stars having brothers and sisters and life partners, and how they support one another, and a particular phrase I loved was when, if they have an argument they might dissolve into a black hole, and so, like, learning about the lives of stars and I guess talking about stars in that way, what do you think we can learn from them? Yeah, do you think they've influenced us or we've influenced how we perceive them, or is it a bit of both?

**L:** Yeah, I think that historically, people looked up at the sky and they didn't know what they were looking at, they just saw pinpoints of light, they saw silver colours. And then people realised, oh, some of them are red and some of them are blue. And so there's a bit of a difference there, they're not all perfect, they're not all you know, sort of, they used to say they were perfect, as in, they were made by God and they were all the same. But that's, you know, not the case, they're very very different. So I think it's a real strong analogy with people, is that we find out more and we look behind the front door of people's homes, we can see their secret lives, and that's the same with the stars. We look with telescopes into their backyards and we can see, stars have surprising relationships. You know, some are – live in families, they are eccentric, they have relationships, they have arguments, there are giant stars, there are exploding stars, there are self-destructing stars. And some cannibalise each other. It's very analogous to human relationships I think. So I enjoyed writing it in that way, to try to bring across their personalities, cos they're pretty cool.

**A:** Yeah, it's very kind of artistic and lyrical, the way you talk about stars as well, which I think for some people might be unexpected because science I think might have a reputation for being difficult to understand and very academic, but I think what I love about your book and the way you talk about astronomy is that it feels like a merging of science and art. I guess I wanted to ask you about that cos I love the idea of those two concepts coming together.

**L:** Yeah, science is so important in understanding the universe. You can't do it without science very well, although people before telescopes came up with some amazing concepts and we really did understand a fair bit about our place in space, but you know once we had telescopes we could really understand that the sun and the earth were not the centre of the universe, we were just a tiny part of everything. And then that comes into the significance of earth and the significance of our lives in the context of a wider universe, and the way that we think about ourselves. And I think that's good, that sort of links to, you know, spiritualism and art, you can think about yourself not as the centre of the universe but more as an important part of it. But in terms of artistic licence, I enjoy using that because I do find the stars beautiful, I really do. And if you've ever gone out of a city and seen a really dark sky, and seen the stars shining down and the Milky Way glittering, it's quite a transformative experience, it really is. That just pure beauty and joy, is artistic, I think. And another thing about art and science is they're linked by mathematics and mathematics is linked to music, inextricably, so all of those things are more connected than we think.

**A:** Yeah, I think there's a real idea, and I think I came across this in high school as well, with choosing what subjects to study, is that, oh some people, like you either go all arts subjects or you go all science and maths subjects, and there's no in between. Like there's this idea that these things don't cross over and it's either or, but I didn't study physics in school but I studied biology, cos I love science, I'm very interested in it. There was a beauty to understanding the world that we live in

and a very artistic quality about it, and also coming up with all these ideas of ways to understand how we live, why we live. It's interesting you say, like, looking up at the night sky and feeling like you're a small part of something big, that we're not the centre of the universe. I love that feeling, I love that feeling. But my sister, on the other hand, she was saying to me, I said: "Come on, come outside, let's look at Jupiter, we can see it from here!" And she goes: "No I don't like it. It makes me feel small and unimportant and it freaks me out!" So I guess I wanted to ask you, have you encountered people who just like freak out too much about looking up at the night sky cos it makes them feel small?

**L:** Definitely, definitely! I tell you what, if you write about cosmology, you know like the whole expansion of the universe, the beginning of the universe, the Big Bang and the end of the universe and the heat death and the expansion forever, people get so freaked out, they hate it. Some people just don't want to know that stuff because it genuinely scares them. But you know I think knowing about something and being scared of it are maybe two separate things. I don't get annoyed about the impending doom of what will happen in a hundred trillion years' time or something, cos it's you know, let's just keep some perspective. We don't need to worry about the end of the Earth for another probably billion years, until it's too hot and the oceans boil, and then you know another few billion years, and I think that we're, we don't need to worry too much about it at the moment.

**A:** We're okay for now. I'll tell that to my sister. See what she says.

**L:** We're okay! Yeah, tell her she's fine.

**A:** I like how you talked about kind of the differences between stars and how the outliers are the really interesting ones, you know, the ones that don't fit into boxes, the ones that don't follow the rules that you originally thought they might. In terms of art and the literary canon and what kind of stories we tell where there's a real push to look at more diverse and inclusive stories, and when I was reading your book I found that push kind of mirrored in the stars, that the ones that are unique and different are the ones really worth studying, and looking at more closely.

**L:** That's absolutely right. I mean as we said at the start, you look at the stars and they all look the same, if you just glance at them. The longer you look the more diversity you find, and the more value you find in that diversity, because the oddballs, as I call them in the book, the outliers, they are the ones that teach us something new. We only discovered some amazing physics because somebody discovered pulsating stars, rotating stars, stars with extreme magnetic fields, stars that explode, and those things tell us about the extreme environments we can't measure here on earth, because they just don't exist. Space in that way for scientists is the most amazing laboratory, cos it creates conditions and environments that we can't possibly measure here. So that diversity creates opportunities to understand the fundamental nature of things, and that too can help us understand our place in the universe, where we came from, where we're going to, but also how physics works, and that helps us to create devices. Like amazing medical breakthroughs and the computers and phones that we all rely on, GPS and all that cool stuff, and allows us to take our knowledge forward, really.

**A:** Yeah, definitely. Talking more about difference and diversity in science, you're an ambassador for the Australian government initiative Women in STEM. Also I thought it was so fascinating, in your book you mentioned that a woman named Jocelyn Bell Burnell discovered pulsating stars, but

she didn't get the Nobel prize, instead it was given to her male supervisors! What's the conversation around science and STEM and feminism like?

**L:** It's slowly opening up, as in the conversation is opening up, and maybe it's a similar one to – in your profession, where traditionally we've seen particular types of people becoming prominent in the field, because of essentially where the money came from, historically. You know we have a patriarchal society, traditionally, we've come from a place where, in science, two hundred, three hundred years ago the great discoveries were made predominantly, at least in our tradition, by white men. And in other cultures there were great breakthroughs too, but these have either been lost due to a lack of those people writing the history books, or due to cultural vandalism essentially, like Aboriginal knowledge, for example. So you have this interesting situation where the best people to do the science, the people with the best brains, the people with the most imagination and capabilities, are not necessarily doing that science. So this doesn't make sense. So the government's funded me to drive gender equity in science, engineering, technology and maths, in STEM. And this is kind of economic drivers as well, because as I say, we're not getting our best minds on the challenges that we face, and we're not getting people from traditionally under-represented groups, and that does include women, into the positions where they can make incredible discoveries, just like Jocelyn Bell Burnell did. Luckily the community is now really opened its eyes to these problems and we're working through them.

**A:** I guess it really makes you think about how much all of these fields and areas intersect, because we're dealing with these same issues in the arts industry and film. But also you know film and science intersect, and arts and science intersect, so the – many layers of figuring out how to make these spaces more inclusive and diverse. And I think your books are a really great stepping stone for that, because they do feel so accessible and readable, which is great I think because it's so easy, like if you have a bad experience with something, it's so easy to get turned off by it and seek something else, but I think science is really rewarding when you work at it and you work to understand it, and thankfully there are people like you out there who are making it more accessible and more understandable.

**L:** That's really good to hear, thanks. And I did definitely have in mind a particular audience. With *The Secret Life of Stars* I was imagining my reader as a woman who hadn't necessarily clicked with science at uni, at school, and had you know maybe had a bad experience with it and not been taught in an interesting way. And that's one of the, I think the biggest challenges, in teaching practice and what I do when I communicate science, sometimes you fall back into bad habits, and you just replicate what – how you were taught, or you replicate the things you read or you replicate the stories that you've heard, and then you essentially just repeat them a generation later, and really if I do that I've lost forty years of progress. And if I focus constantly on the white men, who I learned about who have made progress, and ignore the stories from other cultures and ignored the possibility of reframing science in a more – in a less masculine and less traditionally stereotypical way ... And people frame science in particular ways. In physics they frame it in terms of racing cars, or you know, engineering angles or building things, it's not traditionally feminine things. And I'm not saying that there are masculine and feminine things, but because of the way we're brought up in society, those interests generally on average tend to differ. So we've really got to reframe the way we talk about science and try and make it more interesting for girls and boys and all children who have a variety of different interests.

**A:** Well I love how you're kind of reframing it in a way that talks about relationships and friendships because that to me is a very kind of non-gendered inclusive thing. We all deal with families and deal with friendships, and that's a really accessible way to read and learn about something that might have felt previously closed off. Personally that's something I've also encountered because I loved biology, but for some reason I had this idea in my head that like, I wasn't naturally good at it. I wasn't naturally good at science, and therefore it wasn't my calling, like I wasn't supposed to do that. But I think maybe it was just my own head holding me back, and thinking about all the other role models that I had in science were all, yeah, white men who were telling stories about white men!

**L:** You've just hit the nail on the head there, because you know there's such a lot of research about that, young women who have a lack of role models from diverse backgrounds. It doesn't just need to be women role models, but it can be role models that just differ from that traditional, very Euro-centric white man kind of narrative about science and the history of discovery and the history of innovation. And as we know, if we read books like *Dark Emu* by Bruce Pascoe, we know that there is innovation in every culture, and that is not recognised necessarily. So I think, again, reframing the way we talk about science and technology, so that we don't give young girls this idea that it's a white male domain, they find it easy to do, it's not for you, you go and do something else that's more suitable for you. Because the truth is, no one finds science easy, just like any skill. You know, I'm sure you don't find acting, you can just do it, you have to practise, you have to train, you have to constantly work on all different aspects of your profession, and the same for any scientist. You have to work and work and work, and keep updating your skills, because the world moves on, and no one finds it easy.

**A:** I loved an anecdote you told in the book about how when you arrived at university you felt like there was so much you didn't know, and there was so much that you needed to get your head around. But I kind of liked how it's presented as a journey, and we will never know everything about science, but that's what makes it exciting and interesting.

**L:** Yeah, it's a process of discover and it's, science is a method, it's not a religion, it's not a belief system. I don't believe in science, I just do it. I just gather evidence, and I try and act on that. It's not a bad way to live, because you still have all the wonder and the joy and the imagination, and it captivates you and it surprises you, but you also have this kind of rule book, which is, you know, stick to the evidence. And it's a pretty good rule book in life, I think.

**A:** I wanted to ask you about your marathon running, because this was such a fascinating thing that I read about in your bio, about how you ran across the desert! And I just wanted to ask you about that, that was that like?

**L:** Yeah, wish I was doing that now, I mean this COVID thing, I'm not sure when I next go to the desert. But yeah I've been running I guess my whole life. My dad used to run ten miles every day, have a bit of a role model there. But I've always loved running and I got to uni, started doing half-marathons, and then when I was, when I first moved to Australia about 13 years ago, I did my first marathon, I guess accidentally.

**A:** How do you accidentally do a marathon? I've never accidentally done one!

**L:** It's a good question! [laughs] Well I hadn't trained for it specifically, I'd just been running a bit, and this guy was doing, this British guy was doing seven marathons in seven days on seven continents, for charity. And I decided to turn up, it was in Sydney's Centennial Park, and I lived in Sydney, and I thought I'd turn up and run a few laps of the park with him. He wanted people to come and support. So I did, and I ended up running the entire marathon with him. And I, you know, I felt like I was going to die, by the end, like I know what hitting the wall means, it means not preparing and not eating anything during a marathon. [laughs] So I ran that and then I thought, wow, I wonder what else I can do? So I started running ultra-marathons and basically anything longer than a marathon, and ended up doing some really fun things, like I ran 24 hours in a circle once, [laughs] around an athletics track in Queensland. And I'd done these, some of the Oxfam trail walkers, running with a team, and then we did the Big Red Run across the Simpson Desert, which is just incredibly beautiful. And the stars at night were just fantastic, it was, you know, really one of the best experiences of my life. It's more about getting into nature for me now than running around in circles, that was 10 years ago. [laughs] But I'm less about the ego and more about the nature now.

**A:** I mean that's wonderful that you had that experience of running across the desert, and I can only imagine how beautiful the sky would have looked at night with no light around, just unobstructed view.

**L:** Just nothing, and one day we had to do a double marathon, we had to get up really early and we had head torches and we ran about three hours before sunset, sunrise sorry, and across sand dunes. And oh, I just turned my head torch off, at times, just so I could just see everything. And the whole field was spread out very thinly so there was no one really else around, and at times I was running on my own for one or two hours, before I saw another person. It was just magical, really really great. Recommend that.

**A:** [laughs] Hm, I'll have to build up to it, definitely. I guess during this time we're all cooped up in our houses, but I guess the closest thing ... the closest thing I can do is take my app and sit outside and look up at the stars, just in my backyard. And it's kind of like travelling through nature and through time that way.

**L:** That's it. And you can think about the history of the earth, and the history of the stars, and where all the carbon and nitrogen and oxygen and iron in your body that's going through your bloodstream right now, where it all came from. Those exploding stars, and you can see them all, and you can imagine it all. So it's kind of like reading a book, I think, looking at the stars, you just take your imagination and your knowledge and you go on a bit of a journey.

**A:** That is just such a wonderful sentiment, and wonderful thing to think about. So before we wrap things up, is there anything else you want to talk about?

**L:** We've covered so much, it's great, and it's a lovely conversation because it's, it's really touching on what I tried to create in the books, which was that sense that it wasn't a science-y thing to look at the stars. You don't have to identify with an interest in science to actually be interested in science. Cos it's very different from the stereotypes and the *Big Bang Theory* kind of idea of science. And if you're artistic or if you're a dreamer, you can also look at the stars and get

something very special out of understanding what they're all about, and that's hopefully what I managed to achieve.

**A:** Yes, definitely. I think so. And I hope the listeners and other readers of your book will identify with that as well, I'm sure. Finally, before we close out, I like to ask all of my guests: what are you currently reading?

**L:** Ooh. Well I'm writing a new book at the moment, but also I'm trying to read quite a lot. I love, absolutely love autobiographies. And I've been reading a load of them in quick succession, in fact I inhaled about ten autobiographies in the last month or so. All of kind of British born comedic performers. So I read Dawn French, Jennifer Saunders, David Walliams, Matt Lucas, Miranda Hart, all these names on BBC comedies over the years, when I was growing up, so I just had a bit of a spurt on those. And I fell in love with them I guess because of reading Michael Palin's diaries, which I really would strongly recommend. All of those books are okay but Michael Palin's diaries, from Monty Python, are absolutely brilliant. And just fascinating, and it kind of made me wish I'd kept diaries from my whole life, like he did, cos you can just make them into books without writing! [laughs] But seriously, it's a fascinating insight. So really recommend the diary thing.

**A:** That sounds so cool. Would you ever consider writing an autobiography? Or is your new book possibly an autobiography?

**L:** It isn't, I'm writing a new series of children's books. So my next one will be all about aliens. So exciting! [laughs]

**A:** Oh how exciting and awesome! I'm very much looking forward to it. Thank you so much for chatting, I hope you enjoyed being on the podcast and thank you for sharing your insight and knowledge with everyone.

**L:** Thanks so much. It's been great.

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[fade in and out: plucky musical sound bite to indicate a break]

### **Angourie**

Thank you so much to Lisa Harvey-Smith for chatting to me about her latest book, *The Secret Life of Stars*, which will be released on the 30<sup>th</sup> of September from Thames&Hudson. You can pre-order the book from Thames&Hudson, but you can also pre-order a signed copy from Lisa's website. While you're waiting for the book to come out, however, you can also check out Lisa's other books. Her first book, *When Galaxies Collide*, is for adults and young adults. And she also has a kids' book, called *Under the Stars: Astrophysics for Bedtime*, which I had the privilege of recording the audiobook for, so if you're interested in listening to that, it's out now. It's perfect for kids aged 6 to 12, so if you have kids, or younger siblings, or a niece or nephew or neighbour, it's a really fun one, but I also learnt a lot from reading it, and it's kind of for everyone. You can get both *When Galaxies Collide* and *Under the Stars: Astrophysics for Bedtime* through Lisa's website, and you can also follow her on Instagram and Twitter. Of course, all of these links will be down below in the show notes.



*The Community Library* – Angourie Rice

[fade in: plucky theme music with violins, clarinet, piano, and twinkly triangle]

Thank you all for listening, I hope you enjoyed. You can, as always, find me on Instagram and Twitter @angourierice, or on Instagram @the\_community\_library. Just a reminder that our book club pick for this month is *Catching Teller Crow* by Ambelin Kwaymullina and Ezekiel Kwaymullina. This book is also published under the title *The Things She's Seen* in the US, so if you're struggling to find it, maybe type in that title as well. I will be discussing this on the 27<sup>th</sup> of September, so you have exactly three weeks to read it. I'm really excited to read this book, it's kind of a bit of a spooky one leading into October, and it's also Australian, so that's really fun. I hope you read along with us. I hope you're all staying safe and washing your hands thoroughly, and maybe looking up at the night sky. I'll talk to you next week. Bye!

[fade out: theme music]