Podcast Name: Imagine This

Episode Title: Is there life in other galaxies?

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[ABC Podcast sting - This is an ABC Podcast]

Bri: Hello, Bri here. Wherever you are right now I'd like you to stop for a second and see if you can feel your heart beating.

[Heartbeat sound]

Bri: Can you feel it?

Kids: I hear it and feel it.

Bri: What does it sound like?

Kids: Ba boom! Ba boom! Ba boom!

Bri: That means you're alive.

[Curious orchestral music, outdoor sounds]

Bri: And if you look around, there are lots of different kinds of life on this planet. People, animals, insects. There are fish and sea creatures in the ocean. And there are tiny living things like bacteria and germs that we can't even see. Even all the plants and trees are alive. And all of this is part of life on planet earth.

[Mystical music]

Bri: But have you ever stopped to wonder if life exists anywhere else?

Annabel: Is there life on other galaxies?

Bri: Five-year-old Annabel wants to know if life exists in other galaxies. So today on Imagine This, we're bringing back our good friend and astronomer professor Jonti Horner from the University of Southern Queensland.

Jonti: Hello.

Bri: Are you ready to look for life in other galaxies?

Jonti: Yes.

Bri: Great. So what is it exactly that we're looking for?

Kids: Aliens!

 A alien.

Bri: Aliens?

Kids: Yeah.

Bri: What would an alien look like?

[Quirky plodding music]

Kids: Funny creatures with funny eyes. Lots of eyes. More than us.

 20 eyes and they would have a giant face and a giant body.

 They would have 20 legs, on both sides.

Bri: Ooh, what would they sound like?

[Kids speak gibberish]

Bri: What do you think they're trying to say?

Kids: Come and meet me.

 Some aliens are green.

 Yeah, and they're really small like penguins.

 Aliens have antennas like butterflies.

Bri: Little green creatures with lots of eyes, an antenna like butterflies?

Kids: Yeah.

Bri: Jonti, is that what aliens would look like?

Jonti: Probably not.

Bri: Why not?

Jonti: All the aliens in the movies look like us. They look like me and you just with a bit of makeup on.

[Spooky music]

Bri: Look like me? I don't have 20 eyes or 20 legs or antenna. Do I?

Kids: No.

Bri: Oh, you mean what we think aliens look like is from the movies?

Jonti: Uh-huh.

Kids: Because I watched it on my TV.

 I knew it was really, really imaginary.

 And it was a movie called Death Aliens.

 Well, I've seen it in a show.

 On a space puzzle and it had just one leg and lots of eyes.

Bri: So if alien life might not look like that, then what are we looking for?

Jonti: So we're looking for every kind of life out there. Not just life like people. We're looking for complex life like trees or animals, and also very basic life like bacteria and bugs.

Bri: Ooh, space bugs and space germs.

Jonti: Yeah, germs that you can't see. That's probably the most likely kind of life we'd find. Tiny, tiny, tiny life.

Bri: Where should we start looking?

[Outdoors at night: crickets buzz, owl hoots]

Kids: Maybe look outside in the dark when it's night?

Bri: That's a good place to start, but we might need a telescope or something.

Kids: Yeah binoculars! Maybe a rocket.

 They live where astronauts go in the rocket.

 Planets. They live in space and float away. Otherwise they can't stand.

Bri: So aliens might need a planet to stand on. Do you think they live in houses?

Kids: They don't. They live on the ground on the planets!

 In holes in space things have came by and crash landed, and they made holes for them to live in.

Bri: There might be life hiding underground on the planets out there. So Jonti, where are we looking?

Jonti: We're looking out into the sky. We're playing detectives. We know that life began on a planet so we look at other planets to find signs of life.

Bri: What kind of planets are we looking at?

Jonti: Well we have Mars. Of course Mars is a planet, but it's still probably the best place for us to look.

Bri: So if we were on Mars, what would we start looking for?

Jonti: Water, liquid water. Like we drink out of the tap.

Bri: Water? Why do we start looking where the water is?

Jonti: Because everywhere on earth that there is liquid water, we have life. And there are lots of places in the solar system where we now think there is liquid water. So lots of good places to look.

Bri: Where else do we know that has water?

Jonti: We then have moons of Jupiter. We have Europa and we have Ganymede and on both those moons we think there are oceans buried under the surface. Buried deep underground, where there could be more water than there in the whole of the planet earth. So that's very cool.

Bri: So we're looking for planets out there that have water, liquid water. It sounds like aliens might like that.

Kids: So they can get a drink if they're thirsty.

Bri: What other clues are there, that there could be life out in the universe?

Jonti: So recently on Mars, they found that there is this gas called methane and on earth we have methane and it's related to life. If you fart, that makes methane.

Bri: Methane?

Jonti: Yes.

Bri: I wonder what alien methane sounds like.

[Kids make alien fart noises]

Bri: So methane could be a clue that there might be life on Mars.

Jonti: It's not definite, but maybe.

[Sound of a space probe being launched]

Jonti: But to find out we’re sending a space probe to land on Mars. And drive around to drill into Mars and try to work out what's happening.

Bri: So how else are we looking for life out there?

Jonti: When we broadcast radio, those radio waves travel out in all directions and go out into space. So people out there could be listening in.

[Warped radio programs]

Bri: Wow. Things in out of space can hear us on the radio?

Jonti: Yeah. It's kind of like, we've been shouting into out of space.

Bri: Oh, let's say hello. Hello out there.

Kids: Hello!

 Hello!

 Hello out there.

[Slow curious notes]

Bri: Has anyone answered us?

Jonti: We've not heard anything back yet.

Bri: Oh. So why are we looking for life out there anyway?

Jonti: Because we always want to know the answer to everything. And the biggest question, the coolest question of them all is are we alone? Is there life in the universe?

Bri: So Jonti, what do you really think? You think we're alone?

Jonti: I would say if I had to guess that we're not alone. And the reason for that comes down to numbers. In our galaxy, we have 400,000 million stars.

[Magical chime]

Jonti: And all the stars have about 10 planets in average. So that's 4,000, thousand million planets.

Bri: Whoa. So that's 4,000, thousand million different places that there could be life out there?

Jonti: Yeah. With all those big numbers, to say we're the only place with life is really hard for me to imagine.

Bri: So there's a chance?

Jonti: es. The chances are looking good and that's just maths, but it might take some time. A long, long, long time.

[Comforting orchestral music]

Bri: So Annabel, humans have been looking into outer space for signs of life for a really, really long time. And we've been looking in lots of different ways. We've been looking on planets that have water. We've sent radio waves into outer space. And we've been listening to see if we can hear anything back. And just because we haven't found anything yet, doesn't mean that there's nothing out there. It's just that the universe is really, really big. And it might just take a really, really long time before we find something.

[Music turns to a more hopeful tone]

Bri: So right now earth is the only planet that we know of that has life. And that's why some people call it the lonely planet. So even if we feel lonely some of the time, remember we're not really alone because we have each other. So we can look up into the night sky together.

[Music concludes]

Bri: Imagine This is produced by me, Brianna Peterson, and is a co-production between The Conversation and ABC Kids listen. Additional sound and mastering for this episode is by Bryce Holiday. And this is our last episode for the year, but you can listen to all 20 episodes of Imagine This, anytime you like on the ABC Kids listen app or wherever you get your podcasts.