A Journey of Perseverance

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SPEAKERS

Britt Duffy Adkins, Diana Trujillo

Britt Duffy Adkins 00:12
You're listening to the Celestial Citizen Podcast and I'm your host, Britt Duffy Adkins. Celestial Citizen is a space media company with embedded urban planning values, looking to help shape a more equitable and just future for all of us in space. This podcast seeks to provide an opportunity for conversation about how to be a better interplanetary citizen, and responsible steward of Earth and the cosmos. By engaging the global public, providing greater access to the space industry, and amplifying a more diverse set of voices - progress in space can equate to progress on Earth. We who are bursting with stardust, can become Celestial Citizens. Today, I'm excited to be speaking with Diana Trujillo.

Diana Trujillo 01:09
We don't have to wait for all of us to go to space and have the Overview Effect that the astronauts have to recognize that we're all on Earth and that this is our home and our job is to protect it. We know that, we just need to get on it.

Britt Duffy Adkins 01:26
We'll discuss the latest updates from the Mars Perseverance mission, how the space industry can work toward becoming more inclusive of the Latinx community, as well as Diana's personal journey into the space industry.

Diana Trujillo 01:39
Invest in the next generation, making sure everybody sees themselves in the work that we do that it is no longer, I say the word astronaut and a specific individual comes to your mind, is that I say the word astronaut and you see your face in it.

Britt Duffy Adkins 02:12
My guest on today's show is Diana Trujillo. Diana is an aerospace engineer at NASA's Jet Propulsion Laboratory, where she currently serves as a flight director and as the robotic arm system domain lead for the Mars Perseverance mission. Born and raised in Colombia, Diana emigrated to the United States at the age of 17, to pursue her dream of working for NASA. After graduating, she worked on the

Cygnus International Space Station resupply vehicle before joining JPL. Prior to her work with the Perseverance mission, Diana worked in several roles on the Mars Curiosity and Constellation program since joining JPL in 2008. Most recently, she served as the Mission Lead, Deputy Project System Engineer, and Deputy Team Chief of the engineering division for Curiosity, also known as the Mars Science Laboratory. In addition to her technical roles at JPL, Diana also created and hosted #JuntosPerseveramos, NASA's first ever Spanish language live broadcast of a major mission milestone, attracting a global audience of millions. And I'm so excited to be chatting with you today. Thanks so much for joining Celestial Citizen Podcast, Diana.

Diana Trujillo 03:27
Thank you so much for having me.

Britt Duffy Adkins 03:28
Diana, your personal journey to pursuing your dream of working for NASA is so inspiring. Can you tell us more about what sparked your early interest in the space industry?

Diana Trujillo 03:38
For me, it was a series of events. One of them was as a kid, I loved looking at the sky, right? And I think that as an adult, even now you have a hard day and you go home and you go for a walk at night and the stars are just magnificent, right? And for me, it was always curiosity about how all of that works. How is it that when you look at the sky, not only does it look perfect, but behind all of that perfection, in my mind, there is this giant planets going around the sun, and they have figured out a way of coexisting together, being completely different from each other, and still managing to get it all going without any issues. So, I feel like, to me it was always wondering, how does that work? Later on, you know, you get to know about NASA. I remember coming across a NASA sticker when I was a kiddo and thinking about the fact that whoever works in that organization, they're just amazing and get to do amazing stuff. And one day, hopefully I can do that. But then, you know, my life evolved and as it evolved I got opportunities that I never expected would come my way and the idea as a kid of understanding what's behind what you see on the night sky, came back again on my path and I was able to cross that door and ended up working where I work today.

Britt Duffy Adkins 05:00
So how did you first get involved with working for NASA?

Diana Trujillo 05:03
I was studying at University of Florida. It was my senior year. And I realized that I worked so hard and redirected everything in my life to enable the possibility of going to school as an aerospace engineer, and working myself through it, and also paying myself through, you know, English, as a second language and the beginning of my career. And I was going to graduate and I realized I'm in Florida, the cape is right there. Launch vehicles happen all the time and I am as close as I can be, but as far as I could possibly be from having a job. So I decided to tell my professors I say, you know, it's the last semester, the last two semesters, they're not going to remember me anyways, if they think this is stupid to ask. And so I got the courage to tell my professors, "hey, I want to work at NASA. I know it's crazy." And, to my surprise, they were like, "it's not crazy, and here's an internship that you can apply to," and I

ended up applying to an internship which at that point was the NASA Academy at Goddard Space Flight Center. And I got that internship, which allowed me to get the most amazing introduction to what NASA does, and who works at NASA. And what those people do, which traced a path directly for me as to, what were the possibilities in a way that I never thought they could be?

Britt Duffy Adkins 06:24
I think that's such an important message too, to listeners, that if ever you're doubting yourself or doubting applying for something, you should just go for it. Because I think often times we don't necessarily see our own potential in the same way that sometimes outsiders do.

Diana Trujillo 06:38
I agree. You know, it's interesting that you say that, because it was a combination of two different things. It was a combination of people believing in me before I believed in me, and making sure that I was aware of that. And then the second one was, the equivalent for me is thinking that Disneyland is fun, but you shouldn't go and then all of a sudden, somehow you get a ticket to go to Disneyland, and you get there, you're like, "oh my god, there's so many things. And I love this. And I love this." And so I felt like my whole NASA Academy experience was, I got a trip to the Disneyland equivalent of NASA-land. And I just got to meet so many people and so many amazing things that I just fell in love with what I thought I liked.

Britt Duffy Adkins 07:16
That's such an amazing experience, and especially a great way to kick off what's now been a very successful career with NASA. I do want to ask, though, what was your experience like as a Latina woman carving out this path for yourself in such a male dominated industry?

Diana Trujillo 07:32
There's a few things and it's linked to the prior question that you asked me. When I said earlier, there was many people that believed in me, I mean, they ranged from my neighbor to the bus driver, because I will always take the same bus. And it was the same driver or to my English teacher. And so I get encouragement from all of those people. Even though I was not asking for it. I felt like I had these extended family of people that always saw me trying my best, and came to me and said, you know, "keep going, keep doing, you're doing great." But then now when it gets to your other question about the male dominated industry, I think that, for me it was slightly different. I'm not going to say that it isn't a male dominated industry. It is a male dominated industry. But at the same time, I think that when you really find your calling, and you see, the goal that you're trying to achieve, it's so much bigger than yourself, you spend less and less time thinking about, am I the only one? Am I one of a small group? Am I the only one that has an accent? Am I the only one from a different country? Like, those things start being smaller and smaller, in a way. My husband has this teacher that says we're all immigrants on Mars. And I think about it and I think, yeah, the bigger the goal, the less it is about you and the more about what you're trying to achieve. So for me, it was, I didn't have time to think about this other stuff. I just had time to hone in into my abilities to do my best and then push the goal.

Britt Duffy Adkins 09:00

Was there ever a time that you wanted to give up? Was there ever a time that you really had to push yourself to keep going?

Diana Trujillo 09:05
Oh, yeah, 100%. I think that the biggest battle for me, was me telling me it's okay. Telling me not to worry about certain things or not to over-analyze certain things. I think that that was probably the hardest thing. I mean, it ranged from recognizing that yes, I have an accent. And yes, when I speak English. And yes, there are some things that I make mistakes when I speak or whatever, in knowing that in the back of my head and thinking, "well, I can give a presentation to somebody very important at JPL and just think about all of those mistakes that I'm going to make or just realize that I am standing in front of that person because my boss has believed in my work and I need to believe in my work too. This is my chance to do my part and not put myself in front of myself in a way. And I mean even now, right, like you mentioned at the beginning of the podcast, I was blessed to have the ability to work with an amazing team with NASA en Español, where we put together the first ever Spanish language NASA broadcasts. And there were lots of moments where we were like, are we doing the right thing? There's no thing that we can look back and say, "oh, yeah, the one that they did last year, they did this, but not that. So don't do this. There was all trying what we thought it was going to work and thinking, you know, maybe 100 people will watch it. That will be fine. If 50 will be okay, if not, I'll call my family and they will watch it and that will be sufficient in the fact that we are talking about millions now. I think that it speaks to the same thing that I'm saying is, is there doubts and everything that you do? Yeah, certainly there is. I mean, I feel like everything in your brain somehow just wonders like, can I do this? Even if it's for a sliver of a second over 10 minutes or to the point where it paralyzes you and you don't do it, I think that that goes through everybody's mind. But it's funny that I have experienced that when I feel that my immediate reaction is: I think I'm going the right way. If I was going the wrong way, I wouldn't be feeling like this because I'm trying to analyze it so that I can make it perfect, which is why I'm scared, which means that it's going to be good anyways. So just push through it.

Britt Duffy Adkins 11:24
Now I do want to go back to though what you just mentioned and of course you know, we mentioned this in your bio as well but it's absolutely astounding that this Spanish language broadcast of the Perseverance mission attracted millions of viewers globally, which is just such an inspiring reach. And it makes me wonder, you know, what more can we expect from yourself and NASA in terms of more Spanish language programming in the future?

Diana Trujillo 11:47
Yeah, it was great. NASA itself has a NASA en Español office. I love working with that team. And so María-José and I will, María-José is the leader of NASA en Español, had talked about it and they have lots of things going on, lots of programs, you go to Twitter and they actually put out a lot of content in Spanish. The NASA en Español office is constantly trying to reach the Spanish community. But I think that when she and I got together and we talked about it, we can talk about news everyday and all the things that are occurring, but there's a moment where we need to not come second, not come later, not come translated, just be there at the same time. And I think that that's what the Juntos Perseveramos, together with Perseverance, showed. It enabled everybody to almost flip in between two different channels and be like, okay, you want to listen to it in Spanish, or you want to listen to it in English? It's

almost like you're watching the Soccer World Cup, and you're like, "okay, who's gonna watch it in English? Because we want to watch it over here." You know, I got this picture from my son's teacher at daycare, and they send me this picture of all of them watching it. And it was great, because they actually had a split screen. So they had the English and the Spanish version on both of the projectors going with the audio separated, in case there was like kiddos that felt more interested in listening to it in Spanish or English, which it speaks to how we are evolving and changing the landscape to be more inclusive, right? It's no longer one way, it could be many ways. And on that topic, what are some steps that you feel like NASA has taken that are really going in the right direction of being more inclusive of the Latinx community? And where are we still falling short? So how could the space community do a better job of welcoming the Latinx community and encouraging those who want to pursue Space Science and Engineering roles? The fact that NASA has an communication office to reach the Latinx community speaks a lot about what NASA thinks is important and how to reach others. I know that part of the steps that you're asking, for example, if you go to the NASA en Español website, all the content is in Spanish. There's zero content in English. If the content is in English, it's not in the website. And in addition to that, that office works also with how to provide content to other countries that speak Spanish to make sure that it's just not NASA and the US in Spanish, it's like NASA around the world. They also work very closely with all the different NASA centers. You know, 10-11 NASA centers, they have conversations and meetings weekly, where they discuss what the Español content is, so they can pump it out in different cities across the US or around the world, with different individuals that are doing amazing work. It's just that we don't seem to know about in so that's one aspect. But then the other aspect that you're asking is how can we help as a community? I think that part of helping as a community is recognizing that that is there. If we do not elevate that message, and we do not help people see it, it's an impossible job for the NASA en Español team. We're doing all of this. We're doing all of this work, but nobody reads it, nobody sees it. Nobody expects it. And so, it's a two fold thing where NASA en Español provides, but the rest of us need to make sure that it reaches as far as it can reach, it is important for us to all to be sensitized, right that as much as I know that this is the case, which is that my high school experience, my middle school experience in Colombia was amazing from the perspective that you know, I graduated high school, and I knew up to calculus three, and that was just normal. That's not, like I did more than everybody else. It's like, everybody should know that. And so that speaks to the investment, on math and science that the schools put in the Latin America countries. Now, where it falls off, really is in two places, in my opinion, is when it goes from high school to college, we don't talk about here is the science careers or majors that you can go to, because honestly, that's not something that you know, I don't go out the street in Colombia and find that there's like, a doctor, a biologist, and an astronaut. That is changing, but that's not the norm. And so, because that's not the norm, that's not something that your parents talk to you about all the time. And because it's not something that you hear at home all the time, then it starts feeling foreign. I think that what I'm trying to tell you with this is the fact that we can help everybody realize that math is in our DNA, and we use it every day. And the idea of, I wasn't good at math, or I don't do math, it's just not okay. If I tell you, I don't do writing, or if I tell you, I don't do reading, you're looking at me strange. But if I tell you, I don't do math to be like, "oh, yeah." Why is that different?

Britt Duffy Adkins 16:53
Yeah, that is strange! I've never thought about it that way.

Diana Trujillo 16:56
It's interesting, because I will tell you this, you go to Colombia, and I'll tell you, my daddy, or my mom will not receive the wrong change when they buy something. That's like, I know exactly how much you're going to give me back. And I know immediately if you would just shortchange me here. And that also comes out of the fact that, you know, we're constantly looking for work, we're constantly looking to making sure that we can survive, not so much have a luxurious life it's just more like survival mode. And to do survival mode, you've got to be on top of your money and how you're spending it, which means that you are really good at math.

Britt Duffy Adkins 17:31
Also, your point about just exposure, and being able to see yourself in these roles. And those sorts of things are so important. That's really core to Celestial Citizen, as well, and just trying to create media that provides those opportunities for people as well, because I actually think media is one of the strongest ways to reach people, the important work that you're doing over at NASA as well. And also your weekly Twitter updates, it helps get the word out. And I think that's a really key message and takeaway here is that we can all do a better job to make sure that we're expanding that reach.

Diana Trujillo 18:03
You know, going back to my example, about math, being in the center of everything and not appreciating it, I always think about when I go to Colombia, we have this thing where you stuck in the traffic lane, and there's somebody that comes in and is like is offering you something to drink. So you can buy or is offering you food, or sometimes there's a few people that like do tricks in front of you while you're waiting for the light. And I love to eat peanuts that they sell on the street, and I stopped and I get them. And it's funny because I always go with my family. And so I get them, and then I'm giving them the money and they're giving me the change in the middle of that happening. My bro is like, "I want one too!" And it's like, "oh, nevermind, give me two." And then my other bro is like "give me another one!" And the person on the other side, which is probably 12, is doing math on the fly while the light is in yellow. And you're making it complicated because you're adding all these variables in a time crunch moment where that person cannot afford giving me the wrong change, not because of me, because of them. And they do this on the fly and we take it as if it's normal, it's every day. I don't know if I can stand up on the other side, I have all these people on this yelling car asking me for all of this and doing math in the fly. And making sure I even have the right change. Because if I don't, it's not going to happen.

Britt Duffy Adkins 19:17
It's so important that people start to view that as a real telltale sign that math could be very much a strong suit of theirs, it could be the right area of study to pursue, and again to really see themselves in those roles. And that's the key thing.

Diana Trujillo 19:32
It's exactly that, it's like, if everybody looks different than you, then I don't know why our brain is wired that way. But we do try to find the same group as ours. So, I wonder sometimes it's like, you know, I'm a wolf and they're all lions. I don't belong there. And it's crazy because you're talking about being a wolf.

Britt Duffy Adkins 19:51
Well and speaking of roles, tell us a little bit more about your current role at NASA and also about the Perseverance rover mission, and what we hope to learn from that.

Diana Trujillo 20:01
I am a former flight director and domain lead for robotic arm. I have had the pleasure to follow the entire mission from the time where the hardware showed up to the time where we had to integrate it and test it and put it on the rocket and having all that thrill of like running against the clock to be honest, and landing and checkouts and all of that. So as all of those phases happen, I've been very lucky that my bosses appreciate my work. And I have, you know, switch hats. It's almost like my hat finished, I delivered. Let's go for the next one. And so I keep going through it. Right now I have the pleasure to be one of the mission leads for the Perserverance mission. So I'm pulling shifts for the commanding side for the data analysis side. So where we are right now is to be very specific, very close to solar conjunction. Now, we can't talk to Mars, because it's Earth, it's the Sun and then Mars. So now we got the sun in the middle of us, and we can't talk to Mars. So we have to put the rover in a situation where we say, well, we're not going to talk to you for two weeks, as the sun gets out of the way, literally. And as soon as it gets out of the way we can talk back to you. But here's all the commanding that you need to do. In the meantime, here's all the checkouts that you need to do while we're not talking, making sure that you can do some very, very basic science in case something goes wrong, you don't need human intervention. But we can do things like driving because I work in a field specifically for Mars, where it is an everyday activity. So you have to talk to them consistently every day, if not multiple times a day, because what we do is based on what we did the day before. So we get images every day, we analyze those images, we decide what we want to do, and we command the next day. So we're just having a daily schedule, which makes it to me very exciting. And I have of course biases against orbiters because you know, for the orbiter, you can just tell the orbiter, what it's going to do for the next three weeks. For the rover you can because it's changing by the hour. So it makes it super exciting. But to go back to what you were asking is, we can't drive during conjunction because we don't have any input. We can't do arm because we don't have any input. But thus far, we're doing awesome. I mean, I think that just to put it in context, right, we landed in February, we did all the checkouts. The basic checkout, we did apply software transition from the cruise flight software to the surface flight software to be able to use all the mechanisms like the arm and the sampling caching system, and more capabilities for a mobility. After that, I had the pleasure to work with the fly system team to keep pushing more capabilities into the rover. We get there with, you know, I like to think about it this way where you go to sleep, and then you wake up and then you have your little message on your iPhone that says software update. And then you do your software update. And now three more things showed up as capabilities that you didn't have. And so we do exactly that. It's, go figure out where those capabilities, do a software update, and then use it and use it for the first time on Mars. And what's crazy about it for me, is that we're doing it in another planet. So it's not like we said, "hey, let me go check it out and then load it, it's like, no, no, let's load it and we'll check it out when it's there. And yeah, I think that's pretty awesome.

Britt Duffy Adkins 23:24
Going back to February, which was such an exciting month, I think for everybody in the space industry. But for the team, the Perseverance team, how nerve wracking was February for you?

Diana Trujillo 23:36
It's funny because I want to go back to launch for a minute. If you were in California, I will say, if you were in the LA area, you would have known this, but we launched in July 2020. And it was a 4:40am pacific time launch. And at 4:20am, we had an earthquake. You know, I remember I was talking about what was gonna happen the team was on the other side, I could see them through, you know, the webcam, and then the earthquake happened like 20 minutes before and it was one of those things where you're like, okay, if we have an aftershock, what are we gonna do? You know, thank God it's all in Florida. We don't have to worry about it, but we have to still monitor. But then like, fast forward now to your question. It's like nerve wracking landing, oh it's interesting because you're like, last time, it was an earthquake, like what's going to happen this time? And then at the same time, you don't have time for nerve wracking things at that moment. I think that the earthquake for launch was one of those things where you're like, I got my ABCD plans, whatever happens, we know what to do. It's just that earthquake wasn't on the radar for landing. I think that at that point, we knew what we were getting into. Thankfully, we had experience Curiosity in a very similar manner as to the landing way with less pictures of course and so much more excitement, but at the same time, it was COVID, or is COVID still right? And so at that point, we're splitting different rooms. We are all separated. If you were not necessarily required in that room, you're in a different room, if something happens, it would have been a recall and a crazy coordination of like, how do we get everybody back? So I'm glad everything worked out.

Britt Duffy Adkins 25:21
Yeah. As we all are! I mean, one of the big goals of Perseverance is to potentially find evidence of ancient life on Mars. How would such a discovery influence NASA's future missions to the Martian surface? And more personally, what would this discovery mean to you?

Diana Trujillo 25:39
NASA is very strategic about what they do. I mean, this is part of the reason why I love working at NASA, right? We have a Mars program office and we work with NASA Headquarters with what is the future of what we're trying to do, so there is already another mission called Mars Sample Return, MSR. The way that we're seeing it is we catch the sample and, we hand it to them, and they grab it, and then they come back to Earth. So Mars sample return, as the name said, is to come in and fetch the samples that Perseverance has collected, and put it on a on a rocket and launch from the surface of Mars and bring them back. As much as I love the instruments that we have on the rover, and they're spectacular and amazing, and I know exactly what we need them, I will never change one of those children, I guess. But I will say we don't have all the technology, it's a small rover in many ways. And bringing that sample back is going to allow us to see and understand way more about Mars. And then you can expand from there in many directions. Like, you know, we want to do humans to Mars. And so we got to learn how to launch, land, big payloads, particularly land, which we shown twice now Curiosity and Perseverance, big payloads. And then we need to show that we can launch from the surface of another planet. So MSR is going to show that we can do that. And then bring it all the way back. The idea, or the architecture, of light launch from the surface, dock into another vehicle that's going around Mars and then take flight back to Earth. If you think about, it is very Apollo-like, it's just a we're doing a Mars.

Britt Duffy Adkins 27:15
Well and of course, there was the really big news earlier this month, which at the time of recording is September, but Perseverance successfully completed collection of its first Mars rock samples. So a question that I think a lot of people in the public will have is, now that we have this sample, what do we expect to learn from it? And when do we expect to be able to bring it back to Earth to be studied?

Diana Trujillo 27:37
So we've done three collections, two collections of those were with actual samples in the tube. With those two collections that we have done, we got several collections to do. We carry, I believe it's 47-ish, I can't remember if it's 47 or 46 tubes, onboard the spacecraft or aboard Perseverance, and then we do several samples. But the question of when is it supposed to come back is a little bit of a loaded question, because it's coming back when MSR is there. It's an interesting thing to talk about. Because the way that I see it, instead of seeing it as a sample is collected, when is it coming back? I think is more of a sample is collected, MSR run, like, your turn! Like if we don't get this sample, I feel like MSR like, please get that sample. Because if you don't get that sample, I don't know if we're gonna exist. So right now I feel like that sample was not so much when are you going to bring it back? It was just more of a, you're real, it is real, and we got it. So hurry up and come pick it up!

Britt Duffy Adkins 28:41
So when do you think we'll land humans on Mars? I know that NASA Administrator Bill Nelson recently came out saying perhaps the late 2030s. You know, do you think that that's the timeline we'll be able to hit? And of course, once we do, how do we balance science objectives with human exploration?

Diana Trujillo 28:58
First is the Moon. We've got to get there, we're going to show that we can do it. And then we talk about beyond that. So right now, for the human exploration side, I think that it is all about let's make sure that we do this right, as we've always done, right. And what I mean with that is the incredible amount of excellence and commitment from the team. It's just skyrocket in the fact that we're gonna go to the moon first and show that we can do it at the level that we want to do it before we go a little bit farther. It emphasizes what I was talking earlier about NASA be very strategic and knowing, okay, what are the steps? What are we going to do? What are we going to show? What are the metrics that we're going to have before we keep inching forward, we got to show pieces. And so that makes sense to me. And so first is the Moon. I hear you about Mars. We got to demonstrate all these other technologies that we were just talking about because it scales up very fast. When you think about now is Mars, now is a longer duration. Now, you think about radiation. Now, you think about landing the payloads. Like, now you need to even think about one way lifetime, which is not something that we're that worried about it on the Moon, because you don't have to wait that long. And so it's a lot of learning that is going to stack up. And hopefully Artemis will eliminate lots of those learning curves for us. But then we still have some to go. So I don't know how long it's going to take us to go to Mars, I would say in my heart that I hope that we can do humans to Mars in my lifetime. I expect that to be the case. I know, there's other companies, you know, working on trying to do that as well. But I think that yeah, NASA is making lots and lots of steps in the right direction. And I very much appreciate and feel very encouraged of the fact that we do parallel stuff, right? It's like low Earth orbit, let's do the Moon, let's do Mars. And if you step

back for a minute, it's like, oh my god, like, all of those things, we like nail them, right? ISS check. We know how to do that. Moon, we're working on it. And we're talking about doing it before 2030s. Like that sort of thing for Artemis. Everybody is working on everything that is necessary for that infrastructure. So it's on its way. And then Mars, check also, you know, and that's not even adding that we went to Jupiter, we went to you know, we're talking about Europa and we're pushing all the paths. And we have been blessed that all of those paths have returned

Britt Duffy Adkins 31:29
For people out there who might question why we spend money on space and say that perhaps we should prioritize on climate change, or some other of the many challenges that Earth faces today? Why should the broader public care about space, in your opinion?

Diana Trujillo 31:44
My personal opinion, I will say there's a few things, right, you're talking about climate change. NASA is also in the climate change business. I mean, understanding how we're changing comes also from our ability to monitor and track data with orbit satellites, and so on orbit satellites, helps us figure out what's going on and how we can address it. So in addition to that, also, NASA has programs not just in space, but also, I will call it in house meeting on Earth, where we are working on different things that can help us understand our planet even more. Now with respect to your question as to like okay, so if you're working on Earth, and you're working on on space for Earth, and on Earth itself, why are we spending money on the other planets or on the other moons? And that sort of thing? I will say that, for me personally, it gets very interesting when you ask that question, because it's all about understanding and unlocking your perspective and your knowledge about where you are. And not necessarily because you want to give up on where you are today or because you want to move on. It's the reverse in my opinion, the more you understand, the more you know how to help. And the more you know how to help, the more you can prevent things that are not going okay. I like to always think about the movie WALL-E, where everybody just leaves Earth. And then are on this amazing spacecrafts that they don't even know what's going on. But I like that movie, because it's interesting to me to see that I know, and I hope that we will never think that way, which is "oh we're done with Earth, get on a spacecraft, get your soda and let's go." Like no, that's not how it works. It's the other way, it's the way of learning, understanding, developing technology that is pushing the boundaries so that we can use all of that and say, we're going to fix this, we're going to make it better. I mean, that is on our human nature, it's on our DNA. And so when we scale it up to thinking about our home planet, we don't have to wait for all of us to go to space, and have the Overview Effect that the astronauts have to recognize that we're all on Earth, and that this is our home, and our job is to protect it. We know that we just need to get on it.

Britt Duffy Adkins 34:01
Wow, that's such a beautiful message. And I appreciate that. And, you know, what are some future goals that you have for yourself? Perhaps NASA Administrator someday soon?

Diana Trujillo 34:13
Thank you, very funny. No, I, you know... I don't know I feel very blessed with the fact that I got to a point in my life where I could speak my mind and not feel like I don't belong. And it's something that unlocks your brain and when you unlock that you unlock your heart too. And then you can speak even

better because you're now thinking about it, it's not me, it's about everything else. It's about everything else. And so that type of freedom is something that I want to help everybody else to get it, to understand it, and to harness it and then to unlock their own brain so they can do more because it can't be a few people that, that do this. Otherwise we're never going to get to where we want to go. We're never going to explore the way that we want to explore, it's going to take us too long. So I feel like to me, the next thing is make sure that the next generation understands the passion that we're bringing in and takes it further. Because otherwise everything that we're doing is meaningless. If it just ends with us, then why the heck did we do it in the first place, right? A nd so that's my thing is invest in the next generation, making sure everybody sees themselves in the work that we do that it is no longer...I say the word astronaut, and a specific individual comes to your mind, is that I say the word astronaut, and you see your face in it, like how awesome would that be right? And not feel like, "oh, I am thinking too much of myself." Like, if I tell you astronaut and you put your face and you're like "not me!" It's like, why not? Or if it's not you, use your neighbor. If it's not your neighbor, use your niece.

Britt Duffy Adkins 35:31
No, I'm serious. It's so important that people start to have that like instinctual viewing of themselves in that role, as opposed to the default, being thinking of some Apollo-era astronauts. So I think that's a really beautiful sentiment. So this is our last question before the lightning round here. And this is something that we ask all the guests that come on the podcast, but Celestial Citizen is all about the idea that humans can become not only better stewards of Earth, but also better interplanetary citizens. So in your opinion, what is one important way in which people can work toward becoming Celestial Citizens today? And I'm wondering if on this last question, given it usually results in a pretty important takeaway message, you wouldn't mind responding in both English and Spanish, for any of our listeners for whom Spanish might be their primary language?

Diana Trujillo 36:42
Maybe the thing that I will leave everybody with is share. Share your experiences, as an individual. Share your passions. I think that when we think about Celestial Citizens, and we think about space, we might forget that Earth is still in space, so it is also about us. And it's also about how we behave and what we see and how we connect with each other. So I guess to make it shorter, to recognize that you don't have to go to space to appreciate that you're a part of Earth or that there's one Earth. You just need to realize that everybody around you is connected to you in a way and it is up to you to slow down the world and listen to them and make them part of your life and learn from them. So I think that that makes you a better person and that makes us all a better community that can push the boundary. So now let me say in Spanish! Para mí, yo le diría a su audiencia que lo mejor que puede pasar es que compartan. Compartan todo los que les pase como personas. Compartan las inspiraciones y las pasiones que tienes por lo que queiren hacer en el futuro. Porque yo pienso que no necesitamos ir al espacio para ver el planeta Tierra y dar nos cuenta que todos estamos conectados alrededor tuyos. Hay muchas personas que están conectadas contigo, así que si tu puedes callar un poquito la mente y escuchar a las otras personas y aprender de ellos, podemos hacer una comunidad más grande y podemos empujar la forma en que exploramos y aprendemos juntos.

Britt Duffy Adkins 38:12

Thank you. I appreciate that. So our lightning round, we'll run through this real quick. Would you rather live on the Moon or Mars?

Diana Trujillo 38:20
Mars.

Britt Duffy Adkins 38:20
Your favorite Mars rover?

Diana Trujillo 38:22
Curiosity.

Britt Duffy Adkins 38:23
What is your favorite space TV show or movie?

Diana Trujillo 38:26
Hmm, Star Trek.

Britt Duffy Adkins 38:27
And the worst space movie ever?

Diana Trujillo 38:30
Hmm, The Core?

Britt Duffy Adkins 38:32
I haven't seen that actually. It's not space, it's about Earth and they try to get to the middle of the Earth and it's just horrible. Well, maybe that's why I haven't heard of it. Okay, permanently grounded on Earth or a one way trip to Mars?

Diana Trujillo 38:48
Ooh, both? Yeah, I want to be permanently grounded until it is time for me to go on a one way trip.

Britt Duffy Adkins 38:55
There you go. There you go. Somewhere other than Mars that you would like to explore if you have the chance

Diana Trujillo 39:01
Hmm, Jupiter.

Britt Duffy Adkins 39:03
And let's say you're sent on a long duration mission, what's more important, choosing your crew, choosing the food or choosing the destination?

Diana Trujillo 39:11

The crew.

Britt Duffy Adkins 39:12
And I think that's all the time that we have for today. Thank you Diana for joining Celestial Citizen Podcast. It's been an absolute pleasure getting to discuss all things Perseverance, as well as ways in which we can make the space industry more inclusive to those from the Latinx community. And I'm sure this interview is going to inspire a lot of people out there to see themselves in this industry. So I thank you very much for that. And I encourage everyone listening to follow Diana on Twitter for updates on the Mars Perseverance mission, especially if you or people in your community are looking for those updates in both Spanish and English. So thanks again. Diana. I really appreciate your time today.

Diana Trujillo 39:50
Thank you so much for having me.

Britt Duffy Adkins 40:21
And to our community of Celestial Citizens. Thank you so much for tuning in to this episode of Celestial Citizen podcast. This episode would not be possible without the terrific work of this show's editor, Victor Figueroa. Thank you, Victor. Also a very special thank you to Graham Clark who created the amazing intro and outro music for this podcast. If you're interested in learning more about Celestial Citizen, and I hope you are, then check out CelestialCitizen.com. You can also follow along on Twitter @celestialcitzn and Instagram @thecelestialcitizen. And be sure to sign up for the Celestial Citizen newsletter on Substack. You can find the links to all of these on our website. If you're interested in supporting the mission of Celestial Citizen, consider making a donation on our website. Or you can always reach out to learn more about opportunities to sponsor this podcast. A major component of Celestial Citizen is feedback and public participation. We want to hear what you have to say so let us know what you think about humanity's future in space and what it should look like. Please share your voice and your unique perspective on social media. Or if you prefer, all of the Celestial Citizen articles can also be found on Medium. So, drop a comment and join the conversation. If you love today's podcast, please have your friends and family subscribe on whatever device or platform you listen to podcasts on and leave a stellar review so others can get hooked as well. That's all for now Celestial Citizens. I'll be back next week for another episode. In the meantime, don't be afraid to take up space.