



How Going to Space Changed Katya Echazarreta

The electrical engineer and civilian astronaut shares her journey from community college, to NASA intern, to first Mexican-born woman in space.

Alicia Menendez: Katya Echazarreta captured headlines in 2022 when she became the first Mexican born woman in space after being selected by Space for Humanity, for a mission to analyze the overview effect. But in Katya's case, the road there is as awe-inspiring as the destination. Talk about the bias she's confronted as a Latina engineer everywhere from college to the halls of NASA. How going to space changes you and her advice for any Latina who feels she's being asked to compromise who she is in order to be taken seriously.

Katya, I'm so excited that we're getting to have this conversation because our audience has specifically requested that I speak with you. So it makes me so happy when we actually are able to deliver on that for them.

Katya Echazarreta: Yay, I'm so glad to hear that.

Menendez: Katya, you were born in Guadalajara, you moved to the US when you were seven. What is the earliest manifestation of your love for STEM?

Echazarreta: Honestly, it's probably my first word. It was in Spanish and it was "¿Porque?" I couldn't really say it too well. So it was "¿Po-que?" Which really is at the base, like that is the root of scientific thinking is just wanting to understand and wanting to question everything. And I remember my mom, she's told me these stories so many times about how she would get so annoyed and just so over it because I wouldn't stop. She would answer and then I'd be like, "Well why that?" And she would end up running away and hiding in the bathroom and she could just see my little hands underneath the door being like, "Mommy, well, why are in the bathroom for so long? I have so many more questions, come on out."

Menendez: I got to tell you now that I am a mom, I totally have so much sympathy for your mom who just wanted a minute to herself. Everybody wants a super smart and curious kid, and then you have them and you realize that it is a ton of energy and work to honor their curiosity. After you graduate from high school, you go to community college and you describe yourself going after various setbacks. And I wonder if we can dig into what those setbacks look like and how it was that you overcame them?

Echazarreta: I went to a school where college was the norm, thankfully. I remember those last few weeks of high school senior year were extremely difficult because I had all my college acceptances, but I no longer could go to any of these schools. My parents were getting a divorce, it was very, very messy. We had everything taken away from us. We no longer had a home to live in. My mom's car was technically under my dad's name only, and so very

easily it was taken away from her. Bank accounts were all under my dad's name only. And so from one day to the next, we were just left with nothing and I had to make a very difficult choice. So do I take out a bunch of loans, get a bunch of jobs, and just go off and go to college by myself and figure it out, or do I stay here and make sure my family's going to be okay? So that was a very obvious and natural choice for me to make.

Menendez: What then changes, where three years in, you make the decision to transition to UCLA?

Echazarreta: UC Berkeley was actually my dream for as long as I can remember and I got rejected in high school. When all of this happens, I sort of thought, okay now I have an opportunity to do it better and to do it bigger this time. So I really took that very seriously. I worked so hard. My mom and I had all the odd jobs you could imagine. She was cleaning homes, she was taking care of babies and kids. I would walk dogs, I would grade papers, I would grade homeworks for the math department. I don't know how I did it. I really truly don't, but I did.

I had a 4.0 the entire time. I founded a couple of clubs at my school. I did hundreds of hours of community service at the local museum and I was able to get a full ride to any university I wanted to go to. And I got accepted into all the schools I applied to, including UC Berkeley, UCLA. Especially after spending so many years taking care of my family, I could not fathom leaving them. And so I remember I visited UCLA and I just fell in love. That is how I made that choice to go there. Which is a whole other very difficult story because now I'm leaving my bubble for the first time and I'm around people that don't necessarily want me there or think that I belong or deserve to be there.

Menendez: Do you remember one of the times that made you feel that way or where you felt that was communicated to you?

Echazarreta: Oh yeah. I mean, it was straight out of a movie the way that you would sometimes walk into a classroom and they would put their backpacks down on the seat so that you wouldn't sit there. Or they would sort of just look at each other and make a little smirk or make little comments about how you're in the wrong class and you must be lost. So it became very clear that they didn't want me there just based on the way that I looked. And all of that changed once they started seeing my grades coming out and the questions I asked in class. And suddenly it's like you have to work so hard to be accepted and once you're in, you're in. But once a new girl, a new woman comes in, then it starts all over again.

Menendez: There's all the success, the academic success. I appreciate though that you also write about the fact that even that was not linear and was not consistent. That there were Ds along the way and that there were classes that had to be taken again. And I think that candor is often missing in the stories we tell about Latina excellence. That you can have what other people will see as failures, and that doesn't have to be the end. It can be an opportunity to start again. What was the closest you came to walking away and how did you rebuild yourself after one of those times where it might have felt even to you, like you couldn't keep up with the work?

Echazarreta: One of the biggest moments I had like that was at UCLA. It was my very first quarter and one of those first tests that I took, I failed horribly. I scored the lowest out of everyone in the class. And mind you, this is a very large class, like 300 students. It just sent me so down because I started to think, well, what if they're right? What if they're seeing something that I'm maybe not seeing? Because clearly I'm not doing too well. Clearly they don't think I should be here, so maybe I shouldn't be here. And I spent a few days just

feeling so horrible and I wasn't really even going to class anymore. I wasn't really even trying with my homework anymore because I'd let their words really get inside of my heart and my mind.

I started looking what the process was to change majors, to drop out of the engineering school. But I remember that there was nothing. There was else I wanted to do. I kept looking, I kept reading. I kept looking at videos and talking to people, but just none of it interested me in the way that this did. So I really had to make that choice of, are you going to keep going despite how hard it is and despite how nobody here wants you or not? And are you also committing to no longer paying attention to all of those voices and all of those pressures? Because that is likely the reason why it's been so hard.

Menendez: That grit, that tenacity pays off. You get your internship at NASA. One of the things you're very big on is delivering practical skills for other women in STEM, about how to get an internship, how to get a job. I am curious how you parlayed that first internship into future missions. What was it that you were doing that made the team at NASA want to work with you again?

Echazarreta: I mean, I definitely know exactly what I did because it was very intentional and it had to be at that time, since you're being offered a 10 week internship. And you're seeing around you all of the interns that started before you not be offered positions back. I figured, okay, first of all, let me analyze these people. Let me analyze what it is that they did and what can I do different? What can I do to make myself an important part of this team, even though I'm only a student? And I decided that what I was going to do was I was going to help people.

I started to realize how many engineers were doing similar work to what I wanted to do, how many of them were so overworked. And I kept hearing the same words over and over during the meetings of, "Well, I couldn't finish this because I had to do that and I couldn't finish this because I had to do that." And so I started to think, okay, what if I offered up my services to help them? That way they can finish more work because they'll just give me whatever is either time consuming or they don't see as something that's too difficult, but yet still needs to get done right? I'm a student-

Menendez: This is a brilliant strategy.

Echazarreta: And all of them said yes, just one by one by one were saying yes, and they were giving me work, and that's how I was able to learn from what they were already doing. I was really able to see all of the different areas from the beginning, to the end, or the middle busy work. And I was doing real engineer work because this is the work that the engineers were assigned. And that's how I started to realize, you know what? This is not so bad. I can definitely do this on my own.

It became so successful, this little project side business of mine that engineers were coming in and specifically requesting me for their different projects or to help them with their projects. So it's coming up to the time where I'm supposed to end my internship and my boss is like, "Well, I can't let you go because you have apparently 15 projects that you're working on and they're not going to let you not finish them, so you have to stay." And I was like, "Sure, I'll stay." And so that's how I got my job. Six months before I graduated UCLA, I was already working as an engineer.

Menendez: Such a hustler, Katya. I love that, I love that spirit, so much to learn from that and from that example. You of course, first Mexican woman to go to space. I wonder what surprised you

most about going to space, and I wonder if you could talk me through what a civilian astronaut can and can't do compared to a professional astronaut?

Echazarreta: I think the thing that surprised me the most was the nothingness that is in your mind while you're seeing the planet. You can't think of anything. You cannot, you're just mesmerized, you're hypnotized. You are kind of like a child, seeing the world for the first time. At this moment, there are a few different ways to categorize astronauts. There's space tourism. There is the regular astronaut program that we see through, for example, NASA or Europe. And then there is a very new thing which is emerging, which are the either civilian or citizen astronauts. I am technically considered a citizen astronaut. I am the first person selected for a mission for a citizen astronaut mission through an organization called Space for Humanity. And all of this depends on what they're there to do. This organization sponsored my flight because we are doing citizen science.

This is science that's not necessarily sponsored by NASA, but it's science for the sake of understanding and growth. And we're trying to analyze something called the overview effect. The overview effect is an effect that happens to individuals when they're able to look at the planet from the outside for the first time. And what psychologists have noticed is that so many astronauts that've seen the planet come back changed, fundamentally changed, psychologically changed. They become more humanitarian. They become activists. They start foundations. They retire from NASA, from their flights and start just trying to do work to help humanity and society. We are seeing this time and time again, and here the question is first of all, why? And second of all, how can we harness this? How can we harness this effect to create superhuman activists that are going to change the world and plant them all over the world like seeds? And that is what my mission is.

Menendez: Did it change you?

Echazarreta: Yes, it did. But the thing is that it's kind of interesting the way it happens. I went through a lot of mental training beforehand because since my mission was to have this experience and analyze the psychological change through science, and I think that in prepping me for it, I sort of created this idea of what it would be like. I kind of imagined it like flipping a switch once you look at the planet. Where now you're just fundamentally different, but you don't feel it that way. You come back and you feel normal. But it was in the coming weeks, in the coming months that I realized that I was actually behaving differently. I was no longer afraid of making big choices. I was no longer afraid of speaking up, being able to speak to some of the highest officials in Mexico. I spoke to the President, I spoke to the Canciller, who's a foreign affairs minister. I've spoken to so many different governors and congresspeople and senators, and I'm not afraid of it.

Menendez: The last question to you, there's a quote you have on your website where you say, "I want to show others that you can lead a successful career without sacrificing what makes you perfectly unique." What is your council to Latina in STEM... Latina anywhere, but I think you've sort of illustrated some of the unique challenges of being in STEM, who feels that she has been asked to compromise parts of who she is in order to be accepted, to fit in, to be taken seriously?

Echazarreta: For so long, I had to sacrifice so many sides of myself to feel accepted in these fields. I remember I would go to college and I would go to class and purposely it was sweatpants and hoodies, try to be as invisible as possible, try to not necessarily fit in, but just not be seen, not be noticed. I would sit in the back. That femininity was the first thing that was stripped away from me in trying to pursue this degree. I did realize how differently I was

treated and some of my classmates who decided to be a lot more feminine in the way that they presented themselves, I had a lot of my male classmates talk to me a lot more. I had them include me a lot more. I had them respect me a lot more when I presented in this way. And that can do a lot of really negative things to you as you start to find yourself and your role in this world.

And I remember when I got to NASA, I was so excited and I thought, okay, well I'm finally here. I'm, I'm going to fit in. I'm going to be amazing. I'm going to do a great job. They're asking me to come back. And I started to sort of fall back into myself a little more and dressing a little more like what I wanted to dress like. You want to wear the cute little outfits and the working girl outfits and bring your laptop in a purse. And it was something that was so exciting to me. There's nothing wrong with wanting to be feminine in that way. And I remember I had a coworker who said to me, "You're doing a really great job, but you should be careful with the way that you're dressing." And I said, "What do you mean?" Because I was dressing professionally, so I didn't understand what he was talking about. He was acting like I'm showing up in the tiniest shorts and a crop top to a professional setting.

Menendez: Especially considering what you do, it would be suboptimal.

Echazarreta: Yeah, but that wasn't the case. I was just so confused. And he said, "The way that you're dressed, people are not going to take you seriously." And I remember I left from that conversation just thinking, what is he talking about? I am putting in an effort into myself, for me to feel comfortable, to feel confident, to be able to do my best work. And you're over here showing up in cargo shorts and flip flops, and you're telling me that you're going to get taken more seriously because of that? You're my fashion police.

Yeah. So that was really hard to hear. And again, I feel like I reverted back to that college student who just tried to hide.

Menendez: Well, because now especially a part of your public persona, in addition to being an educator and a spokesperson and a mentor is doing a bunch of modeling and leaning into that beauty and that femininity and saying, these two things can exist side by side without each challenging the other.

Echazarreta: Exactly. I think when the pandemic started and I started to be able to dress however I wanted because we're all working from home, I started to really flourish. And I realized that it was directly connected to me presenting as myself. And that is so important. And so that's why I had the idea of starring in these different television shows and being this hyper-feminine version of myself on purpose, so that the people that I was teaching science and engineering to could see that and start to create that connection in their mind that femininity has nothing to do with credibility. And that's why I'm really excited to be partnering with Ant-Man and the Wasp, Quantumania because Ant-Man's daughter, Cassie Lang, she is an inventor. And so to be able to see, for example Marvel, which has a very large male audience, for them to represent female characters in this way, we are going to be able to start normalizing the idea that a woman doesn't have to sacrifice herself for her passion or for her career.

Menendez: I love it so much Katya, thank you so much for doing this.

Echazarreta: Thank you so, so much.

Menendez: Thanks for listening. Latina to Latina is executive produced and owned by Juleyka Lantigua and me, Alicia Menendez. Paulina Velasco is our producer. Kojin Tashiro is our lead producer. Tren Lightburn makes this episode. We love hearing from you, email us at

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CITATION:

Menendez, Alicia, host. "How Going to Space Changed Katya Echazarreta." *Latina to Latina*, LWC Studios. February 27, 2023. LatinaToLatina.com.

Produced by:

