



# Ellen Ochoa

## A Look Back at the Badass Astronaut Who Diversified NASA

BY BROOKE ALLEN

From the weightless atmosphere of space, Ellen Ochoa watched the sun set and rise over Earth. As she traveled over the globe, the indescribable sights blew her away. “Part of our job was we needed to video every sunrise and sunset, which happened every 45 minutes,” Ochoa said. “So, we spent a lot of time up on the flight deck looking out the windows, and we just had some amazing views. That was one of the fun parts of that mission.”

On April 8, 1993, Ochoa, at the age of 34, boarded the shuttle Discovery and was the first Hispanic woman to launch into space. Ochoa, now 60 years old, is a veteran astronaut who has four space shuttles under her belt and has logged almost 1,000 hours in orbit.

She recently retired as the 11th director of the Johnson Space Center. She was the first Hispanic director, and the second female director. She also received NASA’s highest award, the Distinguished Service Medal, along with many other awards.

Although, success didn’t always come easily for this trailblazing astronaut. From a young age, Ochoa’s mother, Rosanne, taught her and her siblings the importance of education. “My mom had a love of learning in general and she was usually taking one college class a semester pretty much the whole time I was growing up,” Ochoa said. “Mainly because she just loved learning things, and I think certainly with my brothers and sisters and me, we just sort of had this idea early on that learning was important.”

Sexism was a huge barrier to break for Ochoa. In college, at San Diego State University, she visited the electrical engineering professor because she wanted to pursue that major. The professor attempted to talk her out of the major because “only one woman had gone through [the department].” Ochoa said he then picked up different

electrical components on his desk and said, “Well, you’ll have to work with these. I don’t really know if that would be interesting to you.”

With her confidence blown, she then talked to a professor in the physics department, who was “very encouraging.” After telling the professor about her background in calculus, he said she would be a great addition to the department because she already knew the language of physics. After five years, she graduated with a bachelor’s degree with honors in physics.

Although Ochoa was talked out of an electrical engineering major as an undergraduate, she went on to receive a master’s degree and doctorate in electrical engineering at Stanford University. After she received her Ph.D., she decided to apply to NASA’s astronaut program. Sally Ride, the first woman in space, had already completed her first mission, so the probability of Ochoa being an astronaut seemed “possible” to her.

“It still seems like sort of an impossible dream to actually get selected, since so few people get selected for that job,” Ochoa said. “But I was able to see people somewhat like me [go to space]. I mean, when Sally Ride flew, she had been a physics major, which was my major.”

Ochoa applied to the space program twice before being selected in 1990 — only 23 others were selected. Although she was a minority, her trainers and classmates were “really helpful.” Her survival skills were lagging behind others in her class because a lot of them had military experience.

“I really found that training very supportive. In other words, they’re trying to get people through and trying to give you the right skills. They’re not trying to weed you out at that point — they’ve already done that before selecting a class,” Ochoa said. “So, the trainers were helpful, and the

rest of my classmates were actually really helpful, too. So, I actually just found it really interesting. Some of it was challenging, but it was fun, and it was important.”

According to Ochoa, the years of training before orbit are crucial because every astronaut on the shuttle needs to be prepared. “Anybody that goes into space, you want them to be prepared, whether it's yourself, whether it's your crewmates — it's the right thing for NASA and for everybody. So, getting everybody trained up, it's important to the whole program,” she said.

When she was finally chosen for a space mission, she was able to continue studying what she loved: engineering research. During her first mission, she operated a robot arm that was used to deploy a small research satellite into space. On her first two flights, she studied the earth's atmosphere to uncover more information on the issues of ozone depletion. Also, on all four missions, she utilized the robot arm.

The launch was “really exciting” for Ochoa. “Now that cameras are so much better, maybe you get a little bit better idea [of the view from space] but I would still say seeing it in person is different than anything that you can really show or describe otherwise,” she said. Because she had to log every

sunset and sunrise, she travelled “over a good part of the globe, certainly over all the populated regions of the globe.” The views were “spectacular.”

During her first day in space, her body underwent a lot of adjustments. “Physically you feel a little bit different. But, particularly, I would say the first day [is the most uncomfortable] because your body is trying to get used to microgravity. You don't necessarily feel well right away, but then your body figures it out, and it starts to get pretty fun because you're floating. Everything you're dealing with is floating, so it's just a very different environment you have to get used to.”

After her first mission, numerous primarily Hispanic schools reached out to Ochoa and invited her to speak with students. She used these opportunities “to encourage girls and underrepresented minorities to study STEM (Science, Technology, Engineering and Mathematics) fields.” She said, “That just added sort of that extra dimension to my life as an astronaut... it was an extra rewarding part of my career.”

She strived to emphasize the importance of how a good education can change one's life. “It's not like anybody's anointed from birth that you're gonna grow up and become



Photo by NASA



Photo by NASA

an astronaut. Sometimes it sort of seems that way, like you have no idea how these other people get to that position, so when I had the chance to visit schools in person, I just wanted the students to see me as somebody not too different from them,” Ochoa said. “They can set goals for themselves, they can work hard in school, follow a passion that they have.”

Since Ochoa became the director for the Johnson Space Center, women and minorities have taken up a lot of positions, but NASA “still needs to do better.” She said, “Women and minorities were able to move into all different kinds of positions, all different kinds of leadership positions, and high visibility positions. So, not just astronauts, but flight directors, the ones who are in charge of Mission Control during a mission... And that just wasn't the case when I first joined NASA.”

As the director, Ochoa gave women and underrepresented minorities a voice. She fought for their rights and gave hope to so many people who yearned to enter STEM fields by representing the people who are not always taken seriously.

“There are many different kinds of careers when you choose the STEM field. Astronaut is one that is pretty special, but I know so many other women scientists and engineers who have just had amazing careers, so that's why I want people to at least think about it, and make sure in high school, for example, that you are taking science and taking math because that way you have that option as you go on later in life. Even if you're not sure whether that's something that you're completely interested in, start to investigate different kinds of careers and just give it some thought.”