



US-ELTP Career Profile

Breann Sitarski

Giant Magellan Telescope Optical Systems Scientist



Follow your passion and never be discouraged by what someone has said about you."

Breann's science journey has been inspired by teachers prioritizing student engagement. She recalls her middle school teacher's star parties that fostered her interest in the night sky and challenged her to be naturally curious about the world. At UCLA, her astronomy professor's teaching methods were also inclusive and hands-on, adding to her motivation to continue studying science and eventually develop her career initiative of public engagement through volunteer and outreach opportunities. After Breann completed her undergraduate degree in astrophysics, she attended graduate school at UCLA for astronomy and studied the Galactic Center, trying to understand how objects orbit the supermassive black hole and are torn apart if too close.

Breann applied her background in astrophysics to her first job at Aerospace Corporation, where she worked on a variety of projects and added to her astronomy toolkit. About a year and a half into her first job, Breann saw a dream listing and applied to work on one of

astronomy's next-generation telescopes, the Giant Magellan Telescope. Now, as the optical systems scientist for the Giant Magellan Telescope, Breann works with many groups of scientists and engineers to ensure the telescope's functionality. It is her responsibility as the system scientist to make sure every piece of the telescope, be it the primary mirror, secondary mirror, or support structures, will operate properly to deliver accurate images and data to other astronomers.

What do you enjoy the most about your current position?

I love being able to work on a wide variety of tasks. In a given week I may be analyzing how temperature changes and the environment are going to impact the telescope, and in another week I may be studying a very fine detail of some small part of the telescope. Being involved with so many different aspects requires me to collaborate with many different groups at the Giant Magellan Telescope. I love the sense of community that comes with my role.

I also enjoy applying my background in astrophysics as I create simulations to ensure the telescope systems under construction meet the requirements for science and future discoveries. I take the architecture of the Giant Magellan Telescope and create simulations of astronomical objects, such as black holes or stars, to determine the data and observations the telescope will be able to produce.

Fun Facts



I originally attended UCLA with the intent of pursuing a degree in history. I quickly realized how much I missed taking science and mathematics courses.



During the pandemic, I took on French baking and taught myself how to make macarons and croissants. I would deliver the goods to friends and make care packages.



I design clothes and learned how to sew from my mother as a small child. I have made clothes ranging from ball gowns to work clothes.

What excites you the most about what the Giant Magellan Telescope could discover?

Planets! Planets around Proxima Centauri and exoplanets, in general, are fascinating to me. The Giant Magellan Telescope will be extremely large in size and use the latest advancements in instrumentation. It is exciting to think about how many new exoplanets will be detected and what we can learn from these new discoveries. For example, think of a telescope as a giant rain bucket collecting photons. The bigger the bucket, the more you collect and the more you are able to see.

What are some opportunities or challenges you faced?

Being a woman in science is often challenging and I have faced sexist remarks. I have also found that many women starting their futures in science are not always encouraged and yet they have so much potential. Everything becomes more challenging as you advance through undergraduate and graduate school. The more

you advance academically, you lose women along the way. Now in my career, there are times that I am the only woman in a room full of 40 people. This issue needs to be put forward and addressed. I can't say I know how, but there need to be equal opportunities for every single person starting in elementary school.

One small role I play to make a difference is mentoring a few women. I'm part of the UCLA Mentorship Program where I encourage women who are going into the astrophysics major and help them find internships with professors. One thing that I find a lot of women and men alike have is imposter syndrome when you doubt your abilities despite your experience, education, and accomplishments. In graduate school, I helped lead some imposter syndrome workshops not just at UCLA but also at neighboring universities. I take these opportunities to support others because I would not be where I am today without my allies and colleagues who respect me and are there for me when I need them.

Breann's Pathway to Optical Systems Scientist

