



Astronova Fellow

Christina Vides, Ph.D.



Ph.D., Physics, Astrophysics Concentration,
University of California, Irvine

RESEARCH

Creating technologies that capture and manipulate light to directly image gas giant planets as they form close to their distant stars.

YEAR AWARDED

2026

HOST INSTITUTION

University of California,
Santa Cruz

"Aperture masking is good at increasing angular resolution, but you lose a lot of light. This new Jewel mask will effectively increase the amount of light that can be used for science. That will increase the sensitivity and open up a whole new population of systems we can't study right now."

- Christina Vides, Ph.D.

Christina Vides did not set out to become an astrophysicist. As a community college student, she took an astronomy course to fulfill a general requirement and was captivated by how photons travel billions of years to reach our eyes and reveal secrets about the universe. When she asked how to learn more, she was introduced to her first mentor, a retired NASA Jet Propulsion Laboratory scientist who happened to be running experiments in the college basement.

Now Dr. Vides is a scientist in her own right, building the tools she wants to use. During her Ph.D., she explored aperture masking interferometry—placing a carefully punctured, quarter-sized mask over light as it enters a telescope. The mask parses wavelengths into signals that can be decoded into images of distant cosmic bodies.

As an Astronova Fellow, Dr. Vides will significantly advance this research. First, she will develop data-reduction pipelines that convert raw observations from the Keck Observatory's new SCALES instrument into scientifically reliable data. This software will automate complex calculations to interpret aperture-masked light waves and refine the data so that it can be reconstructed into images of planets forming in orbits similar to those of Saturn and Jupiter around distant stars. She is also designing a Jewel mask, a multifaceted interferometric device that amplifies the light received by a telescope, boosting its sensitivity to detect even farther, fainter planetary systems in the process of formation.

Dr. Vides volunteers with the First Astronomy Scholar Training (FAST) program, which recruits community college students who have the passion to pursue science, regardless of experience, for a week-long workshop preparing them to do undergraduate research. She hopes to expand this program to serve more students during her time as an Astronova Fellow. As someone who entered science in a less-traditional way, Dr. Vides is intentional in meeting and mentoring people early on in their trajectories—where, like the still-forming planets she studies, the most profound things can happen.

Dr. Vides received her Ph.D. in physics with a concentration in astrophysics from the University of California, Irvine, in Spring 2026.

