

Name: Luis Rodriguez de Marcos

Code: 665

Home institution: Catholic University of America

Name of task: UV Mirrors for Large Space Telescope Astronomy (665.029)

Role in task: My research focuses on developing new optical coating technologies to enhance the reflectivity of broadband mirrors for the UV to near-IR.

Background: I was born and raised in Madrid, Spain. I earned my bachelor's degree (2008) and master's degree (2010) in theoretical physics from Universidad Complutense de Madrid. During my Ph.D. with the coatings group at the Spanish Research Council (CSIC), I specialized in determining the optical constants of materials and developing optical coatings for the far UV (FUV) and extreme UV (EUV). I successfully completed my Ph.D. in 2015. In 2016, I moved to Singapore, where I joined the Singapore Synchrotron Light Source as a beamline scientist. My work was focused on the EUV characterization of mask blanks for the next generation of photolithography tools. In my spare time, I explored the application of metamaterials in UV optics and indulged in my passion for soccer.



I later joined Tohoku University in Japan in 2018, where I combined seismic adventures and massive Sushi ingestion with research on gratings for X-ray interferometry. Afterwards, I joined the Catholic University of America in April 2019 through CRESST II as an assistant research scientist. Here I am nowadays supporting the coatings laboratory at GSFC. My research efforts are motivated to increase the reflectivity of FUV mirrors and the exploration of metamaterials in the FUV spectral range. I am also the striker of the GSFC Orange soccer team (who needs a rainbow-size soccer goal to score!), and an avid reader of hard sci-fi novels!

Favorite part of being a CRESST Scientist?

Without a doubt, is the people! My favorite part of being a CRESST scientist is the opportunity to connect with incredible people; I am privileged to work within a group of extremely talented people and being engaged in collaborations with top research institutions. I also love the opportunity to participate in the development of future space telescopes.

Aaaaaaand.....well, being part of this fantastic program is like having THE ticket to the ultimate playground – basic research, funded by taxpayers, without neck-breaking pressure and deadlines! It feels like I am a small kid again, playing with the most amazing toys (materials, deposition chambers, characterization devices, and more) to find the ultimate mirror, all in the name of “research”. And the best part? I get to do it with a mischievous grin, knowing that I am required to utilize these resources wisely to unveil valuable scientific mysteries that benefit society...because at the end of the day, a little playful exploration with taxpayer funding can lead to discoveries that shape the future!