

KARLA DANIELA REYES PIPPER

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EDUCATION	New Mexico State University <i>B.Sc. in Aerospace Engineering with minor in Astronomy</i> <ul style="list-style-type: none">• GPA: 3.944/4.00	New Mexico, USA 2023 - 2027 (expected)
RESEARCH	Astronomy Department Research Assistant NMSU	2025.02 - Present
	<ul style="list-style-type: none">• Under Prof. Joseph Burchett, I analyze SDSS quasar spectra to identify MgII absorption and characterize the intergalactic medium, developing Python pipelines (NumPy, Linetools) for data cleaning, continuum fitting, and line detection. I generate visualizations, interpret spectral features, and work with large astrophysical datasets. Recent sightline analysis shows no Mg II absorption at expected radii, indicating low gas density in regions typically associated with large-scale structure.	
	Mechanical and Aerospace Engineering Research Assistant NMSU	2026.01 - Present
	<ul style="list-style-type: none">• Under Prof. Shashikanth Banavara, I am engaged in a faculty-supervised research and learning project focused on advanced topics in fluid dynamics, aerodynamics, dynamics, and engineering mathematics. This work involves theoretical modeling, computational exercises, and the study of technical literature across multiple physical systems. Through this project, I am building a deeper foundation in mathematical methods, physical modeling, and analytical problem-solving, while gaining exposure to the types of complex systems and computational approaches that underpin modern engineering and physics research.	
PROJECTS	NASA and NM Space Grant Consortium Lunar Logistics Challenge <i>NM Space Grant Consortium / NASA</i>	2025.09 - Present
	<ul style="list-style-type: none">• National competition sponsored by NASA centers and the NM Space Grant Consortium to design pressurized, temperature-controlled logistics containers for lunar missions.• Led manufacturing planning, safety analysis, and QA documentation for a pressurized, thermally controlled lunar logistics container.• Developed standardized assembly and testing procedures aligned with NASA safety requirements. Conducted hazard assessments and contributed to mechanical reliability evaluations.	
	NanoSatellite Lab <i>NMSU Structures Team</i>	2023.08 - Present
	<ul style="list-style-type: none">• Designed and mechanically tested structural components using SolidWorks and additive manufacturing, validating reliability for spaceflight conditions.• Developed standardized testing procedures and documentation for structural verification.	
	AIAA Rover Project NMSU	2025.09 - Present
	<ul style="list-style-type: none">• Payload team member developing a rover prototype for volcanic exploration on Jupiter's moon Io.• Designing mechanical components for a robotic sampling arm, including structural analysis and CAD modeling for thermal, dust, and pressure constraints.• Collaborating on prototyping and mechanical testing to validate subsystem reliability.	

WORK EXPERIENCES

Webmaster, Engineering College NMSU	2025.09 - Present
• In charge of their websites with over 5,000+ pages using HTML, CSS and Cascade.	
• Migrated their old websites with 400+ pages to the new Cascade version v.4.2. (ece.nmsu.edu, ie.nmsu.edu, etse.nmsu.edu).	
Webmaster, Sunspot Solar Observatory and Astronomy Department NMSU	
2024.03 - 2025.09	
• Developed and in charge of their website (sunspot.nmsu.edu) using HTML, CSS and Cascade.	
• Translated documents and flyers for the museum and visitor center from English to Spanish.	
• Helped manage the online and in-person store.	
• Assisted with solving tech-related issues.	
Student Aide, Honors Department NMSU	2024.03 - 2025.09
• Developed their current websites (honors.nmsu.edu and discoveriescholars.nmsu.edu) using HTML, CSS and Cascade.	
• Helped with any tech-related issues.	
• Managed their social media accounts.	
• Assisted with the office (with issues from visitors, students and faculty).	
Orientation Leader, AWO Office NMSU	2025.03 - 2025.08
• Assisted 500+ students and their families/supporters transition into the NMSU community.	
• Presented both in-person and virtual orientation sessions, strengthening public speaking abilities.	
• Coordinated check-in processes, campus tours, and event flow to ensure smooth program operations.	
• Collaborated with university staff to resolve student concerns, directed participants to appropriate campus services, and maintained a welcoming, inclusive environment.	

PARTICIPATION IN ORGANIZATIONS

Founder and President, Society of Students in Astronomy NMSU	2025.09 - Present
• Founded and developed the club.	
• Plan and oversee all activities in the club.	
• Create all events / fundraising activities.	
• Present at club meetings and events.	
• Created and implemented a structured program enabling undergraduates to earn observation volunteer hours at the Tombaugh Observatory.	
• Created and implemented a structured program enabling undergraduates to do science outreach activities at elementary / middle / high schools.	
• In charge of website maintenance.	
Member, American Institute of Aeronautics and Astronautics NMSU	2025.09 - Present
Member, Society of Woman Engineers NMSU	2023.09 - Present
Participant, Intel Shape the Future Program NMSU	2025.02 - 2025.07
Mentee, Grad Astronomy student Julio Morales NMSU	2023.10 - Present
Vice-president and Website Developer, International Students Club NMSU	2024.08 - 2025.09
Treasurer and Secretary, International Students Club NMSU	2023.10 - 2024.08
Mentor to 11 students, Honors First Year Seminar NMSU	2024.08 - 2024.12
Mentee, Cyber Systems Engineer Ilana Moreno ILEW	2024.02 - 2024.11

AWARDS
AND
HONORS

- **Bronze Honour**, International Astronomy and Astrophysics Competition 2025.09
- **Dean's List**, New Mexico State University 2023, 2024, 2025
- **First Prize**, Mexico interCBTa Competition, 2023.07
- **First Prize in Mathematics, Physics and Chemistry**, Basic Sciences competition of the National Technological Institute of Mexico 2022, 2023
- **Participation in Mathematics and Biology**, International Competition of the Monterrey Institute of Technology and Higher Education 2022, 2023

SKILLS

Languages: German, Chinese, English, Spanish (Native).

Programming: Python, C++, MATLAB, HTML, CSS, JavaScript, LaTeX, C.

Hardware and Systems: Solidworks, CAD, 3D Printing, Electronics Integration, Sensors, PLC, Arduino, Drones, Microsoft Access and Office Suite.

CONFERENCES

International Telemetry Conference: *Attended the conference in Arizona*

National Conference for College Women Student Leaders: *Attended the conference in Washington. Learned how to network, practiced public speaking and more professional abilities through workshops..*