TIMESTEP Summer Tech Internship- Student Panel
University of Arizona, PAS 236
OR online: https://arizona.zoom.us/j/82615759625
Wednesday, February 4, 2026 ✦ 5:00 - 6:30 pm

Panelist Internship Experiences



Philip Klaassen
Physics, Mathematics
Paramium Technologies

Paramium Technologies is a startup focused on Satellite Communications. Satellites need to communicate with ground stations for data download, telemetry data, flight control, and more. Paramium aims to build and operate these ground stations. During my internship I was able to design the antenna and dish that will be used in these ground stations. I was able to use my optics and coding experience to determine optimal parameters for the dish. During the process I learned how to use modeling software like SolidWorks and how to implement design principles. I am continuing with Paramium working on a prototype ground station.



Rohin Sant
Astronomy, Physics
NOIRLab

My internship was at NOIRLab. My internship included looking through and conducting a deep analysis of the Astro Data Lab Jupyter Notebooks. I skim read the notebooks, analyzed GitHub pages, and looked at other example galleries to set out recommendations to enhance the delivery of their notebooks. I also worked on a research project under Dr. Stéphanie Juneau where I used a machine learning algorithm, UMAP to analyze and look at trends in AGN/Quasar galaxies. I used Python, Jupyter Notebook, SQL Queries, data visualization, and a lot of traditional astrophysics research methods to obtain interesting results about black hole activity in AGN. I also presented my results as a poster at an astronomical software conference. The technical skills that I learned during the internship were machine learning, traditional astrophysics research methods in an industry setting, presentation at conferences and team meetings, among others.



Shashank Verma
Astronomy, Physics
Go For Vertical (2025), Fringe Metrology (2024)

I'm currently majoring in Astronomy and Physics at the University of Arizona. Last summer, I interned at Fringe Metrology, where I developed a dual-camera metrology system for measuring the flatness of large radio dishes. My work involved optics, instrumentation, and software development. I later continued

working with Fringe Metrology beyond the internship, transitioning into semiconductor wafer metrology. During this experience, I expanded my skills in Python, SOLIDWORKS, ZEMAX, and MATLAB, while also connecting with industry leaders in the semiconductor industry. My current research focus is in astronomical instrumentation, where I work with CCD detectors, telescopes, and applied optics.

I'm an Astronomy and Physics student at the University of Arizona focused on instrumentation and applied optics. I previously interned at Fringe Metrology, where I developed a dual-camera metrology system for measuring the flatness of large radio dishes and later continued with the team on semiconductor wafer metrology. More recently, I've worked as an engineering intern at FreeFall Aerospace on deployable/large-aperture structures, contributing to requirements-driven test planning, sensor/telemetry workflows, and metrology (deflectometry and photogrammetry) to quantify deployment behavior and surface figure. In parallel, I've supported MindBoard.ai through structured testing and reliability-focused validation work. Across these experiences, I've built skills in experimental design, data analysis, and tooling including Python, MATLAB, SOLIDWORKS, and optical/measurement workflows.



Santana Madero
Applied Computing, Software Development emphasis
UA Space Astrophysics Laboratory (UASAL)

I completed a summer internship with the University of Arizona Space Astrophysics Laboratory (UASAL), where my project focused on the evaluation of commercial off-the-shelf components for space systems. UASAL works to lower the cost of developing new technologies that help astronomers better image extrasolar planets.

My role specifically involved the evaluation and qualification of VEXTA stepper motors for their potential advancement along NASA Technology Readiness Levels. My work included assembling test hardware and conducting literature reviews aligned with aerospace standards. Through this experience, I gained strong skills in engineering documentation and space hardware planning. Following the internship, I was hired full-time to continue working with UASAL and now support the management of two laboratory spaces as part of my ongoing role.



Zeke DeLaughter
Astronomy
Rincon Research Corporation

I am currently a Junior majoring in astronomy with minors in physics and computer science. Last summer, I had an internship with Rincon Research Corporation (RRC). The company focuses on digital signal processing. For my internship, I programmed an automated system to track and observe signals coming from a list of different satellites. This "survey" as they called it would be used for a proof of life study on the given satellites, finding out if they were still active and at what frequency bands they operated on. I also assisted with Catsat operations, which is a joint project between RRC and the University of Arizona to build and operate a small cubesat. There is a University web page on the project if anyone is interested in it. For these projects, I developed my Python coding skills, which was the primary language used to program my project. I also learned both Bash and CSH, which are two scripting

languages used in Linux environments. As I continue my internship beyond the summer, I have had to gain a better understanding of signal processing, particularly in how signals are modulated and demodulated. The focus last semester was on Catsat operations, where I was given the task to demodulate a certain signal being transmitted. All of these projects have shown me the number of career options that are available. This degree is not just limited to research, and getting industry experience can open the door to many opportunities.