

**Collin Fan:** Grade 11

**Hobbies:** Binging SpaceX live streams, amateur YouTuber, basketball, piano

**Clubs:** Math Team, Statesman newspaper, Peer Tutors, Baroque Ensemble, Freshman Mentor Program

**Experience:** USAPhO Honorable Mention (2021), AIME (2020-2022), USAAAO NAC (2022), M3 Challenge Finalist (2022), MTFChallenge Champion (2022)

**Autobiography:**

I still remember the time in freshman year when I received my first ("actual") lego set: a model of the Saturn V rocket.

From what I know, the model got everything to scale—from the engines to the astronauts to the fuel tanks. I remember getting especially excited by the fact that the set had exactly 1969 pieces, the year Apollo 11 was launched. I put the set together over the course of a few weeks, not expecting to learn anything more than how to put plastic cubes together.

Boy, was I wrong. In many ways.

To my dismay, a few dozen of the 1969 pieces ended up being spares, so the actual number of pieces in the final rocket numbered a year somewhere during the Great Depression. Devastating, I know. I was also caught by surprise by how the massive first, second, and third stages stacked up to a dinky command module at the top—the proportions ended up being far different from what I expected. Most importantly, though, I finished the set with a newfound obsession with physics that is still with me today.

I wanted to find out why such a large rocket was needed just to send a tiny capsule to the moon. I began exploring first in the realm of Wikipedia, then to random YouTube videos, then to Walter Lewin's mechanics lectures. It was in the lecture on precession where I saw the thing that completely changed my (then highly limited) perception of what the word "physics" meant: a floating bicycle wheel.

My brain said, "it must be CGI." But it wasn't. It was then that I understood that physics was more than just memorizing a list of formulas—it was a whole process of thinking, of exploring the world, and of personal growth.

After the pandemic started, I had loads of time on my hands... what better to do than physics? I began to dig deeper into the subject, starting with Giancoli and then the renowned HRK. I can confidently say I learned quite a lot during Zoom school—though much of that learning came from the physics textbook open in front of me rather than my computer screen.

After less than a year of genuine studying, I did surprisingly well on the online USAPhO, earning an Honorable Mention. After another year of reviewing past exams and solving tricky problems, I'm honored to have qualified for the 2022 Physics Team.

Looking back, lots of chance occurrences led me here, from the lego set to browsing physics videos on YouTube. I am incredibly grateful for all those that have helped and inspired me to do my best and to explore the amazing world that is physics. A big thank you to Ms. Ruda for organizing the exams and Ms. Edstrom, my physics teacher, for showing me that there's so much more to physics than meets the eye. I'm really excited to meet everyone at camp (and to do some cool physics)!