Final Reflections on the Physics of Stars at the UChicago Summer Session

by Safwan Morshed

This summer, I was provided with the opportunity to attend the University of Chicago Summer Session in Hyde Park. Students from around the world traveled to Chicago with the intention of gaining firsthand experience with college life at a selective institution. While everyone pursued their own paths with their respective programs, the Physics of Stars program was where I was headed.

My first week at UChicago felt like a dream come true. The initial nervousness during orientation quickly faded as I discovered how easy it was to connect with people from all corners of the globe. Exploring the campus with my group led to unexpected friendships, and impromptu conversations became a source of joy. The grand gothic architecture and lush greenery across campus made every stroll feel like an adventure.

The dorm housing system, reminiscent of Hogwarts, provided a unique sense of community. Each student is assigned a house to stay at along with residential assistants that would aid in curfew check-ins and group activities like baking and karaoke. When I moved into my room, it dawned on me that this was going to be the longest time (in my life so far) that I would be living away from my parents. I was initially concerned with how I would be able to maintain my wellbeing, but luckily the environment was very supportive. There may have been a time or two where I was late to curfew or left my key in my room, but the staff at the dorms were easily accessible and were willing to help. Communal bathrooms were an interesting experience that resulted in some unexpected conversations about soccer, but nevertheless exceeded my expectations. The houses at our dorms also began their seasonal House Games. Each house was going against each other completing various tasks for points ranging from creative endeavors to tests of strength. Doing the Macarena for thirty minutes straight and getting into a human pyramid was enough to make my head spin. Overall, the living experience there was quite enjoyable and unlike any other experience I've had anywhere else.

In my Physics of Stars class, icebreakers and interactive activities helped forge connections with my peers and made instruction more lively. Though the coursework was challenging, I pushed through with determination, often collaborating with classmates into the late hours of the night. By my second week in the course, the material began to click and the instructors responded to feedback about pacing, thus allowing me to actively participate in class discussions and even tackle problems on the blackboard—an unexpected confidence boost. Guest lectures enriched my understanding of astronomy as their diverse teaching styles kept every class engaging and dynamic. I was even introduced to an online game that made learning the sequence of nuclear fusion in stellar evolution sound fun! The lecture hall experience was one of a kind. Attending a graduate institute and witnessing the research of UChicago's astronomy students was truly inspiring, fueling my passion for the subject. Considering that my final presentation for the class exhibited advanced understanding in topics I knew nothing about from the beginning, I feel accomplished in my newly gained knowledge in astronomy.

Weekends were filled with exciting trips to Chicago's cultural landmarks, such as art museums and the Brookfield Zoo, which added a colorful layer to my UChicago experience. Exploring more of Chicago, including the Art Institute and Millennium Park, was a blast. Each corner of the city held its own unique charm, and I cherished every moment spent exploring with friends. There were a few moments where being lost and unable to get a ride back to the dorms made some return trips quite miserable. Other days the air quality limited what our plans were for the day. But in the end, we were able to adapt to the climate and get acclimated to traversing the vast city of Chicago.

However, my greatest accomplishment and favorite experience wasn't even in Chicago. The final week was the crown jewel of my experience. Our class took an extended trip to Williams Bay, Wisconsin to visit the Yerkes Observatory, colloquially known as the "birthplace of modern astrophysics." Our instructors decided on Wednesday to set up various stations around the observatory where students would get into groups and rotate between each activity. One station was set for an observation of the Sun through a solar telescope. While the only requirement for the station was to draw a picture of what we saw through the lens, a few of my group members and I decided to get a photograph of the sun through the lens. After several adjustments to the phone camera and telescope angle, we were able to produce a photograph that left one of our instructors in awe. I never anticipated that the photograph would induce a reaction like that, but it gave a sense of fulfillment that sealed the deal for me.

My favorite station at Yerkes would have been the sky survey room. Venturing past a series of "Employee Only" signs, staircases, and ominous hallways will lead to a vast array of documented sky surveys taken by the refracting telescope throughout its life in commission by the University of Chicago. Various cabinets filled to the brim with long sheets of paper that had been recorded along with plastic overlays that gave labels to the astronomical objects that were identified by scientists in the past. My group enjoyed looking up the coordinates of various objects we've heard of and identifying them ourselves using the collection of sky surveys.

This trip also gave me the opportunity to go stargazing for the first time in my life in an area with minimal light pollution. A few of my classmates and I decided to lie on the grass to admire the night sky in all its beauty. It was amazing to see and actually identify stars in the sky based on what we learned in class. It was equally amazing to manipulate the telescope within the observatory late at night to observe a wide field of stars.

The lodgings we had at George Williams College was enough to elevate these final moments with my class to another level. The vibrant view of Geneva Lake juxtaposed with the hilly landscape of Williams Bay was enough to make everyone engaged. A walk along the lakeshore path. An evening playing frisbee at the beach. To top it all off with a gathering and deep conversation around the campfire made the trip feel extraordinary.

In wrapping up the program, saying goodbye to the friends and experiences I've gained was bittersweet. The final group photos taken left everyone in tears while simultaneously leaving everyone excited. I even managed to catch a final photo with my instructors which meant a lot to me. This summer adventure has been beyond anything I could've imagined, leaving me with a

deep appreciation for astronomy, city life, and the lifelong connections I've made. I recommend the UChicago Summer Session to those willing to put in the extra effort to make the most of this experience. Furthermore, I highly recommend that applicants consider taking the Physics of Stars, as UChicago's unique history with astrophysics enhances the learning experience in ways not many other universities can provide. I want to express my deepest gratitude to the Garwin Family Foundation for making this extraordinary journey possible. Your support has ignited a spark within me that I will carry forward as I continue to pursue my passion and academic aspirations.