

International Conference for Physics Students XXIII  
Report

Kraków, Poland, August 2008

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## 0.1 5 August 2008

After arriving in Europe, I still had one more plane to take from Germany to Poland. This was my third and final flight. Upon landing in Poland, there was the quick realization that I was jet-lagged due to the inability to sleep on the transatlantic flight.

I managed to take the train from the airport to City Center. From there I walked around Kraków for about an hour before wandering into the dormitory for the conference (see Figure 1).

My first impression of Kraków is that it is a varied city. There is a mix of bright green gardens and creatively-colored historic buildings, but there are also many dull grey-toned buildings, which are built around the perimeter and presumably are more recent additions to the city.

What was left of the day was spent settling into the dormitory and preparing for my impending speech. The International Conference for Physics Students XXIII (ICPS) would begin in a few short hours.



Figure 1: The view from my dormitory room window.

## 0.2 6 August 2008

This was the day that most people were arriving, as it was the official start of the conference. Since there were no events for the morning, I decided to go on an adventure to Wieliczka Salt Mine. I met another ICPS participant on my walk into the city. He was from Norway and told me that ICPS is a great way to meet students from around the world that have

similar interests. He had attended two previous conferences. I would come to notice that the attendees at this event were open and had a passion for both physics and the conference.

I somehow managed to get to Wieliczka knowing no Polish by the kindness of several people who spoke enough English to direct me to the proper bus stops.

I stood in line waiting to get a ticket for what seemed like forever. I almost opted to take a tour in French just to bypass the long line for English. It turns out that the line for Polish tours was several hours longer than the English, so many who are bilingual were flooding the English line to save time, which is essentially what I almost did to the French tour.

Wieliczka is the perfect tourist attraction. Everything is set up well, and it has its share of salt sculptures carved by miners (see Figure 2) as well as painfully tacky dioramas (see Figure 3). I was generally pleased with the tour.



Figure 2: Salt sculptures carved in Wieliczka Salt Mine by miners.

Other highlights of this adventure included a visit to Saint Kinga's Chapel inside of the mine (see Figure 4). Everything was made out of the salt, including the crystals on the chandeliers. Apparently, masses are held weekly here, as well as special events like weddings and classical music concerts. I also really enjoyed looking at the salt deposits forming on the walls and ceilings (see Figure 5).

Having read travel books on Poland and having seen excerpts on television about Polish tourism, Wieliczka was not something that I was about to miss. It is rich with history and interesting exhibits, but it really isn't for everyone. Most notably because of the several hundred steps that one needs to descend before starting the tour, but also because it is more touristy than historical. Then again, where else is there a salt mine that you can wander around in? Ultimately, I think it's just a good experience to have.



Figure 3: Diorama in Wieliczka Salt Mine depicting the miners.



Figure 4: Saint Kinga's Chapel inside of Wieliczka Salt Mine.

I returned to the dormitory and soon met Jodie Tvedtnes-Barker, who also won the chance to attend from the Society of Physics Students, and the nice Romanian girl that she was sharing a room with. Together, we experienced our first ICPS-provided meal of rolls with minimal meat and cheese and sausage. It was indicative of the rest of the meals. I got the feeling that this was not exactly traditional Polish fare, so I was motivated to eat outside of the conference.

That night was the Welcome Party, which was a good chance to meet new people. Everyone was very interested in talking to the Americans, which was extremely exciting as we were interested in talking to everyone else. This was certainly a good opening to the conference.



Figure 5: Salt deposits on the walls of the tunnels of Wieliczka Salt Mine.

### **0.3 7 August 2008**

Jodie and I attended the Opening Ceremony and finally found Therese Jones, the third winner of the award, and her British roommates. The opening lecture was a discussion of superconductivity, followed by extensive physics demonstrations, which every physicist loves to watch.

After lunch, we opted to give ourselves a city tour (see Figures 6 and 7). We wandered around the old parts of town at our own pace. It was a lovely afternoon spent with good people looking at a beautiful city. That was probably when the realization of how privileged I was to have gotten this opportunity set in.

That night was a Polish evening where we were provided with Polish food (mostly various kinds of sausage) and lessons in traditional Polish dancing. We retired relatively early as all three of us representing the United States had to present our research the next morning.

### **0.4 8 August 2008**

Therese was the first presenter in the room designated for astrophysics for the day (see Figure 8). Her speech was clear and understandable. She did a great job explaining the material with confidence.

There was another lecture followed by a small break, and then I gave my talk (see Figure 9). Unfortunately, this coincided with Jodie's lecture. I received only positive feedback from the audience. My favorite comment was how understandable I made the content of my



Figure 6: One of the beautiful façades of Kraków topped by a tower.



Figure 7: Another building in the center of Kraków.

speech, as discussing the subject on a level appropriate for my audience is a goal of mine.

We were relieved to be done presenting on the first day of lectures. Now, we could just enjoy ourselves. We sat through the rest of the astrophysics lectures and were grateful that we were prepared for questions because some of the sessions had some harsh critics in them.

This night's party was the National Party, where students get together by country and bring native food and drink. Jodie prepared fajitas and nachos with salsa for a Southwestern sampling, I brought s'mores, and Therese made funnel cakes (see Figure 10). Amazingly enough, everyone seemed to be unaccustomed to our food. People actually searched for the



Figure 8: Therese Jones presenting her lecture, Using Absorption Lines to Probe the Universe: From Cosmic Reionization to the Milky Way.

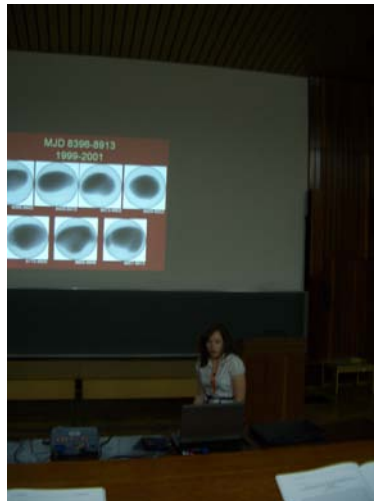


Figure 9: My presentation of my lecture, A Study of Differential Rotation on II Pegasi Using Starspot Imaging.

American food, making us feel even more welcomed into this conference.

Each country had the opportunity to put on a skit somehow representing their heritage, but we weren't prepared for that surprise, so we just watched everyone else. There were national anthems sung and ethnic dances performed. There was a lot of traditional food that was delicious to sample. This was probably the best night of the conference because everyone was so excited to talk about their culture and to learn about everyone else.



Figure 10: Therese making funnel cakes for the National Party.

## 0.5 9 August 2008

This was the day of our excursions. Independently of each other, Jodie, Therese, and I all signed up to go to the Auschwitz-Birkenau concentration camp (see Figures 11-14). There is absolutely no way to describe this experience accurately. Everyone was overwhelmed with sadness from this experience. There is also no way to really fathom what these places were like during World War II.



Figure 11: A view of a small section of Auschwitz II, a World War II concentration camp not far from Kraków.

We were informed that these areas are preserved so that mankind does not forget what evils it has bestowed upon itself. One can hope that that message is actually learned.



Figure 12: A street in Auschwitz II.



Figure 13: The train tracks leading into Birkenau that transported so many unknowingly to the concentration camp.

That night was a complete contrast to the excursion. This was a night for ICPS participants to go out into Kraków and experience the nightlife. Therese and I joined a group of English students we had been introduced to the prior night and headed out to a club where we were met with a lot of interesting remixes of British and American music.



Figure 14: A small fraction of the vast expanse of Birkenau.

## 0.6 10 August 2008

There were more student lectures on various subsections of physics, as well as a poster session on this day. I was disappointed to find that very few were presenting posters, but I discussed with some of the authors. Despite the few posters, there was a large variety of interests presented.

A rescheduled workshop session occurred, too. The presenters did a ton of demonstrations and discussed the importance of physics outreach.

That night for dinner I went into Kraków determined to find pierogies for dinner. I was joined by Therese and one of her roommates. We were successful and had a welcomed break from the sparse dinners that we were served, as lunch is typically the main course in Poland. That night was the Costume Party, which was fun to see how inventive everyone was.

## 0.7 11 August 2008

Again the morning was filled with student lectures. This afternoon and evening were filled with the meeting for country representatives to discuss the progress and structure of the International Association of Physics Students (IAPS). Jodie, Therese, and I happily represented the United States. It was good to know that even though we are a single country, our opinion mattered a great deal. Our membership is important to IAPS because of all of the integral research occurring in our country. It is also understandable why the American Physical Society and the Society of Physics Students want to have this international affiliation. It

promotes the good-natured aspects of international cooperation in scientific research. After nearly nine hours of this meeting, we were all released. It was nearly midnight and the only logical move was to get a kebab to eat and walk around the area by the host university, AGH University of Science and Technology.

## 0.8 12 August 2008

This was the last day of ICPS activities. Most were leaving the next day, but a few departed early. After the daily lectures, Therese and I wandered around Kraków enjoying the end of our stay (see Figures 15-19).



Figure 15: A tower in the center of Kraków.

Kraków is an amazing city to experience. There are so many winding streets to absent-mindedly stroll down.

After Therese left Kraków by train, I went back to the ICPS for the final night of the conference. The Farewell Party had a melancholy air. Everyone was saying their goodbyes and pulling for everyone to return the next year. I thought it was incredibly touching that so many suggested that the Americans return again next year. We got to know so many great people throughout this adventure. As I previously stated, it was great to feel so welcomed. I hope to make it to the next meeting, which is in Split, Croatia.



Figure 16: The cathedral dedicated to Saints Peter and Paul.



Figure 17: The view from Wawel Hill of the Wisła River.

## 0.9 13 August 2008

I opted to stay for an extra day. More self-guided touring and some souvenir shopping was accomplished as I wandered around Kraków for the last time. The day seemed very peaceful and was the perfect end to the adventure.

The day was short as I made it an early night to depart painfully early the next morning.



Figure 18: The top of Wawel Hill.



Figure 19: A view of Kraków from Wawel Hill.

## 0.10 14 August 2008

The day of my departure was hectic. I was returning home on three flights. The morning started out interesting because the bus stop I was attempting to use to get to the airport was apparently out of order. Naturally someone tried to inform me of this in Polish, but I could not understand them. I realized what was being said after the bus drove by without stopping. It is a mystery to me how bus stops can be out of service. I managed to get a taxi to the airport because there was not enough time to relocate to a functioning stop and get to the airport.

The adventure was not over because I was forced to check my suitcase, which subsequently

was lost after being rechecked in Washington, D.C. It made its way to me the next day, thankfully.

I was happy to be home, but I honestly believe that I will take the memories of this experience with me for a very long time. I have been to several conferences over the years to present my research, but this was by far the best of those.

## **0.11 Acknowledgements**

I wish to extend my gratitude to the Society of Physics Students for this opportunity. I had a fantastic experience because of the support from the Outstanding Student Award for Undergraduate Research. This was the chance of a lifetime, and I am honored to have been chosen for this.

Along the same vein, I want to thank the Ohio Wesleyan University Department of Physics and Astronomy for their insistence that research be required to graduate and for providing me with exceptional preparation for a career in physics. I especially extend my thanks to Dr. Robert Harmon, who worked on starspot imaging with me since the summer of 2006. His support of the work and suggestions that I apply to the award were far beyond what were required, and I am forever grateful.

Finally, I thank Gregory Henry of Tennessee State University for providing twenty years of data from the 0.4-m Vanderbilt/Tennessee State Automated Photometric Telescope on Mount Hopkins, AZ, without which I obviously could not have done any of this.