

“IT’S GOOD TO BE IN DC”

— by Melissa McClure, University of Rochester

Hi, I’m Melissa McClure, a senior astronomy and math major at the University of Rochester, and this report describes my experiences at the 207th meeting of the American Astronomical Society (AAS). I had the good fortune to be sent by Cornell and Rochester to present a poster about my REU work on modeling Spitzer Class I protostellar spectra at Cornell last summer. What I expected was a very sedate formal gathering. Reality was refreshingly different than my expectations.

Two of my friends from Rochester, Amanda LaPage and Grant Tremblay, also went to the conference, which was convenient because I could split a room with Amanda. They both flew down to Washington, DC, but to give my schedule more flexibility (since my poster session was on Thursday), I decided to drive from my hometown of Ithaca, NY, instead of flying. The trip was smooth enough, except around Germantown MD, where I got lost looking for a gas station. Getting lost was a fixture of the week; the hotel was like a giant maze.

After arriving at the hotel late and flustered, I found Amanda and we made it down to the undergraduate orientation just as it was beginning. There we saw many people from the summer research programs we’d taken over the past two years. From the orientation, we migrated to the opening reception. The crowd in the entryway was enormous, but as we made our way to the head of the stairs to look for food, we saw that the floor below us was packed with even more people. As we learned later, the total number of conference registrants was over 3000, the largest gathering of astronomers ever. We descended the stairs and got in line for refreshments. According to veteran AAS go-ers, the food this year was much improved, with a larger variety and more substantial foods. The reception was very good for finding and talking to people we already knew, but it wasn’t that helpful for networking, since most of the people had just arrived and were engaged in catching up with old acquaintances. Afterwards, we headed back up to our room in the central tower and I proceeded to highlight all of the talks and posters that I wanted to see during the week.

On Monday morning, I got up early to get coffee and listen to the opening talk, but got lost trying to find the Starbucks in the hotel. The talk was almost over by the time I found the main ballroom, so I headed upstairs to check the online news at the Cyber Cafe. Fortunately, there wasn’t much of a line when I arrived, although one developed by the time I left. Before the oral presentations began, I decided to scope out the poster presentations in the massive rooms below the conference rooms. I only got to stop at half of the posters that I wanted to see before I had to head up to talks. The first 2-3 minutes of each one was informative; after that, they were interesting but over my head. Ironically, one of my undergraduate friends overheard some professors echoing those sentiments; afterwards they laughed that they all wanted to be astronomers when they “grew up.” It was encouraging to see professors and researchers still talking and thinking like students.



Some of my loot.

Photo courtesy of Melissa McClure



Paths converge in the hotel.

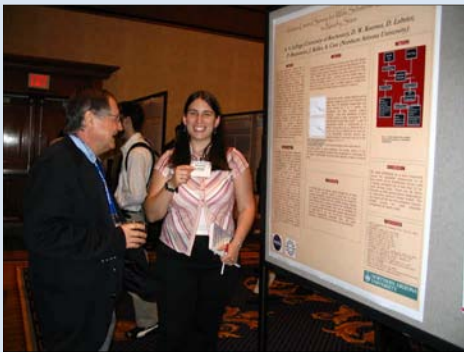
Photo courtesy of Melissa McClure

Over the lunch break, I went back down to the poster session. While I was reading the material at the NRAO table, the representative asked if I wanted a poster and laughed at me when I asked how much it was. After leaving with several posters, which he insisted that I take, I ran around with child-like greed, picking up all of the free material until I couldn’t carry anymore. Then I found the free heavy duty plastic NASA bags (a million thanks to whoever came up with those!) and proceeded to collect even MORE samples. I met up with Amanda, who had already done the rounds that morning, and she directed my attention to a number of cool items that I’d missed, like the thermometer magnets by the Einstein display, the paper Swift airplanes, and the GLAST playing cards. There were a few things, such as the airplanes, that I took doubles of for my six year old brother, who is going through an airplane phase. After absconding with our loot to our room, we got lunch at the Woodley Market and headed back down to the talks.

Later that night, we met up with Grant and went to the special SPS undergraduate session. Since all three of our posters had been selected for display at this session, we got there early to set up. Once again, the food was really good and sufficed for dinner.

The first hour was spent reviewing the posters, which was good practice for everyone who had yet to present at the poster session, and the rest of the time was spent listening to themed talks by Vera Rubin and Chris Impey. Vera, whose presentation was about “beginnings,” went first, describing how she became an astronomer. We were in stitches from the moment she described how she found her husband: she was so impressed with Feynman

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Amanda presenting her poster.

Photo courtesy of Melissa McClure

incredibly modest, not explaining her experiences in terms of an epic struggle of women's rights, but rather as her standing up for what she, personally, had worked for. Her last comment was that we now live in a data-rich period of time, in contrast with her student years, and in these circumstances, it is incredibly important to forcibly take the time to stop and really think about the bigger theoretical picture, in addition to doing massive amounts of data analysis. It was incredibly inspiring to everyone in the audience, and the applause at the end was thunderous.

After Vera stepped down, Chris began his talk with a prelude in which he responded to her last comment about taking time to think. He pointed out that it was essential both to astronomy as a whole and to us personally to slow down once in a while and deliberately engage in deeper thought. Then he segued into the body of his talk, which was all about "endings." As inspirational as Vera's talk had been, Chris's talk was equally hilarious and elicited lots of laughter. Beginning with early religions, he explained how the concept of a time as a finite thing with both a beginning and an end was a direct consequence of the Judeo-Christian mythology, in

contrast with older religions which viewed time as a more cyclic entity. The focusing idea of his talk was how to respond to questions like, "you're an astronomer...tell me how the world is going to end!" With some political references, he glossed over the obvious response of, "We'll manage to blow ourselves up somehow," and addressed the idea that we will be obliterated by a meteorite, complete with movie clips. Multimedia was a big part of his talk; for the next segment on our sun's eventual death, he played clips from various "sun" songs (*Here Comes the Sun* will never be the same...). Moving on, he covered how the galaxy will eventually burn out and become dark, and then the various possibilities in which the universe might end. However, there was a small ray of hope amidst the clouds of despair; Chris concluded by pointing out that according to logicians, it is very probable that we are all simulations, so none of the end-of-the-world possibilities are significant! Knowing this, there was no reason



Chris Impey listens to a presentation.

Photo courtesy of Melissa McClure

to lose sleep that night pondering our fate in the distant future.

The next morning, Tuesday, I attended various talks while Amanda, Grant, and some of Amanda's co-NAU REU students presented their posters.

For lunch, Amanda went out to eat with some other undergraduates who were applying to the University of Maryland for graduate school, while I took a nap. At 2:00 pm, I had the opportunity to interview Chris for this report. Since he and Vera had both spoken of taking time to just think about astronomy in general, I was curious to know how he managed to fit that into his busy schedule. Chris pointed out that going observing provided the perfect opportunity to think and brainstorm in isolation with his colleagues. Having one on one time to advise his students also made him stop and think. Time management allowed him to fit everything into his busy schedule; he sometimes wakes up at 5:00 am to finish writing something, but does not take his work home on the evenings or weekends, which gives him time for his family. Additionally, getting out and exercising is really important to him. Since Chris has experienced the education systems in both the UK and US, I asked him what he felt the challenges faced in each system were. First, he pointed out that the UK has drastically improved the percentage of the populace in pursuit of higher education from approximately 10 percent when he was a student to 40 percent

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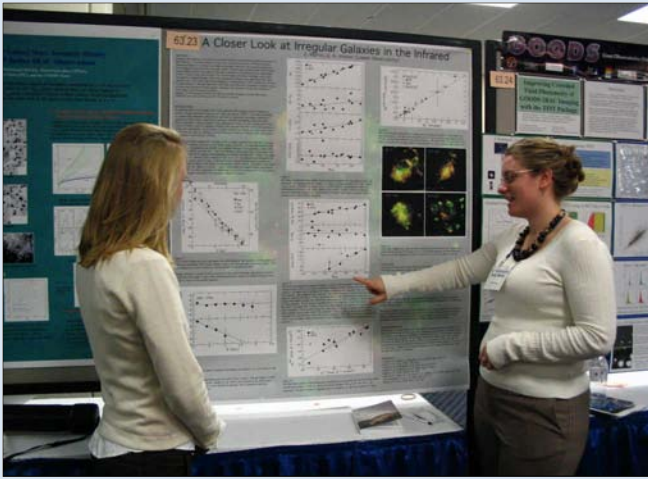
Vera Rubin reviews poster of M31 work.

Photo courtesy of Melissa McClure



Grant discusses his poster with Gary White.

Photo courtesy of Melissa McClure



Emily explains her poster to Kate.

Photo courtesy of Melissa McClure

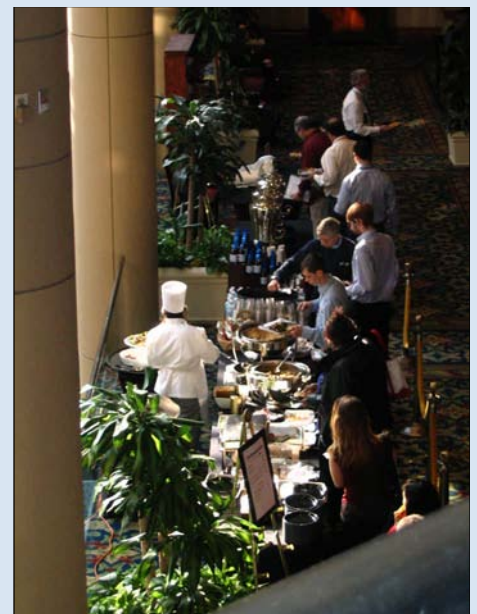
in his presentation, we went our separate ways.

That night, Amanda and I went out to eat at “La Tomate,” a local Italian restaurant, with Grant and his parents, who had flown down to tour the city while he was at the conference. The food was really amazing, and we had an excellent view of a church of Scientology across the street, which engendered a lot of vigorous discussion! Maybe we are all in fact simulations of the Emperor Xenu...

On Wednesday morning, I finally got down to the exhibition hall early enough to get a free bagel at the coffee stations before a line formed. This was really nice, because the prices at the Starbucks in the hotel were inflated; a bagel and a coffee came close to \$6 dollars. After attending the morning’s talks, Amanda and Grant went with Grant’s parents to the National Air and Space Museum during the lunch break, where they saw Space Ship 1 displayed. Apparently it was more dinged and scuffed than they had anticipated. In another exhibit, a recording of Vera Rubin explained dark matter, and Grant’s parents were impressed that we had actually heard her speak on Monday night. Meanwhile, I was meeting with Vera over lunch to interview her for this report. We both sat down with Cobb salads and I started with my questions. First, I was curious about what she was working on now, since she was so well known for her association with dark matter. Her answer was dwarf irregular galaxies, which I had to admit I knew nothing about. Fortunately, Vera took pity on me and gave a succinct explanation. Then I asked her several of the same questions that I’d asked Chris, hoping to see how their perspectives differed. According to Vera, she finds that walking to work is the best way to clear her mind and give herself time to think, although admittedly it depends on the person; not everyone works close enough to home to walk or finds walking relaxing. I was also curious how she felt the US education system had changed since the 1940s and 50s. She, also, was impressed by the number of undergraduates who are being brought into research so early, and she was very enthusiastic about this development. The one thing that she thought could use improvement was in the student’s ability to find the right advisor to support him or her in learning how to research. I asked how she managed having a thesis and several children while only in her early twenties. For reference, I’m 21, and when she was 22 she had completed her Masters at Cornell and was presenting a controversial topic at AAS with a baby in tow; I was understandably boggled and slightly alarmed by this realization. Her response was that her husband and parents were very supportive, and the timing between the births of her children was good. She did point out that even with both of those circumstances, it wasn’t an easy time; she would get up in the morning, take care of the children during the day, and then work on her thesis from 7:00 pm until 2:00 am. I asked her if it was worth it, and she replied that it certainly was. Out of curiosity, I asked her what fields her children were in, and she described how interesting family gatherings could be with two astronomers, a physicist, two geologists, a mathematician, and the families of her children in one house. At this point, we noticed that it was 1:00 pm, and Vera had to leave for a town hall meeting. Our conversation was definitely one of the highlights of my day, both as an astronomer and as a female scientist.

Later that evening, Grant and Amanda attended the banquet at the Wardman Marriott. I had forgotten to sign up for it during registration, so I joined one of my friends

now. The UK also does more one-on-one studying and conversation groups between students of a particular discipline, which he felt would make for a good change in the US. However, US undergraduates in general had more opportunities for research experience and the school system is less rigid here. One problem that he has noticed is that many US students seem to take on more than they can chew, maxing out their time with double majors and extracurriculars. While he felt that some of this was normal in my age group, he noticed a drop in academic performance associated (again!) with not having the time to sit back and think about the concepts between problem sets. Better prioritizing is important, and although a double major can still be very useful, Chris advised forcing oneself to slow down and cut back on “extras” that just added to a student’s stress level. Finally, I asked him what he thought were the most important skills for today’s young astronomers to learn. He replied that communication skills were essential and closely coupled with that the ability to present concepts clearly and in an interesting manner. To do this, we should also improve our knowledge of computational and simulation techniques in addition to basic programming languages, particularly those used most often in astronomy. After a few more questions, such as clarifying the names of the songs he had used



Astronomers getting lunch.

Photo courtesy of Melissa McClure

from the Cornell REU program, Adrienne Stilp, and several of Addie's friends from an REU at the VLA to eat out at a sushi restaurant called "The Sake Bar." This was my first experience with sushi, but I chickened out when faced with the eel and only tried some anari and a regular entree. We all had a really great time talking about our current projects and reminiscing about the REUs that we had done. Ironically, one of Addie's Socorro



Washington Monument in the fog.

Photo courtesy of Melissa McClure

friends, Nicole, is now a first year at UVa with another of my Rochester classmates who graduated last year. Even though AAS was really big, the world is very small! After dinner, we went back to the hotel and several people left to go to the party at "Tom Tom's." The rest of us went back out to a coffee shop to replenish our blood with much needed caffeine. I tried a Washington Carver, which was a frozen coffee/chocolate/peanut butter mix that tastes like a liquefied Reese's peanut butter cup. We continued to chat there until someone checked the clock on the wall and realized it was almost midnight already. Since several of us, myself included, had our poster sessions and travel home the next day, we called it a night and headed back.

I woke up really early on Thursday morning to get myself together for the poster session (since I'm nervous about being on the spot, I had to psych myself up for it) and take my luggage out to my car.

There were a large number of people already down in the exhibit hall at 8:30 am even though the session didn't open until 9:20 am, and it seemed like everyone wanted to see the posters before their flights in the afternoon.

My space was next to a professor whose talk on FU Ori events I had gone to the day before. He asked me a lot of questions about my poster, which I hope that I answered correctly, given that I was in awe of him and hadn't had my morning coffee yet. After he left for a talk, I said hello to the student whose poster was on my other side. He was from Urbana-Champaign

and his project was almost identical to mine except that his Class I sample was in Perseus and mine was in Taurus. We exchanged comments about how our models were working out, and then more people started to trickle in, so we went back to answering questions. One thing that I found very confusing, this being my first poster session, was the question of whether I was supposed to wait for someone to ask a question about my poster or immediately start explaining it before they started reading. Other than that, the morning progressed smoothly until 11:00 am, when I had to run up and check out of my room, which took longer than I wanted because the hotel double charged Amanda and me for the room's internet service. During the afternoon, there weren't many people passing by our posters; as someone had said, that's the frustrating thing about presenting on the last day of the conference when everyone starts to go home. I did manage to see a whole lot of people whose names I recognized from papers I'd read. This was somewhat disconcerting because I really wanted to say hi, but felt that saying I liked their papers would sound lame; presumably they already knew their papers were really good and inspirational, since they are the top in their fields.

Right before the session ended, I stopped by a few more of the tables where sponsors were trying to finish off open boxes of posters so they wouldn't need to carry them back. In this manner I got five copies of the NRAO poster contest winner, which my friends back in Rochester really appreciate! Then I packed up and started back home. True to form, I got lost again between Routes 15 and I-83 around Harrisburg, PA, and then spent a half-hour explaining some basic astronomy to a Wendy's manager when I stopped for directions and he asked me why I was driving back from Washington, DC. Finally I got home at midnight, and proceeded to get a parking ticket the next day at Cornell when I stopped by to tell my summer mentors there how the conference had gone.

I was really exhausted when I finally got home, but it was completely worth it. It wasn't a very good place to meet people for the first time, but it was excellent for reconnecting with friends from over the summer and to get an overview of a variety of new research areas. I'm really looking forward to future meetings as a graduate student!



Sunrise from our hotel window.

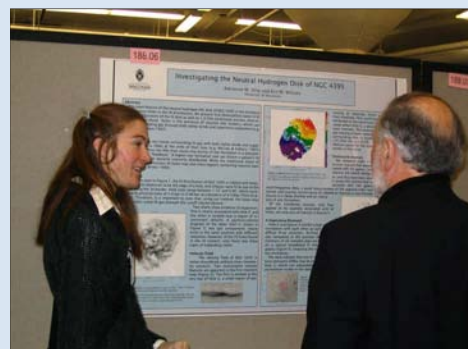
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Adrienne and her Cornell mentor, Riccardo.

Photo courtesy of Melissa McClure