



2014-02-18 update

A newsletter for non-scientists (and scientists) interested in MAGIC

MAGIC is a field program funded and operated by the Atmospheric Radiation Measurement (ARM) Climate Research Facility of the U.S. Department of Energy. The ARM MAGIC webpage is <http://www.arm.gov/sites/amf/mag>. All previous updates and other MAGIC information can be found at <http://www.bnl.gov/envsci/ARM/MAGIC/>.

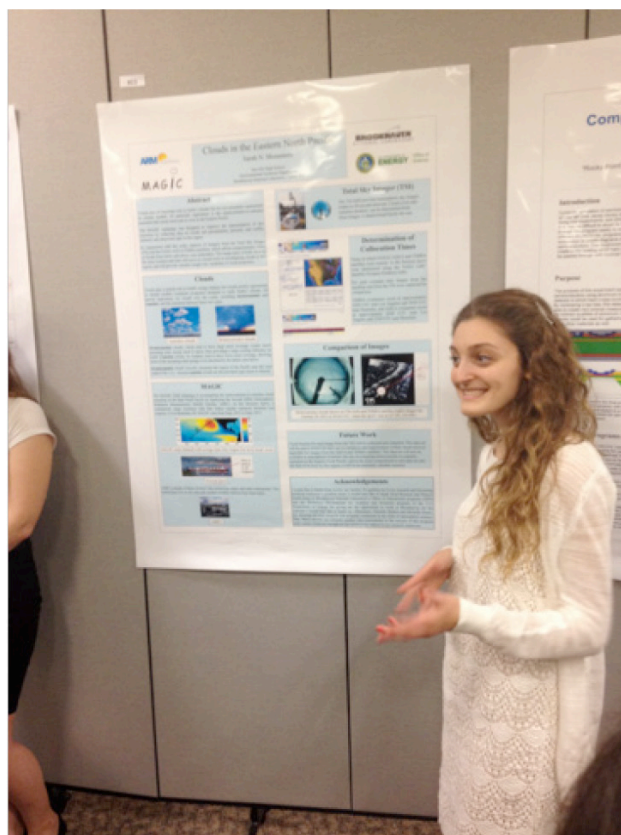
MAGIC has still been active and keeping me busy, despite my lapse in writing updates. In the last one (<http://www.bnl.gov/envsci/ARM/MAGIC/docs/updates/MAGIC%20update%202013-11-01.pdf>) I described the presentations that would be made at the MAGIC session of the Atmospheric System Research (ASR) Fall Working Group Meeting last November (ASR is a program of the US Department of Energy whose goal is to fund research to better understand interactions among aerosols, clouds, precipitation, and radiation – i.e., light). The session was well attended and quite successful, with a number of investigators already looking at MAGIC data, comparing results from different instruments, and so forth. There is another ASR meeting next month, the Science Team Meeting, during which there will also be a session on MAGIC. I am lining up speakers, and it looks as if it too will be an interesting session. Two graduate students I invited to give presentations during this session, Xiaoli Zhou from McGill University in Montreal and Trevor Ferguson from University of Utah, will be giving presentations involving MAGIC data to the entire Science Team. I'm excited about that, as it allows them to talk about their work in front of a wider audience. I know both of them and am looking forward to hearing about their results.

There was also a session on MAGIC at the American Geophysical Union Conference in San Francisco in December. This is a very large conference (roughly 20,000 attendees) covering all aspects of geophysics – clouds, aerosols, atmospheric electricity, other planets, earthquakes, volcanoes, etc. It's a bit overwhelming at times, but also exhilarating to see all the fascinating research going on in all these fields. There were around 20 posters in the MAGIC session, and it was great for me to meet and get to talk to some of the people interested in MAGIC that I hadn't previously met. There was also a MAGIC meeting at a nearby hotel the previous evening that was well attended. I find meetings like this to be very useful, as they draw together scientists that can discuss their interests and needs, share results, and form collaborations in a way that would be impossible without meeting face to face.

For these same reasons, the First MAGIC Science Workshop will take place here at Brookhaven National Laboratory in May of this year. It will be a great opportunity for those working on MAGIC to meet each other, find out the status of data processing, present results, form collaborations, and discuss future research and directions. The amount of data collected during MAGIC is vast, with nearly 200 days at sea and three dozen instruments, and covers an array of topics in atmospheric science, from clouds to aerosols to radiation. This amount of data is more than any one person can handle, and the questions that can be addressed cover to a wide range of interests. Collaborations are thus necessary, and welcome, as they allow people to utilize their respective experiences and expertises to different aspects of problems.

As I have often stated, one of the most rewarding aspects of my involvement with MAGIC has been interacting with wonderful people – other scientists, the Captain and crew of the *Spirit*, and students at all levels. Last summer two university students, Danielle Mallon and Michelle Gostic, were in a program that allowed them to come to Brookhaven, where they worked with me on MAGIC data (<http://www.bnl.gov/envsci/ARM/MAGIC/docs/updates/MAGIC%20update%202013-06-14.pdf>). Danielle (<http://www.bnl.gov/envsci/ARM/MAGIC/docs/updates/MAGIC%20update%202013-08-15.pdf>) is back in Albany, where she had graduated last spring, and she is now getting a Master's Degree in Geographic Information Systems (GIS) in addition to working at NY State Department of Environmental Conservation. She has applied to graduate schools in atmospheric sciences and environmental studies, and will be hearing soon. Michelle (http://www.bnl.gov/envsci/ARM/MAGIC/docs/updates/MAGIC_update_2013-07-02.pdf) is spending her junior year at Cornell University abroad at the Universidad de Cantabria in Santander, Spain (on the coast due north from Madrid). I was fortunate enough to be able to see her when she was back for Christmas and to hear about some of her travels and adventures.

In addition to Danielle and Michelle, I had another student working with me last summer, Sarah Monastero, now a senior at Sayville High School nearby on Long Island. Like Danielle and Michelle, Sarah was also a joy to work with. She had a part time job at a local library but was at the laboratory nearly every day, where she performed a variety of tasks. She calculated times when satellites would be over the ship so we would know what relevant satellite images to obtain, and she also downloaded these images from NASA's website. She has applied, AND been accepted, to several universities, and is planning on majoring in civil engineering with a focus on sustainability. I wish her all the best and look forward to hearing about her activities and accomplishments in college and beyond.



Sarah Monastero at her MAGIC poster

There are two more students in our department this term: Bunheng Ty, who is working on a project involving optics, and Anastasia Maydanov, who is working on MAGIC data. Ty just graduated with a B.S. degree in physics and is deciding what graduate school he will attend in the fall. Anastasia is a chemistry major at Northeastern University (NEU) in Boston and is spending this term at Brookhaven National Laboratory as part of her internship program (NEU students typically take three 6-month internships during their undergraduate studies). She had had no previous programming experience, so I had her immerse herself in learning the programming package we use here (IGOR) so that she could process MAGIC data and make graphs for me for an upcoming presentation. She seemed a bit overwhelmed at first, but very rapidly picked it up to where she probably knows more about IGOR than I do. She claims that Ty (a computer whiz) helped, which he probably did, but I told her that this is a good thing in that it is an efficient use of resources. In my opinion, learning from others (and sharing what you know with them) is a vital part of science, which is intrinsically a collaborative process. I will write more on these two later.

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