

The elements that make up our bodies formed from the violent explosions of massive stars. The same shapes that we trace when we look up at the sky were marveled at centuries before us by the ancient Greek and the early Islamic worlds. These are only a handful of wonders to which astronomy holds the key. This summer, I had the pleasure of working for *Sky & Telescope (S&T)*, a monthly astronomy magazine. The publication is mostly geared towards amateur astronomers but covers a broad range of astronomy news from the latest research breakthroughs to instructions on how to build your own backyard telescope.

As an editorial intern, I primarily wrote news articles for the webpage. I received my own company e-mail and was placed onto press release lists for major astronomical groups and journals. The “newsworthiness” of a topic was discussed collaboratively through an ongoing e-mail thread between myself and a few other staff members. Once I found a story worth covering, I would begin by reading the research paper. Each story required a different amount of background reading because some topics were familiar to me from previous coursework while others lay far outside the realm of undergraduate astronomy. The next step was to put the results of the research into a bigger context. How does this discovery impact the way we see the universe? How will this new method of data analysis make it easier for astronomers to see dimmer objects? These questions were less straight forward, but the most crucial. I researched the current literature in the field, interviewed other research experts, and asked the paper authors many, many questions until I felt comfortable enough to write. After I had a complete draft, I sent my article to an editor for hardcore feedback.

In addition to writing news stories, I was tasked with reorganizing the website. The staff recalled from my cover letter that I was interested in exploring a career in science museums, so they made an effort to tailor my internship experience to that interest as much as possible. On

my first day, they asked me to create a plan that would outline ways to make the web content more accessible for readers. I produced a report that made recommendations on how to display content more effectively and identified outdated information that should be archived. I also compiled an eBook for magazine subscribers and sought illustrations for a feature article in the magazine. Finding the right illustrations required a delicate balance of many things. Firstly, the illustrations needed to enhance the reader's experience with the story. Secondly, they needed to be affordable enough to reproduce in the magazine, which means that the images had to be used in a past issue or they needed to be official images from NASA or some similar organization. Thirdly, the quality of the image was essential because there were resolution and size constraints for the kinds of images that the magazine could print. Finally, it was important to find images that had not been featured before. The task of designing an eBook and searching for illustrations sparked my interest in science communication, not just through writing, but through visualization.

Because the magazine's office is located in the hub of astronomy research (Cambridge/Boston), I was granted press access to a science communication conference nearby. Before my internship, I had a strong writing background but very little experience with journalistic writing. This conference filled a crucial gap in my confidence and knowledge of science journalism because I met graduate students from across the country who were similarly interested in making science accessible to others outside of the field. I realized that I was not alone in feeling inadequate when it came to doing science and that a large barrier to learning was poor communication – in other words, the language or “jargon” used by the educated scientists make it difficult for those learning the science to understand. The conference featured a variety of panelists from Harvard professors to *New York Times* writers. Here, I was also introduced to Twitter as a professional tool. This prepared me to manage *S&T*'s Twitter page.

Another critical insight I gained from my experience this summer was effective team management. Every week I attended an editorial meeting where the staff discussed matters as detailed as the wording on the cover page and as broad as whether the issue's theme should be comets or the Moon. The staff, though small in number, could compete with well-staffed publications and produce high-quality content because they were aware of each member's strengths and trusted each other to carry his or her share.

The biggest obstacle I faced this summer was my lack of confidence and lack of background in astronomy and journalism. Since undergraduate interns were an exception rather than the norm at this organization, I was anxious about writing my first few stories. For instance, I felt the need to impress the researchers I interviewed with my knowledge of the field. Ironically, this approach back-fired because by forming my questions in a way that demonstrated my knowledge of the field, I evoked jargon-filled responses. Although it made me feel better about myself to act like I knew what I was talking about, it hurt my writing because I didn't truly understand the science myself, which reflected in my writing.

The most important skill I developed was the boldness to ask questions, including the "stupid" ones. People *will* get frustrated if you ask the same questions. But they don't expect you to know things you have never been taught, and, most often, they are flattered by your interest in learning about what they do. In the end, I realized that my job as an intern was to learn new skills rather than impress people with the skills I already possessed.

The most unexpected outcome of my internship was a new curiosity for science visualization. In my final weeks, I spent most of my time working with the magazine's Art and Design Department. I learned how to create basic diagrams for the magazine and the website using Adobe computer software. Since the staff was so accommodating to my interests, I was

also able to spend several hours picking their brains about the behind-the-scenes process for coming up with effective illustrations. Going forward, I am interested in finding creative ways to represent complex data sets because there is important information that never reaches the public or scientists in other fields that have potential to make valuable research contributions. My hope is that by developing my computer science skills, I can experiment with illustrating already existing data sets and find ways to communicate complex ideas to a broader audience.



This is the group photograph taken at the 2013 Communicating Science Conference.



Here I am researching a news story on B-mode polarization in the cosmic microwave background.

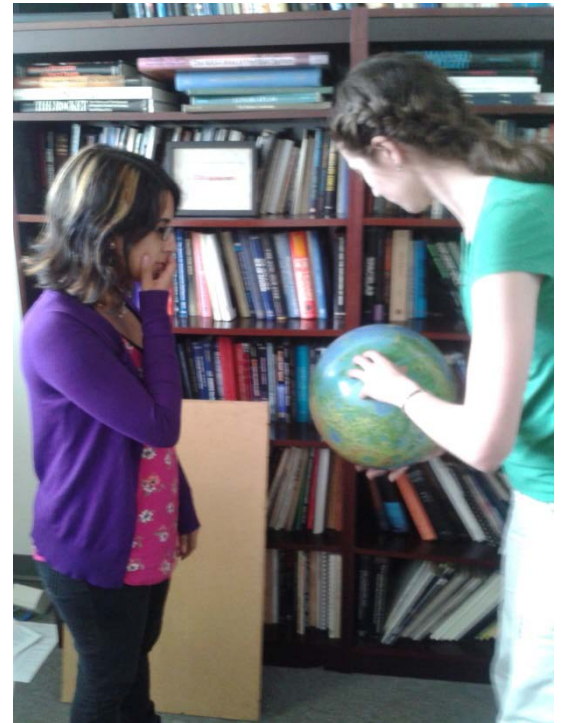


Web editor, Monica Young, shows me a Milky Way map insert that S&T produced for a recent issue.



Illustration Director, Gregg Dinderman, shows me how to use Adobe programs to create content for the magazine. Here, he is editing images for S&T's Mercury globe.





Assistant Editor, Camille Carlisle, describes lunar craters using S&T's topographic Moon globe.