

Charles Prentiss / Brendan Wells

BRENDAN'S BLACK HOLE

By Charles Prentiss

For his thesis project, PhD candidate Brendan Wells studied data from the blazar Markarian 421 in the constellation Ursa Major. Mrk 421 is between 397 and 434 million light years from earth and is a strong source of gamma rays. Because gamma rays from Mrk 421 are dissipated by the earth's atmosphere, Brendan's data came from the Fermi Gamma-Ray Space Telescope. The goal of Brendan's study was to use the gamma rays as a flashlight to illuminate fields in the path of the beam. However, it turns out those fields are too weak to be understood that way at this time, and we'll have to wait for the next generation of telescope to really figure them out.

As someone with a natural history background but quite ignorant in the field of astrophysics I was struck by the scale and broad spectrum of the elements involved and by the accumulated knowledge of generations of people which made the research possible. Tiny electromagnetic waves created in the chaos of matter being sucked into the black hole of a galaxy hundreds of millions of light years away and we can catch them and know where they came from. GET OUT OF HERE.

I was also forced to again confront the question, "How can we be so intelligent and scientifically sophisticated and continue to destroy our own planet?"

By Brendan Wells

In my research, light (as gamma rays) is a series of particles which rarely interact with the things they pass by or through. To me, colors are wavelengths with specific energies, and the ones that humans cannot see are as important, if not more, than the ones we can see. I enjoyed turning that around to ask which parts of my research can be conveyed through the visible spectrum, and how best to do so. What each color means and the emotions it inspires, let alone what happens when you combine them, is a much more complicated subject than the one I study. The universe may be old and impossibly large, but it follows remarkably predictable patterns. The human world is different.