

## Astronomy and Myself

As the 'physics guy' among my group of friends, it fell to me to try and answer the question "Does the universe have an edge?" when conversation turned metaphysical a few days ago. I said that I didn't think so and tried to back that up with some clever sounding things about flat universes and the big bang but it became obvious to me (and to my friends) quite quickly that I didn't actually know. So, of course, I googled it and was relieved to find that no one is really sure but that the consensus is that I was probably on just about the right track. The fact that there are such profound questions which we cannot yet answer is what makes astronomy stand out to me; I love the challenge which such mysteries pose to science.

I am currently going through the application process in the hope of pursuing a degree in physics starting next September. I enjoy physics because I am curious; I want to understand the world. I think that the purpose of physics is to find answers to questions such as the one above, and this is a valid aim in itself, without a necessity for practical applications. Astronomy and cosmology are therefore particularly exciting areas of the science because they are so curiosity led. Besides this, astronomy is special because of its jaw dropping scale and beauty. The distances and time scales involved when talking about the universe are incomprehensible to the human mind. Knowledge that astronomy gives us about the universe is both humbling and enlightening.

I have had success in both physics and maths at school, scoring full UMS in my AS physics exams and in all six of my maths modules. In the British Physics Olympiad, a competition designed to stretch more able candidates, I achieved a gold award and I was awarded both a gold award and the award for best in my school year in the UKMT intermediate maths challenge. I won an Ogden Trust 'Schools Physicist of the Year' award last year, and was recently a member of the team of four which finished 3rd in the 2014 Liverpool Physics Olympics.

This summer I spent four weeks working at the University of York on a research placement sponsored by the Nuffield Foundation under the supervision of Dr Charles Barton, a nuclear physicist at the university. We worked on a dipole antenna and a radio telescope to observe low frequency radiation from the sun and Jupiter. This allowed us to calculate, among other things, the energy produced in a solar flare we observed. I learned some interesting physics, such as the mechanism by which radio waves are emitted from Jupiter, and the whole experience really got me excited about astronomy in particular as an area of study within physics and gave me a desire to find out more. It is due to this desire that I am now applying to go on the ESU astronomy camp.

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