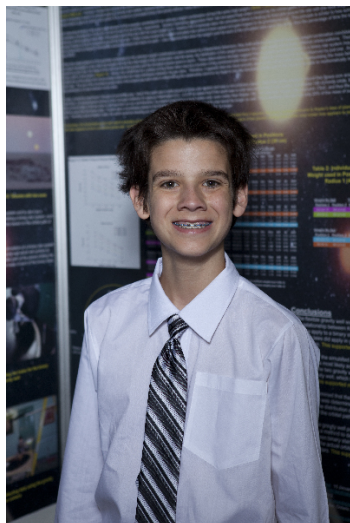


CWSF 2013 - Lethbridge, Alberta



Connor MacLean

Using a Gravity Well As A Simulation 2.0: Planets Orbiting a Binary Star System

Challenge: Discovery

Category: Junior

Region: Sudbury

City: Sudbury, ON

School: Algonquin Road P.S.

Abstract: For this project a gravity well was constructed to simulate a binary star system to determine how it is possible for a planet to be in a stable orbit around two stars. I also wanted to determine the mass of the binary stars using the orbital time and path of the planet. Finally I wanted to examine the relationship between Kepler's laws and circumbinary planets.

Biography

My name is Connor MacLean; I am a gr.8 student and the treasurer at Algonquin Rd Public School in Sudbury Ontario. I decided to do this project when I read about Kepler16-b (the first planet found orbiting a binary star system). I wanted to see how it was possible for a planet to be in a stable orbit around two stars, so I decided to use a gravity well to simulate this. My inspiration for the "Using a Gravity Well as a Simulation" project series came from my Gr.6 heritage fair project on SNOLAB. In that project I learned about neutrinos, dark matter and other scientific theories and concepts that fuelled my interest in physics and space, confirming that I want to be a theoretical Physicist when I grow up. In my free time I like playing sports such as hockey, baseball, basketball, and volleyball. I also enjoy playing guitar and plan to volunteer at Science North (located in Sudbury) in the summer. At school my favorite subjects are Math and Science, I also make sure to take advantage of all the Math, Science and engineering competitions and opportunities such as Math-Science Olympics and Math trivia competitions.

Awards

Value

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|---|----------------|
| Award for Excellence in Astronomy - Junior Sponsor: Royal Astronomical Society of Canada | \$500 |
| The Actuarial Foundation of Canada Award - Junior | \$500 |
| Excellence Award - Junior - Bronze Medal Sponsor: Youth Science Canada | \$100 |
| Western University Scholarship Bronze Medallist - \$1000 Entrance Scholarship Sponsor: Western University | \$1 000 |
| Total | \$2 100 |

Youth Science Canada
PO Box 297
Pickering ON L1V 2R4
www.youthscience.ca / info@youthscience.ca
416-341-0040