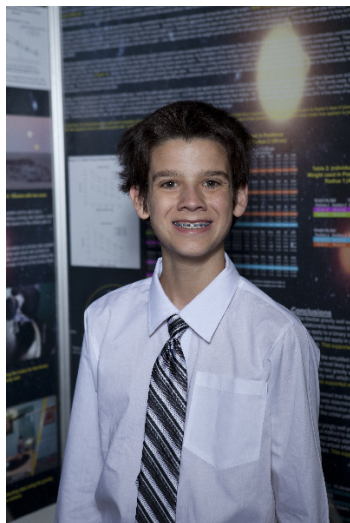


# CWSF 2013 - Lethbridge, Alberta



## 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

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
<b>Total</b>	<b>\$2 100</b>

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