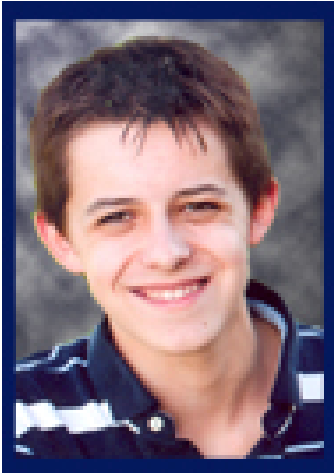


**Davidson Fellow  
Benjamin Clark**

\$25,000 Scholarship Recipient



**Personal Info**

Age: 16

Lancaster, Pennsylvania

**School, College and Career Plans**

An incoming freshman at California Institute of Technology, Benjamin plans to pursue a Ph.D. in physics and/or astrophysics. He hopes to hold a faculty position at a major research institution.

**Davidson Fellows Submission: Science**

In his project, "The Close Binary Fraction: A Bayesian Analysis of SDSS M Dwarf Spectra," Benjamin determined the frequency at which M stars form close binary star systems using spectroscopic data from over 39,000 M dwarfs. Using the Sloan Digital Sky Survey

(SDSS), Benjamin designed a methodology to use the extremely large, but low resolution and signal-to-noise ratio database, to calculate the close binary fraction. Star formation has long been an open question in astrophysics and this data can be used to test theories of how this process occurs.

**Biography**

Benjamin has twice been grade accelerated, skipping fifth and eighth grades. He has also been accelerated in mathematics since second grade. Benjamin took math and physics classes through the online Stanford University Educational Program for Gifted Youth (EPGY).

A math team teammate's math research project presentation is what inspired Benjamin to pursue his own research. Benjamin wanted to do an astrophysics project but didn't know where to start, so he knew he needed to find a mentor. Since Princeton University is relatively close to his home with a top astrophysics department, he sent an email to the head of the department introducing himself and explaining that he was interested in doing a research project with a mentor. Within a day he had a response from the department head, within two, he was working with a postdoc in the department.

Even with a mentor, Benjamin encountered many difficulties which prevented the project from proceeding until they were solved. Though he received no guidance on the project from his teachers at school, his mentor served as a sounding board but left implementation up to Benjamin.

Aside from astrophysics, Benjamin is interested in all things computer-related as well as hiking, skiing and cross country running. He is a member of the Boy Scouts of America and holds the rank of Life Scout.

*Please see next page.*



**Davidson Fellow**  
**Benjamin Clark**  
*(cont.)*

- 2011 Davidson Fellow
- 2011 Intel Science Talent Search Seventh Place
- 2011 Intel International Science and Engineering Fair Google CS Connect Award Winner
- 2010 Siemens Competition in Math, Science & Technology Grand Prize Winner
- 2010 United States Physics Olympiad Semifinalist
- 2010 George Washington University Colonial Math Challenge First Place Team, Top 10 Individual
- 2010 Millersville University Math Contest First Place Team, First Place Individual
- 2010 Harrisburg Area Community College Math Contest First Place Team, First Place Individual
- 2010 Lebanon Valley College Math Contest First Place Team
- 2010, 2009 United States of America Mathematical Olympiad
- 2010, 2009 American Invitational Mathematics Exam
- 2009 American Mathematics Contest 10 Perfect Score
- 2009 American Mathematics Contest 12
- 2009 Pennsylvania Math League First Place, Perfect Score
- 2009 Princeton University Mathematics Competition Division A Individual Finalist