



Colorado Science and Engineering Fair

2025 Team Project Abstract Form

Please print 2 copies of the completed form. Sign both copies, keep 1 for your notebook and submit 1 copy to your Regional Fair Director with your other paperwork.

Title of Project: Modeling the Flight Paths of Conical Meteorites

Team Leader's Name: Dillon Curtis

Team Member 1: Meah Ring Hall

Team Member 2: Hector Villacana Saucedo

School and City: Brush High School, Brush

Sponsor's Name: Erik Stone

Category: Physics & Astronomy

Division: Senior (grades 9 - 12)

Abstract (250 words or less):

The purpose of the project "Modeling the Flight Path of Conical Meteorites" was to decipher which degree of flair at the base of the cone had the most stable flight path after being dropped into a tank of water. We believed that the degree of flair for the most stable flight path would be about 25° as it is slim enough that it would have less resistance against the water after being dropped. Materials used in the experiment include clay cones made of varying degrees of an arc of a circle and supplies to make them. Increasing by 20 starting at 70° and ending at 210° (actual degree measurements were 22 to 70 degree angles). We made the cones by cutting arcs out of a circle on an index card. Each cone had a mass of close to 4.1 grams for accuracy. Each of the cones were recorded being dropped into the tank of water three times in order to increase accuracy. Science experiments such as this are important for understanding the mechanics of free-falling meteorites that have a conical shape. Based on the testing it seems that the cone with the most stable descent is 210° with an actual flair of 35°. The cone with the least stable descent is 70° with an actual flair of 11° in which it almost immediately inverted its orientation. In summary, the cones with larger degrees had a more stable flight path than those of smaller degrees.

We hereby certify that the above statements are correct and the information provided in the Abstract is the result of one year's research. We also attest that the above properly reflects our own work.

Team Leader's Signature: _____

Date: _____

Team Member 1's Signature: _____

Date: _____

Team Member 2's Signature: _____

Date: _____

In addition, all students must complete the ISEF Student Checklist (1A), Research Plan, Approval Form (1B), and Checklist for Adult Sponsor (1), and any other ISEF forms required for this type of project. See the International Rules and Guidelines for form requirements. Return COPIES of all of these forms to your Regional Fair Director with your Finalist Verification/Permission Form. **A signed copy of this form must be included in your notebook.**