



**CALIFORNIA STATE SCIENCE FAIR
2009 PROJECT SUMMARY**

Name(s) Spencer G. Ford	Project Number J1909
Project Title Are There More Cosmic Rays at Higher Altitudes?	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The purpose of my experiment is to find out if there are more cosmic rays at higher altitudes than at lower altitudes. I believe that there are going to be more cosmic rays at higher altitudes due to the thinner layer of atmosphere. For detecting the cosmic rays, I will build a cloud chamber.</p> <p>Methods/Materials To perform this experiment, I took the cloud chamber to three locations in San Diego County. Each one was at different altitudes, varying by about 3000 ft. At each location, I recorded the number of cosmic rays that I saw pass through the cloud chamber in twenty one-minute intervals. I calculated the average number of cosmic rays at each location.</p> <p>Results The average number of cosmic rays during the first session at about 6000 ft. was 20.1 per minute. The average number at about 3000 ft. was 19.8 per minute. The average number at sea level was 7.35 per minute. During the second session, the average number of cosmic rays at about 6000 ft. was 25.8 per minute. The average number of cosmic rays at sea level was 11.65 per minute.</p> <p>Conclusions/Discussion In conclusion, my hypothesis was proved correct. I thought that there would be more cosmic rays at higher altitudes. My experiment showed that the average number of cosmic rays at higher altitudes was more than at lower altitudes. I believed that there would be more cosmic rays at higher altitudes due to the thinner layer of atmosphere at higher altitudes.</p>	
Summary Statement My experiment is to find out if there are more cosmic rays at higher altitudes than at lower altitudes, by using a cloud chamber.	
Help Received Parents drove me to test locations, and held the stopwatch and flashlight. They also reviewed my report, and helped with photography and layout of backboard.	