



**CALIFORNIA STATE SCIENCE FAIR  
2012 PROJECT SUMMARY**

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<b>Project Title</b> <b>Sol-Air Efficiency</b>	
<b>Objectives/Goals</b> The goal is the test the affect of the haze layer and temperature at altitude on the efficiency of solar panels.	
<b>Abstract</b> <b>Methods/Materials</b> I used a weather ballon with various measuring devices along with a solar panel to conduct my experiment. I filled the ballon with helium and released it into the atmosphere. While in the air, the measuring devices took reading of the power output of the solar panel and the outside temperature. After getting to 20,000 feet, the balloon popped and returned to earth safely via a parachute. The onboard GPS then started receiving its current location and transmitting it to my phone via GMS.	
<b>Results</b> There was a 35% increase in solar panel efficiency after it surpassed the haze layer. Although the haze layer had a significant impact on the efficiency of the panel the temperature change did not. Unfortunately, the amperage measuring device did not function, but the volage did, which was enough for an accurate reading. With an exception of the amperage device, all systems worked as I predicted and the mission was a success.	
<b>Conclusions/Discussion</b> We can conclude that solar panels will be more efficient when functioning in an area that has less pollutants, like cars, adding to the haze layer. Solar panels will be more efficient in a dessert where there is less city activity that can pollute the air.	
<b>Summary Statement</b> Sol-Air Efficiency is an exploration of the affects of the haze layer on solar panels.	
<b>Help Received</b> My father help drive on launch day and with the math for the circuit. He also funded the project. Other than those contributions, I did the project by myself.	