



**CALIFORNIA STATE SCIENCE FAIR  
2013 PROJECT SUMMARY**

<b>Name(s)</b> <b>Tovah H. Popilsky</b>	<b>Project Number</b> <b>J0216</b>
<b>Project Title</b> <b>Watts Up with Solar Energy?</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> The objective of my project was to determine whether placing a solar panel under an "aqua lens" (a magnifying glass constructed of hot water poured on plastic) at different heights makes the panel generate more energy.</p> <p><b>Methods/Materials</b> I built a 4ftx8ft platform with one 4ft wooden post at each corner and attached a frame on the top, which was similar to the structure of the base (see specific materials), and stapled painter's plastic (4 gauge) and poured one gallon of hot water on each section of the frame. I then made three stations with milk crates to place my three "home-made" solar cells on each station, to measure their volt and amp measurements to find watts. Then I averaged the watts for each test (1, 2, and 3) then the overall watts measurement of all three panels for each test.</p> <p><b>Results</b> When the panels were placed under the aqua lens at 2ft above the base, the average amount of watts produced was approximately 1-1.6 watts. Overall the averaged watt measurements were anywhere from 1.2-1.6 watts. In order from most watts produced was 2ft above the base, 1ft above the base, Control (not under lens) , and then at the base.</p> <p><b>Conclusions/Discussion</b> Overall I determined that placing a solar panel under a magnifying lens like object helps to increase the amount of energy the panel produces. Specifically, I discovered that placing a solar panel 2ft above the base (under the lens) helped the solar panel generate the most watts/energy. I think my results were they way they were because when the panel was placed closer to the light beam, the panel was almost completely covered with the focused light and heat. It did better compared to the panels placed lower under the lens because when the panels were placed at the base the beam generated by the lens wasn't as strong or sharply focused so wasn't as efficient.</p>	
<b>Summary Statement</b> The aim of my project was to determine whether placing solar cells under an aqua lens increases the amount of energy it produces.	
<b>Help Received</b> Family friend helped to build aqua lens	