



**CALIFORNIA STATE SCIENCE FAIR
2009 PROJECT SUMMARY**

Name(s) Windy Graham; Codi Hirsch	Project Number S0814
Project Title Photovoltaic Performance: SunEye vs. Pathfinder	
Abstract Objectives/Goals Which of the two different instruments, the SunEye or the Pathfinder, more accurately predicts the photovoltaic array performance of a shell panel system consisting of 930 watts? Methods/Materials Materials: A Solmetric SunEye, A Solar Pathfinder, An MX60 Charge Controller, A full solar array system consisting of: 6 Shell SQ80 panels, 6 Shell SP75 panels. Results SunEye first predicted that a total of 227.28 kilowatt hours were going to be produced. The Pathfinder predicted that a total of 209.48 kilowatt hours were going to be produced. The Shell panel system actually produced 126.60 kilowatt hours. Our data logging system recorded daily kilowatt production but did not come close to either predicted amounts. Conclusions/Discussion After completing our experiment with two different popular solar instruments that predict solar outputs, we cannot say which instrument was more accurate. Weather is the main factor when recording daily solar output. Because we conducted our experiment in two of the worst months of the year (weather-wise), we did not have enough data to show which instrument was more accurate. We would need to take data for an entire year instead of for two months to show an accurate conclusion.	
Summary Statement Which instrument, the SunEye or the Pathfinder, more accurately predicts photovoltaic array performance?	
Help Received Father helped me set up the instruments	