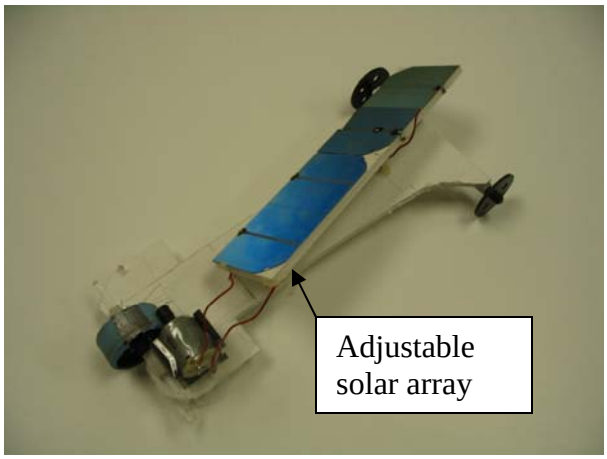
Design Competition Results
Includes photos shot during the competition and Report Submitted by the Team.

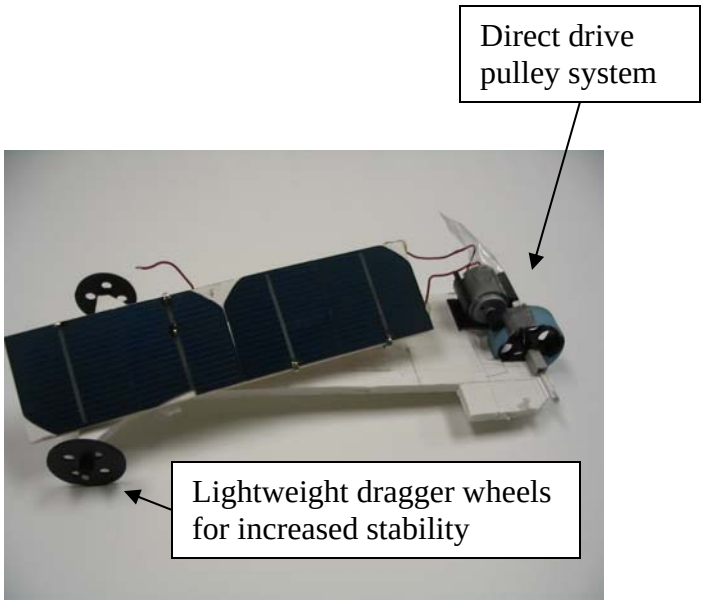
# Team 1: Stephen Wong, Bill Coffin, Igor Tikhonov

The goal of this project was to design and build a solar powered car. Our design philosophy was to build a car that was sufficiently fast and light. Our team created a solar array with two solar cells parallel and the two parallel cells in series with each other. We designed the array to be modular, allowing us to direct the array in the direction of the sun and reduce the amount of weight that was needed to hold the solar array. This array setup allowed for high current but moderate voltage. The voltage provided by the array also meant that the motor would reach its peak power sooner during acceleration. Our team attempted to create a direct dive system. In order to bypass the need for gears and gear ratios we decided to directly mount the motor to the driving wheel. Our main problem with this system was the total amount of power the motor was able to provide to the wheel. Power was lost when there was not enough contact between the wheel and the motor. Poor traction was noticed at certain times as well. Due to the high-current wiring, the car was able to accelerate quickly but lacked effective speed due to voltage limitations. Although the vehicle performed slower, it was able to complete the entire distance of the course of 34 ft.

| time (s) | weight (g) | dist (ft) | score |
|---|---|---|---|
| 15.21 | 72 | 34 | 160.9467 |
| 15.28 | 100 | 34 | 222.5131 |
| 13.12 | 156 | 23 | 273.4756 |
| 12 | 212 | 18.25 | 322.4167 |

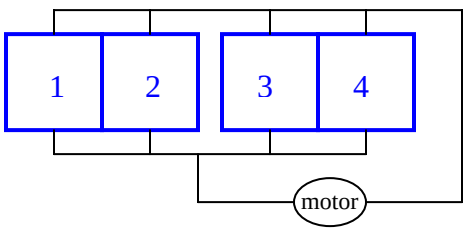
**Scores as a function of weight, time and distance**




| Team | Highest Score from each team's tries |
|---|---|
| 1 | 322.4167 |
| 2 | 568.4965 |
| 3 | 365.1026 |
| 4 | 453.6133 |

**Each team's score**




**Array wiring: 2 parallel pairs in series**