



**CALIFORNIA STATE SCIENCE FAIR
2009 PROJECT SUMMARY**

Name(s) Nanor Kassabian	Project Number J2415
Project Title The Effect of UV Light Range Radiation on the Magnetosensitivity of Drosophila melanogaster	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The purpose of this project was to see if UV radiation affects the ability of Drosophila melanogaster, a type of fruit fly, sense a magnetic field. I hypothesized that, if the UV light was filtered out, the flies' magnetosensitivity would be reduced. My independent variables are the entire light range (about 300-700nm), and the light in the UV light range (about 300-400nm) filtered out. My dependent variable is the number of flies affected by the entire light range, as opposed to the number of flies affected by the removal of the UV light range.</p> <p>Methods/Materials Starve 120-150 flightless D. melanogaster for 20-22 hours. Transfer 30 flies into each of the three labeled bottles. Construct a T-shaped maze in a clear case. Place a piece of banana at the end of one of the horizontal arms. Generate a magnetic field at the same end. Transfer flies through the vertical arm of the maze. Record results after 3 minutes. Stop magnetic field, and remove the flies and the banana. Repeat the procedure, excluding the banana. Replace the T-shaped maze with one that is covered with a UV filter sheet. Repeat the procedure, again without the banana. Repeat all the steps for batches B, C, and D.</p> <p>Results When the UV filter was applied to the apparatus, the ability to sense the magnetic field was reduced in the flies, and there was no preference in direction. 34% of the flies went towards the magnetic field, 43% went away, and 23% were undecided. When there was food, along with the magnetic field, the majority of flies (78%) went towards it, and 9% away, with 13% left undecided. When the food was removed, the majority of flies (68%) still went towards the magnetic field, but less than when there was food. 22% went away and 10% were undecided.</p> <p>Conclusions/Discussion It was found that UV radiation affects the magnetosensitivity of Drosophila melanogaster. This is due to the fact that UV radiation activates cryptochrome, a molecule in the fruit flies, which in turn activates the magnetosensitivity of the flies.</p>	
Summary Statement Drosophila melanogaster lose their magnetosensitivity when UV light range radiation is blocked.	
Help Received Mother helped transfer flies; Father helped get supplies and generate magnetic field.	