



CALIFORNIA STATE SCIENCE FAIR 2015 PROJECT SUMMARY

Name(s) Matas G. Kulikauskas	Project Number J0718
Project Title A Puzzling Parallax Perspective	
<div><div>Objectives/Goals To understand how distance affects parallax shift--specifically how far an object appears to leave your field of view as it is moved closer. The observer stands at a distance from a cardboard tube and looks parallel to the left or right of it. Here, a camera was used to simulate the eyes of the observer. This experiment explains parallax shift and its importance in vision, astronomy, and mathematics.</div><div>Abstract</div><div>Methods/Materials A cardboard tube was positioned at different half-meter distances in front of a 220-cm grid. Photographs were taken parallel half a meter to the left and right of the center of the grid. Photoshop was then applied to analyze the pictures and determine exactly how far the tube appeared to move to the left or right of the center. To make it easier to determine the exact center of the tube, a strip of tape was placed vertically down the cardboard.</div><div>Results The cardboard tube did not move out of the camera's field of vision by a consistent unit every half meter the tube came closer. Instead, it increased in a way that looked almost exponential. The parallax shift did not increase in the way anticipated.</div><div>Conclusions/Discussion This strange shift could be due to the curvature of the camera lens. A different perspective would occur when looking at the object through a flat surface. This is similar to the human eye, which is also curved. In theory, if this experiment were done on a larger scale with a telescope, there would be different results because the curve of the telescope's lens would be differently shaped. A mathematical version using trigonometry would have different results if that curve factor was not applied. In future experiments, it might be best to see if the curve of the telescope lens really causes different results from those of this experiment.</div></div>	
Summary Statement My project is designed to understand parallax shift in relation to distance.	
Help Received My dad, Jonas Kulikauskas, helped me find the right conditions for the experiment. My mom, Nola Butler, helped to edit my work. My science teacher, Ms. Horridge, gave me advice on assembling my binder.	