



CALIFORNIA SCIENCE & ENGINEERING FAIR 2018 PROJECT SUMMARY

Name(s) Makayla A. Plasse	Project Number 38561
Project Title Effects of Light Pollution on Astrophotography	
Abstract Objectives/Goals My goal was to find out if light pollution effected astrophotography. I wanted to be able to provide picture evidence of light pollution. I focused on the star Rigel in the constellation of Orion. I wanted four different photographs of Rigel in different light pollution levels. Methods/Materials In my research I found a light pollution map where I chose my four different locations (White Water, Palm Springs, Ontario, and Long Beach). To keep variables as consistent as possible I traveled to each location in one night to take pictures of Rigel. I used a Nikon D3200 camera and a 180140 mm lens. I repeated this a total of three times over the course of three months. I could only take pictures on one night of each month because the moon will interfere with the brightness of the star. Results My data showed a clear connection between the level of light pollution and the apparent brightness of the star. The more light pollution the dimmer the star appeared. I fulfilled my goal, in that I was able to obtain picture clear picture evidence of the brightness of Rigel. Conclusions/Discussion While doing this experiment I found that light pollution is an issue that must have dramatic effect more than just astrophotography. Starting this project I didn't expect to see such clear results. The images of White Water were so much brighter than those in Long Beach. I can't imagine how much worse light pollution will get in the coming years if regulations aren't made. During my research I came across articles saying light pollution can effect animals and even humans. I would love to take this experiment a step further and find a way to quantify just how much organisms are effected by light pollution.	
Summary Statement The level of light pollution in the sky effects the brightness of the star in your photograph.	
Help Received My father helped me carry out my science fair project. He drove me to each location so I could take photographs of the star Rigel.	