



**CALIFORNIA SCIENCE & ENGINEERING FAIR  
2018 PROJECT SUMMARY**

<b>Name(s)</b> <b>Makayla A. Plasse</b>	<b>Project Number</b> <b>J1213</b>
<b>Project Title</b> <b>Effects of Light Pollution on Astrophotography</b>	
<b>Abstract</b> <b>Objectives/Goals</b> 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. <b>Methods/Materials</b> 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. <b>Results</b> 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. <b>Conclusions/Discussion</b> 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.	
<b>Summary Statement</b> The level of light pollution in the sky effects the brightness of the star in your photograph.	
<b>Help Received</b> 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.	