



**CALIFORNIA STATE SCIENCE FAIR
2016 PROJECT SUMMARY**

Name(s) Leif P. Rudling	Project Number J1718
Project Title Which 3-D Geometric Shape and Surface Color of Stealth Aircraft Makes It Most Invisible or Undetectable to Radar?	
Abstract Objectives/Goals My project was to test different 3-D geometric shapes and surface colors to see which ones were most invisible or undetectable to radar, by testing which ones deflect the most light. I predicted that the #black v# would do the best in the stealth tests. Methods/Materials After I constructed a test box, I determined the place where the test shape is supposed to be, by placing a cylinder in the box and moving it so that the lux meter reads 50 lx+. I placed the test shapes (#black v#, #white v#, and #foil v# - then inverted the shapes) into the box, turned on the flashlight and lux meter, then recorded the results. Results The #black v# and the #black v inverted# proved the stealthiest. Then the #foil v#, #white v#, #foil v inverted#, and finally the #white v inverted#. My experiment supports that a black surface #V-shape# is very important in stealth aircraft, as evidenced by existing aircraft, such as the B-2 Spirit, F-117 Nighthawk, and the SR-71 Blackbird. Conclusions/Discussion My hypothesis was proven correct that the #black v# was the stealthiest, along with the #black v inverted#. A surprise was that the #foil v# got third because it is a reflective material. It is evident that black is the stealthiest color and that #v#s# are the stealthiest shape. The practical lesson I learned from this experiment is that stealth technology is very critical in ensuring safety in the world against enemy attacks. Our country must continue to invent, develop, test, and build stealth armament to always be the leaders in keeping the peace.	
Summary Statement My project was to test different 3-D geometric shapes and surface colors to see which ones were most invisible or undetectable to radar, by testing which ones deflect the most light.	
Help Received My parents bought the lux meter (light meter) and the project board. They also helped me create the graphs.	