



**CALIFORNIA STATE SCIENCE FAIR  
2002 PROJECT SUMMARY**

<b>Name(s)</b> <b>Brian E. Terrell</b>	<b>Project Number</b>  22387
<b>Project Title</b> <b>Utilizing Sunspots to Analyze Solar Rotation</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> To analyze the movement of sunspots to determine whether or not the sun rotates and if so, at what rate.</p> <p><b>Methods/Materials</b> I utilized two Schmidt-Cassegrain telescopes (5 inch and 8 inch) with approved sun filters to observe and photograph the movement of the sunspots. I photographed the sunspot movements with a 35mm single lenses reflex camera. I used a Minolta X 700 camera with 400 ASA Kodak film. An atomic clock was also utilized to insure the accuracy of time measurements.</p> <p><b>Results</b> The sunspots were noted to move in groups and in a relatively uniform and consistent manner. The approximate rate of rotation was once every thirty days.</p> <p><b>Conclusions/Discussion</b> Sunspots are a relatively stable phenomenon in the sun's photosphere. They typically last a matter of days to weeks. As such, they can be used to track the movement of the sun and determine its' rate of rotation. According to my findings and calculations, the sun rotates approximately once every thirty days, in a left to right manner as observed from the earth.</p>	
<b>Summary Statement</b> Tracking the movement of sunspots to determine if the sun rotates.	
<b>Help Received</b> My mother taught me how to use the telescopes with sun filters in a safe manner. My mother helped with the board layout and design.	