

Morgan Cragin
Starring Materials

Can the light of a star tell us the contents of the star? I am doing this experiment because most of space is unexplored. Depending on what we find in space can be a revolutionary change not just to our world but for our universe. It can also change or save many lives whether it is a new planet to live on or a material or gas that can cure a disease. The first step I took was figuring out which stars are best to examine and when I can observe them. On a clear night we set up the equipment to test the telescope, camera, filter, and software together by recording a star named Vega. We then calibrated the software to our camera using the Vega spectrum we captured and a reference spectrum available online. On a warm, clear night we finished examining the stars and recording their spectrums so we could analyze all the stars and come to a conclusion. Then, we examined the spectrums that we recorded using the software we found and referencing it to professional spectrums we found online to make sure we had correct spectrums to finish analyzing our data. Finally, we came to a conclusion after analyzing our data. We can determine the composition of a star by using stellar spectrography. By using spectrography we can determine the contents of a star by its spectrum. Using the Hydrogen-Balmer lines we can calibrate the spectrum of each star. After we have calibrated the spectrum with the Hydrogen-Balmer lines we can compare the absorption lines to known sets to find the other unknown elements in the star. We can later compare the absorption lines of other known elements to check for their presence in the current spectrum. By checking for each element that is likely in the star (helium, argon, calcium, etc.) we can determine the composition of a star. In conclusion, my science fair project is star spectrograph. My question is can the light of a star tell us the contents of the star? I am doing this because most of space is unexplored, and what we find in space can be a revolutionary change to our world. What we learn by exploring space can help to address problems we face today or might face in the future