Parallax, Part III: A Study on the Effects of Time Duration on a Stellar Parallax's Accuracy

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For three years I have sought out a stellar parallax. This year I wanted to successfully measure a stars parallax and see if a stellar parallax is linear; meaning if I measure a stellar parallax in proportionately less time, the parallax angle that is measured will be less accurate based on that proportion. I tried three ways to measure a stars' parallax. The first was taking six consecutive month pictures and comparing the pictures with plastic overlays marking with colored markers, and then measuring the stars with a caliper. The second method I used was the use of azimuth to plug into the angular diameter formula. Thirdly manipulating distance value in the angular diameter formula. The first method of experimentation gave off wild results. The inconsistencies were caused by insecurely anchoring the picture on the sleeve and the hand measurements were not precise. The second method didn't work because I couldn't get an accurate enough azimuth readings from the website, Sky View Café. The results of the final approach both proved my hypothesis right and wrong. Parallax is not linear but, there is a correlation. The percent accuracies of the time taken to measure a parallax are: 5 months 95%, 4 months 85%, 3 months 70%, 2 months 50%, and in 1 month 25%. This means that a parallax will be 70% of the normal parallax if measured in half the time. These results show that mathematically, you can get preliminary results when measuring a star's parallax.

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