

Re: Star Distances

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- *From:* Saul Levy <saullevy1@xxxxxxx>
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Yes, many years of plates are taken to increase the accuracy. Today parallaxes are often measured electronically, no photographs are taken.

Since only relatively nearby stars can be measured by the parallax method, most field stars will be much farther away and perfectly suited to be reference stars. If by chance you happen upon a reference star which is much closer, it will leave its mark by also showing some parallax. It cannot hide in the data.

I used to work for Nicholas Emory Wagman at Allegheny Observatory. He was truly a genius at arithmetic and could find any errors either caused by a reference star having parallax/proper motion or a calculation error by the measurers (including me!). He always told us to recalculate any errors we made. Usually the final parallax was derived by Dr. Wagman, but one time he let me do the entire calculations. It was quite interesting even though I missed a lot of exactly what the technique included. Many sources of error are corrected for and technique errors avoided.

I also measured tau Ceti which is a nearby star with a large proper motion. The p.m. has to be corrected for at regular intervals so that it doesn't affect the final parallax. That was a lot more work, but is common in parallax work.

Saul Levy

On 23 Jun 2006 08:46:47 -0700, "Hurt" <hurt_beyond_repair@xxxxxxxxxx> wrote:

Suppose I put a mark down at one end of a field, then another mark at the other end, and then I take a tape and measure the difference between them. Yes, I've done two "snapshots". But would you describe that as "measuring two lengths"?

These are not exactly analogous situations. You're not measuring two

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lengths but you are taking two data points, the first being zero, the beginning of the tape measure. In this case though you have definitively set both your reference and target points. In stellar measurements all points are to some degree a moving target. Initially both the reference star and the relative motion of the target star are indeterminate; two unknowns requiring a minimum of two measurements.

Uh, no. The point is that there is a star (a distant one) that the near star IS shifted relative to. You only require two stars, one near, one far. And all you care about the far one is that it IS far.

That's theory, in actuality astronomers have to take many photographic plates to find a reference star that isn't shifting relative to the target star. Initially we don't know how far any of the stars are.

You're either being prick or just ignorant if you dispute this. I think it's both personally. Go talk to an astronomer and/or therapist.