Re: Nearby stars−why do they start at 4LY?

Source: http://sci.tech−archive.net/Archive/sci.astro/2008−07/msg00268.html

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- *Date*: 20 Jul 2008 18:12:56 −0400

John C. Polasek <jpolasek@xxxxxxxxxx> writes:

> Wiki et al show tables of the first 20 or 50 starsnearest the earth.
> The distances for the first few are
> .. .. .. 4.3 6.0 7.7 8.4 8.6 9.4 10.4 LY
> 1.7 1.7 .7 .2 1.2 1 the differences
> Why are there no stars from 0 to 4.3 LY? From the difference list
> there should be at least 2 closer than 4.3.
> These are probably the few that can be measured using the parallactic
> effect. It just doesn't seem likely that such a void exists.

If there are 7 stars within a radius of 10 light−years, then the density is .00168 stars per cubic light year. Assuming a uniform density (no voids), the cumulative number should grow as R^3.

On average, the first star will appear at a radius between 4−6 light years, which is a reflection that the inner 5 light years contains only about 1/8th of the total volume out to 10 light years. On average, the next stars will be separated by 1.8, 1.1, 0.8, 0.7, 0.6, 0.5 light years respectively. Seems like a reasonable approximation of reality to me.

CM
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