

Re: Galactic pancake mystery solved

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- *From:* Ernie Wright <erniew@xxxxxxxxxxxx>
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Tim Killian wrote:

It was data from Tycho's `_observations_` that lead a frustrated Kepler to try an elliptical motion model!

Of course. I said this already.

But Tycho didn't see ellipses in the sky. He saw planet positions that didn't agree with the current theory. And Kepler wasn't led to ellipses by experiment. He assumed them, then simulated them numerically and demonstrated that they fit the facts.

My pique with the satellite galaxy model is the authors use of a model with multiple levels of assumptions including a cold dark matter theory that has no experimental evidence to support it.

I think you're putting the cart before the horse.

There is abundant evidence from independent sources that the motions of galaxies and the large-scale structure of the universe are inconsistent with the mass we can see.

That's the Tycho, discrepant facts stage. Now we're at the Kepler stage, where we brainstorm ideas and simulate them numerically to see whether we can account for the facts.

We've known about the problem for over 70 years, and all the simple models have already been tried. So now we're discarding our cherished

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circles and trying some ellipses.

There was no experimental evidence to support Kepler's second law. That had to wait for Newton and the formulation of a physical theory that was testable at human scales. And we aren't going to find dark matter in accelerators--or reject its existence--until we understand the problem well enough to formulate a theory that makes testable predictions.

- Ernie

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