Re: A new computation of G from the Cavendish experiment

Source: http://sci.tech−archive.net/Archive/sci.physics.research/2007−08/msg00162.html

- *From*: pioneer1 <1pioneer1@xxxxxxxxx>
- *Date*: Thu, 30 Aug 2007 05:37:19 +0000 (UTC)

On Aug 28, 8:34 pm, Edward Ruden <rudenbz...@xxxxxxxxx> wrote:

> On Aug 27, 7:47 pm, pioneer1 <1pione...@xxxxxxxxx> wrote:
> ..
>
> http://www.densytics.com/wiki/index.php?title=Cavendish_experiment_and_G
>
> You need to make your calcuations more clear and self−contained. It requires too much detective work to even figure out what your variables are defined as in terms of measurements. Like, how do you define theta? Deflection from equilibrium without gravity from either big ball would be appropriate for it's occurance in the equations, but is that how you define it, or is it deflection between going from M to M' attraction (which should be 2*theta)? Such a confusion could be the key to the discrepancy. It's not clear what *you* think the variables should represent, so we'll never know.

Ok. I would like to make the calculations self−contained. Let me know what is not clear. For theta, you might want to check Figure 1 here:

http://www.densytics.com/wiki/index.php?title=Cavendish_experiment_and_G

In Cavendish's pendulum, as shown in the figure, the scale division 20 was where the pendulum arm was at rest. At 20 divisions theta equals zero. In this particular experiment he moved the weights from M to M'. At M the rest point of the arm was at 18.01 divisions. When he moved the weights to M' the rest point of the arm moved (as calculated by Cavendish) to 24.04. I used r = 24.04 − 20 as the angle of displacement to compute restoring torque tau = k theta. I computed theta as theta = gyration arm / r = 0.0547 radians.

I don't understand why I should be using 2 theta. Can you explain?

Thanks.

.