

Kätta's Last Lecture

I don't think I could give you many details. I wasn't there *for* the lecture, I just didn't have any classes at the time, and I lived too far to make it home and come back before the next class. The lecture was just better than doing nothing at all.

What do I remember? Well... it began as a normal lecture, really. And it *was* a normal lecture for most of it. I actually remember pretty well what it was about (just look at my job now, haha). It was about what we call Blood Rarefaction now. But at the time it was just a project in Vats' Vacuum Chambers.

See, way back then we had a rudimentary method for mana extraction. We used to expose blood refreshing units to moonstones just to let the mana passively leak out, and then we'd collect it. It was an expensive process (we're actually expecting to run out of moonstone deposits in four or five generations) and it required a lot of material just to power a city.

We had this equation — Kachi's Equation — which modeled this process pretty well. The only nitpick everyone had (and to a point, everyone still has), is that it had this constant that only existed to make the results correct. Kachi's Constant. A term you have to subtract just to make the numbers line up with experimental results.

Of course, it's a bit inelegant, and Blue Kingdom has higher standards than that, so they did tests in more extreme conditions, trying to make the constant fail and, by doing so, discover the true nature of the energy output. But it didn't break. The constant was seriously the way to go.

It worked, and it was what we used for the longest time, but as I said, it was expensive. Of course they were already working on alternatives. Vats' method consisted of compressing moondust into an incredibly dense sphere called a manastone. The dust is mixed with a little bit of blood to make the manastone volatile. You have to make sure the blood is mostly inside, because otherwise the energy would leak out and leave you with a spherical stone mixed with useless stale blood.

So the way we put this in laymans' terms is that the blood inside this ball *seriously* wants to stop existing. But its effect is so strong that if you put other blood in direct contact with the ball, that blood will want to stop existing too. It was considered as a defense in case Green Kingdom sorcerers ever tried something funny, but that didn't go anywhere.

If you make the ball's work easier by putting it inside a vacuum chamber, you can actually extract more energy than you're putting in.

And here ends the normal part of the lecture. She gave us the formula for the newer model — which accurately predicts the old methods and the new method — and goes on a tangent about Kachi's constant.

Ten years ago (so, like, actually twenty by now, I think), she noticed that the constant had changed slightly. It wasn't really significant at the time, but if Vats' methods were scalable, then it could actually become significant (and they for sure were; every city has one blood rarefactor, two if it's a really big one). She talked about how she was excited at first, because Kätta's Constant had a nice ring to it, but no, it wasn't Kätta's constant. Kachi's constant had just changed.

And so she measured the constant with the old method, and found out that old textbook results were in fact off. So she measured them again. And found the same thing. It consumed her. She

said she'd actually been measuring the constant for the last ten years, and had seen a consistent, yet really slow, increase.

I still remember how freaked out everyone was by this time. I don't think I'm conveying it properly, really. This woman was freaking out in front of a hundred and so students. And it kept getting worse. By the end, she was mostly muttering to herself, talking about how the energy had to be going somewhere, and how there had to be *something* that was suddenly demanding more energy to be given to it. "Where does it go..."

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Which... now that I think back on it... it *is* strange... where *does* it go?

— a retelling by Mezu

I've since asked KitzKätta about it and she says it lines up pretty well with what she remembers. Very interesting.