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## TAILPIECE

# The universal model

Inspired by news of Edinburgh Parallel Computing Centre's acquisition of the 256-processor CRAY T3E-900 to study, among others thing, the mysteries of the Universe,  
Professor Richard Lathe looks to the next generation.

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- More tea, Zansak?
  - Thanks, just a little. How's that lad of yours doing?
  - Jez you mean? Well he's doing pretty fine. Getting on to 42 trillion trillion trillion calculations per cubic yoctosecond and he's just a baby. We're pretty proud of him but it's still early days.
  - How are his practical abilities coming on - I guess he's got lots of toys?
  - Funny you should ask. You know how we are regular nine-dimensional entities, and all that, but maybe you remember we discussed the theoretical possibility of a self-contained universe with just three space dimensions and one time dimension? Wasn't it when you came over for dinner?
  - Sure, I remember.
  - Now you're not going to believe this, but our Jez must have been listening in because he went away and built one.
  - What? He built a universe?

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- Yessir!

- By himself?

- Seems he started with a kit for a miniature galaxy, and it just grew from there. He was at it for a whole week, we hardly saw him. Want to see it?

- Of course, if you've got time.

\* \* \*

- So here it is. It's a bit big and complicated but you'll get the general idea.

Zansak drifted in amazement, a complete working model of a three-dimensional universe lay before him, with gently orbiting star systems interwoven in a vast complexity of brightness.

- Wow! That's pretty good.

- Yep, you should see it when we turn off the tachy lights. What's neat about it is that the total mass of the universe is just enough to prevent it expanding infinitely outwards, so it sort of recycles material to the extremities and back again by a process that Jez calls gravitational convection.

- But what keeps it going?

- Oh, it converts matter to energy in a big way, but it'll run down in the end because there's no way to make it energy tight. Already it's a bit dimmer than it was a few days ago. You'll also notice ... Hey, that's real weird, the darned model is giving out some kind of radio signals. Where's that boy? Jez, JEZ, come here right now!

- Hey, what's wrong now? You like my model, Mr. Zansak?

- Now look here, Jez, there are radio signals coming from it. That's the second time there's been a problem this week.

Yester-day it was the stink coming from a planet with scaly things crawling all over it, now it's radio signals of all things. Radio signals! I don't believe it, Jez, you can't have cleaned up those scaly things properly.

- Oh I did, I really did, I gave it a really good spray.

- Let's see, where is it - one, two three, four - Ahah - here it is. Good grief, JEZ, it's wet, it's bloody well WET, it's covered in water. You blind, Jez? The goddamned thing is so wet it's blue! No wonder it keeps going off.

- OK, I'll show you what to do. You wipe it down very carefully - like this - so as not to change the mass, and to make sure I'll give it another spray. Sparkling clean!

- Right, you can put it back now, fits just there, give it a gentle spin to set it going. And, Jez, my lad, I've had it up to here, if there are any more problems with your model you'll just have to get rid of it.

- Well, Zansak, it's neat but it doesn't prove anything - the three-dimensional universe must remain just an intriguing mathematical possibility.

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