



Source: Dina Kraft, 'Israeli machismo slams into the law', *New York Times in International Herald Tribune online*, 19/10/06.

Tags: [death](#), [science](#), [religion](#), [nostalgia](#), [music](#), [poetry](#)
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The Professor, although he did not know it, was already dying. And because he was completely unaware of his situation—the second-by-second countdown to oblivion—he continued to work on his seminar. His topic was neutrinos and he had already decided, without quite knowing why, that the title of the seminar would be 'Are Angels Okay?'. He thought he must have seen that title in a bookshop, perhaps in the burgeoning 'Spirituality & Life' section. Not that he had much time for that sort of rubbish, but you couldn't avoid seeing it these days.

Neutrinos, he planned to begin, are elusive. Right now, each and every person in this audience, myself included, is being invaded by a hundred trillion neutrinos per second! He would turn to the blackboard and write out the 1 followed by fourteen zeros—that's a helluva lot of neutrinos! And all left over from the Big Bang. And you might well ask, what are they for? He would then quote from the John Updike poem *Cosmic Gall* which begins

Neutrinos, they are very small
They have no charge and have no mass
And do not interact at all
The earth is just a silly ball
To them, through which they simply pass
Like dustmaids through a drafty hall.

He would repeat that last line—Like dustmaids through a drafty hall—and pause to let his listeners absorb the image. He would remark: The poets love neutrinos, they are just so mysterious. The very elusiveness of neutrinos is part of their mystique. But in spite of that, scientists had succeeded in 'observing' them, or rather, gathering evidence of their existence through their effect on other particles; specifically, by the destruction of a proton (essentially the stuff we are made of) and the subsequent release of light; that's how we 'see' neutrinos. But, he would warn, these events are very, very rare and the scientists have to create very large and expensive accelerators to have any chance of catching sight of a single one in one hundred billion!

However, The Professor would continue, sometimes nature itself lends a hand. What have Kamioka and Ohio got in common, he would ask, apart from baseball, perhaps, and wait for the polite laughter. He would tell them that in a zinc mine in Kamioka, Japan and in a salt mine in Ohio, USA, there were two similar experiments underway to observe a different effect, the spontaneous destruction of the proton, the suicide of the proton, if you like, without the aid of a neutrino. Consisting of 2,000 tons of ultrapure water and buried deep in the earth to exclude other effects, these careful experiments were regarded as neutrino-free. Until one night in 1987 both

experiments recorded unexpected activity.

He would lower his voice now, to ask what was happening? What was happening, he would loudly declare, was extraterrestrial! Way out there, he would point vaguely upwards, a star was dying, not slowly but dramatically, in what we call a supernova. Not, as the ancients thought, the birth of a new star but the death of an old one, in which it briefly shines brighter than 10 billion suns! And accompanying that explosion of energy would come a lot more neutrinos, enough to create the activity seen in the two mines.

That much of the seminar he had sorted out, but where was he to go to from here? He knew he should be sticking to the physics of neutrinos but found himself wandering off, in this case from Kamioka and Ohio to Bethlehem. There was a connection of sorts for the most rational explanation of the Star of Bethlehem was another supernova, hence the Wise Men and their journey 'following yonder star'. He began humming the carol 'star of wonder, star of light, star of royal beauty bright' then, with his inability to stay in key, folding into 'angels we have heard on high'. He remembered waking up on Christmas morning to the sound of the Salvation Army band in the street below, playing all those wonderful old tunes. And that reminded him of his mother tucking him into bed every night and how together they would whisper the prayer:

There are four corners at my bed
There are four angels round my head
Matthew, Mark, Luke and John
Bless the bed that I lie on

Angels again, he noted, remembering his title. How strange to make this connection. And what was all that stuff about how many angels could dance on the head of a pin; probably billions, he smiled, seeing them jostling for room, like the chooks his mother had kept in the back yard, using their wings as elbows. Wonderful nonsense, he thought.

And then it struck him, struck him with all the force of a supernova, or a bullet to the head: The experiment with the ultra-pure water wasn't new. It was there all the time in the old bible story of the pool at Siloam, where the sick lay waiting for the angel to brush the surface with its wing. It was so obvious and so wonderful and so, well, timely as one hundred trillion angels linked hands to carry him home.

Adapted for performance by Barbara Campbell from a story by Iggy McGovern.