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A down to earth star on space mysteries

TORRANCE MENDEZ

Would-be astronaut and physicist Jim Gates has jetted to Perth to reveal the secrets of the Big Bang in a way that parents can understand.

Officially, Professor Gates, from Maryland University in the US, is here to discuss ideas with counterparts in the University of WA, but was persuaded to use his gift for distilling complex subjects.

He will give a free public lecture in UWA's Octagon Theatre tonight to explain in everyday language our latest understanding of the origins of the universe.

"We all look up at the stars at night and wonder what is up there," he said. "This is probably one of the deepest heritages of wondering; what does all that in the sky mean?"

Professor Gates has crafted a reputation on TV in America and Australia for captivating mass audiences through simple explanations of science, a feat that saw him dubbed the Tiger Woods of physics. In fact, he almost became an astronaut.

"I applied for the astronaut program around 1978-79 and I came very close to being accepted," he said. "I did have a very good friend who was an astronaut, Ronald McNair, who died in the Challenger explosion in 1986. He and I were graduate students together."

Professor Gates will reveal how the latest measurements on supernova explosions and the Hubble space telescope demonstrate that the universe is expanding and accelerating in its expansion.

Modern cosmology suggested an unquantified force called dark energy was driving the expansion of the universe.

"One of the most remarkable things . . . is that at the instant of the Big Bang, the amount of energy that was contained in gravity versus the amount of energy that was contained in everything else – and we're part of everything else – those numbers were exactly the same," he said.

"Most educated people have heard of the Big Bang but what they don't know is that there's a type of signal it left in the sky that we can see. It's called the cosmic microwave background."

In effect, it was a snapshot of the universe about 300,000 years after creation 13.7 billion years ago.

"These observations tell us that for whatever reasons, and some might prescribe these to a supreme being, there's an infinite set of balances that makes our existence possible," Professor Gates said.

Equations, including Einstein's general theory of relativity, led us to conclude the human race was nothing but distilled and frozen energy.

"When you talk about science like this, it almost begins to sound like religion because you look at the universe dispassionately with all the rigour that we're equipped to bring to the task and yet at the end of the day you find all this beauty that's been called elegance and mysterious," Professor Gates said. "And without this we wouldn't be here."

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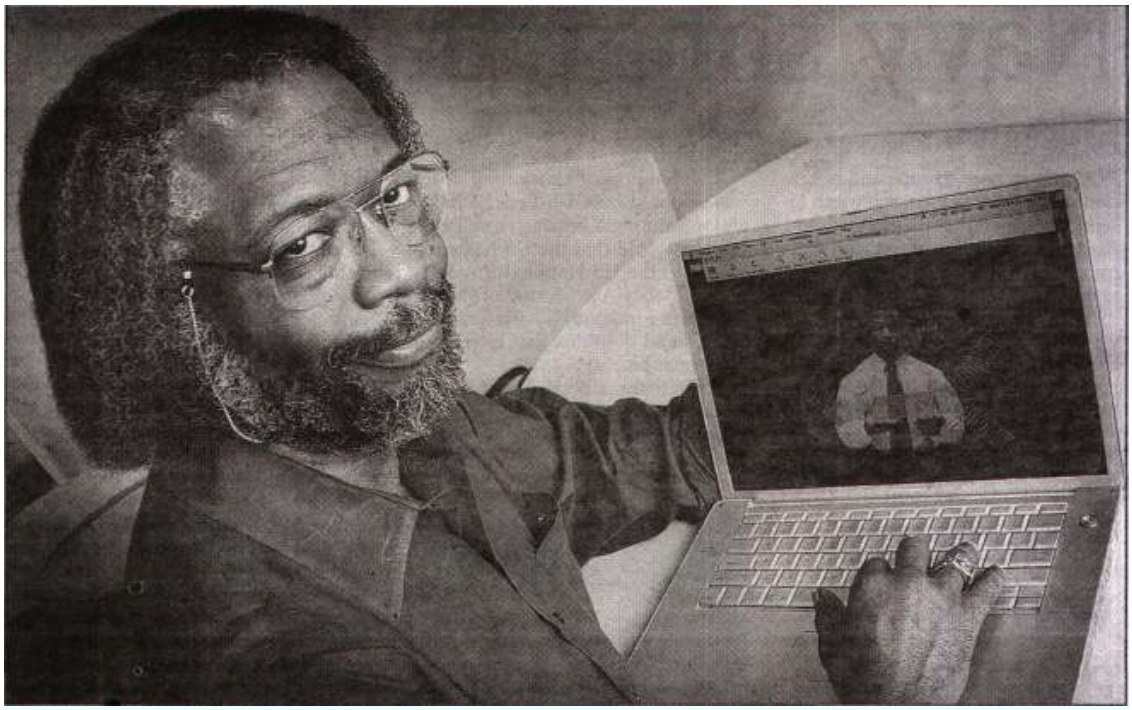

In touch: Professor Jim Gates uses everyday language to explain our latest understanding of the universe. Picture: Guy Magowan