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HEADLINE: **Universe** just keeps on growing

BYLINE: By JOE CARROLL

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BODY:

New data collected from exploding stars show that the **universe** will keep **expanding** for ever. The data also put the age of the **universe** at 15 billion years, contradicting recent claims that it is only about eight billion years old.

The new findings were presented at the annual winter meeting of the American Astronomical Society.

Five teams of astronomers working independently said that they had come up with similar results based on studies of exploding stars known as supernovas.

"All the indications from our observations of supernovas spanning a large range of distances are that we live in a universe that will expand for ever," the leader of one team, Dr Saul Perlmutter of Lawrence Berkeley National Laboratory in California, told the conference.

"Apparently there isn't enough mass in the universe for its gravity to slow down the expansion, which started with the Big Bang, to a halt," he said.

"For the first time ever, we're going to actually have data so that you will go to an experimentalist to find out what the cosmology of the universe is, not to a philosopher," Dr Perlmutter added.

Dr Peter Garnavich of the Harvard-Smithsonian Centre for Astrophysics in Cambridge, Massachusetts, said that the latest studies on the expansion rate show that the universe is 15 billion years old and so much older than previous estimates by other astronomers.

The findings were discussed by two international teams using the Hubble Space Telescope and other telescopes in Chile, the Canary Islands, Hawaii and Arizona.

Astronomical teams from Princeton and Yale Universities were also involved.

Dr Ruth Daly of Princeton said that, as a result of the findings, "we are 95 per cent confident that the universe is

going to expand for ever".

The astronomers are now satisfied that the matter in the universe is less dense and consequently more lightweight than previously believed.

Existing theory held that the expanding universe had reached a "critical density" which allowed it to expand while on the verge of collapse from gravitational forces.

The astronomers now say that the matter in the universe is only at 20 per cent of the density which would halt expansion and perhaps cause the universe to implode.

By measuring the light arriving from the supernovas, the astronomers can calculate accurately the rate at which the universe has expanded since the Big Bang 15 billion years ago and how much the expansion is accelerating or slowing.

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