

Herschel telescope shows galactic star formation is slowing (Update)

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The Herschel telescope is the biggest ever sent into space. New star formations in spiral galaxies such as the Milky Way have declined five-fold in the last three billion light years, according to the first findings of the European Space Agency's Herschel telescope.

The formation of new stars in galaxies like the Milky Way has declined five-fold in the last three billion years, initial findings of the European Space Agency's Herschel telescope showed Thursday.

While scientists already knew that star formation was more prolific billions of years ago, the Herschel telescope has for the first time been

able to start measuring the rate of decline, scientist Steve Eales said at the launch.

Three billion years ago "galaxies were forming stars at ... five times the rate we know today," he told AFP at the agency's offices in Noordwijk in the western Netherlands.

Eales said the Herschel telescope's infrared technology allowed scientists to see galaxies, mainly spiral ones like the Milky Way, that were previously hidden from scientists' view by cosmic dust clouds.

The telescope, launched a year ago to study star formation, is the biggest ever sent into space, orbiting at a distance of 1.5 million kilometres (932,000 miles) from the Earth.

Scientists already knew that 10 billion years ago "there were these galaxies that were forming stars really fast," said Eales, but previous telescopes were unable to see up to a distance of 10 billion light years.

"We haven't been able to fill that gap until today.

"What Herschel has been able to do because of the wave length it is observing at, it can suddenly see lots of galaxies in the nearby universe, up to about the last three or four billion light years. It can fill the gap in cosmic history," Eales said.

The findings suggested, he said, that "at some point stars will stop forming" altogether, unless solar conditions changed.

Scientists did not know the reasons for the decline.

Researchers also told the launch that Herschel had managed to spot an embryonic "massive star" -- a celestial object more than eight times the

size of our sun.

"Massive stars are rare and short-lived," said an ESA statement. "To catch one during formation presents a golden opportunity to solve a long-standing paradox in astronomy."

Scientist Annie Zavagno said that radiation emitted by massive stars should destroy them at some point -- instead they continue to grow.

According to accepted scientific principles, stars should not be able to become more than eight times bigger than our sun.

Understanding how these "impossible" stars were formed was critical because they "control the dynamical and chemical evolution of galaxies," said Zavagno.

The ESA's director of science and robotic exploration, David Southwood, said "a new universe" was emerging from Herschel's findings.

"We can look at the complex chemistry that goes on in space that ultimately has created the things that we are made of," he said.

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