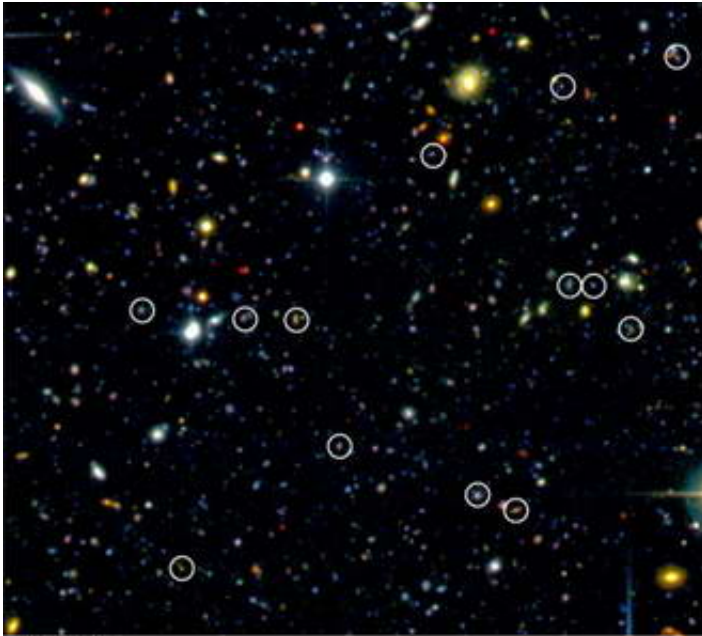


A Cosmic Baby-Boom

September 21 2005



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New Population of Distant Galaxies
(Megacam/CFHT)

ESO PR Photo 29a/05 (September 22, 2005)



The Universe was a more fertile place soon after it was formed than has previously been suspected. A team of French and Italian astronomers made indeed the surprising discovery of a large and unknown population of distant galaxies observed when the Universe was only 10 to 30% its present age.

Image: New Population of Distant Galaxies

This breakthrough is based on observations made with the Visible Multi-Object Spectrograph (VIMOS) as part of the VIMOS VLT Deep Survey (VVDS). The VVDS started early 2002 on Melipal, one of the 8.2-m telescopes of ESO's Very Large Telescope Array.

In a total sample of about 8,000 galaxies selected only on the basis of their observed brightness in red light, almost 1,000 bright and vigorously star forming galaxies were discovered that were formed between 9 and 12 billion years ago (i.e. about 1,500 to 4,500 million years after the Big Bang).

"To our surprise, says Olivier Le Fèvre, from the Laboratoire d'Astrophysique de Marseille (France) and co-leader of the VVDS project, "this is two to six times higher than had been found previously. These galaxies had been missed because previous surveys had selected objects in a much more restrictive manner than we did. And they did so to accommodate the much lower efficiency of the previous generation of instruments."

While observations and models have consistently indicated that the Universe had not yet formed many stars in the first billion years of cosmic time, the discovery announced today by scientists calls for a significant change in this picture. The astronomers indeed find that stars formed two to three times faster than previously estimated.

"These observations will demand a profound reassessment of our theories of the formation and evolution of galaxies in a changing Universe", says Gianpaolo Vettolani, the other co-leader of the VVDS project, working at INAF-IRA in Bologna (Italy).

These results are reported in the September 22 issue of the journal *Nature* (Le Fèvre et al., "A large population of galaxies 9 to 12 billion years back in the life of the Universe").

Source: ESO

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