

Origins of Life on Earth

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Comment: This is just speculation on the origins of life on "earth". I read, "On September 28, 1969, a meteorite fell over Murchison, Australia. While only 100 kilograms were recovered, analysis of the meteorite has shown that it is rich with amino acids. Over 90 amino acids have been identified by researchers to date. Nineteen of these amino acids are found on Earth. (table showing comparison of Murchison meteorite to Miller/Urey experiment) The early Earth is believed to be similar to many of the asteroids and comets still roaming the galaxy. If amino acids are able to survive in outer space under extreme conditions, then this might suggest that amino acids were present when the Earth was formed. More importantly, the Murchison meteorite has demonstrated that the Earth may have acquired some of its amino acids and other organic compounds by planetary infall."

So of the 90 amino acids found in the Murchison meteorite 19 have been found to exist on earth. An amino acid is a small molecule [or block of molecules] used by cells to make proteins. Certainly, however, the discovery of 90 amino acids on Murchison doesn't constitute "life" or we would have announced our first meeting with an extraterrestrial. For the sake of argument let's say Earth did acquire some of its amino acids and other organic compounds by planetary infall. But given initial conditions on Earth these amino acids and organic compounds would remain inactive. It would take different atmospheric conditions to activate these amino acids and organic compounds.

Apparently the first organisms were the prokaryotic bacteria and algae which didn't need to rely on oxygen and thrived in an atmosphere mainly of carbon dioxide. Although it has been discredited by scientists the Urey-Miller experiment of using reducing gases and electricity to create amino acids impressed me. But the consensus today is Earth's early atmosphere was not a reducing atmosphere but one filled mainly with carbon dioxide and nitrogen. Under such conditions Urey-Miller's experiment fails. But is it possible, as someone suggested, that in more local environments there might be more reducing gases conducive to repeated lightening to create life?

http://www.chem.duke.edu/~jds/cruise_chem/Exobiology/miller.html

Miller/Urey Experiment

By the 1950s, scientists were in hot pursuit of the origin of life. Around the world, the scientific community was examining what kind of environment would be needed to allow life to begin. In 1953, Stanley L. Miller and Harold C. Urey, working at the University of Chicago, conducted an experiment which wou