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Asteroids may have helped life emerge about 4 billion years ago
Don Davis / NASA

Asteroids Also Give Life, Not Only End It

Simulations reveal ancient asteroids spawned life in oceans

Modern vision perceives asteroids more as a threat than as anything else. Plans are being made to track the movements of near-Earth objects, to detect those that may be on collision courses with our planet and to intercept those that might prove hazardous. But it hasn't always been so, shows a recent experiment, albeit a small scale one. It seems that, in fact, life was also spawned by such powerful impacts that we dread today.

A team of scientists from the Tohoku University in Sendai, Japan, led by Yoshihiro Furukawa, has managed to devise a small test that would simulate the conditions in the planetary ocean about 4 billion years ago, as well as the result of a major asteroid impact. It seems that, contrary to what is believed, the aftermath of the collision provided a very hospitable environment for life to emerge. This doesn't bode well for the theory of panspermia, which states that the prebiotic life components or even a rudimentary form of life were brought from outer space by comets or asteroids. Back then, 4.2-3.8 billion years ago, in the **Late Heavy Bombardment** period, the Earth was pummeled by celestial rocks about 100.000 times more often than now, and, as a result, primary protein-building compounds (like carboxylic acids, amines and amino acids) - an energy source for primordial organisms - emerged. This was proved by shooting iron and carbon-containing pellets at 4,500 mph (about 7,250 km/h) into a tank of water and ammonia. Iron and carbon **reacted** with hydrogen and nitrogen to form the organic compounds. Still, the ocean was too vast and the dispersion factor too big, so the recently-proven theory of volcanic activity occurring at the time was also added into the equation, as a catalyst and stabilizer that helped concentrate the molecules. But more research and further simulations of different conditions are required in order to back the study up and enhance its results. Although asteroids helped form life in the beginning, their vastly reduced number in the following ages helped preserving it.