

What is the universe made of?

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by Mark Paris

A team of physicists and astrophysicists at Los Alamos National Laboratory, in collaboration with leading universities around the country, are using the Laboratory's supercomputers to simulate the Big Bang nucleosynthesis and the early universe to unprecedented precision. These researchers developed a code, called BURST, that describes the universe from a time of a few seconds after the Big Bang to several hundred thousand years later. BURST allows physicists to study the microscopic, quantum nature of fundamental particles — like nuclei and the ghostly, weakly interacting neutrinos — by simulating the universe at its largest, cosmological scale. BURST simultaneously describes all the particles present in the early universe as they develop, tracking their evolution, particularly the amounts of light nuclei fused in the cosmic soup.

Watch the video on [YouTube](#).

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