

Chinese team breaks record for largest virtual universe

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Credit: chinadaily.com.cn

(TechXplore)—A team of researchers with the Chinese Academy of Sciences in Beijing has announced that it has broken a [record set just last month](#) by a team at the University of Zurich in Switzerland—they have created the largest-ever virtual universe. An announcement regarding the record breaking feat, [was made](#) via *Science and Technology Daily*, an

official Chinese newspaper.

Since the advent of computers, space scientists have attempted to use them to create a virtual, or simulated [universe](#). The idea is that if the universe can be simulated, it can be better studied because it can be observed over manipulated time from its birth to today. The problem with simulating the universe, of course, is that it is made up of so much stuff. Such simulations are known in the field as N-body simulations, because they become more intense as more particles are added. During the early years of such efforts, in the 1970s, computers could only handle on the order of a thousand particles. That number increased to the trillions over the past few years as computers have grown ever more powerful. The researchers with this new effort used the most powerful [computer](#) available in the world today, the Sunway TaihuLight supercomputer, built by China and based in Wuxi.

Officials with the project told the press that the team had simulated the universe from birth to early expansions (approximately ten million years after the Big Bang) over the course of one hour and that the effort involved 10 trillion digital particles. The result was a virtual universe five times as big as the one created by the team in Switzerland just last month.

The supercomputer gets its speed by utilizing millions of CPU cores—each able to carry out instructions independently. During the creation of the virtual universe, the team was able to make use of 10 million cores, which they described "as lots of calculations."

The researchers also reported that because of the unique architecture of the Sunway TaihuLight, the team had to write almost all of the software for the project from scratch—a very labor-intensive task. They also noted that the supercomputer encountered no problems and that the simulation was terminated after just an hour because another team had

booked time on the computer.

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