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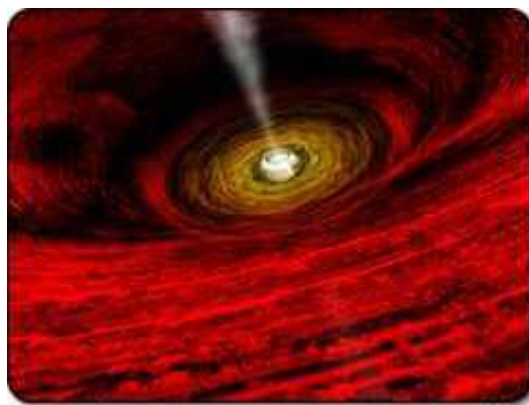
Technology & Science

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Did cosmos begin as a black hole?



NASA

Theorists propose a 'white hole' scenario for creation of universe, but it remains to be seen whether idea will hold up

Sept. 8, 1999 -- Watch a NASA animation zooming in on a black hole as you listen to black hole sounds. The sounds are X-ray data from GRS 1915+105, translated into audible pulsations by MIT's Edward Morgan.

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By Robert Roy Britt
SPACE.COM

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Sept. 17 — If black holes and the Big Bang befuddle you, try wrapping your brain around this one: The entire universe may have been created in an explosion inside a black hole. "It's a mathematically plausible model which refines the standard model of the Big Bang," said Blake Temple, a mathematician at the University of California at Davis.

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THE STANDARD MODEL holds that the universe began about 13.7 billion years ago. The Big Bang is described not as an explosion so much as a rapid outflow of material from a point of nearly infinite density. It is a theory, one among several attempting to describe the observed expansion of the universe today. It has not been proved.



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The Big Bang has been compared to black holes before, because the tremendous crush of matter that defines a black hole is much like the unfathomable density that preceded the Big Bang. Both phenomena are termed singularities.

In the proposed modification to the standard model, the Big Bang is an actual explosion, Temple explained Wednesday in a statement, and it occurs within a black hole in an existing space. The shock wave of the explosion is expanding into an infinite space.

Temple also describes the whole scenario as a white hole, the theoretical opposite of a black hole because it tosses matter outward instead of pulling it in.

White holes have been talked about before, mostly as mathematical curiosities. There is no evidence these "anti-black holes" exist, whereas scientists have solid evidence for the presence of black holes.

Eventually, Temple says, the universe will emerge from all this as something like an exploded star, called a supernova, but on an enormously large scale. He said the new theory satisfies Einstein's equations in the General Theory of Relativity, which gave rise to the Big

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Bang theory.

Temple can't say where the matter we see today originally came from. What existed before the Big Bang? This, in fact, is a thorn in the side of all cosmologists, and it may never be answered because we can't see time and space as it existed prior to time as we know it.

But Temple and colleague Joel Smoller, from the University of Michigan, wrote recently in the Proceedings of the National Academy of Sciences:

"It is natural to wonder if there is a connection between the mass that disappears into black hole singularities and the mass that emerges from white hole singularities."

And it remains to be seen, or more likely not, whether any of this is true.

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