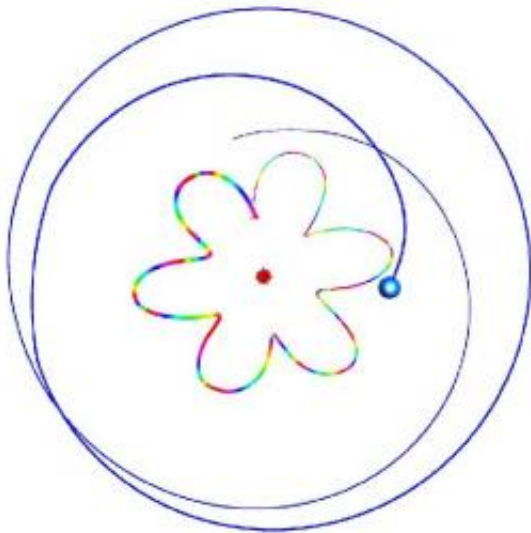


# Russian cosmologist suggests life could exist inside a black hole

April 13 2011, by Bob Yirka

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The stable periodic orbits of photon and planet. See <http://arxiv.org/abs/1103.6140>

(PhysOrg.com) -- Going out on a limb, Russian cosmologist Vyacheslav Dokuchaev, of the Institute for Nuclear Research at the Russian Academy of Sciences in Moscow, has speculated in a paper published in *arXiv*, that due to the very unique conditions that exist past the event horizon in certain (charged and rotating) black holes, life could very possibly exist, and could very well have evolved into advanced civilizations.

Black holes, as we all know, are entities that exist in space that have such

strong [gravitational forces](#) that everything around them gets sucked in and swallowed up, never to be seen again. Well, not exactly, scientists know that deep inside rotating, charged [black holes](#), past the [event horizon](#) (the point where time and space become one) things switch back to what would be considered normal (the Cauchy horizon) at least to the extent that photons can orbit the singularity. And it's the existence of these photons that leads Dokuchaev to believe that other objects could conceivably exist as well, some of which could possibly harbor life forms; albeit their world would be radically different from what we know due to the presence of dramatic amounts of light from the photons that would also be trapped orbiting the singularity with them, not to mention constantly fluctuating tidal forces and bombardment by other energy sources.

Dokuchaev, whose field is the study of the orbiting entities that do actually exist within the small subset of black holes, known as charged rotating black holes, as opposed to the Schwarzschild black hole (no movement) or Kerr black hole (no charge), clearly realizes that though his proclamations might be a bit extravagant, his science is clearly not. His theories expand on previous research that has shown that elementary light particles (photons) have been found to orbit the [singularity](#) in such black holes, in stable, periodic orbits. He asserts that there is no evidence to suggest that something larger, such as a planet with complicated chemistry could not do the same.

Of course, if what Dokuchaev suggests is true, we'd almost certainly never know about it due to the impossibility of emissions from any such advanced [civilizations](#) escaping the immense gravity of the black hole in which they live; so the argument is rather moot, though certainly intriguing.

**More information:** Is there life inside black holes? by Vyacheslav I. Dokuchaev, arXiv:1103.6140v2 [gr-qc] [arxiv.org/abs/1103.6140](https://arxiv.org/abs/1103.6140)

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