



Life, Unbounded

The Scariest Thing in the Universe

It's not what you're probably thinking

By Caleb A. Scharf on October 30, 2018



Credit: C. Scharf 2018

The universe is full of phenomena that are rather obviously terrifying, especially to meaty little sacks like humans.

For example, the very fact that we sit on a frantically spinning ball of slowly crystallizing minerals that is careening around a nuclear fireball that is itself plunging through the depths of galactic space is pretty nerve-wracking. Or that other nuclear fireballs, the brilliant stars that look so innocent in our night skies, are not only all

going to die one day but will sometimes tear themselves apart in explosions that corrupt vast swathes of the interstellar landscape.

Then there are the fearsome gravity wells. Ranging from the clawing pulls of giant planets, to the literal disassembly of the rules of 'ordinary' spacetime at the horizon of black holes. One step across the threshold and there is no return, just a ticket to a singular Hades.

ADVERTISEMENT

And what appears to be empty space is itself a creeping fog of biology-wrecking radiation. From slow-cooking gamma-rays and x-rays to the bullet-like tearing of ultra-high-energy particles, borne out of extremes of physics, and ripping through matter like a relativistic slasher.



Credit: C. Scharf 2018

Yet, none of these horrors can really compete with the biggest frightener.

Your brain, an almost inconceivably complex mesh of 86 billion neurons, has assembled from thirteen billion years of cosmic evolution. It began with undeveloped matter, effectively structureless. That matter eventually generated new versions of itself in chemical elements that could – in certain circumstances – generate entirely novel structures: molecules that begat molecules. And some four billion years ago, on this planet Earth – one world out of trillions – your ancestral pieces began a journey of self-propagating novelty generation that would reach across time to make you.

Yes, you are the scariest thing in the universe. You are the ultimate golem, a creature made from inanimate stuff, rising from the cosmic swamp. Your exquisitely sensitive, active, plotting, conspiring brain is a Lovecraftian horror, borne from the deepest laws of nature and asserting its influence on the world.

A universe devoid of structure, pure in its simplicity, would be a calm and welcoming place. But we do not live there because we come from the chaos... Sweet dreams.

ADVERTISEMENT

The views expressed are those of the author(s) and are not necessarily those of Scientific American.

ADVERTISEMENT

ABOUT THE AUTHOR(S)



Caleb A. Scharf

Dr. Caleb A. Scharf is Director of Astrobiology at Columbia University, and has an international reputation as a research astrophysicist, and as a lecturer to college and public audiences. The UK's Guardian newspaper has listed his blog Life, Unbounded, as one of their "hottest science blogs," while an editor at Seed Magazine called it "phenomenal. Informed, fresh, and thoughtful." Scharf is author and co-author of more than 100 scientific research articles in astronomy and astrophysics. His work has been featured in publications such as New Scientist, Scientific American, Science News, Cosmos Magazine, Physics Today, and National Geographic, as well as online at sites like Space.com and Physorg.com. His textbook for undergraduate and graduate students, Extrasolar Planets and Astrobiology, won the 2012 Chambliss Prize of the AAS. His articles and reviews have appeared in such prestigious publications as Science, Nature, The Astrophysical Journal, and Monthly Notices of the Royal Astronomical Society. Dr. Scharf is a regular keynote speaker at academic meetings, such as for the American Physical Society, museums, and both public