

Where did the Big Bang happen?

February 13 2015, by Fraser Cain



Dr. Neil deGrasse Tyson contemplates the Big Bang. Credit: Image courtesy of Fox.

Close your eyes and imagine the Big Bang. That first moment, where all the energy, matter and light came into existence. It's an explosion right? Fire, debris, sinks, marmots and anvils flying past the camera in an ever expanding cloud of hot gas.

And like any explosion, there must be an aftermath, right? Some place we could travel in the Universe and see the exact spot that everything began; the exact location where the Big Bang happened and ideally a huge crater in spacetime where the Universe began.

I expect you're imagining our little scene in your mind. Complete with space-time indentations and orbital detritus. I hope you're also getting the unsettling feeling of dread that I'm about to smash up beloved sci-fi tropes for my own amusement. And here it is...

There's no exact spot that the Big Bang happened. In fact, the Big Bang happened everywhere in the Universe. The problem generally comes from the term "Big Bang". It brings to mind explosions, detonations, balloons being popped, and everything being blown out to chickenbasket hades. It's too bad for us regular folk, this isn't a good descriptive term for what the Big Bang was.

So I'm going to propose a new term, and just use it from here on out, and pretend like it was always this way. So, from here on out, I'm going to call it the Big Stretch, and by that I mean I've always called it the Big Stretch, and for those of you familiar with this type of retconning, the chocolate ration is being increased from 40 grams to 25 grams.

Imagine a balloon covered in dots, then inflate the balloon. Also, for the purposes of this illustration, you're a 2-dimensional creature living at one of those dots and watching all the other dots. From your perspective, everything will smell like that weird damp spit and rubber balloon scent.

You'll also see all other other dots moving away from you. You might even think you're at the center of the expansion of the balloon. And then if you jumped to any other dot, you'd see the same thing. Just smelly dots, all racing away from you.

Now a lesser being would get all caught up thinking about the fact that the balloon is a three-dimensional object, and the center of the expansion is actually at the middle of the balloon. But you're a 2D creature. You can't comprehend anything but the surface of the balloon. That and the funky smell.

Now take that concept and scale it up one more dimension. As a three-dimensional creature trapped within a three-dimensional Universe witnessing it stretching out three dimensions. Every galaxy is moving away from you. But if you travel to any other galaxy, it looks like all the other galaxies are moving away from them.



Expansion of the Universe. Credit: Eugenio Bianchi, Carlo Rovelli & Rocky Kolb.

Could a four-dimensional being find the center of the expansion, the place where the Big Bang happened? Probably. 4D beings are cool like that. But then, a 5D being would probably laugh at their simplistic 4D view of the Universe, with their quaint Klein bottles and rustic hypercubes. Suck it 4D jerks, they'd say, and then they'd trap them in their 5D lockers for the entirety of recess until the janitor heard the banging and let them out.

And don't get me started on those 11D jerks. Those guys are awful, and

they really think they're better than everyone else. They're like Greg Marmand from Omega House but with 8 more dimensions of nose to look down at you across.

So, where did the Big Bang happen? It happened everywhere. All places formed in the Big Bang – I mean – Big Stretch, and they've been moving away from each other for 13.8 billion years. There's no one place you can point to and say: the Big Bang happened there. But you can be totally obnoxious and point to anywhere, and say the Big Bang happened there. Since the Big Bang happened everywhere, it happened in your hometown. Tell us where you're from in the comments below.

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