

## Re: Inflationary Theory ; I'm confused

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**From:** ghoulx (ghoulx\_at\_ghoul.de)

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Date: Fri, 04 Feb 2005 20:25:04 -0500

Edmond Wollmann wrote:

> *Bobby D. Bryant wrote:*

>> *On Tue, 18 Jan 2005, "Rob Dekker" <rob@verific.com> wrote:*

>

>> > *Over the past couple of years, I've read various articles*

>> > *about the Big Bang Theory. Part of that is a theory*

>> > *proposed by Groth, which states that the early Universe went*

>> > *through a period of very rapid expansion called 'inflation'.*

>

>> > *I understand that the inflation theory was*

>> > *invented to explain the 'flat-ness' of space and the*

>> > *MBR isotropy (microwave background indicates that*

>> > *the early Universe had a very consistent high temperature).*

>

>> > *I am confused about this inflationary period.*

>

>> > *I've read somewhere that the Universe expanded to*

>> > *a size of 40 million light years within a miniscule time.*

>> > *This would clearly violate the limitation of the speed*

>> > *of light.*

>

>> *IANACosmologist, but I think the speed limit applies to moving stuff*

>> *around \_in\_ space, whereas the expansion of the universe is an*

> *expansion*

>> *of space itself, not subject to the speed limit.*

>

> *I am wondering then what constitutes "space" if there is little "stuff"*

> *occupying it? I thought space/time were aspects of the physical*

> *universe and that moving one directly "moves" the other so to speak and*

> *that the properties of the space WAS defined by the "stuff" in it.*

>

>> *If the universe is "big" enough, some of it will be receding from us*

>> *faster than the speed of light even today, due to the expansion of*

>> *space.*

>

> *What is the Universe defined by then if not the material in it that is*

> *moving around? Wouldn't we have to have something OTHER than what is*

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- > typically known as empty space to differentiate it from the thing it
- > was expanding in or expanding to become?
- >
- > "According to general relativity, the concept of space detached from
- > any physical content does not exist. The physical reality of space is
- > represented by a field whose components are continuous functions of
- > four independent variables—the coordinates of space and time. It is
- > just this particular kind of dependence that expresses the spatial
- > character of physical reality.
- > Since the theory of general relativity implies the representation of
- > physical reality by a continuous field, the concept of particles or
- > material points cannot play a fundamental part, nor can the concept of
- > motion."
- >
- > "Just as Maxwell and Faraday assumed that a magnet creates certain
- > properties in surrounding space, so Einstein concluded that stars,
- > moons, and other celestial objects individually determine the
- > properties of the space around them. And just as the movement of a
- > piece of iron in a magnetic field is guided by the structure of the
- > field, so is the path of any body in a gravitational field determined
- > by the geometry of that field." Lincoln Barnett in "The Universe and
- > Dr. Einstein"
- >
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to those who dont know, EDMO is a k00k!