Re: Expansion and balloon analogy

Source: http://sci.tech−archive.net/Archive/sci.physics.relativity/2005−11/msg00981.html

- *From*: "TomGee" <lvlus@xxxxxxxxxxx>
- *Date*: 16 Nov 2005 07:12:40 −0800

Joe Fischer wrote:
> On 15 Nov 2005 08:14:01 −0800, "TomGee" <lvlus@xxxxxxxxxxx> wrote:
>
> >Joe, I have never taken the phrase, "the universe is expanding" to mean
> >anything more than that it's getting bigger.
>
> Ok, but that does not precisely describe what _MAY_ be happening,
> the original term was "recession of the galaxies.
>
>
That's correct. I agree.
>
>
> But it is all based on
> emperical observations, there was no model before the spectroscopic
> data became avaiilable in the late 1920s (unless DeSitter defined a model),
> although Einstein definitely had ideas that suggested the possibility.
>
>
It is commonly thought that Einstein wanted so badly to prove a static
universe that he fudged on his numbers to invent one. At that time, it
was becoming more and more accepted that the U. is expanding so he must
have known about the possibilities.
>
>
> > That has always explained
> >the observations of galaxies moving away from each other. The balloon
> >analogy was born to explain that process.
>
> Yes, to explain it to lay people mostly, astronomers and cosmologists
> knew what "recession of galaxies" meant.
>
> >However, almost everyone argued that we live inside the universe and
> >not on its surface. The rising raisin bread analogy was born to better
> >explain the expansion process. It was better than the balloon business
> >because it has an "inside" to it while the balloon only has a "surface"
> >to it.
>

> Actually neither is very good, bread would be like a medium,
> and that is not possible.
>
>
But of course it is. Space is a medium for matter and if space is
filled with DM, then it is DM that is what is expanding and not space,
more likely.
>
>
> >But then it was noted that while galaxies are all moving away from each
> >other, their coordinates remain the same. I.e., the distance between
> >them grows but they remain in the same spacial relationship as before.
>
> That is a guess−timate, the size and distances are so large
> compared to the time it has been observed, and the only data
> available is probably spectroscopic with translation mapping and
> interpolation.
>
>
No, it has been shown to be so through observation. Another of
nature's grand paradoxes for our viewing pleasure....

> >Now that cannot be explained by balloons or raising breads. It seems
> >the only explanation possible is that the galaxies are not moving apart
> >from each other due to their own motions, but due to the expansion of
> >space!
>
> Not hardly, that would make space a medium capable of
> carrying galaxies, I don't think anybody would realy think that.
>
>
You seem to be giving a meaning to the term "medium" different than
commonly accepted. Galaxies do exist in space so space is indeed
capable of carrying galaxies.
>
>
> They could be moving apart to nothing but thier own
> motion with a non−Euclidean component in the motion.
>
>
That's what was thought af first, but if it was due to their own
motion, their coordinates would change.
>
>
> >So, to talk about the expansion of matter in regard to the expansion of
> >the universe is passe, to say the least.
>
> Not really, there is much more that needs to be explained and
> fitted to a pattern besides spectroscopic data.
>
> > It is not matter that is

> >expanding, but the distance between it.
>
> That is not a certainty. The inportant thing is to consider
> something that could have caused all the matter in the universe
> to be thrown apart, and expanding matter is as good as any
> cause of that.
>
>
I disagree. The idea of expanding matter is probably the worst idea to date about the expansion process of the universe. The BBT is a better idea because it provides the reason why everything is in motion and we cannot find a single stationary place in it.
>
>
> Chances are all the different modern concepts of a
> cosmological constant will be wrong, the spherical geometry
> of expansion of any kind may not follow Newton or Euclid.
>
>
Again, I disagree. Chances are that AE's constant will come to have some validity after all, even though it won't overthrow the expansion process observations.
>
>
> >We are not getting bigger at all.
>
> At least one person feels we may be.
>
> >It is only space that is growing inbetween all discrete matter!
> >At least, that is the latest guess from the physics community.
>
> I don't think it is the whole community, guesses are
> made by individuals, the rest either concur, object (maybe
> silently), or follow like sheep.
>
> >For something to do something in our universe requires energy of some
> >sort, but if space is empty, and unless we overthrow the Principle of
> >the conservation of energy and E=mc^2, it is not possible for space to
> >expand.
>
> I thought you said it is expanding?
>
>
I said that is the common idea.
>
>
> >Like so many other things in our universe that seem to be
> >doing one thing and later we find out they are doing something
> >different than what we first guessed, there must be a better
> >explanation than the counter−intuitive idea that space itself is
> >expanding.

>
> I agree, in fact it probably is a certainty.
>
> >If space was expanding, why only between galaxies and not within them?
> >The attraction between visible matter is the only reason we can point
> >to as a possible explanation for that observation. That means either
> >that the space within galaxies is not expanding or that the bodies
> >within maintain the same coodinates that make their group a galaxy
> >while the space around them expands, and they do that due to
> >gravitational attraction. The latter guess is more likely correct so
> >long as we cannot think of a way to explain the former.
>
> There are other guesses to be made.
>
>
Yes, I agree.
>
>
> >But now we observe that some bodies within galaxies have speeds beyond
> >those they should have and some guess that could possibly occur due to
> >the existence of Dark Matter interactions with visible matter. If that
> >is so, it could explain how seemingly empty space can expand: It
> >isn't space that's expanding, but the invisible matter in space that is
> >causing the galaxies to move apart.
>
> Not hardly, there is no action at a distance without a mechanism.
>
>
Below, I give the impetus of the BB as the mechanism for DM motions.
>
>
> >It's my guess that it is Dark Matter that is expanding due to the
> >impetus of the BB, and that as the impetus wears off some of it becomes
> >stationary in space.
>
> Dark Matter is nothing but matter that is too cool to glow,
> and that is a lot different than Dark Energy.
>
>
There is no reason to think that because matter too cool to glow should
still reflect light for us to see it. I agree more with Gamow that
invisible matter exists in all the spaces of our universe. Such matter
is invisible because it has no positive energy and mass and our eyes
cannot discern objects having only negative mass/energy.
>
>
> All this points out a clear fact, that no good model exists
> that can bring all the bizarre observations together.
>
>
Well, that's what mine does, and that's why I post here.

>
>
> >As visible matter collides with DM, interactions
> >occur that could cause the faster−than−expected motions of galactic
> >matter. If such interactions do occur, others may also occur, such as
> >the creation of matter in the birthing of stars.
>
> Actually, a static universe with constant size objects in it
> should be much more passive than what is observed.
>
>
Pardon?
>
>
> The many different explanations of all the different
> observations has become so speculative and silly they
> are now saying that a certain extremely bright and massive
> object is a "Black Hole" __FEEDING__ on the matter
> around it.
>
>
Not exactly. It would be the matter surrounding the bh that is bright
but not the bh itself, since light cannot escape it.
>
>
> Now black holes have become the brightest objects
> in the sky. I prefer to wait for a breakthrough.
>
> Joe Fischer

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- ***Follow−Ups***:
  - ♦ ***Re: Expansion and balloon analogy***
    - ◊ *From:* Joe Fischer

- ***References***:
  - ♦ ***Re: Expansion and balloon analogy***
    - ◊ *From:* Ben Rudiak−Gould
  - ♦ ***Re: Expansion and balloon analogy***
    - ◊ *From:* Joe Fischer

- Prev by Date: ***Re: A little challenge for relativists.***
- Next by Date: ***Re: Non−expanding universe***
- Previous by thread: ***Re: Expansion and balloon analogy***
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