

## Size of the (observable) universe

The most distant observed objects are +- 13.2 billion light-years (Gly) away  
(see [https://en.wikipedia.org/wiki/List\\_of\\_the\\_most\\_distant\\_astronomical\\_objects](https://en.wikipedia.org/wiki/List_of_the_most_distant_astronomical_objects)).

The age of the universe is observed as +- 13.8 billion years (see [https://en.wikipedia.org/wiki/Age\\_of\\_the\\_universe](https://en.wikipedia.org/wiki/Age_of_the_universe)).

This led to assumptions that the universe is also more or less 13.x Gly in expansion. But this is clearly not a conclusive assumption.

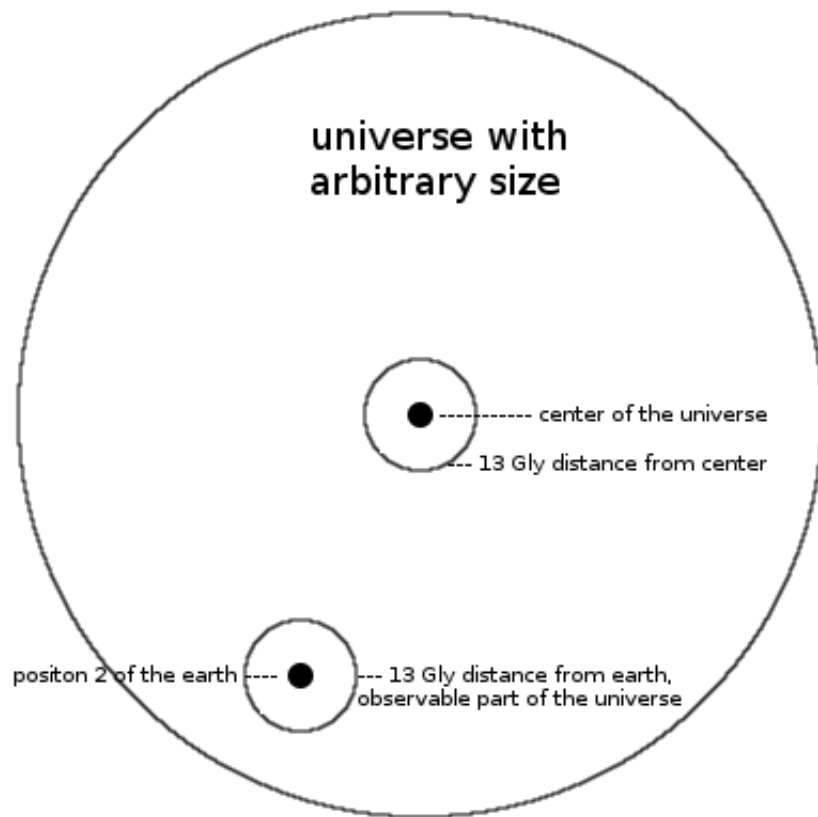
In this theory there is no limit in velocity, and simply explains that objects further away than 13.8 Gly move away from us with speeds faster than c. Thus, the emitted light, even the parts emitted in our direction, still move away from us and thus will never reach us.

The size of the universe can be magnitudes greater, e.g. 999999999 Gly, just to assume a number, of which 99.9999% of the objects move away from us faster than light, and thus can not be observed by the light emitted.



*Diagram 1: The universe, with the earth placed within the inner circle representing 13.x Gly of size.*

In Diagram 1 the earth is positioned 'close' to the center (within its 13 Gly radius). But actually this position should render the asymmetry between different directions visible. For example stars further away from the center should be distributed further away from each other, while stars closer to the center should be distributed nearer to each other (if not totally different due to other mechanisms near the center).



*Diagram 2: The universe, with earth placed far away from the center (thus moving at speeds  $v \gg c$  away from the center)*

Diagram 2 demonstrates another possible position of earth in relation to the center of the universe. This assumed position nevertheless complies much better with the observation that there are no known asymmetry observations throughout all directions from earth. The further away from the center, the less impact any differences in the distribution of observed stars due to the spacial expansion away from the center will have.

The circle around position 2 of earth represents the observed universe as we know it, which clearly does not include the center of the universe itself.

- Copyright © 2015-2017 Kechel