

The Universe Is Infinite And Eternal And Has No Gods Over It

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[The Universe Is Infinite And Eternal And Has No Gods Over It](#)

1. Summary

- The universe is infinite in size and has no boundaries. Epicurean theory rejects the idea that the universe as a whole originated at any point in time. "Big bang" theory does not invalidate this position (see note below).

2. Explanation

- Once Epicurus determined that the universe results from atoms moving naturally through void, he reasoned that the universe could not exist if the atoms were infinite in number but space were limited in size. If that were so, everything would be close-packed and nothing could move. Likewise, the universe could not exist if the atoms were limited in number but space were unlimited in size. If that were so, the atoms would never combine into bodies, any more that debris floating on a vast ocean could ever come together to form solid objects. Epicurus therefore deduced that universe is infinite in size - both the number of atoms and the extent of space are infinite in extent.
- From this Epicurus concluded that there can be nothing "outside" the universe as a whole, and so everything that exists is a part of the universe if it exists at all. This conclusion eliminates the possibility of supernatural forces existing "over" or "outside" the universe, and it focuses our attention on the tremendous implications of infinity. Given the infinity of atoms and space, all combinations of atoms which are possible can be expected to come into existence an infinite number of times and places. This does not mean that "anything" is possible, because some combinations of atoms are physically impossible. We know, for example, that there are no "Centaurus," or "Supernatural Gods," because it is Nature itself which sets the limits between what is possible and what is impossible.
- As Epicurus wrote to Herodotus: "These brief sayings, if all these points are borne in mind, afford a sufficient outline for our understanding of the nature of existing things. Furthermore, there are infinite worlds both like and unlike this world of ours. For the atoms being infinite in number, as was proved already, are borne on far out into space. For those atoms, which are of such nature that a world could be created out of them or made by them, have not been used up either on one world or on a limited number of worlds, nor again on all the worlds which are alike, or on those which are different from these. So that there nowhere exists an obstacle to the infinite number of the worlds." (Bailey, at 45).

3. Citations

1. The universe is infinite in size.
 1. Lucretius Book One - [951] But since I have taught that the most solid bodies of matter fly about for ever unvanquished through the ages, come now, let us unfold, whether there be a certain

limit to their full sum or not; and likewise the void that we have discovered, or room or space, in which all things are carried on, let us see clearly whether it is all altogether bounded or spreads out limitless and immeasurably deep.

2. [958] The whole universe then is bounded in no direction of its ways; for then it would be bound to have an extreme point. Now it is seen that nothing can have an extreme point, unless there be something beyond to bound it, so that there is seen to be a spot further than which the nature of our sense cannot follow it. As it is, since we must admit that there is nothing outside the whole sum, it has not an extreme point, it lacks therefore bound and limit. Nor does it matter in which quarter of it you take your stand; so true is it that, whatever place every man takes up, he leaves the whole boundless just as much on every side.
3. [968] Moreover, suppose now that all space were created finite, if one were to run on to the end, to its furthest coasts, and throw a flying dart, would you have it that that dart, hurled with might and main, goes on whither it is sped and flies afar, or do you think that something can check and bar its way? For one or the other you must needs admit and choose. Yet both shut off your escape and constrain you to grant that the universe spreads out free from limit. For whether there is something to check it and bring it about that it arrives not whither it was sped, nor plants itself in the goal, or whether it fares forward, it set not forth from the end. In this way I will press on, and wherever you shall set the furthest coasts, I shall ask what then becomes of the dart. It will come to pass that nowhere can a bound be set and room for flight ever prolongs the chance of flight. Lastly, before our eyes one thing is seen to bound another; air is as a wall between the hills, and mountains between tracts of air, land bounds the sea, and again sea bounds all lands; yet the universe in truth there is nothing to limit outside.
4. [984] Moreover, if all the space in the whole universe were shut in on all sides, and were created with borders determined, and had been bounded, then the store of matter would have flowed together with solid weight from all sides to the bottom, nor could anything be carried on beneath the canopy of the sky, nor would there be sky at all, nor the light of the sun, since in truth all matter would lie idle piled together by sinking down from limitless time. But as it is, no rest, we may be sure, has been granted to the bodies of the first-beginnings, because there is no bottom at all, whither they may, as it were, flow together, and make their resting-place. All things are for ever carried on in ceaseless movement from all sides, and bodies of matter, are even stirred up and supplied from beneath out of limitless space.
5. [998] Lastly, one thing is seen before our eyes to be the limit of another; air separates hills and mountains air, earth bounds sea and contrariwise the sea is the boundary of all lands; the universe, however, has nothing outside to be its limit.
2. The universe as a whole has always existed and will always exist.
 1. *Epicurus to Herodutus* - 37 - Having made these points clear, we must now consider things imperceptible to the senses. First of all, that nothing is created out of that which does not exist: for if it were, everything would be created out of everything with no need of seeds. And again, if that which disappears were destroyed into that which did not exist, all things would have perished, since that into which they were dissolved would not exist. Furthermore, the universe always was such as it is now, and always will be the same. For there is nothing into which it changes: for outside the universe there is nothing which could come into it and bring about the change.
 2. *Velleius in Cicero's On the Nature of the Gods* - 1:IX. But I would demand of you both, why these world-builders started up so suddenly, and lay dormant for so many ages? For we are not to conclude that, if there was no world, there were therefore no ages. I do not now speak of such ages as are finished by a certain number of days and nights in annual courses; for I acknowledge that those could not be without the revolution of the world; but there was a certain eternity from infinite time, not measured by any circumscription of seasons; but how that was in space we cannot understand, because we cannot possibly have even the slightest idea of time before time was.
3. Infinity allows things that are possible - such as the earth - to occur an unlimited number of times.
 1. *Velleius, in Cicero's On The Nature of The Gods*, XIX - Moreover, there is the supremely potent principle of infinity, which claims the closest and most careful study....

2. *Epicurus to Herodotus 45* - These brief sayings, if all these points are borne in mind, afford a sufficient outline for our understanding of the nature of existing things. Furthermore, there are infinite worlds both like and unlike this world of ours. For the atoms being infinite in number, as was proved already, are borne on far out into space. For those atoms, which are of such nature that a world could be created out of them or made by them, have not been used up either on one world or on a limited number of worlds, nor again on all the worlds which are alike, or on those which are different from these. So that there nowhere exists an obstacle to the infinite number of the worlds.
3. *Lucretius Book 2, Bailey*: [522] And since I have taught this much, I will hasten to link on a truth which holds to it and wins belief from it, that the first-beginnings of things, which are formed with a shape like to one another, are in number infinite. For since the difference of forms is limited, it must needs be that those which are alike are unlimited, or else that the sum of matter is created limited, which I have proved not to be, showing in my verses that the tiny bodies of matter from everlasting always keep up the sum of things, as the team of blows is harnessed on unbroken on every side. [532] For in that you see that certain animals are more rare, and perceive that nature is less fruitful in them, yet in another quarter and spot, in some distant lands, there may be many in that kind, and so the tale is made up; even as in the race of four-footed beasts we see that elephants with their snaky hands come first of all, by whose many thousands India is embattled with a bulwark of ivory, so that no way can be found into its inner parts: so great is the multitude of those beasts, whereof we see but a very few samples. [541] But still, let me grant this too, let there be, if you will, some one thing unique, alone in the body of its birth, to which there is not a fellow in the whole wide world; yet unless there is an unlimited stock of matter, from which it might be conceived and brought to birth, it will not be able to be created, nor, after that, to grow on and be nourished.
4. *Lucretius Book 3 Bailey* - [843] And even if the nature of mind and the power of soul has feeling, after it has been rent asunder from our body, yet it is naught to us, who are made one by the mating and marriage of body and soul. Nor, if time should gather together our substance after our decease and bring it back again as it is now placed, if once more the light of life should be vouchsafed to us, yet, even were that done, it would not concern us at all, when once the remembrance of our former selves were snapped in twain. And even now we care not at all for the selves that we once were, not at all are we touched by any torturing pain for them. For when you look back over all the lapse of immeasurable time that now is gone, and think how manifold are the motions of matter, you could easily believe this too, that these same seeds, whereof we now are made, have often been placed in the same order as they are now; and yet we cannot recall that in our mind's memory; for in between lies a break in life, and all the motions have wandered everywhere far astray from sense.
5. *Diogenes of Oinoanda Letter to Antipater* - Fr. 63 So, as I was saying, having had my appetite most keenly whetted by all the advantage of the voyage, I shall try to meet you as soon as winter had ended, sailing first either to Athens or to Chalcis and Boeotia. But, since this is uncertain, both on account of the changeability and inconstancy of our fortunes and on account of my old age besides, I am sending you, in accordance with your request, the arguments concerning an infinite number of worlds. And you have enjoyed good fortune in the matter; for, before your letter arrived, Theodoridas of Lindus, a member of our school not unknown to you, who is still a novice in philosophy, was dealing with the same doctrine. And this doctrine came to be better articulated as a result of being turned over between the two of us face to face; for our agreements and disagreements with one another, and also our questionings, rendered the inquiry into the object of our search more precise. I am therefore sending you that dialogue, Antipater, so that you may be in the same position as if you yourself were present, like Theodoridas, agreeing about some matters and making further inquiries in cases where you had doubts. The dialogue began something like this: «Diogenes,» said Theodoridas, «that the [doctrine laid down] by Epicurus on an infinite number of worlds is true [I am confident], as [if] Epicurus
4. Life exists in an infinite number of places throughout the universe.

1. Lucretius [2:1048] First of all, we find that in every direction everywhere, and on either side, above and below, through all the universe, there is no limit, as I have shown, and indeed the truth cries out for itself and the nature of the deep shines clear. Now in no way must we think it likely, since towards every side is infinite empty space, and seeds in unnumbered numbers in the deep universe fly about in many ways driven on in everlasting motion, that this one world and sky was brought to birth, but that beyond it all those bodies of matter do naught; above all, since this world was so made by nature, as the seeds of things themselves of their own accord, jostling from time to time, were driven together in many ways, rashly, idly, and in vain, and at last those united, which, suddenly cast together, might become ever and anon the beginnings of great things, of earth and sea and sky, and the race of living things. Wherefore, again and again, you must needs confess that there are here and there other gatherings of matter, such as is this, which the ether holds in its greedy grip.
2. Lucretius [2:1067] Moreover, when there is much matter ready to hand, when space is there, and no thing, no cause delays, things must, we may be sure, be carried on and completed. As it is, if there is so great a store of seeds as the whole life of living things could not number, and if the same force and nature abides which could throw together the seeds of things, each into their place in like manner as they are thrown together here, it must needs be that you confess that there are other worlds in other regions, and diverse races of men and tribes of wild beasts.
3. *Lucretius Book 2: 1077 - Bailey:* [1077] This there is too that in the universe there is nothing single, nothing born unique and growing unique and alone, but it is always of some tribe, and there are many things in the same race. First of all turn your mind to living creatures; you will find that in this wise is begotten the race of wild beasts that haunts the mountains, in this wise the stock of men, in this wise again the dumb herds of scaly fishes, and all the bodies of flying fowls. Wherefore you must confess in the same way that sky and earth and sun, moon, sea, and all else that exists, are not unique, but rather of number numberless; inasmuch as the deep-fixed boundary-stone of life awaits these as surely, and they are just as much of a body that has birth, as every race which is here on earth, abounding in things after its kind.
5. Supernatural gods did not create the universe, do not rule over the universe, and do not exist at all. Any "gods" that exist are within the universe and entirely natural.
 1. Epicurus To Herodotus, line 77 (Bailey): Furthermore, the motions of the heavenly bodies and their turnings and eclipses and risings and settings, and kindred phenomena to these, must not be thought to be due to any being who controls and ordains or has ordained them and at the same time enjoys perfect bliss together with immortality (for trouble and care and anger and kindness are not consistent with a life of blessedness, but these things come to pass where there is weakness and fear and dependence on neighbors).
 2. Epicurus to Pythocles, line 97 (Bailey): Next the regularity of the periods of the heavenly bodies must be understood in the same way as such regularity is seen in some of the events that happen on earth. And do not let the divine nature be introduced at any point into these considerations, but let it be preserved free from burdensome duties and in entire blessedness.
 3. **Lucretius Book 2 - 1090 (Bailey):** "And if you learn this surely, and cling to it, nature is seen, free at once, and quit of her proud rulers, doing all things of her own accord alone, without control of gods." *Humphries* - Holding this knowledge, you can't help but see, That nature has no tyrants over her, But always acts of her own will; she has no part of any godhead whatsoever." *Brown 1743* - "These things, if you rightly apprehend, Nature will appear free in her operations, wholly from under the power of domineering deities, and to act all things voluntarily, and of herself, without the assistance of gods." *Munro* - "If you well apprehend and keep in mind these things, nature free at once and rid of her haughty lords is seen to do all things spontaneously of herself without the meddling of the gods." *M.F. Smith* - "Once you obtain a firm grasp of these facts, you see that nature is her own mistress and is exempt from the oppression of arrogant despots, accomplishing everything by herself spontaneously and independently and free from the jurisdiction of the gods. "
 4. *Notes:* Alternate ways to consider this would include: "There are no supernatural causes," or "The gods, however they are defined, have no impact on the cosmos," or "If gods exist, they don't control the universe nor do they bestow blessings or curses on humans." The point is that

there are no supernatural, divine, or mystical forces that intervene in or create the universe.

4. Notes

1. [Discussion Forum](#)
2. *Find out more in our [Physics Forum](#) and our Wiki.*
3. [Research on "Tired Light" theory as refuting idea that the entire universe is expanding.](#)
4. Major Implications:
 1. The universe is infinite in size.
 2. The universe is eternal in time - As a whole has always existed and will always exist.
 3. Infinity allows things that are possible - such as the earth - to occur an infinite number of times.
 4. Life exists in an infinite number of places throughout the universe.
 5. Supernatural gods do not exist.