

# Where is the physical universe, asks Nyasani

The whereness of the Physical universe is a question that has engaged the intellectual efforts of Philosophers and Astronomers for centuries. In this thought-Provoking article, Prof. Joseph Nyasani attempts to throw some light on the issue.

It is not only astronomers who have been wondering about what lies beyond the planetary system and the extension of that reality in terms of the space it occupies. Philosophers have equally been baffled by this same question even though it may not quite be fair to draw a sharp distinction between philosophy and astronomy in certain material respects of inquiry. For many classical or even modern astronomers were as much of astronomers as they were philosophers. Galileo Galilei is a living example of that. Indeed the Greek Ionian School in trying to unravel the mystery of the earth's constitution and, by implication, the essence of reality was not merely Philosophizing but also astronomizing. As a matter of fact it would seem to be an idle question to try to contrast philosophy with astronomy since the two are intimately implicit of each other resting as they do on a common cognitive condition that compels the mind to unravel the enigma of the cosmic reality.

Astronomers and philosophers alike have been puzzled by this unpleasant enigma down the years. They have, for instance, been wondering where this thing we call the universe is situated. Is it contained in one huge receptacle or is it an infinitely extended reality that defies the confines of space and thus bursts out of any physical delimitations? This is one of the most intractable questions in philosophy. It is also a perennial question in that, so far, no adequate or satisfactory answer has been found to demystify the secret of creation. This mystery notwithstanding, the human mind will never stop to inquire since the object of rationality, and indeed of human reason, is pre-



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cisely to pry into the unknown and to devote itself to the problem of questioning questions. The physical universe is one such question that the mind must grapple with at least in the question-science discipline philosophy that is.

Cosmologists and Metaphysicians alike have always attempted to discern the nature of the physical universe and to propose a rational explanation or theory that can facilitate a relative comprehension of the problem. However the problem is still as intractable as it is elusive. What they consider as an answer or answers is still a wishful speculation designed to remove any form of diffidence about the dominion of human reason over nature. This article too is an instance of such speculation — a metaphysical one for that matter!

The question that we first of all want to address ourselves to is: where is the physical universe or, to be tautological, where is the ubication of the universe? This may look like an innocent question at face value but it is very complex, uncanny and elusive more especially because it raises all kinds of assumptions with regard to our knowledge of the reality supposedly anteceding that ubication or whereness itself. For to raise the question of 'where' it is metaphysically imperative to know what 'where' is and where to locate it. If I am sitting in my office at the University of Nairobi, I am quite aware that by my relative position to the objects immediately surrounding me such as

the four walls, the ceiling and the floor below my feet. These things happen to be a *conditio sine qua non* as far as my determinability as a being that is located goes. My whereness therefore seems to emerge out of a preceding reality of which I may not be aware and which is itself determined by yet another antecedent reality to confer its relative whereness in a spatio-temporal context. This already raises or at least adumbrates the issue of infinite regress which, if rigorously pursued, should either nullify the very concept of whereness or at least expose its absurdity as a concept. As a matter of fact, on the basis of the stipulation of the doctrine of *reductio ad absurdum* reinforced by the principles of economy and clarity on Occam's razor, it would make better sense to eliminate altogether any concept which calls for a futile exercise of infinite regress. Maybe that is one of the reasons why many philosophers have preferred to ignore the question of ubication and instead to focus their reflection on the nature of the physical universe only.

The question we are introducing really ushers the elusive nature of the concept of ubication in respect of the physical universe. For as long as we maintain that ubication is determined only on the strength of several things standing continuously to each other, it becomes impossible to locate the universe without suggesting that there may be more than one physical universe for purposes of definition. Hence the question of the possibility of multiplicity of universes is not altogether an unfounded one. Small wonder then that eminent philosophers have been speculating along the lines of demonstrating that there could be an alternative universes in the immensity of creation. However, none has really come up with an answer backed by logic because many answers seem to encroach upon the stipulation of the vital principles that govern scientific knowledge and indeed all cognitive claims, namely, the principle of sufficient reason. As a matter of fact one eminent German philosopher, Leibniz,

seems to have recognized this danger fairly early in his metaphysical speculations on the possibility of the multiplicity of many worlds conceptually existing, then it had to be equally possible that the author of them could have decreed that the best possible of them actually came into being. And in respect of the actual universe, he argued that the author would have had no sufficient reason to effect several universes of the same identical material composition. And he probably could not juxtapose two or more distinct but identical universes in the same spatio-temporal context without breaching the principle of contradiction according to which a thing either is or is not. Thus if the universe is then, it cannot be and at the same time not be. It must be one and identical with itself. And anything that is universe but identical with the former cannot be in effect distinct from the other. It must be one and the same universe that we are really talking about. The same conclusion can also be inferred on the basis of the principle of identity. For nothing can be identical to itself and at the same time identical to another under one and the same respect. Moreover, identity is an intrinsic immanent reality and not an extrinsic transient feature:

Certain philosophical speculations on the possibility of a second universe have tended to produce counter-productive results forcing them to adopt the theory of mono-cosmism. In their reasoning, they have argued that if two universes are juxtaposed as a reality and engulfed in the sea of ether, then it should be possible to arrive at the edge of one or the other since they would have to be two distinct realities actually specified. And that must be so purely on the basis of the logic of distinctness. Thus Achilles, the greatest runner, is able to sprint right to the edge and back to announce that he could go no further. But as it is, Achilles would probably never return. He will wander through the planets and stars in *saecula saeculorum*. Furthermore, if there were two universes with distinct edges, it would not be difficult to envision a situation where an archer or javelin thrower might wander to the edge and decide to hurl his javelin or rocket

across the mass of ether filling the whole of the two separate universes. Were this to be possible then it should be possible for the javelin or the rocket to travel to the adjacent edge, hit there and either bounce back or ricochet to a different direction, most likely towards the direction of its origin since there would be no other body anywhere to attract it to that direction. Moreover, disintegration of the same would be impossible since we assumed that the material composition of the second universe is identical with the first. This then is to say that the principles and characteristics of matter applying in this universe would also be applicable and valid in the second universe. One of those principles is that matter can never be destroyed even though it could change its form. Consequently then the matter that the javelin or rocket is made of would not be destroyed upon crashing on the edge of the second universe. It should be able, albeit in a different form, to boomerang back to the point of origin. But is this possibility realisable? Maybe the Superpowers should tell us the answer based on their planetary and stellar missions. I do not know how much capable they are to retrieve rockets that are on a mission to Mars or Jupiter. Most likely they are irretrievable and, *ceteris paribus*, they will keep on travelling in *sempiternum*. From the above we can infer that the universe is one and infinitely expansive.

If the universe is one, expansive and all-embracing where is it to be placed then? Where exactly is its *locus* in the context of time and space? Is it a still or floating reality in a huge vacuum? What contains this thing that is either still or floating? In other words, is the universe in some kind of space? The answer is probably yes and no. If we are taking space to mean the highest extension of all the physical objects, there is room to say that such a space physically exists. But then this would not be the kind of space that is the object of a metaphysical speculation. Similarly, if space is taken to indicate the tridimensional extension abstracted from physical objects and as such limited, it may be real indeed. This we might call mathematical space. However the kind

of space envisaged by Metaphysics must relate to something of an immense vacuum which would remain in the event of all bodies being destroyed and therefore itself persisting as an indestructible reality. This kind of space moreover must be a reality that is infinitely inexhaustible, infinitely inconsumable or, in a word, it must possess the unique quality of the multiplication of physical objects in the event of any future additions that our mind can possibly envision and which can be effected without exhausting the spatiality of the universe. Indeed such a space must possess this inexhaustible receptive potentiality since, if it would be an exhaustible containing an inexhaustibly extended universe, it would be a clear case of a contradiction of predication. It would almost be tantamount to asserting that from non-being a being can emerge or that from a non-denomination a denomination can subsist. This a curious antinomy that repugnates not only ordinary experience but also the logic of the working of human reason.

Moreover were the receptive vacuum to attain some point of saturation, then it must certainly burst out of itself and, in turn, postulate yet again an extrapositional vacuum that may rightly be denoted as *vacuum vacui*. And once it has burst out of itself there is no reason why it should stop bursting since under that respect it must be assumed to possess the qualities of a 'mobile'. Consequently as a mobile, it cannot stop or refrain from transiting because it has been rendered, must of necessity transit on the principle that that which is moved will be moved necessarily or, in our metaphysical jargon, whatever is essentially *ton movetur* must of necessity be rendered *ton movebitur*. This happens to be a metaphysical necessity which cannot be contradicted even by the greatest reason.

The idea of *vacuum vacui* certainly evokes the unpleasant situation of what we referred to as *reductio ad absurdum* because of its inherent, inevitable infinite regress implications. It would be entirely upon our minds either to pursue it as an inevitable reality at the

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