

(.e- and e+.) in Brahman" = "the electron and the positron which emerge from light, exist in Brahman ;and, not in Space-Time

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The scientific significance of this paper is that it resolves the EPR paradox. This paper doesn't distinguish sharply between Science and Religion, Sirs;;;

Please permit me to mention that I had a firsthand experience in the year '69 of what I subsequently came to recognize as Brahman in a trance which I think is known as Nirvikalpa Samadhi resulting from a continuous word-less meditation on what I feel was the mahavakya "that thvam asi" which translates to "that thou art<on us>". Around the same time, I had what I feel may be described as "yellow bliss" which is perhaps the same as Nirvana of Buddhism or something close to it. I pray all this only makes me feel grateful and humble.

".e- and e+.) in Brahman" = "the electron and the positron which emerge from light, exist in Brahman ;and, not in Space-Time"

Abstract and body of paper Combined:::-:::

The behavior of electron and positron upon their creation from light is paradoxical ;but, I feel rational understanding of this is possible through a comprehension of the four Mahavakyas which go back to the time of the Vedas.

;;; ... please ... ;;;

Vedas

The Vedas (/ˈveɪdəz ˈviː-/;[1] Sanskrit: वेद veda, "knowledge") are a large body of knowledge texts originating in the ancient Indian subcontinent.

One of the several meanings of the word "knowledge" given in the Concise Oxford Dictionary is, I remember ... please ... "understanding". The intent of these Mahavakyas, is really that understanding alone, knowledge being really accessible through meditation only and not through mere verbalization {dic_ verbalization n verbalize v I 3 to use many words; be verbose}. The four Mahavakyas (Rem: 'Mahavakyas' may be translated as 'noteworthy statements' ;or, 'great statements') (Reference: [1]) are:::

1 Prajnanam Brahma (प्रज्ञानम्ब्रह्म)

"Consciousness is Brahman"

2 Aham Brahma Asmi (अहम्ब्रह्मअस्मि)

"I <<otherwise known as 'atma' (in my mother tongue Telugu, a south Indian

Language, or Atman in English and perhaps Sanskrit as well)>> am Brahman". {Rem: This self is Atman which is Witness-Consciousness}

3 Tat Tvam Asi (तत्त्वम्असि)

"That thou art <on us>"

4 Ayam Atma Brahma (अयम्आत्माब्रह्म)

"This Self is Brahman"

I think of Brahman as all there is without a trace of egoism. Crucial thing to point out is that knowledge is not in time ::: knowledge, which is understanding, is beyond both Space and Time in Consciousness, that is, in Brahman. {{{Please see and compare here the following response in the website invitingindia.com >>>

Re: consciousness vs "consciousness in time":::

authored by krp under main article >>>

Vedanta's timeless guidance for today's living

(Rem: please note this main article is submitted by krp ;but, the author is Prasad Vepa)

in the website invitingindia.com.}}}

(Reference: [2]) Knowledge is ***in*** Brahman ***not in*** the libraries of the world ***or in*** scientists' heads. The uncertainty-principle of Heisenberg refers to the knowledge in the libraries of the world or in scientists' heads. To bring out the important difference between the two clearly distinct meanings of 'knowledge' I spell-out in full the word 'knowledge' to which the uncertainty-principle of Heisenberg applies in capitalized letters as ***KNOWLEDGE*** (Ke-eN-Oh-doubleU-eL-Ee-De-Ge-eE) to convey that ***this 'knowledge' is that which is deliberately put together rather than directly perceived.*** By virtue of the fact

that atma = Brahman (all the Mahavakyas in fact ::: numbers 2 and 4 in particular), direct understanding of the state of electron is possible without shining light on the electron. **Only, we may not be enlightened enough** to know the place or state of the electron **amidst the laboratory paraphernalia** {dic_ paraphernalia n personal belongings or bits of equipment; amidst prep in the midst of or surrounded by}.

Though I am not certain, it seems to me that Physics to-day sees Space-Time as the substratum of reality ;but, if we refer to the four Mahavakyas we can recognize that from ancient times Sages {dic_ sage 2 a very wise man} of India declared Brahman to be the substratum {dic_ sub.sta.tum see below (dic for Dictionary)} of all reality ;and, it is clearly high time physicists sat-up to grasp it. >>Brahman is not within Space-Time ::: Space-Time is within Brahman<<.
The relevant insight of the four Mahavakyas is that Brahman is both deeper and beyond

Space-Time ;and, not within Space-Time
;but, encompasses all life.

Historically in India, religious insights have never been at logger-heads {dic_ at logger-heads, engaged in dispute; quarrelling} {dic_ quarrel n an angry dispute or altercation; a disagreement marked by a temporary or permanent break in friendly relations}} <Reference:[6]> with scientific insights as has been the case in the West with Galileo. However, it is incumbent {dic_ incumbent adj necessary as a duty} on me to say that, **Marcelo Gleiser Templeton Award winner is an admirable voice in the West today in the Scientific Community.** It is reported that the award from the John Templeton Foundation annually recognizes an individual “who has made an exceptional contribution to affirming life’s spiritual dimension.” {Rem: the relevant link: <https://www.scientificamerican.com/article/atheism-is-inconsistent-with-the-scientific-method-prizewinning->

physicist-says/ } The ancient Indian perception that Brahman is the substratum {dic_ sub.stra.tum n that which is spread or laid under something else; a stratum or layer lying under another; something that underlies or serves as a basis or foundation}} of all Reality is one such insight going to the roots of both Science and Religion. The four Mahavakyas delineate {dic_ delineate v tr portray by drawing etc. or in words} the concept of Brahman.

Though not elaborated in the body of the paper here, it is conceivable to take the perspective that the world is "Two-dimensional" inspired by the observation that in meditation one is aware of only two dimensions, distance-separation and time-separation. See "Re: Mahayana Buddhism" in the website invitingindia.com. Q: is the universe 4-dimensional ;or, only 2-dimensional? Is not meditation 2-dimensional?[] (Reference:[5]).

The 1935 paper by Einstein-Podolsky-Rosen

(Reference: [3]) questioning the completeness of the formalism of Quantum Mechanics highlights an epistemological problem. The problem, briefly, is described in what Einstein calls a thought-experiment ::: what I am writing below is from "The Einstein Podolsky Rosen (EPR) Paradox - A simple explanation" (Reference: [4,14]). The appropriate link is ...

<https://www.youtube.com/watch?v=0x9AgZASQ4k>

Think of birth of an electron and positron - pair from radiation. Imagine one of them say e^- stays put but the other, e^+ is carried far away to the other end of the globe. The spin of e^- is determined, say it is up. We know that the spin of the far away e^+ is down {Rem: this it seems ***is*** experimentally verified : original reference will be gratefully acknowledged : I learn that this is experimentally verified through the video (Reference: [4])} . Now, if an attempt is made to measure the spin of the positron e^+

in some different direction as the e^- , which stays put, we would be in a position to know the spin of the positron in both the directions, which violates Heisenberg's uncertainty principle. So, the problem is to explain how e^+ "knows" what is happening to e^- <instantaneously> :::: my hunch on resolution of this problem is to recognize that (e^- :::: e^+) -pair creation happens ***in*** Brahman which, as I mentioned already, is defined by the four Mahavakyas, and may be thought of as all there is without a trace of egoism ;and, ***not in*** Space-Time ;but, that Brahman is 'Consciousness' ;or, as I think of it, Knowledge-Absolute which is more like Understanding and not all the knowledge in the libraries of the world or in scientists' heads. Brahman is deeper than Space-Time, which scientists somehow, I feel, mistakenly think of as the container of all reality :::: instead, Brahman is the container of all that is real including Space-Time;::: - ::: - ::: . Brahman figures prominently in Fritjof Capra's ".The Tao of Physics." (Reference: [8]).

Physics sets out to comprehend reality conceiving of matter as contained in Space-Time subject to fundamental interactions (Reference: [8]) :::: however, it seems to me the resulting picture leaves a glaring empty hole in the process. Q: what is the place Science (Physics) gives to the investigating Soul? Is such a Soul unnecessary? ;and, again, what is the place Science (Physics) gives to substance or Object of its investigations, notwithstanding {{.dic_ notwithstanding prep 1 in spite of.}} the accuracy or the lack of accuracy of the results of its investigations? Is such an Object unnecessary? It seems to me, both the Object and the Soul are necessary. I can do no better than quote Gautama Buddha ... to arrive at this :::: the Object of investigations is Brahman ;and, the investigating Soul is atma ;and, Brahman and atma are both revealed in endless variety to the receptive among us through {dic_ through prep 9 by means or agency

of} the four Mahavakyas, which, in essence, declare the identity of Brahman and atma. This is possibly shocking to the scientists --- they are in truth investigating themselves {dic_ themselves pron pl an emphatic form of them}, however far-fetched it may seem to be to them.

I quote the Buddha from "The Buddha and Buddhism", Encyclopedia Britannica copy right 1985, 15th Edition (or, perhaps later), The University of Chicago.

quote

There is an unborn, an unoriginated, an unmade, and an uncompounded; were there not, **there would be no escape** from the world of the born, the originated, the made, and the compounded.

unquote;

What the Buddha is referring to without naming is indeed Brahman and atma of

the four Mahavakyas. Upon Nirvana one lives in the continuous vision of the atma and the Brahman. To complete the perspective of Physics we may state an important insight that goes something like this --- hierarchy of concepts ... please ... Matter, Space-Time, and Brahman ... please ... Brahman and Atman (atma) are beyond the categories { {dic_ category n a class of things with shared characteristics} {dic_ cat.e.go.ry n a classificatory division in a system}} of physical dimensions ::: they are of the nature of existence itself. That is important ::: it is through atma and Brahman that Space-Time and Matter acquire their reality. To elaborate let it be said it is through atma and Brahman that Matter and Space-Time come into being<.=come into existence=.>;;; ... please ... ;;;

a passage including an idea to be partially set aside begin

>.Brahman is not within Space-Time ::: Space-Time is within Brahman.<;;; So, I

wonder if quote-unquote sentient-proof { .dic_ sentient adj having the power of perception by the senses. } of Brahman is possible ::: I hope however, some quote-unquote inferential-proof may, hopefully, be, by the grace of God, granted to us. I desperately and sincerely pray that such may please be our lot. I am passionately working on the possibility of proving the existence of God using the methodology of Science, because the whole world goes by Science ;and, if Science takes them to God it is only to be passionately loved and desired.

a passage including an idea to be partially set aside end;;;

This was written before I became aware of Alain Aspect's work. Alain Aspect proves, in my reading, the existence of Brahman experimentally. Needless to say, Brahman is God. This paper outlines a spiritualization of Physics in ways unexpected in both the traditions of Physics and of Vedanta. The traditional view of Hindu Vedanta (Hindu

Philosophy) is that not only is Brahman inaccessible to senses of the humans but also to inferential processes of the human intellect (Reference:[11] and [12]) ;but, Prof Alain Aspect proves, by way of inference, in my reading of his paper described in this submission, the existence of Brahman experimentally. Prof Alain Aspect's work, if my reading is accepted, proves the existence of Brahman. This is dealt with again after a couple of passages below.

IMPORTANT --- "local realist worldview" of Einstein is not to be rejected as Alain Aspect declared ;but, it is to be recognized as Einstein's single handed discovery of "atma"(Atman), with this important clarification that quote-unquote local is to be taken to be "essentially local <or vaguely, close at hand>" ;and, interpreted to be beyond Space-Time as "atma" (Atman) of the Vedas.

Einstein is a great sage {!.}. Einstein is said to have wondered as a boy, in his

own words, what would happen if he traveled with {dic_ travel v 5 to associate or consort (usu. fol. by with) : consort v to associate; keep company (to consort with known criminals)} light ;and, answered everything would be the same. In my reading, it meant, the **en**-lightened would be in the presence of Brahman, which is existence itself. Q: does 'atma' have mass? I don't think it has ::: IT is not matter.

Alice and Bob can both be understood to be beyond Space-Time in Brahman which is existence alone, their corporeal aspects not being relevant though those aspects are also certainly in Brahman in conformity with the four Mahavakyas.;;; ... please ... ;;;; Pair of photons considered in Prof Alain Aspect's experiment are both clearly in Brahman beyond Space-Time and their polarization is under consideration by Prof Aspect while in the original EPR thought-experiment emergence of electron positron pair from light is considered ::: "the spirit is the same" Prof Aspect, **quote** The strong correlation

between particles which are created together is not a big surprise. Measurement of polarization on one photon seems to influence instantaneously at a distance the state of the other photon **unquote. In contrast** it occurs to me to say, the reality is that the two photons are **in Brahman and Brahman alone beyond Space-Time** in the realm of pure existence and so, there need be no faster than light transmission of information between them ;and, they are in essence in touch, figuratively, with one another in Brahman beyond Space-Time. Aspect's inference of faster than light communication between two points at a distance may be set aside ;but, interpreted as proving the existence of Brahman. Brahman Itself, pardon me for being repetitive, is beyond Space-Time. IMPORTANT. "local realist world view" of Einstein needs to be interpreted as being beyond Space-Time as atma (Atman) Itself.

What Einstein called "spooky action at a

distance” referring to the communication between electron and positron, is actually Brahman which is beyond Space-Time.

;;; ... please ... ;;;

‘atma’ is **not** contiguous {dic_ contiguous adj very near or touching} ;and, Brahman is **not** con.tin.u.ous --- **as it stands in our perception** in the presence of paraphernalia {dic_ paraphernalia n personal belongings or bits of equipment} ;but, **both** Brahman **and** atma are beyond Space-Time and ever present everywhere. The connection between **spa.tial.ly** {dic_ spa.tial.ly adv in a way that relates to space and the position, area, and size of things within it} **separate** events beyond the reach of light-signals discussed by Prof Aspect indicates the presence of Brahman.

[] i pray all thoughts come to their end in my heart ::: ... please ... ::: so i live in love.

“Quantum Entanglement” owes its existence to Brahman. The electron, the positron, are both in Brahman ;and, so are in touch with one another. Information is within Brahman, which is beyond Space-Time ;and, so there is no surprise the information is available to both electron and positron which are both in Brahman beyond Space-Time ;and, no faster than light transmission of information is in evidence **here**.

Refer to “EPR – simple explanation”::: The Einstein Podolsky Rosen (EPR) Paradox - A simple explanation ...

[https://www.youtube.com/watch?ahynv=0x9AgZASQ4k;";](https://www.youtube.com/watch?ahynv=0x9AgZASQ4k;)

Also, please refer to “The EPR Paradox: Einstein Scrutinizes Quantum Mechanics” Arvind, Resonance | April 2000 pp 28-36 (Reference: [14]).

Brahman is Knowledge-Absolute ;and, no coded ... no “awful lot of coded” ... information within electron and positron is in evidence **here, either**. Brahman is all

knowledge ;and, IT (Brahman) is beyond Space-Time.

Important Addition begin

In our **EPR-paradox**, Alice and Bob are to be recognized as being in Brahman beyond Space-Time in immediate touch with one another. When something is beyond Space-Time, the trappings of Physical dimensions don't apply to it. The e- and e+ .. or .. the pair of photons with distinct polarization are in Brahman ;and, hence they, by virtue of being in the realm {dic_ realm n a field of activity or interest} of pure existence, are beyond Space-Time in immediate existence together with the other. Alice and Bob are both in Brahman which is pure existence ;and, communication between them is not in Space-Time ;but, truly consists of **pristine beauty** beyond Space-Time that is Brahman ;and,so **there is no Paradox** as to how one, e- knows another, e+ ;or, one photon with some polarization knows another photon with a different polarization.

begin

dic_ pristine [pris-teen, pri-steen, especially
British pris-tahyn]

adjective

having its original purity; uncorrupted or
unsullied; of or relating to the earliest period
or state; primitive.

end.

Important Addition end;;;

It goes without saying that when we consider either electron positron pair or pair of photons with distinct polarization we should remember to acknowledge that in essence they exist simply in Brahman *beyond* (or, which means the same, *without*) Space-Time. Please let me remark 'thought' is surely only Brahman and IT (Brahman) is really Atman. All this calls for deep meditation. It seems relevant here to add that Hindu Vedanta (Philosophy) describes both Brahman and atma (Atman) as Sat-

Chit-Ananda. "Sat-Chit-Ananda" may be translated as Truth-Consciousness-Bliss. It is instructive to recognize Hindu Vedanta gives Bliss a primordial significance {dic_ pri.mor.di.al adj 1 constituting a beginning or source. 2 Biol. Primitive; initial; first formed. 3 pertaining to or existing at or from the very beginning.}} implying bliss (or happiness) is innate {=inborn=} and not consequential {=resultant=}. Also, returning to the Physical aspects, the process of moving the positron away is of no significance to the pair of electron and positron created which exist in the ***pure realm*** {dic_ realm n field of activity or interest} ***of existence beyond Space-Time essentially in Brahman and in mutual communication with one another during their lifetime.***

To show that, for instance, Carbon dioxide molecule is also in Brahman on independent grounds; or, on first principles, may be complicated ;but, to see that e- and e+ and the pair of photons with distinct polarization

are in Brahman is fundamentally elementary {dic_ el.e.men.ta.ry adj pertaining to or dealing with elements, rudiments, or first principles} and simple.

What exists exists in Brahman. The approach to Brahman is through the hierarchy of Matter, Space-Time and Brahman.

Consideration of Matter at any given moment of time is with Mass coupled with Dimensions in length breadth and depth. Consideration of Space-Time is with Dimensions in length breadth and depth besides Time. Brahman is beyond Matter and Space-Time in purely the realm {dic_ realm n a field of activity or interest} of existence, pure existence, alone. Fortunately for scientists, by the grace of Mother Kali, the photon is in the realm of pure existence ::: also, the electron and the positron live in the realm of existence coupled with Mass as Matter. The rest mass of photon, I recall, is zero ::: that is why, it seems to me, it is in the easily recognizable realm of pure existence. However, needless to reiterate,

all Matter coupled with Space-Time and Space-Time itself are truly in Brahman. It is relevant to ask, Q: Is there Time when one is one with Brahman? The answer is >no< ::::When there is Brahman, there is only one without a second ;and, there is no Time :::: There is only existence. Hindu Vedanta puts it this way --- there is only Sat-Chit-Ananda, Truth-Consciousness-Bliss.

We think we exist in Space-Time ;but, in truth we exist in Brahman. Alice and Bob also are in Brahman. Recall the hierarchy Matter and Space-Time and Brahman. Space-Time {as well as Matter.} is appearance. That things exist in Brahman is the true order.

QM (Quantum Mechanics) says the world to be (in future) is in superposition {of probabilistic states} :::: not what the world is (now) !!! Q: does that not resolve Schrodinger's Cat-paradox?[] :::: the cat is not simultaneously alive and dead but ONLY expected to be **either** dead **or** alive ---

simple !!! That probabilities are relevant for predictions (of future) with statistical expectations is no surprise. "Whatever will be will be The future is not ours to see Que Sera Sera" --- Doris Day. QM is necessary to know what the world is expected to be not what the world is. <IMPORTANT> what the world is, is directly known to anyone who cares to observe, by virtue of being alive, without the slightest doubt ;and, it is a blessing directly from Mother Kali or God Almighty that THAT ((which we want to know)) is known without the slightest doubt. <<<Socratic questions don't preclude {dic_ preclude v t 1 to prevent the presence, existence, or occurrence of; make impossible} the certainty of the knowledge Socrates aims at. This is also what Adi Sankaracharya asserts winning (unfortunately for India) debates against Buddhist scholars ::: the correctness of your knowledge about the world may be in doubt but not of your Self Itself (atma is beyond doubt)(Mandukya Upanishad also asserts the same)>>>. That {.statistical-.} expectations

of the future are probabilistic is no surprise. NOT **what is** is in superposition of QM ;BUT, what may, **in future,** be is in superposition. I feel this obsession with prediction is the fundamental point of departure of QM from the Classical Mechanics not size --- small and big --- as my friend, Jacob, pointed out, QM is used to study black-holes as well !!! This is in keeping with the circumstance that science concerns itself with predictions, I feel. If you don't want to predict anything you won't be in doubt at all ::: but if you intend to predict, then inevitably, you will find yourself to be in doubt. You cannot help being in doubt if you wish to open the box and see if the cat is alive or dead ;but, if you only wish to assert that "the cat is either dead or alive", you will be in no doubt of being right.

They say Classical Mechanics is not probabilistic but QM is ;but, I say, Classical Mechanics is directly perceived ;and, QM is indirectly perceived using the very components of which it is composed

<<<Heisenberg's uncertainty: electron cannot be observed without changing its momentum --- Beiser's Modern Physics p113 --- I question it !!! if only you were enlightened enough you would know all about the state of electron without shining any light on it>>> :::: no wonder there is uncertainty when you probe ;but, if you were to know the electron directly by the atma (assuming you were enlightened enough), there would be no uncertainty, just as certainly as you can say the boy and the girl you see before you are in love without any probing. The scientists dug too deep into Mother Kali without appeasing {dic_ appease v pacify by yielding to his or her demands} Her ;and, got themselves into trouble.

<...> "The Einstein Podolsky Rosen (EPR) Paradox - A simple explanation" ...

link:

<https://www.youtube.com/watch?v=0x9AgZASQ4k>

a few references ---

>>> Schrödinger's cat: A thought experiment in quantum mechanics - Chad Orzel

<https://www.youtube.com/watch?v=UjaAxUO6-Uw>

>>> Quantum Entanglement and the EPR Paradox

<https://www.youtube.com/watch?v=Xzmp7byh77E>

>>> also, see the below reference for a discussion on Einstein's Local realism which I feel is Einstein's single handed discovery of 'atma', though Alain Aspect pronounces, I feel uncomprehendingly, as something to be rejected. In my judgment Einstein's Local realism is his discovery of 'atma' (this God-given instrument of knowledge) with an important clarification that ***it*** (Local realism)

needs to be considered to be beyond Space-Time with this sweet identity with Brahman.;;; ... please ... ;;;

2017 Andrew Carnegie Lecture: Professor Alain Aspect (Reference: [10]),

<https://www.youtube.com/watch?v=qh6IHVs6MI>

>>> also, to add two more references --- **one** invitingindia.com website article

Re: atma --- '.self-referential | recursive.' thought

and --- **two**

Mandukya Upanishad (Reference: [13]) "He goes with his self to the supreme Self who knows 'this', who (referring to 'this') knows this";;; a tantalizingly {dic_ tantalize v tease with the sight or promise of something unobtainable} beautiful recursion is in evidence here.

;;; ... please ... ;;;

Conclusion:::

It is observed from first principles that e^- and e^+ on one hand and light of distinct polarization on the other hand exist in Brahman. In general, what exists exists in Brahman.

From the point of view of Physics, the approach to Brahman is through the hierarchy of Matter {that beautiful substance of Mother Kali}, Space-Time and Brahman. Apart from the time-dimension, consideration of Matter is with Mass coupled with Dimensions in length breadth and depth ;and, consideration of Space-Time is with Dimensions in length breadth and depth. Brahman is beyond Matter and Space-Time in purely the realm {dic_ realm n a field of activity or interest} of existence, pure

existence alone, beyond all measures of dimensions. Fortunately for scientists, by the grace of Mother Kali { {dic_ (Mother) Kali n Hinduism (originating with Adivasis of India) <arguably the most advanced and comprehensive> deity (= a god or goddess =) of the world personifying <both> creation and destruction} }, the photon is in the realm of pure existence ::: also, the electron and the positron live in the realm of existence coupled with Mass as Matter. The rest mass of photon, I recall, is zero ::: that is why, it seems to me, it is in the realm of pure existence, in Brahman. However, needless to reiterate, all Matter coupled with Space-Time and Space-Time itself are truly in Brahman. ;;; ... please ... ;;;

begin acknowledgement

I like to specially thank my longtime friend Jacob Thomas of Brookfield, Connecticut for ***inspiring influence*** ::: I first thought of the title as well as the substance of the paper ***".e- and e+." in Brahman*** = ***"the electron and the positron which emerge from light, exist in Brahman ;and, not in Space-Time"*** ***in the context of my e-mail correspondence with him***;;; Jacob's e-mail address is moolethara@gmail.com ;and, as Socrates said, truth is best unraveled {dic unravel -eled, -eling 1 to separate or disentangle the threads of} through a meeting of minds --- in fact, he (Socrates) left behind no written philosophy ::: all we know of Socrates' teachings comes to us from the student of Socrates, Plato;;; I make no comparison of me to great Socrates ::: far from it ;but, I needed somebody in my mind to address my thoughts to, to effectively draft my paper to send for publication;;; Jacob played that role for me;;; I sincerely thank him;;;

I also thank Prof N Balakrishna of the Department of Mathematical Statistics, Cochin University of Science and Technology, for his generous much needed help throughout {dic_ throughout prep from the beginning to the end} the process of submission of my paper for publication;;;

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