DOWNLOAD PDF THE NATURAL HISTORY OF THE UNIVERSE

Chapter 1 : The Natural History of the Universe: From the Big Ba () by Colin A. Ronan

Using straightforward language, graphics and up-to-date space imagery, this book tells the story of the universe; its birth, its life and its possible future. It provides extensive coverage of astronomical topics - planets and moons, galaxies and stars, pulsars and quasars, brown stars and black holes, worlds long past and those yet to come.

Understanding Thresholds of Increasing Complexity 2: You may proceed through the thresholds in consecutive order, from the Big Bang to the Future, or skip around bouncing from protostar to Pangaea, from Silica to the Silk Road. Make your own connections between thresholds and test your knowledge as you go. Complete quizzes, earn badges, and become a "Big Historian. Not too hot, not too cold The Universe is a simple place. Vast stretches of space filled with nothingness. Yet as it developed over billions of years, it grew increasingly complex. This is a central concept Big History will emphasize â€" the ever-increasing complexity of the Universe. Another central theme in Big History is "Goldilocks Conditions. Origin Stories Where did everything come from? Every culture has its own origin story. They may be very short anecdotes. Or they might be elaborate narratives that help explain the mysteries of our existence. Big History is an origin story like many others. But, instead of being rooted in a specific culture or geography, Big History aims to account for everything we know and that which we have yet to discover. Contributors include philosophers, scientists, scholars, adventurers, and curious learners of all stripes who weave a story of enormous scale. And like all origin stories below, the Big History story has developed over time, and will continue to evolve. The giant Pan Gu emerged from the egg and gave order to that Chaos. As he grew to 48, kilometers high, his skull separated the sky while his feet remained planted on the Earth. When he died, his eyes became the Sun and the Moon, his breath the wind, his voice thunder, his limbs mountains, and his blood the roaring water. Two of the Titans, Cronus and Rhea, had many children. Fearing they would overthrow him, Cronus tried to destroy them. Zeus challenged his father and with the help of his siblings defeated Cronus and became ruler of Mount Olympus and all the gods. Prometheus shaped humans from clay while Athena blew life into them. A woman fell from the sky and was saved from drowning by two white swans. The ruler of water animals, Great Turtle, dispatched creatures to the depths â€" otter, muskrat, beaver â€" to bring up mud. This mud grew into the world island, and offered a home for the woman who fell from the sky. A second story tells how humans are created first, followed by plants and animals. The animals did not show proper respect to the makers, so they were hunted. Then, the makers created creatures from wood. Thoughtless and without emotions, they did not show respect. They too were killed. Finally, humans â€" respectful and thoughtful â€" were created out of corn. Gradually this energy became matter, combining to bear the stars. These too exploded, creating galaxies and the Earth. Water was able to form, which contained the chemicals to give life to single-cell living organisms, then creatures with many cells, such as plants, and later animals. These creatures became more complex and aware, until about , years ago when humans evolved from a shared ancestor with apes. What is known is that, within a few millionths of a second, the Universe expanded at an inconceivable speed. From that expansion, some recognizable subatomic particles and fundamental forces formed. Then the Universe cooled dramatically â€" to about 1 billion degrees Celsius, allowing energy, and then matter, to appear. Much later, after dropping to a cool 1, degrees, the first hydrogen and helium atoms formed. A cosmic "Dark Ages" set in for the next million years. This quiet expansion spread more complex atoms and other materials throughout the Universe. The tiny particles drifted apart like a dense puff of smoke, but not uniformly. Those little inconsistencies of distance set the stage for gravity, creating something very complex out of something very simple. More proof was needed. In Big History, we call this process of gathering evidence that supports a theory or idea "claim testing. In , astronomer Edwin Hubble made observations from a powerful telescope showing that galaxies sped away from each other at an ever-increasing velocity. Still, many scientists refuted the idea. In , two scientists in New Jersey, Arno Penzias and Robert Wilson, aimed a new, extra-sensitive radio antenna at outer space to discover what they could hear. They were surprised to hear the same low, static hiss wherever they aimed it. Finally, a colleague at Princeton suggested the hiss might have something to do with the start of the Universe. He pointed them to mathematical calculations by astrophysicists that showed if the

Universe did, in fact, begin with a Big Bang, it would have released a huge amount of energy in just the same frequency as this low, static hiss. In this way, scientists discovered evidence and claim tested the Big Bang. Changing scale impacts what we can understand and how we fit in with the Universe. This classic video is a great study of these magnitudes.

Chapter 2 : Big History Project: The Universe

Colin A. Ronan (London, 4 June - 1 June) was a British author and specialist in the history and philosophy of science. He was educated at Abingdon School in Oxfordshire and served in the British Army from , achieving the rank of major. After the war he obtained a BSc in.

Outline[edit] For the purposes of this summary, it is convenient to divide the chronology of the universe since it originated , into five parts. It is generally considered meaningless or unclear whether time existed before this chronology: It includes the Planck epoch , during which currently understood laws of physics may not apply; the emergence in stages of the four known fundamental interactions or forces â€" first gravity , and later the strong , weak and electromagnetic interactions; and the expansion of space and supercooling of the still immensely hot universe due to cosmic inflation , which is believed to have been triggered by the separation of the strong and electroweak interaction. Tiny ripples in the universe at this stage are believed to be the basis of large-scale structures that formed much later. Different stages of the very early universe are understood to different extents. The earlier parts are beyond the grasp of practical experiments in particle physics but can be explored through other means. The early universe , lasting around , years. Initially, various kinds of subatomic particles are formed in stages. These particles include almost equal amounts of matter and antimatter , so most of it quickly annihilates, leaving a small excess of matter in the universe. At about one second, neutrinos decouple ; these neutrinos form the cosmic neutrino background. If primordial black holes exist, they are also formed at about one second of cosmic time. Composite subatomic particles emerge â€" including protons and neutrons â€" and from about 3 minutes, conditions are suitable for nucleosynthesis: By 20 minutes, the universe is no longer hot enough for fusion, but far too hot for neutral atoms to exist or photons to travel far. It is therefore an opaque plasma. At around 47, years, [2] as the universe cools, its behavior begins to be dominated by matter rather than radiation. At about , years[citation needed], the universe finally becomes cool enough for neutral atoms to form " recombination " , and as a result it also became transparent for the first time. The newly formed atoms â€" mainly hydrogen and helium with traces of lithium â€" quickly reach their lowest energy state ground state by releasing photons " photon decoupling " , and these photons can still be detected today as the cosmic microwave background CMB. This is currently the oldest observation we have of the universe. Dark Ages and large-scale structure emergence , from , years until about 1 billion years. After recombination and decoupling , the universe was transparent but the clouds of hydrogen only collapsed very slowly to form stars and galaxies , so there were no new sources of light. The only photons electromagnetic radiation, or "light" in the universe were those released during decoupling visible today as the cosmic microwave background and 21 cm radio emissions occasionally emitted by hydrogen atoms. The decoupled photons would have filled the universe with a brilliant pale orange glow at first, gradually redshifting to non-visible wavelengths after about 3 million years, leaving it without visible light. This period is known as the Dark Ages. The earliest generations of stars have not yet been observed astronomically. They may have been huge and non-metallic with very short lifetimes compared to most stars we see today , so they commonly finish burning their hydrogen fuel and explode as supernovae after mere millions of years. Other theories suggest that they may have included small stars, some perhaps still burning today. In either case, these early generations of supernovae created most of the everyday elements we see around us today, and seeded the universe with them. Galaxy clusters and superclusters emerge over time. At some point, high energy photons from the earliest stars, dwarf galaxies and perhaps quasars led to a period of reionization. The universe gradually transitioned into the universe we see around us today, and the Dark Ages only fully came to an end at about 1 billion years. The universe as it appears today. From 1 billion years, and for about It will continue to appear very similar for many billions of years into the future. The thin disk of our galaxy began to form at about 5 billion years 8. The present-day universe is understood quite well, but beyond about billion years of cosmic time about 86 billion years in the future , uncertainties in current knowledge mean that we are less sure which path our universe will take. At some time the Stelliferous Era will end as stars are no longer being born, and the expansion of the universe will mean that the observable universe

becomes limited to local galaxies. There are various scenarios for the far future and ultimate fate of the universe. More exact knowledge of our current universe will allow these to be better understood. A more detailed summary[edit] Further information: Graphical timeline of the universe , Graphical timeline of the Big Bang , Graphical timeline from Big Bang to Heat Death , and Graphical timeline of the Stelliferous Era Earliest stages of chronology shown below before neutrino decoupling are an active area of research and based on ideas which are still speculative and subject to modification as scientific knowledge improves. For the earliest stages of chronology this extrapolation may be invalid. To give one example, eternal inflation theories propose that inflation lasts forever throughout most of the universe, making the notion of "N seconds since Big Bang" ill-defined. The radiation temperature refers to the cosmic background radiation and is given by 2.

Chapter 3 : Chronology of the universe - Wikipedia

The book is divided into three easy to follow parts,each with many color photographs and color www.nxgvision.com book is an exciting tour of; yesterday, today, and the possible tomorrow of our universe. Read more.

PREFACE Since it seems to me that people do not keep strictly to the straight and narrow when forming their opinions or putting things to the test, I have decided to use all the means at my disposal to remedy this misfortune. For in nothing else does the aspiration to deserve well show itself than it things are so arranged that people, freed both from the hobgoblins of belief and blindness of experiments, may enter into a more reliable and sound partnership with things by, as it were, a certain literate experience. For in this way the intellect is both set up in safety and in its best state, and it will besides be at the ready and then come upon harvests of useful things. Now the beginnings of this enterprise must in general be drawn from natural history; for the whole body of Greek philosophy with its sects of all kinds, and all the other philosophy we possess seem to me to be founded on too narrow a natural-historical basis, and thus to have delivered its conclusions on the authority of fewer data than was appropriate. For having snatched certain things from experience and tradition, things sometimes not carefully examined or ideas nor securely established, they leave the rest to meditation and intellectual agitation, employing Dialectic inspire greater confidence in the matter. But the chemists and the whole pack of mechanics and empirics, should they have the temerity to attempt contemplation and philosophy, being accustomed to meticulous subtlety in a few things, they twist by extraordinary means all the rest into conformity with them and promote opinions more odious and unnatural than those advanced by the very rationalists. For the latter take for the matter of philosophy very little out of many things, the former a great deal out of a few, but in truth those courses are weak and past cure. But the Natural History which has been accumulated hitherto may seem abundant on casual inspection, while in reality it is sketchy and useless, and not even of the kind I am seeking. For it has not been stripped of fables and ravings, and it rushes into antiquity, philology and superfluous narratives, neglectful and high-handed in matters of weight, overscrupulous and immoderate in matters of no importance. But the worst thing about this abundance is that it has embraced the inquiry into things natural but largely spurned that into things mechanical. Yet, on the other hand, all the subtlety of mechanics stops short of what I am seeking. For the craftsman, intent on his work and its end, does not direct his mind or put his hand to other things, things which perhaps do more for the inquiry into nature. Therefore we need more meticulous care and handpicked trials, not to mention funding and the utmost patience besides. But the main point of the whole accusation against natural history is that men have gone astray not only in the work, but in its very plan. For the natural history which is in existence seems to have been composed either for the usefulness of the experiments themselves, or for the agreeableness of their narratives, and to have been made for their own sake, not so as to furnish the makings of philosophy and the sciences and as it were breast-feed them. Thus, as far as it is within my power, I do not wish to fail to do my duty in this matter. For I have long since decided how much I should grant to abstract philosophies. Indeed, I believe that I hold fast to the ways of true and good induction, in which all things lie, and which can help the frail and crippled faculty of human intellect towards the sciences, as by mechanical aids or by some thread to guide it through a labyrinth. Nor am I unaware that if I had been willing to restrict that instauration of the sciences which I have in mind to any of the greater inventions, I could perhaps have harvested a greater crop of honour. But since God has given me a mind which knows how to submit itself to things and which readily rejects the specious out of a sense of what is right and from confidence that things will turn out well, I have also taken upon myself that part of the work which I think others have wanted either to avoid entirely, or to treat in a way different from my idea of it. But there are two things which I wish to warn people about in this connection both for the future and, since I am girding myself for the very thing itself, for now especially. The second is that I would have men never forget what is involved and, when they have come across troops of thoroughly vulgar things, things slight and to all appearances frivolous, even vile, and which as the man says must be brought in with an apology, they do not think I am trifling, or reducing the human mind to things beneath its dignity. For these things are neither examined nor

described for their own sake, but in fact there is simply no other alternative open to the human intellect, and the grounds of the work are left insecure without them. For I do not hide the fact that I believe that preposterous subtlety of argument and thought can by no means put things right again, though all the intellects of all ages be gathered together, when, at the proper time, the subtlety and truth of the basic information or true induction have been overlooked or incorrectly established, but that nature, like fortune, is long-haired at the front and bald at the back. It remains, therefore, for the matter to be attempted anew, and that with better help and with the zeal of opinions laid aside, so that we may enter into the kingdom of philosophy and the sciences in which human power is situated, for nature is conquered only by obeying it in the way that we gain access to the Kingdom of Heaven, which none may enter save in the likeness of a little child. The nature of things is either free, as in species, or disturbed, as in monsters, or confined, as in experiments of the Arts; yet its deeds of whatever kind are worthy of report and history. But the History of Species currently available, as for example of plants, animals, metals and fossils, is puffed up and full of curiosities; the History of Marvels empty and based on rumour; the History of Experiments detective, attempted piecemeal, dealt with carelessly, and entirely for practical not philosophical use. Therefore it is my resolve to curb the History of Species, to shake our and purify the History of Marvels, but to our special effort into Mechanical and Artificial Experiments where nature gives in to human intervention. For what are the sports and frivolities of nature to us? That is, the tiny differences of species as to shape, which contribute nothing to works but in which Natural History none the less abounds. Now knowledge of Marvels certainly pleases me, if it be purified and sifted; but why in the final analysis is it pleasing? Not for the fun of being astonished, but because it often reminds Art of its duty to lead nature knowingly where it has itself sometimes gone before of its own accord. In general I assign the leading roles in shedding light on nature to artificial things, not only because they are most useful in themselves, but because they are the most trustworthy interpreters of natural things. Can it be said that anyone had just happened to explain the nature of lightning or a rainbow as clearly before the principles of each had been demonstrated by artillery or the artificial simulacra of rainbows on a wall? But if they are trustworthy interpreters of causes, they will also be sure and fertile indicators of effects and of works. However, I do not think it appropriate to divide my history in accordance with this threefold partition, so as to deal with singular instances separately, but I shall mix the three kinds, joining things natural with artificial. Now it would be more usual to begin with the phenomena of the ether. But I, sacrificing nothing of the seriousness of my undertaking, shall give priority to things which make up and answer to a nature more general, in which both globes share. I shall begin in fact with a history of bodies according to the difference which seems the simplest, that is, the abundance or paucity of the matter contained and spread out within the same space or boundaries, seeing indeed that none of the pronouncements about nature is truer than that double proposition. Nothing comes from nothing, nor is anything reduced to nothing, but the very quantum of nature, or the whole sum of matter always remains and stays the same, and is in no way increased or diminished. Moreover, it is no less certain. For a vessel or cauldron filled with water and air does not hold an equal portion of matter, but more of the one and less of the other. Therefore if someone claimed that a given amount of water could be made from the same amount of air, it would be the same as saying that something can come from nothing. For what you deem to be lacking from the quantity of matter would have to have been made up from nothing. On the other hand, if someone claimed that a given amount of water could be turned into the same amount of air, it would be the same as saying that something can be reduced to nothing. For what you deem to be extra in the quantity of matter would likewise have to have vanished into nothingness. There is no doubt in my mind that this business is capable of being reduced to calculation, to indefinite proportions perhaps in some things, but to ones precise and certain in others, and known to nature. As, for example, if someone said that the concentration of matter in a body of gold exceeded than of a body of spirit of wine by a factor of twenty to one or thereabouts, he would nor be wrong. So as I now mean to present the history I mentioned concerning the abundance and paucity of matter, and its coming together and expansion, things from which the notions of Dense and Rare if properly understood take their origin, I shall so order matters that I shall draw up the relative figures for different bodies as of gold, water, oil, air and flame first. Then after examining these, I shall record with calculations or ratios the retreats and expatiations of each

particular body. For a given body, even without anything being added to it or taken away, or at least nor in proportion to its contraction and extension, allows itself to be gathered by various impulses both external and internal into a larger or smaller sphere. Sometimes the body struggles and strives to restore itself into its old sphere, sometimes it clearly goes beyond that and does not try to revert. Here I shall first record the courses, differences and proportions of any natural body as to its extent compared with its openings and closings up, that is, with its powders, its calces, its virrifications, its dissolutions, its distillations, vapours and breaths, its exhalations and inflammations; then I shall set out the actions and motions themselves, the progressions and the limits of contraction and dilatation, and when bodies restore themselves and when they go beyond than in respect of their extent; but I shall especially note the efficient causes and media by means of which such contractions and dilatations of bodies come about; and meanwhile I shall in passing append the virtues and actions which bodies get and take on from such compressions and dilatations. Now as far as the demonstration or revealing of the density and rarity of bodies is concerned, I have no doubt or hesitation that as to dense and palpable bodies the motion of gravity as they call it may be taken as the best and most ready test, for the more compact the body, the heavier it is. But when it comes to the level of airy and spiritual things, then scales will for sure be of no use to me, and I shall need another kind of industry. I shall begin, however, with Gold:

Chapter 4 : The Natural History of the Universe by Colin A. Ronan

The Known Universe by AMNH Atlas that is maintained and updated by astrophysicists at the American Museum of Natural History. The new film, created by the Museum, is part of an exhibition.

We have experience of only one W i. We have no experience of any Zs at all. There is, however, a vast difference between these effects. It follows that there is little or no basis for assuming that Z resembles something like Xs i. Cleanthes responds to this set of objections with a counter-example that is meant to discredit these criticisms and doubts. Suppose we heard an articulate voice coming from the clouds and the words uttered contain a message instructing us in a way that is worthy of a great, superior being. It is not possible, Cleanthes argues, that we would hesitate for a moment to ascribe some design and purpose to this voice and conclude that it bears some resemblance to the intelligent source of a human voice D, 3. According to Cleanthes, it is similarly perverse and unnatural to deny that the various parts of the body and the way in which they are suited to our environment e. Does it have successive, distinct thoughts? Why should we not assume that God has other human features such as passions and sentiments, or physical features such as a mouth or eyes D, 3. In all cases that we have experience of, human intelligence is embodied, so why not also assume that God has a body D, 6. What this plainly manifests is that the anthropomorphic conception of God, as defended by Cleanthes, reflects an egocentric outlook and delusions about the significance of human life in the universe. Any experimental reasoning of the kind that the argument from design employs must ensure that the cause is proportioned to the effect. If we follow this principle, however, we are no longer in a position to assign several fundamental attributes to God. We cannot, for example, attribute any thing infinite to God based on our observation and experience of finite effects. Nor can we attribute unity to the original cause of the universe on the basis of any analogy to human artifacts such as houses; as they are often built by a number of people working together. Perhaps, therefore, there is more than one God involved in the creation of the universe? More importantly, we are in no position to attribute perfection to God unless we observe perfection in his creation. You find certain phenomena in nature. You seek a cause or author. You imagine that you have found him. You afterwards become so enamored of this offspring of your brain, that you imagine it impossible, but he must produce something greater and more perfect than the present scene of things, which is so full of ill and disorder. You forget, that this superlative intelligence and benevolence are entirely imaginary, or, at least, without any foundation in reason; and that you have no ground to ascribe to him any qualities, but what you see he has actually exerted and displayed in his productions. What we cannot do, Hume argues, is explain away all evidence of this kind by way of assuming that this world is the perfect creation of a perfect being. It is this assumption that needs to be established, so we must not assume it in our reasoning. Plainly, however, it is neither. It follows from this that many other hypotheses and conjectures, consistent with the evidence presented, may be considered as no less plausible. Philo puts this point to Cleanthes: In a word, Cleanthes, a man who follows your hypothesis is able, perhaps, to assert, or conjecture, that the universe, sometime, arose from something like design: But beyond that position he cannot ascertain one single circumstance, and is left afterwards to fix every point of his theology, by the utmost license of fancy and hypothesis. On the one hand, theists such as Cleanthes want to insist that the analogy between this world and human productions is not so slight and maintains, on this basis, that God in some significant degree resembles human intelligence D, 3. Immediately after this, however, Philo proceeds to reverse his reversal i. In an especially important passage, which was inserted into the Dialogues shortly before Hume died, Philo elaborates on his view. In other words, the atheist can concede that there is some remote analogy between the first principle of the universe and several other parts of natureâ€”only one of which is human thought and mind D, These other analogies do not suggest that the cause of this world is something like mind or human intelligence. Clearly, then, the atheist may concede that there is some remote analogy between God and human minds and still insist that there remain other analogies and hypotheses that are no less plausible. Hume never retreats from the view stated in the first Enquiry that God i. No argument considered so far aims to prove that God does not or cannot exist. However, in the Dialogues Hume considers an ancient argument based on the

existence of evil that is intended to establish this negative conclusion. The questions are these: Is God willing to prevent evil but unable to do so? Then he is not omnipotent. Is God able to prevent evil but unwilling to do so? Then he is malevolent or at least less than perfectly good. If God is both willing and able to prevent evil then why is there evil in the world? See the entry on the problem of evil. It is clear, as Cleanthes acknowledges, that if this cannot be done then the case for theism in any traditional form will collapse D, Several different strategies are available to the theist to defuse this problem â€" that is, theodicies of various kinds. In other words, these are only evils relative to our individual, narrow, human perspective. From the divine perspective, viewing the universe as one system, the removal of such ills or afflictions would produce greater ill or diminish the total amount of good in the world. This strategy may be interpreted as arguing either that there are no real evils in the world i. In respect of the first view, that there is no real evil, Hume takes the view that it is plainly contrary to human experience. In the Dialogues Hume opens his discussion of the problem of evil by having Philo the sceptic run through a long catalogue of the variety and extent of misery and suffering in this world. He begins with animal suffering of various kinds the strong preying on the weak etc. Despite this catalogue of human suffering and grief, we find ourselves too afraid of death to put an end to our miserable existence. This is a view that is immediately corrected by Cleanthes along similar lines to those that Hume also presents in the first Enquiry. Now without some such license of supposition, it is impossible for us to argue from the cause, or infer any alteration in the effect, beyond what has immediately fallen under our observation. Greater good produced by this Being must still prove a greater degree of goodness: Every supposed addition to the works of nature makes an addition to the attributes of the Author of nature; and consequently, being entirely unsupported by any reason or argument, can never be admitted but as a mere conjecture and hypothesis. Our predicament is like that of a person who stands in the porch that leads into a very different building or structure and must conjecture what the complete or whole plan is like. We may hope or imagine that something better awaits us but the present phenomena do not license a conjecture or hypothesis of this kind EU, Faced with this difficulty, Cleanthes insists that contrary to all that Philo and Demea have claimed, we must allow that there is more happiness than misery, more pleasure than pain, in this world. Unless all evil is essential or necessary the religious position will collapse. Any degree or kind of unnecessary evil â€" however small â€" would tell against the existence of God as an infinitely powerful and perfectly good being. I will allow, that pain or misery in man is compatible with infinite power and goodness in the Deity, even in your sense of these attributes: What have you advanced by all these concessions? A mere possible compatibility is not sufficient. You must prove these pure unmixed, and uncontrollable attributes from the present mixed and confused phenomena, and from these alone. Further on, Philo returns to this point. I am sceptic enough to allow, that the bad appearances, notwithstanding all my reasonings, may be compatible with such attributes as you suppose: But surely they can never prove these attributes. It is this task, Philo maintains, that Cleanthes has failed to perform. There is no need for the sceptic to launch a strong argument that aims to prove that God cannot exist on the basis of the real existence of evil in this world. What the theist must do, in order to meet this challenge, is to show that all the evil that exists in this world i. It is clear that the theist is in no position to support this claim. The significance of this concession should not be exaggerated. While the sceptic cannot prove that there does indeed exist some unnecessary evil in the world, it is nevertheless possible to show that this view of things is in no way unreasonable. Similarly, why could God not have been more generous in providing his creatures with better endowments for their survival and happiness i. Surely things could have been arranged so that these extremes and their destructive consequences could be avoided? Finally, Hume asks why God does not act through particular volitions to prevent specific catastrophes and disasters e. The implication of all this is not just that we have no reason to infer the existence of an infinitely powerful and good God but that we have considerable reason for doubting it. Given these considerations regarding the causes of evil, and the limits of human understanding, what is the most reasonable hypothesis concerning the first cause of the universe? This leaves only two other possibilities. Either the first cause has both goodness and malice or it has neither. Nature is blind and uncaring regarding such matters and there is no basis for the supposition that the world has been created with human or animal happiness or comfort in mind. Any supposition of this kind is nothing better than an anthropomorphic

prejudice EU, The enormous degree of evil in this world, and the vast range of forms that it takes, are impossible to explain or justify from our human perspective i. There is, therefore, no basis for inferring the existence of an infinitely powerful and good God in face of contrary evidence of this kind â€" evidence that provides us with considerable grounds for doubting this conjecture or hypothesis. Miracles Miracles are an essential and fundamental element of the major monotheistic religions i. The accounts of miracles , as presented in scripture and elsewhere, are supposed to confirm the authenticity and authority of scripture and the prophets and, more importantly, establish that God has revealed himself to human beings through these special acts or events. From the point of view of Christianity, one miracle of particular significance is the resurrection of Jesus Christ. To doubt or question the truth of this event is to doubt the core and distinct meaning and doctrine of the Christian religion. It would be to cast doubt on the claim that Christ is God and the saviour of human kind. As defined, a miracle may occur without any person observing it i. It follows from this that we cannot establish that a miracle has occurred by showing only that the laws of nature have been violated, as this may only be a chance or capricious event EU, 8. A law of nature, as Hume interprets it, involves a uniform regularity of events. We discover laws of nature on the basis of our experience of constant conjunctions of events or objects. It is, for example, no miracle that a man in good health should suddenly die. Although an event of this kind may be improbable, it does sometimes occur.

Chapter 5 : NATURAL HISTORY For THE BUILDING UP OF PHILOSOPHY

A short detour into biological topics, while admirable, jars the chronology and scale of the book, in which the physical history of the universe, from Bang to Bounce, is dominant. This presentation nonetheless effectively harnesses imagination in the service of science.

Chapter 6 : Timeline of natural history - Wikipedia

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Chapter 7 : The Universe | American Museum of Natural History | Khan Academy

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Chapter 8 : Hume on Religion (Stanford Encyclopedia of Philosophy)

The Universe is all the matter, energy, and space that exists, and the observable universe is the part that we can see. While there are still great mysteries about how it all began and evolved, we are living in an age of rapid cosmic discovery.

Chapter 9 : Mission Statement | AMNH

The chronology of the universe describes the history and future of the universe according to Big Bang cosmology. The earliest stages of the universe's existence are estimated as taking place billion years ago, with an uncertainty of around 21 million years at the 68% confidence level.