

III. The Truth of Christianity

A. The Historicity of the Bible

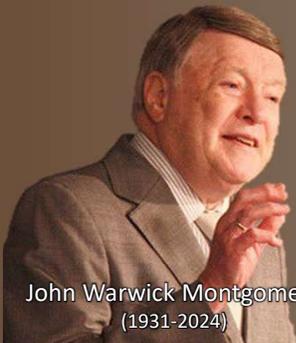
1. Do We Have What They Wrote?
2. Did What They Write Happen?

B. What Does the Bible Say About Jesus?

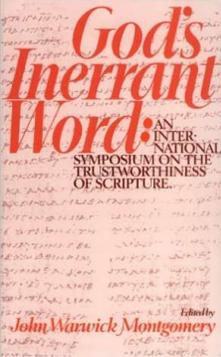
1. Messianic Prophecies
2. Life of miracles/Resurrection
3. Lord, Liar, Lunatic

C. What Does Jesus Say About the Bible?

1. What Jesus Affirmed About the OT
2. Jesus Pre-authenticates the NT



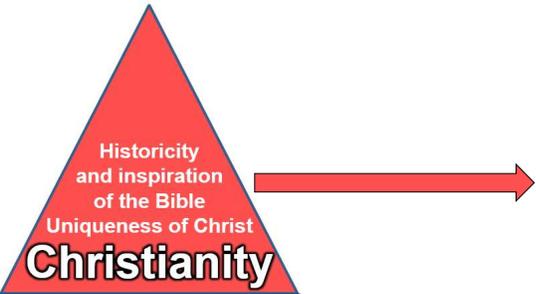
John Warwick Montgomery
(1931-2024)



"The Case for Inerrancy: A Methodological Analysis"



R. C. Sproul
(1939-2017)



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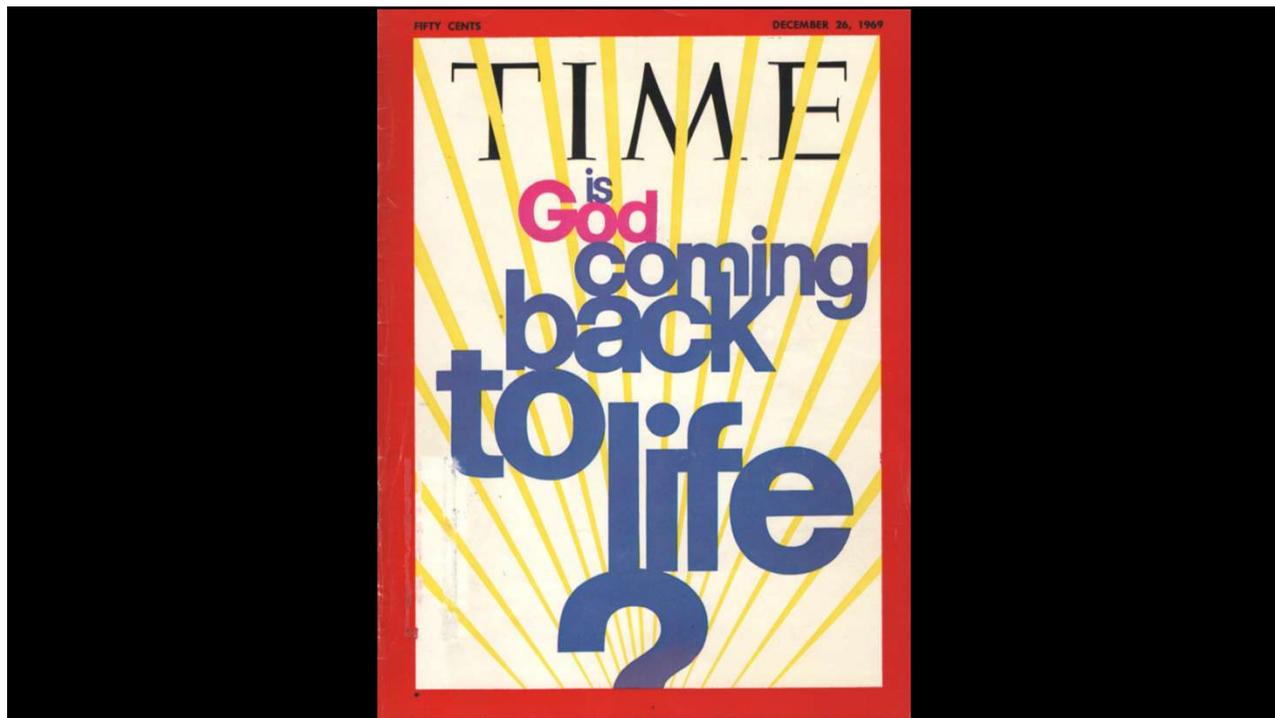
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It should be observed that this third step in the Classical Model is hardly distinguishable from the Evidentialist Model.





Religion

Modernizing the Case for God

Philosophers refurbish the tools of reason to sharpen arguments for theism

God? Wasn't he chased out of heaven by Marx, banished to the unconscious by Freud and denounced by Nietzsche to be discarded? Did not Darwin drive him out of the empirical world? Well, not entirely. In a quiet revolution in thought and argument that hardly anyone could have foreseen only two decades ago, God is making a comeback. Most intriguingly, this is happening not among theologians or ordinary believers—most of whom never accepted for a moment that he was in any serious trouble—but in the crisp, intellectual circles of academic philosophers, where the consensus had long banished the Almighty from fruitful discourse.

Now it is more respectable among philosophers than it has been for a generation to talk about the possibility of God's existence. The shift is most striking in the Anglo-American academies of thought, where arid forms of empiricism have reigned. "What science cannot tell us, mankind cannot know," declared Bertrand Russell. And A.J. Ayer, on behalf of logical positivism, decreed that "all utterances about the nature of God are nonsensical." The accepted wisdom was that the only valid statements were those verifiable through the senses.

Today even atheistic philosophers agree that Ayer's rigid rule is inadequate to deal with human experience. Meanwhile, science, his model for learning, has become less presumptuous and ambitious, its theorizing about cosmic autonomy closer to theology, its promise as savior and absolute codifier of the world somewhat tarnished. In the era of quarks, black holes, physics can seem as baffling as foreign policy in the age of the Ayatollah. Philosophers of science, such as Thomas Kuhn of Princeton, have applied relativism, formerly employed against religion, to scientific knowledge. Cornell President Frank Rhodes, a geologist, once observed that "the qualities that [scientific] man may have as little relation to the world itself as a telephone number has to its subscribers."

Broad cultural forces are also at work. Says Douglas Hall, a theologian at Montreal's McGill University: "The experiment with secularism finally proved to be too much for the human psyche to cope with, both in the Marxist world and our

world. If you begin to doubt that there is some meaning in the process of history, then you get frightened of your own secularity, and you return to religion."

Though still a distant minority in secular universities, some philosophers are not only willing to talk about God but to believe in him: in the U.S., 300 of them belong to the Society for Christian Philosophy. Some scholars are attacking atheism and reviving and refining arguments

pher and guru of the Great Books Program, published *How to Think About God: A Guide for the 20th Century Pagan* (Macmillan, \$9.95). In September Doubleday will issue the English version of disident Konrad Catholic Theologian Hans Kung's latest, which despite its 850 pages is a huge bestseller in West Germany. The title: *Does God Exist?*

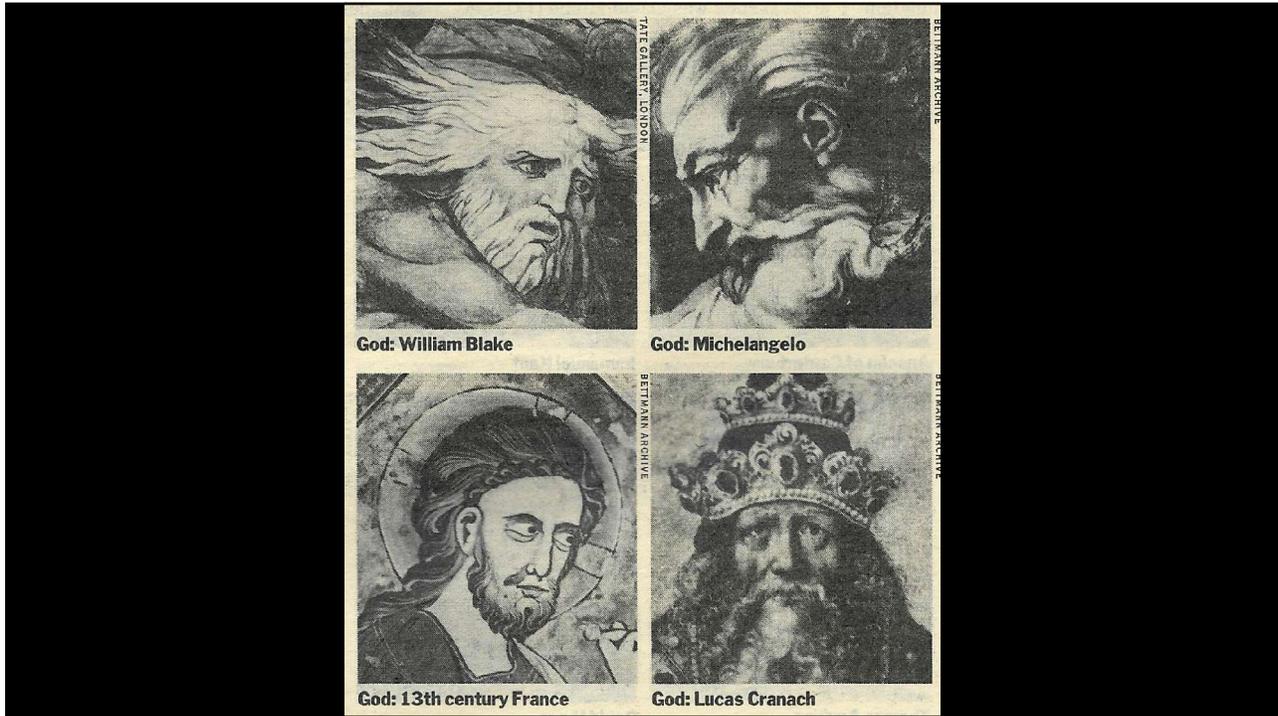
His predictable answer, yes. Even nonbelievers, Kung writes, know that an unjust world raises the question of morality and, in turn, religion. Besides that, the 20th century is littered with the sorry results of supplanting God with an absolute force that is not divine such as the "people" in Nazism or the party in Communism. Kung's lucid analysis contends that atheism's 19th-century patriarchs proclaimed their theories but never bothered to prove them. Ludwig Feuerbach, the founder of modern atheism, asserted that religious beliefs were mere projections of mankind's godly qualities. Kung responds: "But such philosophers' belief in the goodness of human nature is far more likely to be such a projection."

Whatever atheism's weaknesses, what about the other side? Can God's existence be established by reason, without resorting to the Bible, revelation, church dogma or a leap of faith? The attempt is traditionally known as "natural theology," and except for the largely self-contained world of Roman Catholic philosophy, it went out of style more than a century ago.

In the current revival, most arguments still employ the traditional definition of God as a unique personal creative entity. What is new is the effort to refurbish and enhance the traditional approaches to the problem. A summary of the work being done is not new was in those old wineries.

The Moral Proof. This is essentially King's approach: Consciousness itself makes Christianity—at least theism—of all. The case builds upon the universal signs among mankind of conscience, of some moral law and of each person's inability to keep it satisfactorily, all of which cannot be explained as mere conditioning or self-interest. The source of that spark of conscience, theists contend, is God. The most celebrated exponent, Immanuel





God: William Blake

God: Michelangelo

God: 13th century France

God: Lucas Cranach

Religion

Kant (1724-1804), wrote that each person's quest for the "highest good" implies the existence of a moral being as the necessary condition for this idea, who is himself the source of all morality.

Updating Kant, Dartmouth Scholar Ronald Green argues in *Religious Reason* (Oxford, 2012) that though skeptics may think primitive instincts or emotions are the basis for religion, faith actually stems from the sophisticated reasoning process that distinguishes humans from animals. To Green, man must seek an independent, coherent source for his morality. Although Kant ended with a personal God, Green will only go so far as to postulate "some kind of supreme moral causal agency," whether a personal deity or Hinduism's impersonal karma.

The Mental Proof. In this formulation, an all-intelligent Being is offered as the only explanation for the power of reason and for humanity's other nonmaterial qualities of mind and imagination. A contemporary restatement is the 1947 classic *Miracles* by the late English literary critic C.S. Lewis, the century's most read apologist for God. Lewis dismissed the philosophy that mind results from nature: "If any thought is valid, an eternal, self-existent Reason must exist and must be the source of my own imperfect and instrumented rationality."

America's leading orthodox Protestant philosopher of God, Alvin Plantinga of Michigan's Calvin College, develops a related argument from one of the pressing issues in modern epistemology. Though it sounds strange to the man in the street, philosophers ponder how an individual can know that there is any creature besides himself who thinks, feels and reasons, or how he can know that anything ever existed in the past. How, for instance, can we know if another person is in pain? Plantinga answers that such knowledge is acquired through analogy and in *God and Other Minds* (Cornell, \$13.50) he makes an airtight case that this is the way believers know God. Since it is perfectly plausible to infer that other minds exist, he thinks it is reasonable to believe that God does as well.

The Experiential Proof. Because religious experiences are so widespread, that argument runs, there must be something for them. Someone inspiring them. Skeptics, of course, reply that experiences are subjective, hence unreliable as evidence, and besides they can be explained apart from God. Harvard's Quine, for example, dismisses beliefs as the product of "tradition, wishful thinking or something in the genes." However, one of Britain's most

distinguished zoologists, Alister Hardy, begs to wonder. A project he founded at Oxford has issued a rigorous scientific study of 3,000 religious experiences, and reports a striking—and intriguing—commonality among them.

The Teleological Proof. Here the infinitely complex structure of the universe is used to argue the necessary existence of an intelligent Designer. In English Archdeacon William Paley's famous analogy of 1802, anyone who sees a watch is forced to assume the existence of a watchmaker who made it. The marvels of nature's design, from snowflakes to developing embryos, are comforting buttresses to faith for many people.

Since the Enlightenment, though, philosophers have not been impressed. The great skeptic was David Hume (1711-'76),

tends that narrowly antireligious Darwinism ignores the way in which minuscule nature is in harmony with organic evolution. Nor, he asserts, can evolutionary theory possibly explain the rapid emergence of the large brain in the developing human species.

The Ontological Proof. This, the most controversial approach, moves from a mental concept of God to his actual existence. It was originated by Anselm, the 11th century Archbishop of Canterbury who defined God as "a being than which nothing greater can be thought." The Archbishop reasoned that since existence would have to be part of any such perfect and necessary being, this being must actually exist. This is "too good to be true," says one skeptic, and even one of its current defenders admits that it "looks

too much like word magic." The method lay in dispute after Kant supposedly demolished it, until Norman Malcolm, then at Cornell, suddenly "claimed in a 1960 article that it was partly defensible. Since then it has been the most debated proof among philosophers.

Three current advocates reinvigorate it by applying a technique known as modal logic. Plantinga, Unitarian Charles Hartshorne, a follower of Alfred North Whitehead's "process" philosophy, now retired from the University of Texas, and Roman Catholic Layman James F. Ross of the University of Pennsylvania.

In *The Nature of Necessity* (Oxford, \$8.50), Plantinga, who had long opposed ontological theories, explains that his mind was changed through the curious logical process of speculating about "possible worlds" in which things could be different. For example, he says, Raquel Welch has "impressive assets" in our world. But there are possible worlds in which she is "tiny and 50 lbs. overweight," and others in which she is totally nonexistent. "What Anselm means to suggest is that Raquel Welch enjoys very little greatness in those worlds in which she does not exist."

Ross, a leader in modernizing the thought of medieval scholars, favors the revision of Anselm done by John Duns Scotus (1265-1308) but does some revision himself. In the forthcoming new edition of his *Philosophical Theology* (Hackett, \$17.50), Ross is bold enough to claim that he has an airtight proof that "remains unscathed" after a decade of scrutiny. Ross does this with his "Principle E" (for explicability), which is virtually ineluctable to the uninitiated. Roughly, it means that it is possible for everything, including God's existence, to be



Anselm of Canterbury



Immanuel Kant



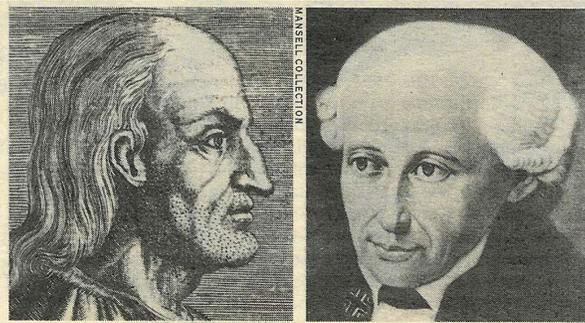
Thomas Aquinas



David Hume

who scoffed at the design argument because nature is so savage and wasteful that it might have been the work of "some infant deity who afterwards abandoned it, ashamed of his lame performance." Turned inside out, the proof is really a question: Could this intricate universe have evolved by pure trial and error? The last major philosopher to promote the argument Britain's F.R. Tennant, wrote in 1934: "Presumably the world is comparable with a single throw of the dice. And common sense is not foolish in suspecting the dice to have been loaded."

Foreknew by philosophers, the proof was brought up to date last year by James E. Horgan, a Denver lawyer intrigued by scientific theory. In *Chance or Design?* (Philosophical Library, \$13.95) he cen-



Anselm of Canterbury

Immanuel Kant



Thomas Aquinas

David Hume

explained, but that God's nonexistence does not admit of explanation. Even atheistic philosophers grant that by the latest rules of logic, the updaters of Anselm are right. If it is even possible that a highest conceivable being exists, then he must exist in actuality. The trouble is, the atheists do not accept that he is even possible.

The Cosmological Proof. The term applies technically to any argument for God through reflection upon the natural world. But most often "cosmological" refers to reasoning generalizations about ultimate origins and why the cosmos exists at all. Evolutionary schools of thought do not entertain such notions because they fall, by definition, outside what can be observed or tracked. If such questions are never asked, of course, they require no answer. Bertrand Russell once remarked in a 1956 debate that the universe is "just there, and that's all." He was convinced that "all the labors of the ages, all the devices, all the inspiration, all the noonday brightness of human genius, are destined to extinction in the vast death of the solar system."

The classic cosmological inquirer was Thomas Aquinas (1224-74), and the classic modern innovator is Canadian Jesuit Bernard J.F. Lonergan, whose "transcendental Thomism" in *Imphilo* (Philosophical Library, \$10) justifies Aquinas in the modern world through a complex philosophy of human understanding. Chicago's Mortimer Adler has long been interested in Aquinas' thought. Though not formally religious, he nonetheless pondered the God problem for most of his 75 years before writing his readable *How to Think About God*.

Aquinas reasoned that each effect must have a cause and that an endless chain must proceed back to a primordial First Cause or Prime Mover. In *How to*, Adler rejects that starting point because a universe with a beginning presupposes the Creator that it seeks to prove. Therefore Adler maintains that the universe had no beginning. He also rejects the idea that a higher cause underlies and explains all phenomena in the universe, on the ground that natural processes provide sufficient explanation. That leaves the most obscure of Aquinas' "five ways" of proving God: from "contingency." Things can be divided into two categories: "contingent" ones that could either exist or not exist, and "necessary" ones that cannot not exist. The latter is a category of one, namely God. The reason that anything at all exists, cosmologists argue, is that there must be a "necessary" being.

At one time Adler embraced Aquinas' proof, then for decades he thought it did not work because although everything in the universe is contingent, nothing ceases to exist absolutely (e.g., burning wood only changes form, so no God is needed to explain the existence of contingent things. Last May he suddenly changed his mind again after applying the "possible worlds" approach Adler speculated that the universe is only one of many possible universes, any of which—including this actual universe—can just as easily not exist as exist.

The universe is "radically contingent," the only thing capable of not existing and leaving behind absolutely nothing. An "efficient cause" is needed to explain "the actual existence here and now of a merely possible cosmos," something that preserves it in being and prevents it from being replaced by nothingness. Color that cause God. Philosopher Ross

what nature and history show to be quite likely—that there is a God who made and sustains man and the universe." Basil Mitchell, a philosopher of religion at Oxford, advocates a "many-stranded rope of reason" like that employed by historians or scientists to develop the best explanation of evidence. Among his strands: individuals' experience of a mysterious "other" outside nature, the simple faith of believers and "cosmic awe" in encountering unusually saintly persons.

The procedure is double-edged. Oxford's J.L. Mackie, perhaps the ablest of today's atheistic philosophers, offers nonempirical explanations for such evidence, and raises the problem, as old as the *Book of Job*, of evil. The existence of evil is no knock-down disproof of an omnipotent and wholly good God," he says, but it does make God improbable.

Plantinga revisits the theist's classic reply to this: the free will argument. Examining whether a semiautonomous, corrupt Boston mayor would have taken smaller bribes in other "possible worlds," he argues that even an all-powerful God cannot create a world in which mayors can choose to take bribes and that also contains no evil. In religious circles, natural theology is not in vogue. Not all Roman Catholics, for example, enthusiastically accept the 1968 Vatican Council's decree that "man can know the one true God and Creator with certainty by the natural light of human reason." At the same time, though few people come to believe through the exercise of reason, cathedrals of thought can provide sanctuary for many when faith falters or is attacked by skeptics. Iona Dougherty, dean of philosophy at the Catholic University of America, also sees value in continuing to labor to reason God out in a day when all sorts of bizarre calls flourish. "If religion is not placed on a rational footing, then *anyhow* can be considered religion."

Probably the major failing of such enterprise is that the results, however persuasive, tell us little about the nature and will of God. Blaise Pascal, anticipating modern objections to natural theology, believed that one cannot worship a dry concept, only the living God. Though a genius in science and mathematics, Pascal believed that "the heart has its reasons, which reason cannot know." But if in an age of science, faith in God can be more rationally grounded, as a growing number of philosophers now attest, then the reasoning soul who is so inclined can more serenely and assuredly feel comfortable in moving beyond reason.



England's J.L. Mackie



West Germany's Hans King



Chicago's Mortimer Adler

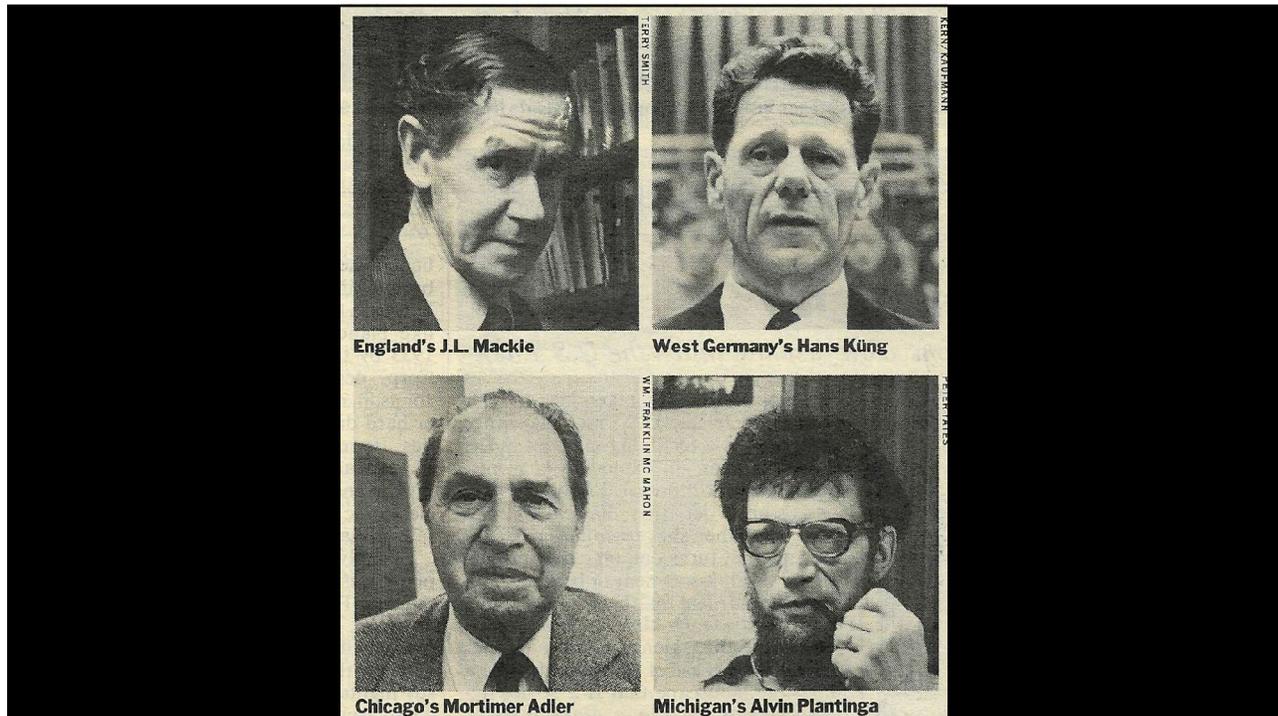


Michigan's Alvin Plantinga

Other scholars use what could be called the cumulative argument: they contemplate the comparative plausibility of various arguments and evidence using Adler's favored standard of judgment, the jury's proof "beyond a reasonable doubt." This premise attempts to avoid having to disprove God absolutely, which is as hard to do as prove his existence, and lets theists cite human phenomena that strict empiricism used to rule out. In *The Existence of God* (Oxford, \$27.50), Richard Swinburne of England's Keele University concludes, "The experience of so many men in their moments of religious vision corroborates

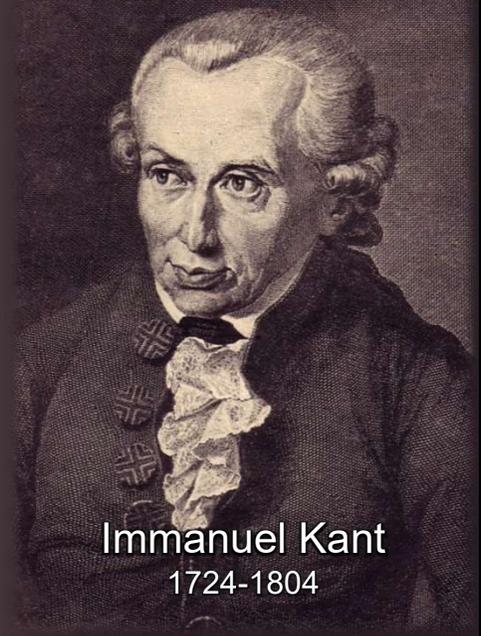
TIME, APRIL 7, 1968

57



***"Two things fill the mind
with ever new and
increasing admiration and
awe, the oftener and more
steadily we reflect on
them: the starry heavens
above me and the moral
law within me."***

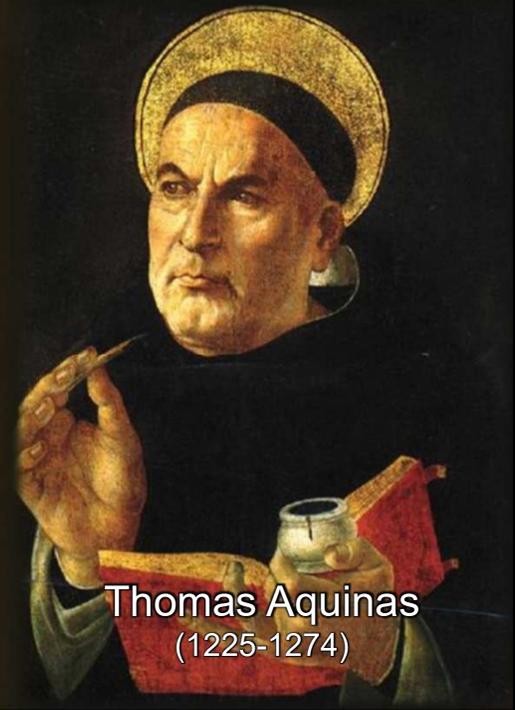
[*Critique of Practical Reason*, trans. Lewis White Beck (New York: Macmillan Publishing, 1956), 166]



Immanuel Kant
1724-1804

"Beginning with sensible things, our intellect is led to the point of knowing about God that He exists, and other such characteristics that must be attributed to the First Principle."

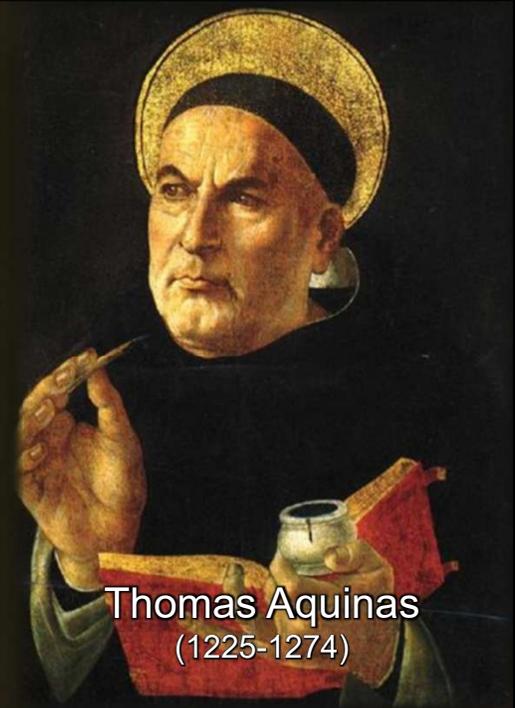
[*Summa Contra Gentiles*, I, 3, §3, trans. Anton C. Pegis (Notre Dame: University of Notre Dame Press, 1975, 64)]



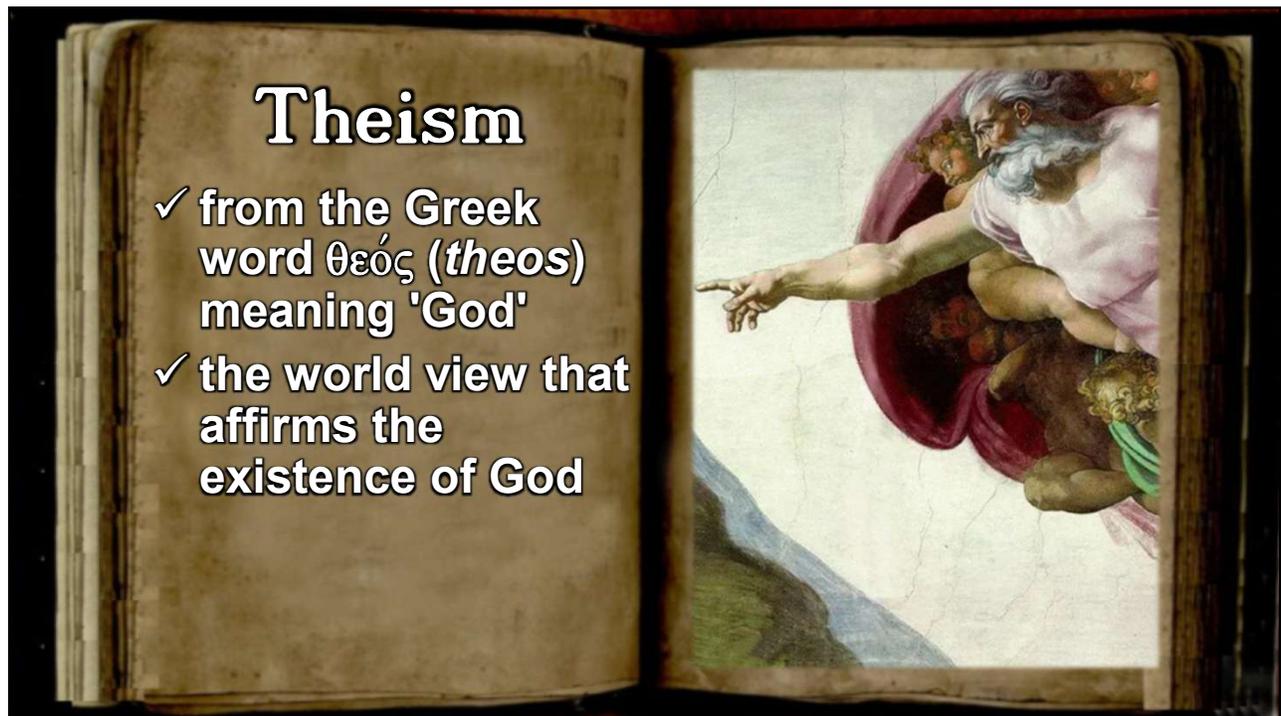
Thomas Aquinas
(1225-1274)

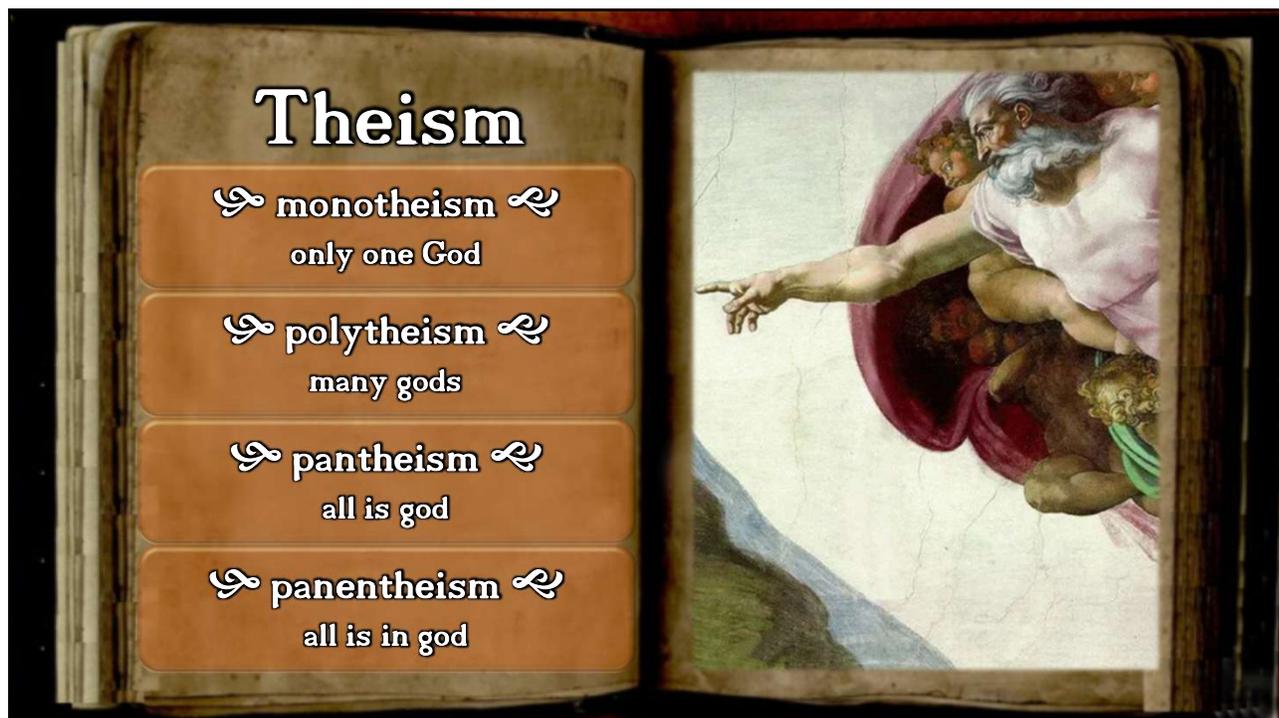
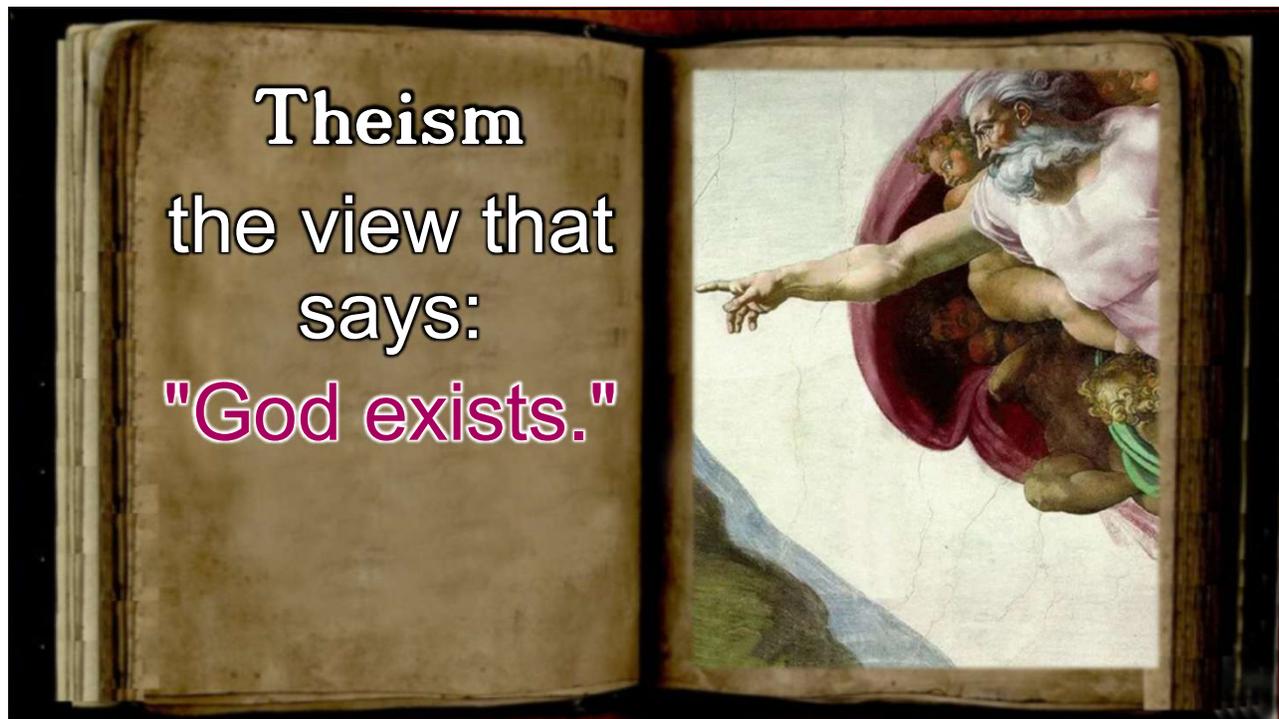
"From every effect the existence of its proper cause can be demonstrated, so long as its effects are better known to us; because since every effect depends upon its cause, if the effect exists, the cause must pre-exist. Hence the existence of God ... can be demonstrated from those of His effects which are known to us.."

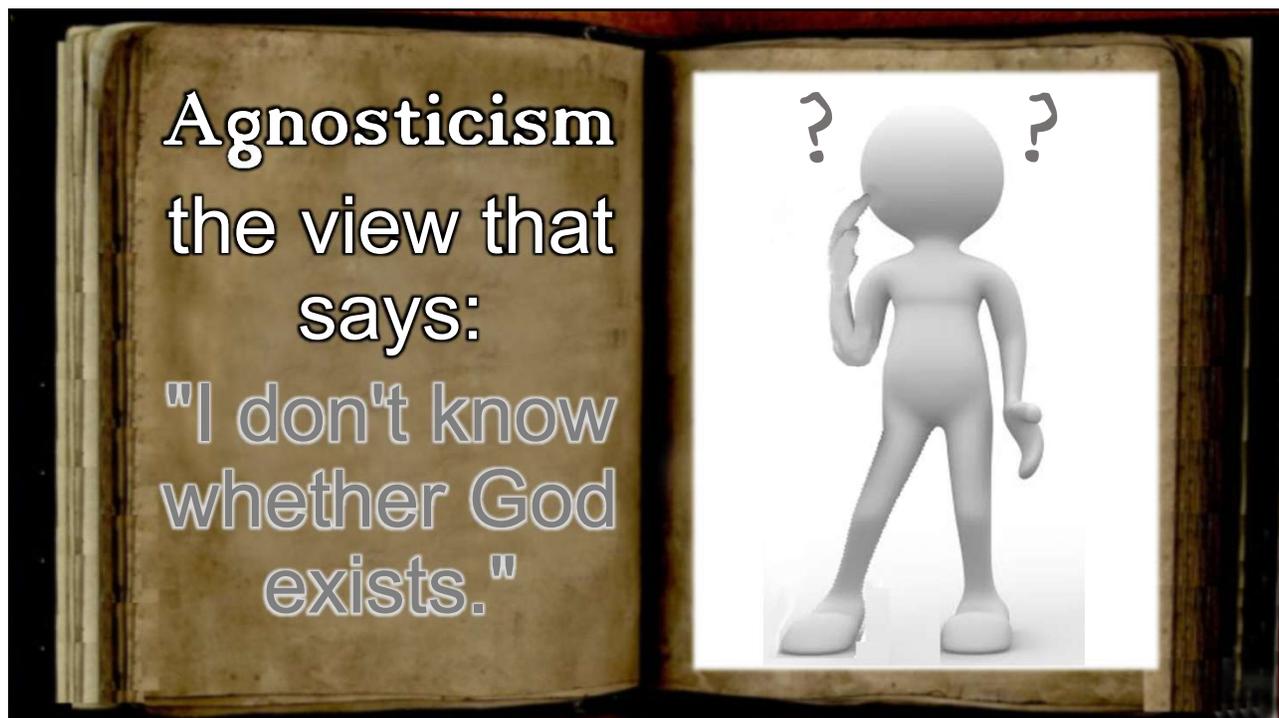
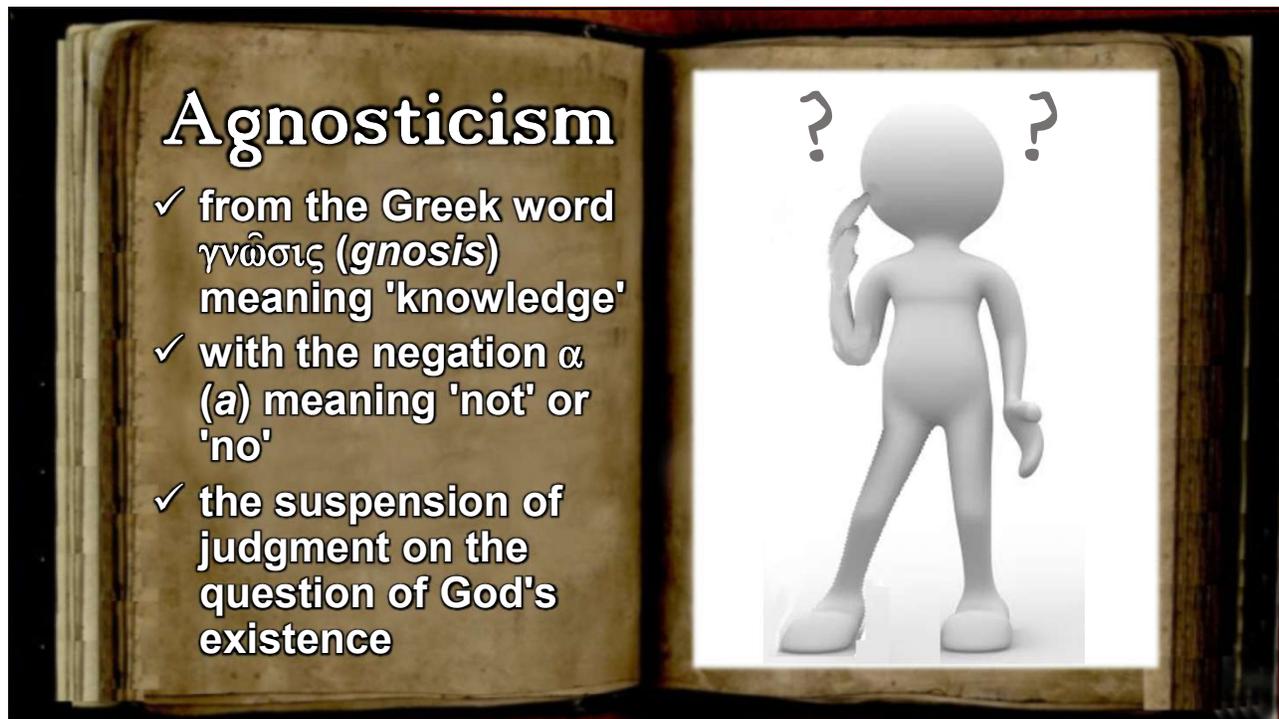
[*Summa Theologica*, I, Q2, Art. 2, trans. Fathers of the English Dominican Province (Westminster: Christian Classics, 1948), 12]

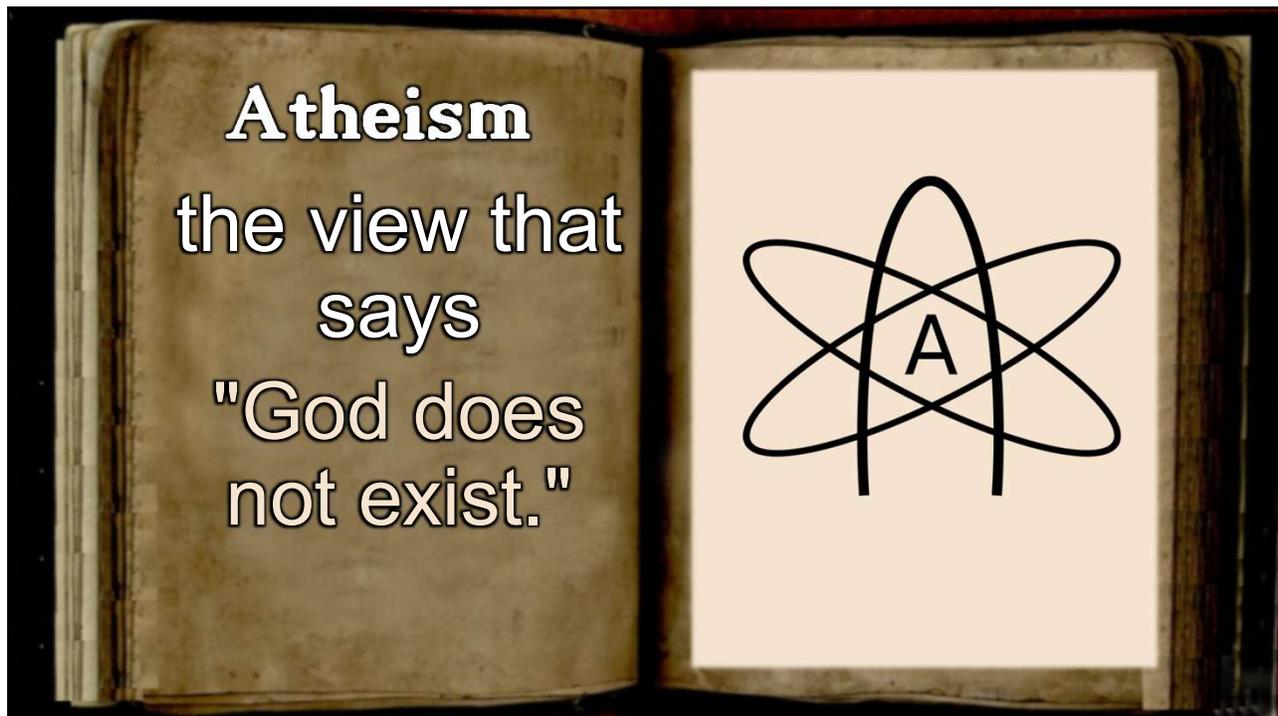
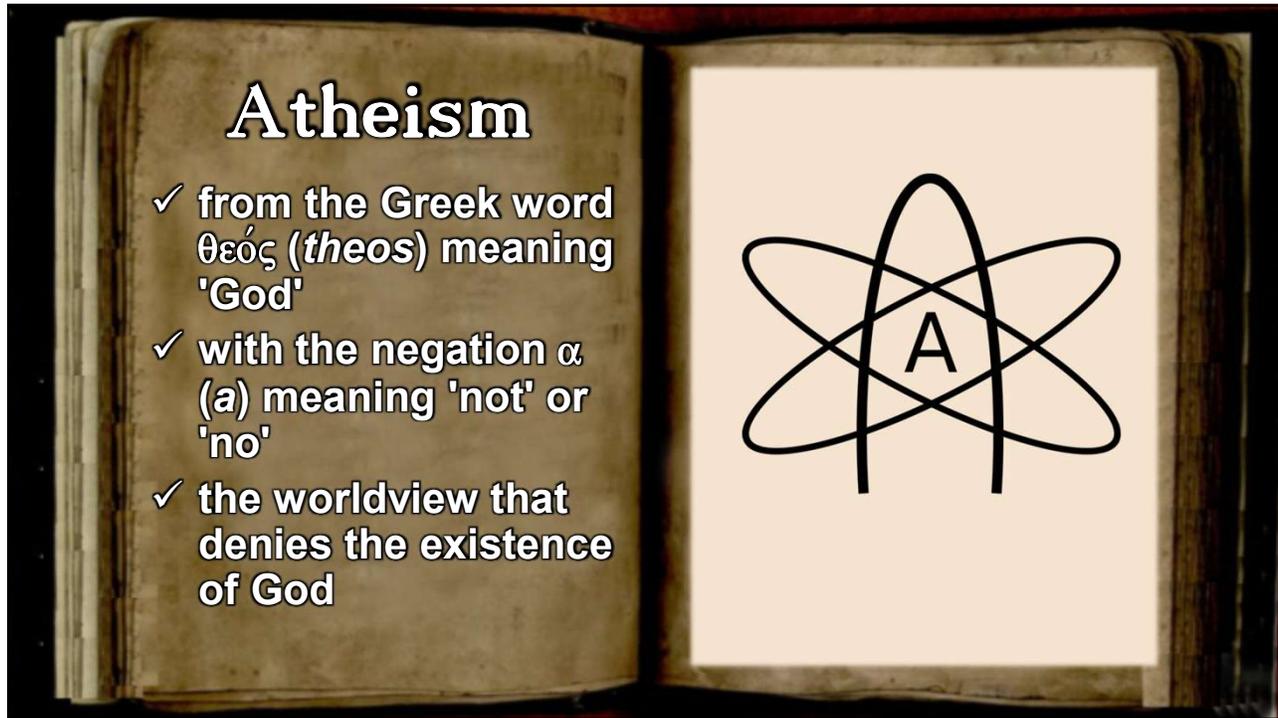


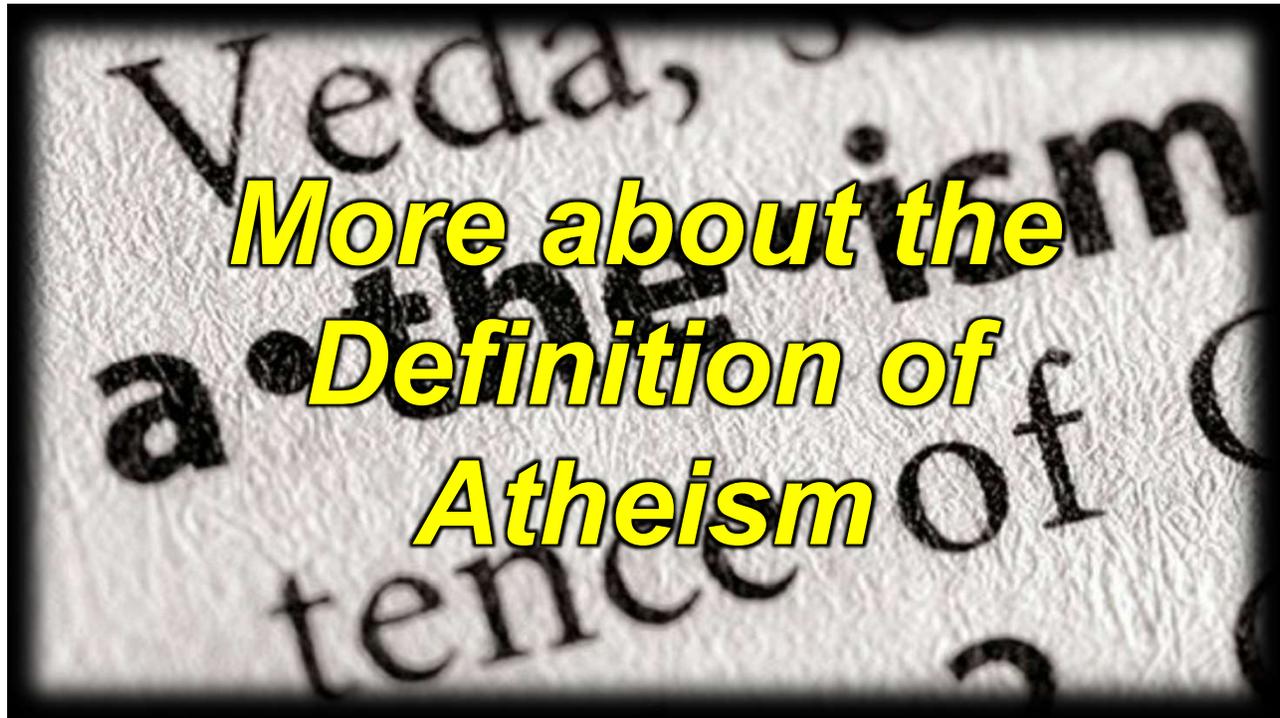
Thomas Aquinas
(1225-1274)













George H. Smith
(1949-2022)

"There is no atheistic worldview. Let's be clear about that. Atheism is simply the absence of belief in God."

[Debate between George H. Smith and Greg Bahnsen]



George H. Smith
(1949-2022)

ATHEISM

THE CASE AGAINST GOD

BY GEORGE H. SMITH

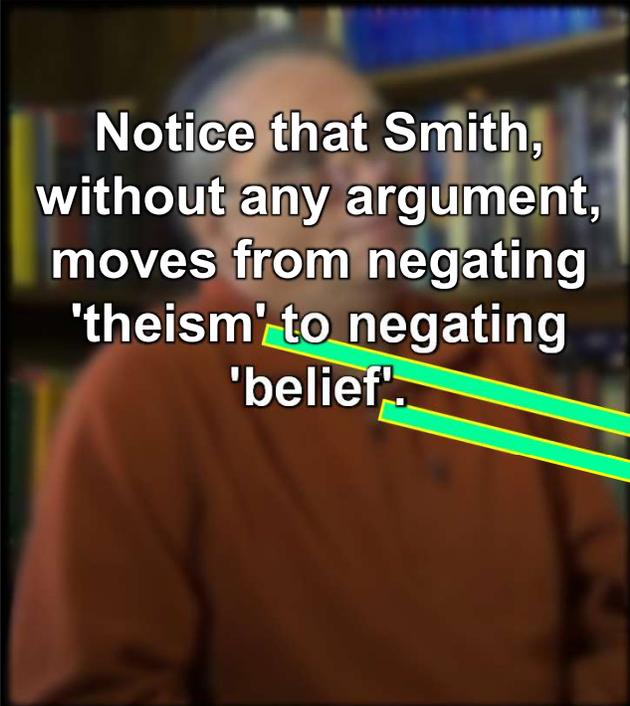
The Skeptic's Bookshelf



George H. Smith
(1949-2022)

"Atheism, in its basic form, is not a belief: it is the absence of belief. An atheist is not primarily a person who believes that a god does not exist; rather, he does not believe in the existence of God."

[George H. Smith, *Atheism: The Case Against God* (Buffalo: Prometheus, 1989), 7]



Notice that Smith, without any argument, moves from negating 'theism' to negating 'belief'.

"As used throughout this book, 'theism' signifies the belief in any god or number of gods. The prefix 'a' means 'without,' so the term 'a-theism' literally means 'without theism,' or without belief in a god or gods."

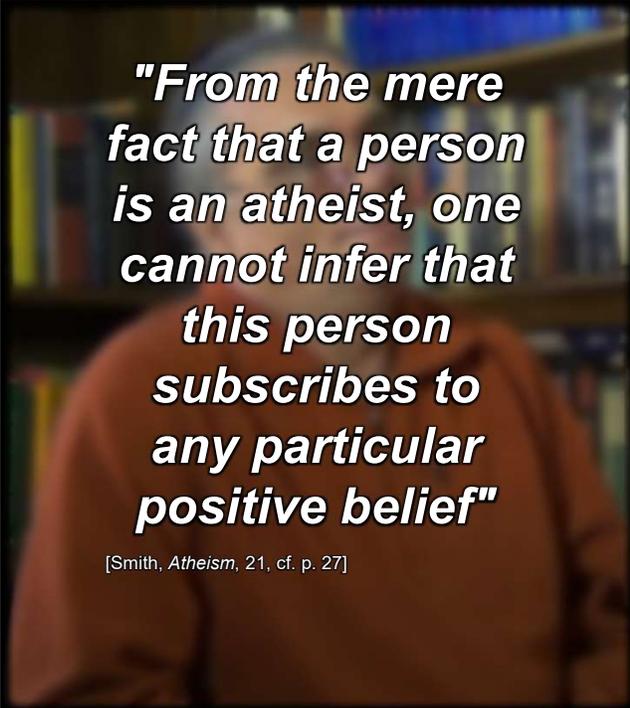
[George H. Smith, *Atheism: The Case Against God* (Buffalo: Prometheus, 1989), 7]



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"From the mere fact that a person is an atheist, one cannot infer that this person subscribes to any particular positive belief"

[George H. Smith, *Atheism: The Case Against God* (Buffalo: Prometheus, 1989), 21]

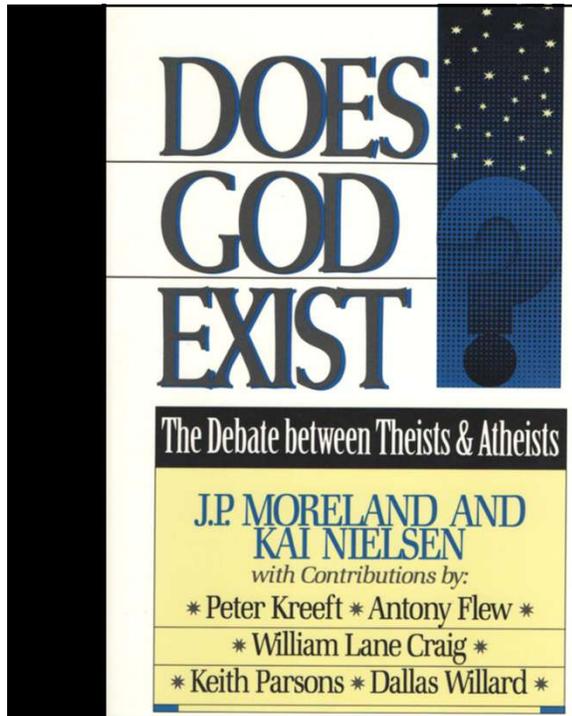


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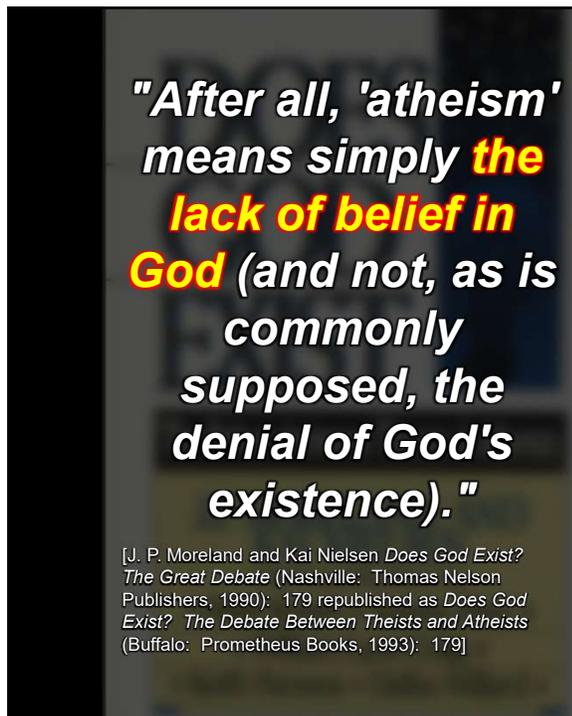
[Smith, *Atheism*, 21, cf. p. 27]

"If atheism is correct,

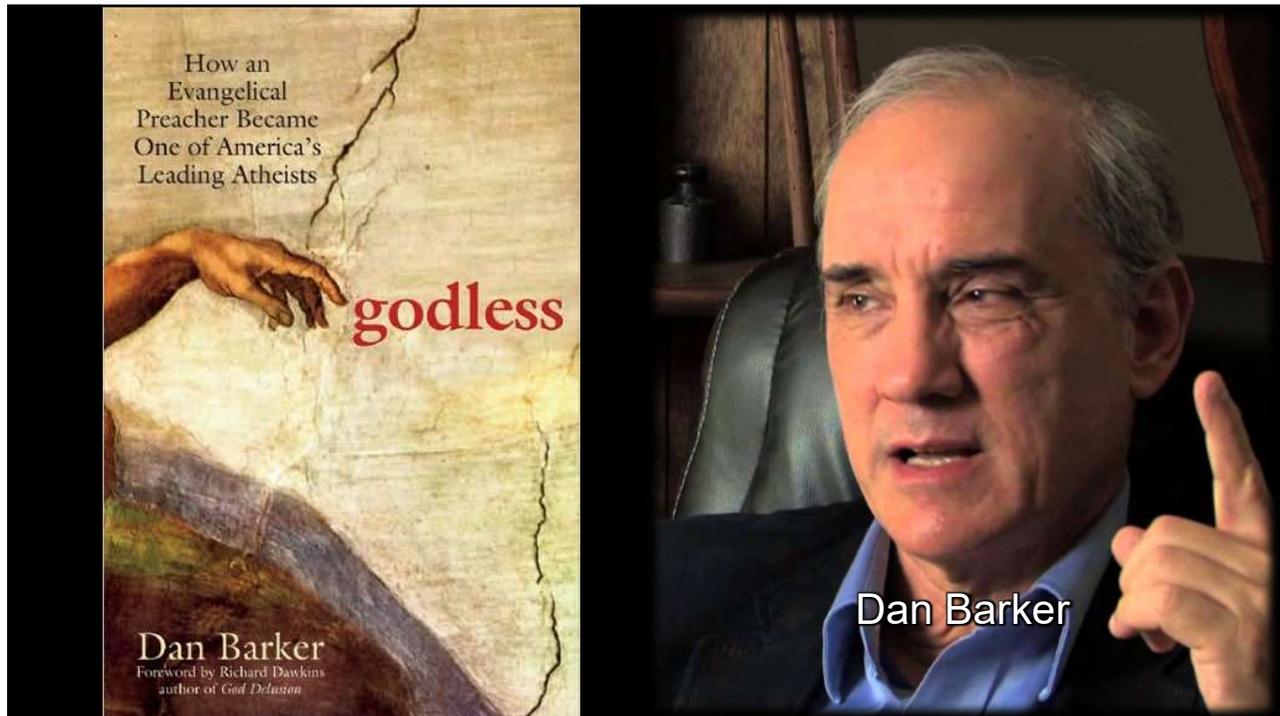
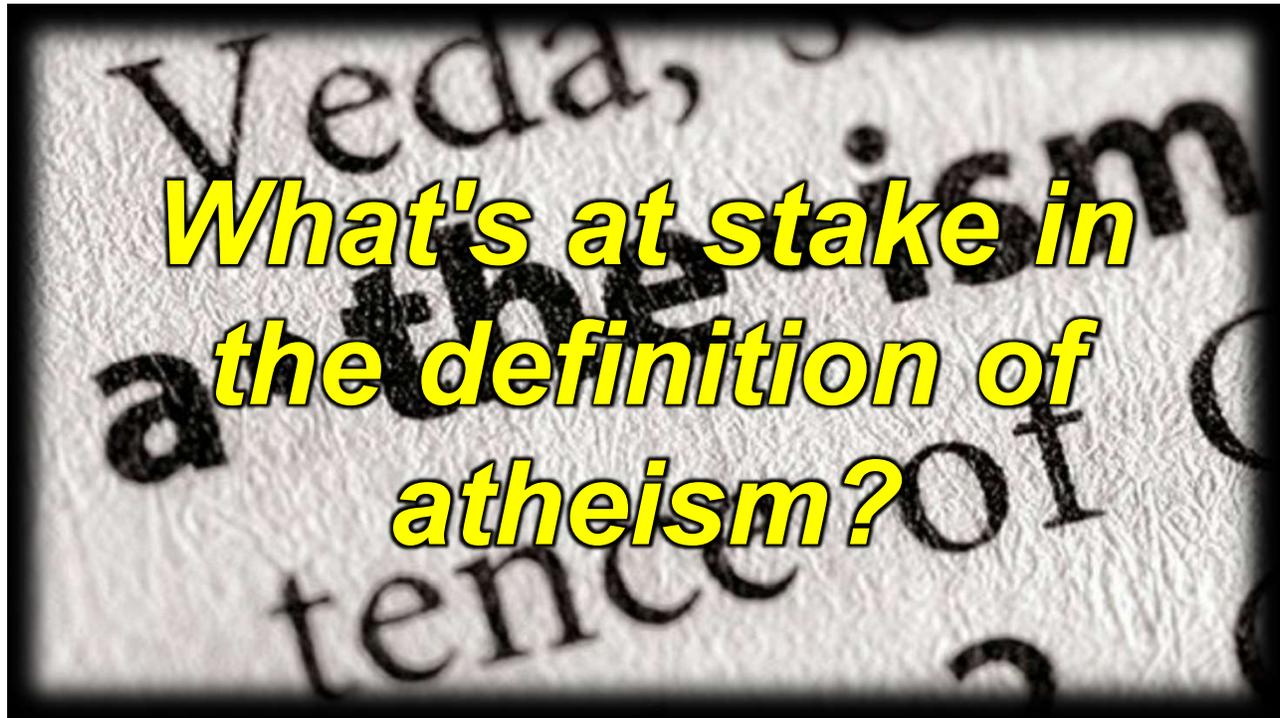
- *man is alone*
- *there is no god*
- *for knowledge, man must think for himself*
- *for success, man must work*
- *for happiness, man must strive to achieve it*
- *all of these are sole responsibility of man*

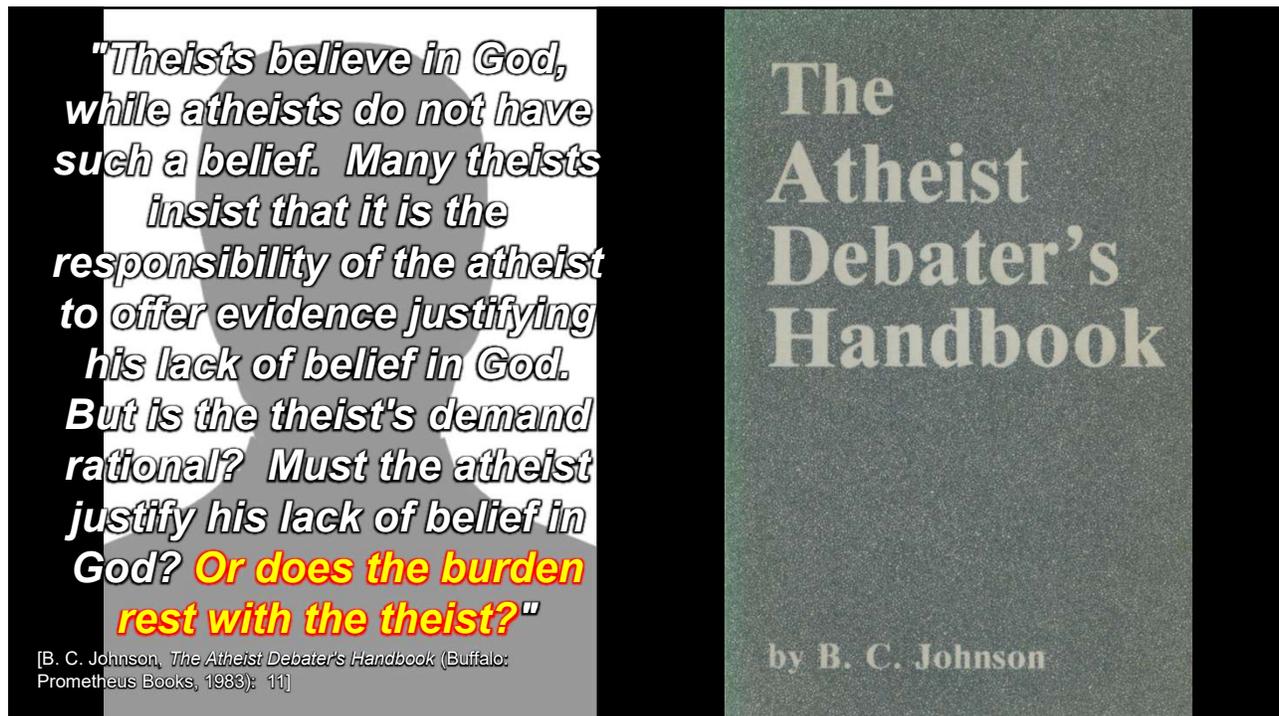
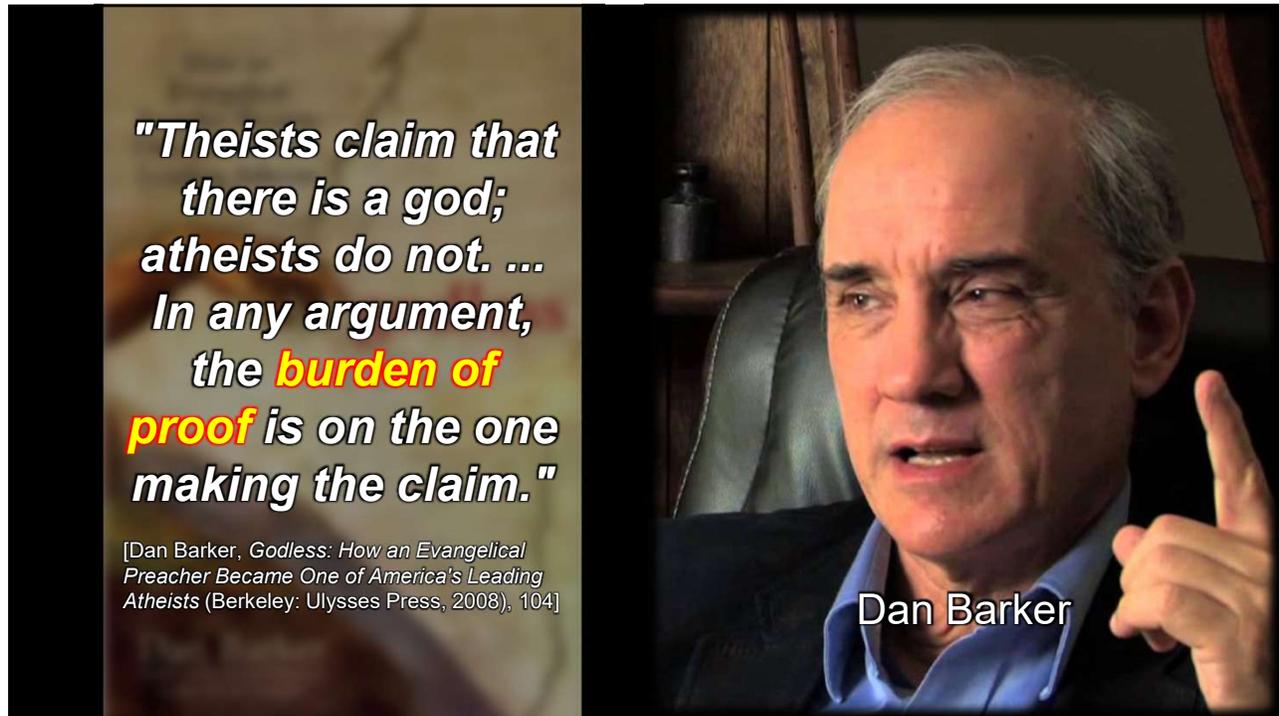


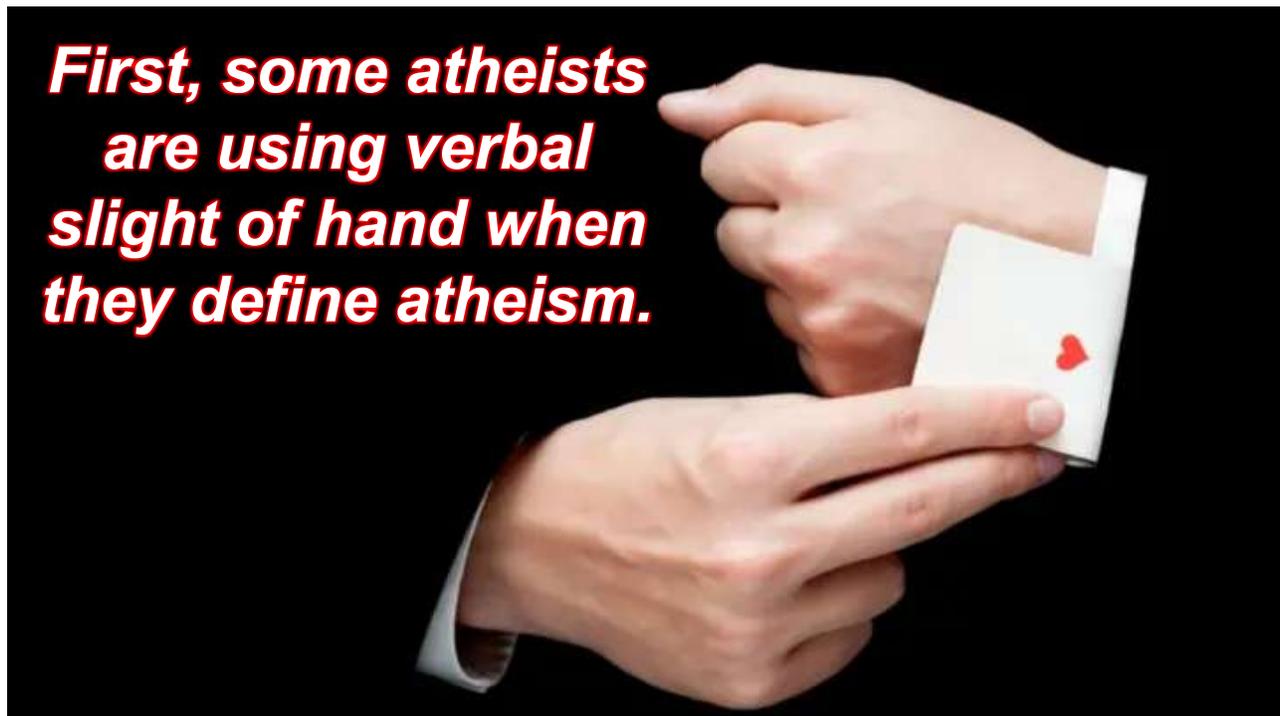
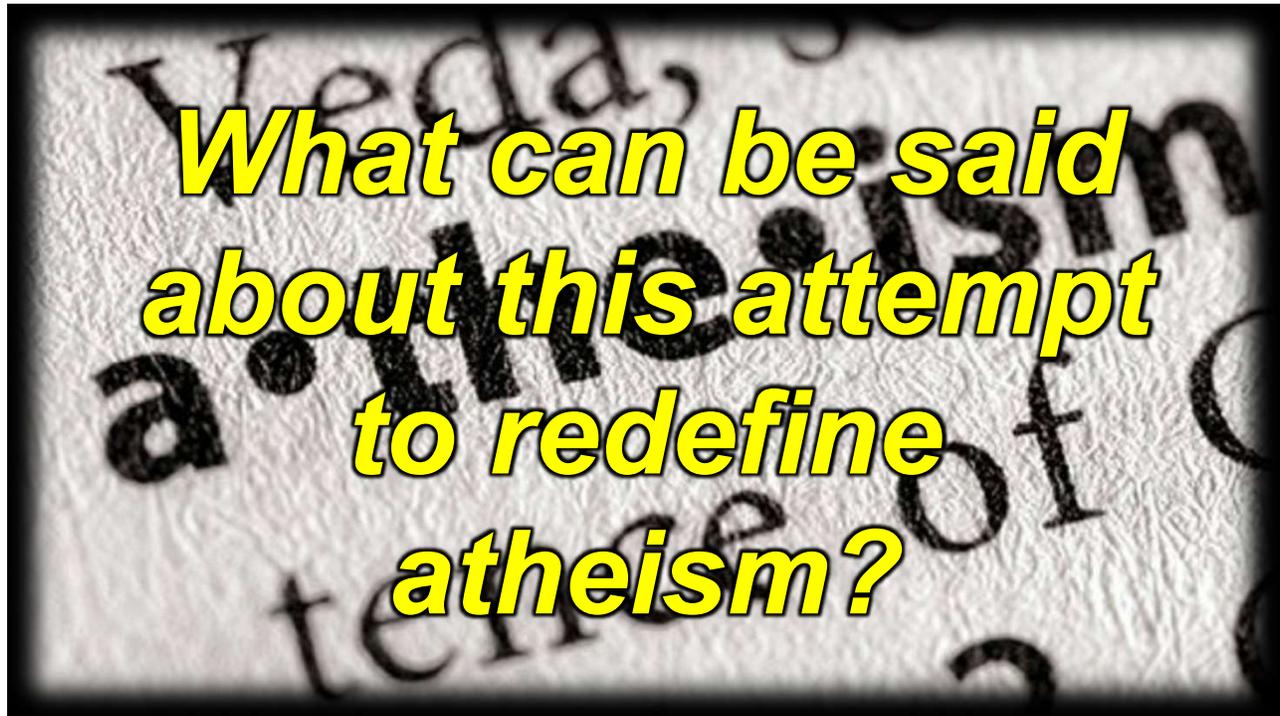
Keith Parsons

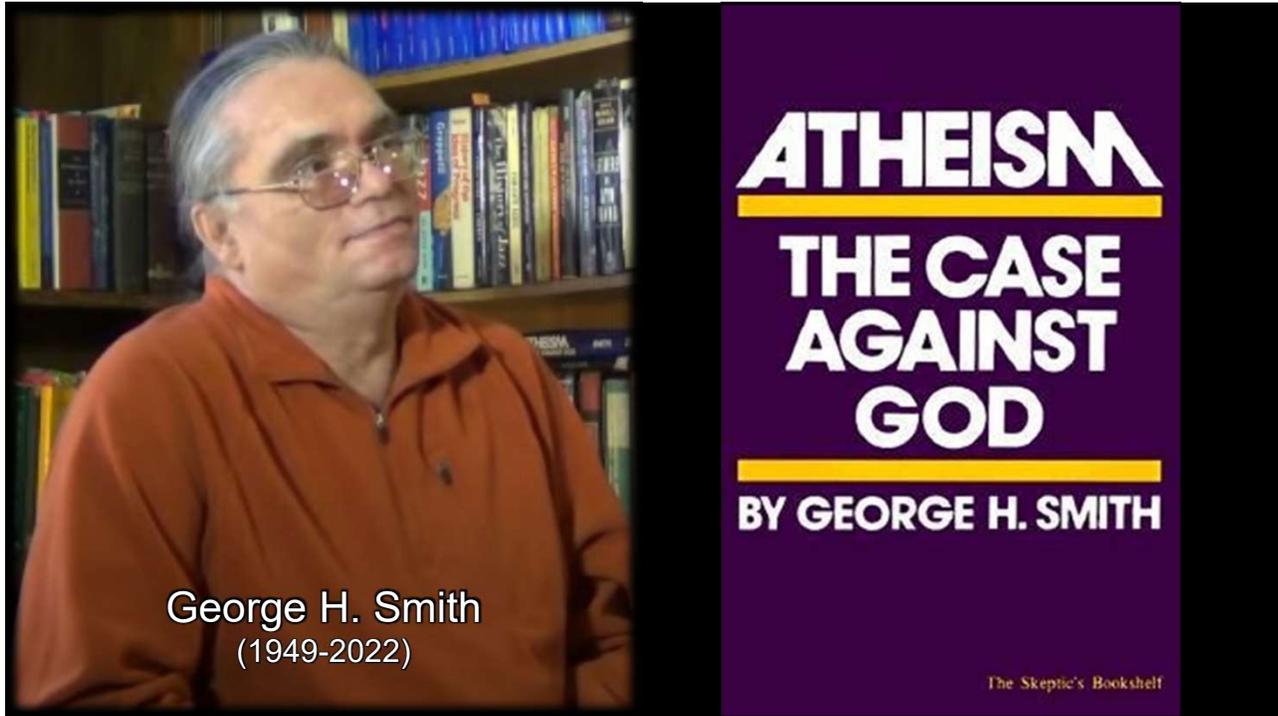


Keith Parsons









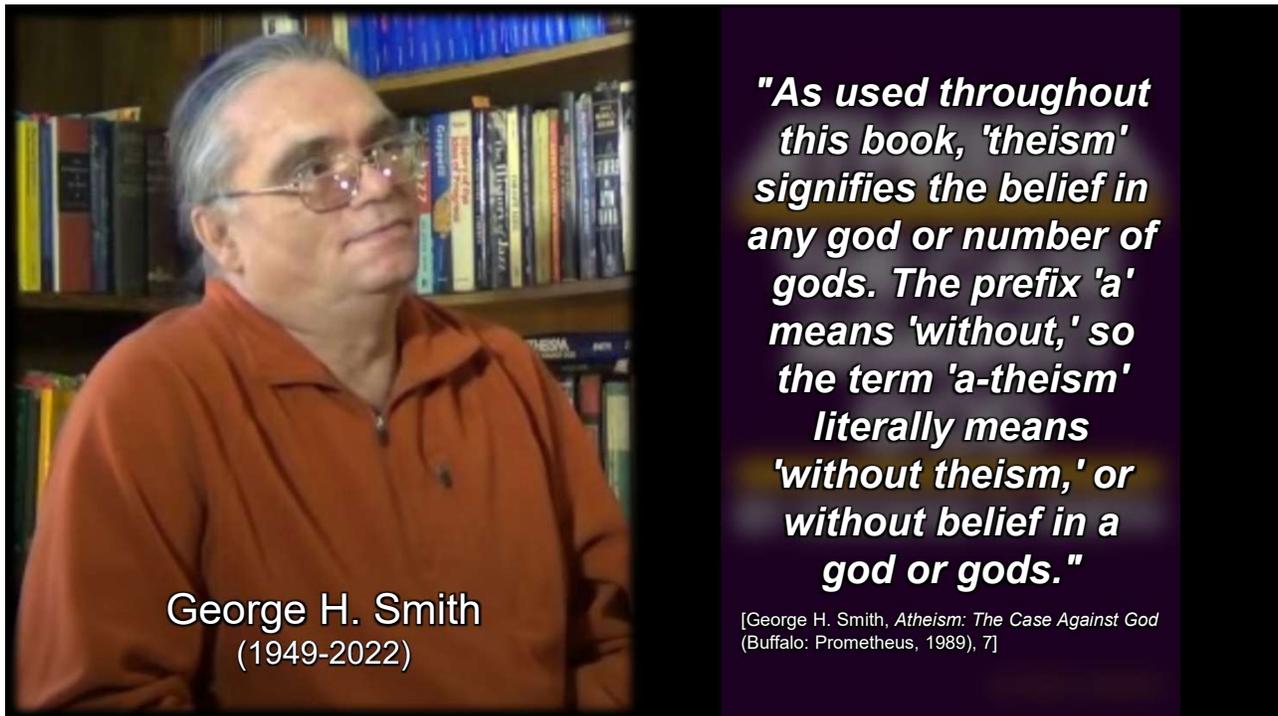
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ATHEISM

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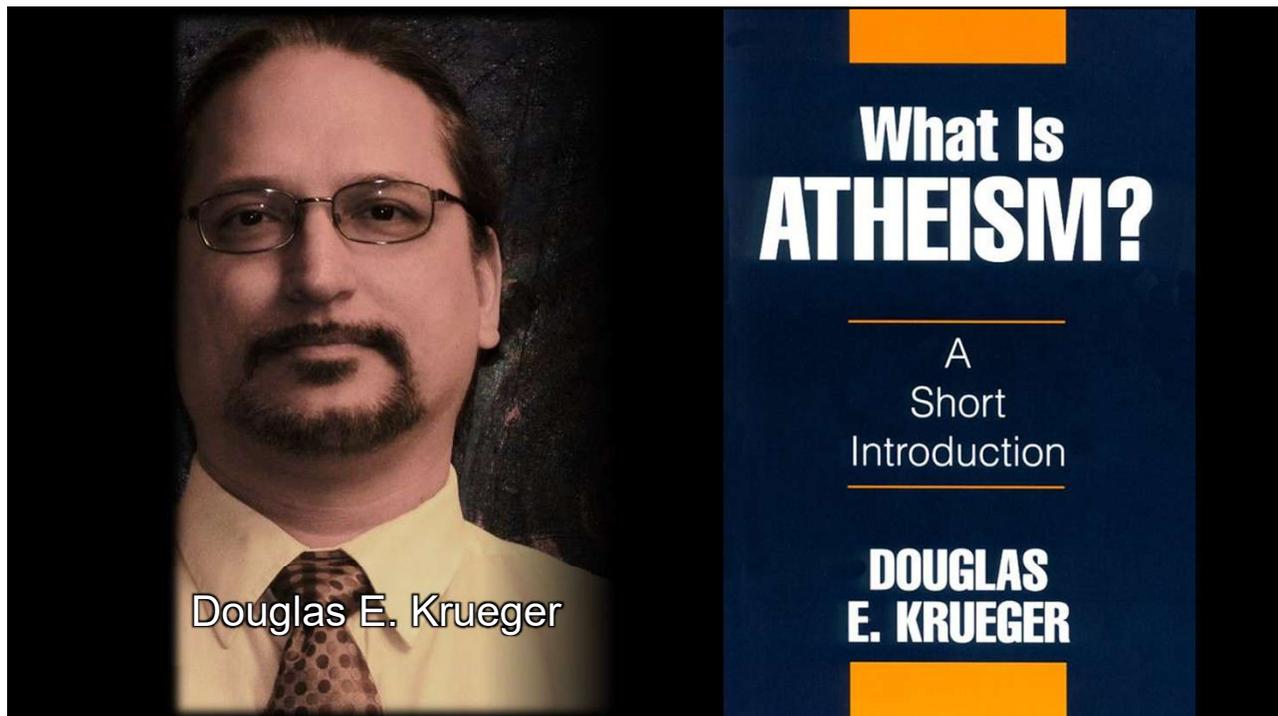
[George H. Smith, *Atheism: The Case Against God* (Buffalo: Prometheus, 1989), 7]

Granted that the suffix "ism" constitutes a belief system, Smith still illicitly has the negation "a" negating "belief" rather than negating "God."

Thus, rather than
"no belief in a God"
 it should be
"a belief in no God."

"As used throughout this book, 'theism' signifies the belief in any god or number of gods. The prefix 'a' means 'without,' so the term 'a-theism' literally means 'without theism,' or without belief in a god or gods."

[George H. Smith, *Atheism: The Case Against God* (Buffalo: Prometheus, 1989), 7]

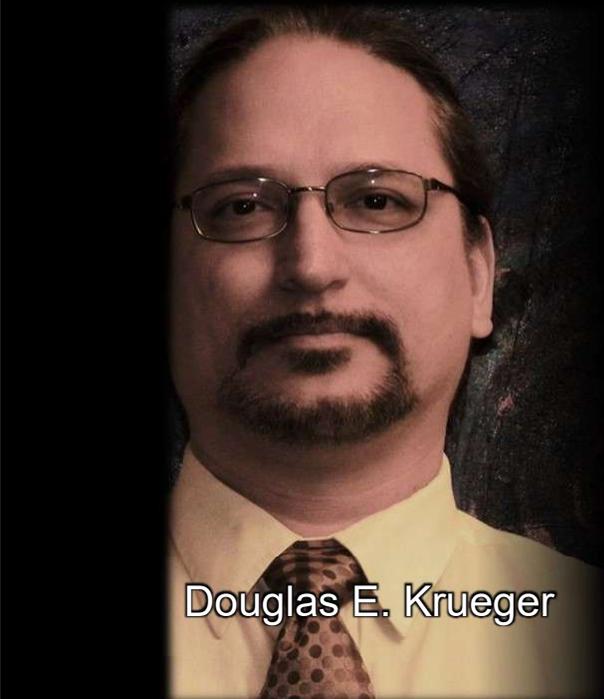


**What Is
ATHEISM?**

A
Short
Introduction

**DOUGLAS
E. KRUEGER**

Douglas E. Krueger



Douglas E. Krueger

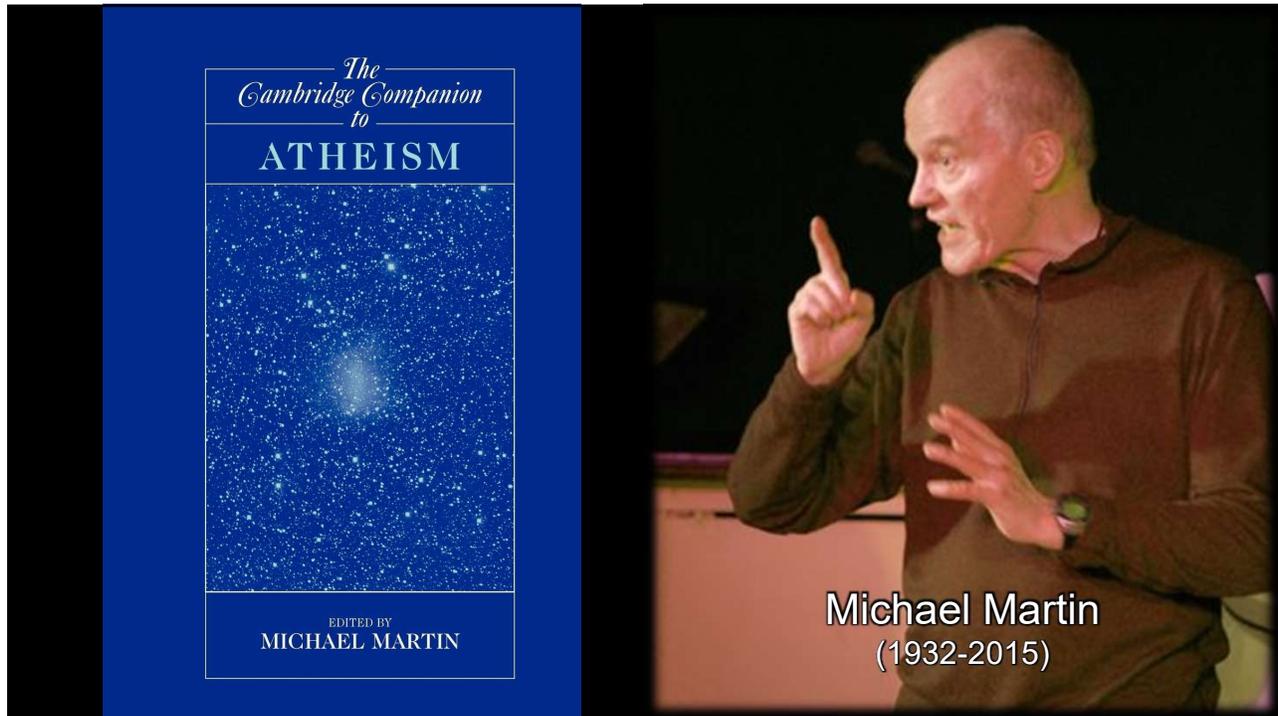
"The term 'atheism' is from the Greek *atheos*. The prefix **'a'** means **'without,'** and the Greek *theos* means 'god,' so atheism means simply **'being without god.'** Theism asserts that there is a god, so atheism is the view which **does not assert** that there is a god."

[Douglas E. Krueger, *What is Atheism? A Short Introduction* (Amherst: Prometheus, 1998), 17]

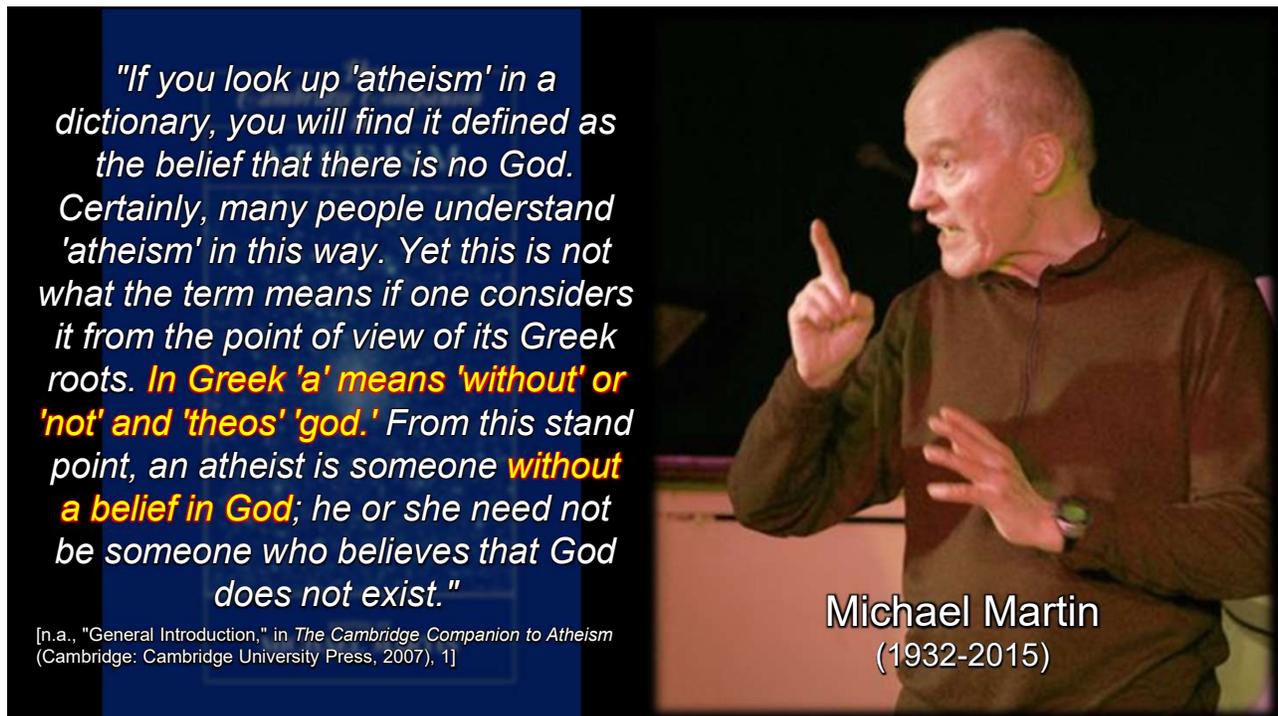
Notice that Krueger moves from the alpha negating **'god'** (which would mean **'without god'** or **'not-god'**) to the alpha negating the **assertion** (which means the absence of the assertion of god instead of the absence of god).

"The term 'atheism' is from the Greek *atheos*. The prefix **'a'** means **'without,'** and the Greek *theos* means '**god**,' so atheism means simply **'being without god.'** Theism asserts that there is a god, so atheism is the view which **does not assert** that there is a god."

[Douglas E. Krueger, *What is Atheism? A Short Introduction* (Amherst: Prometheus, 1998), 17]



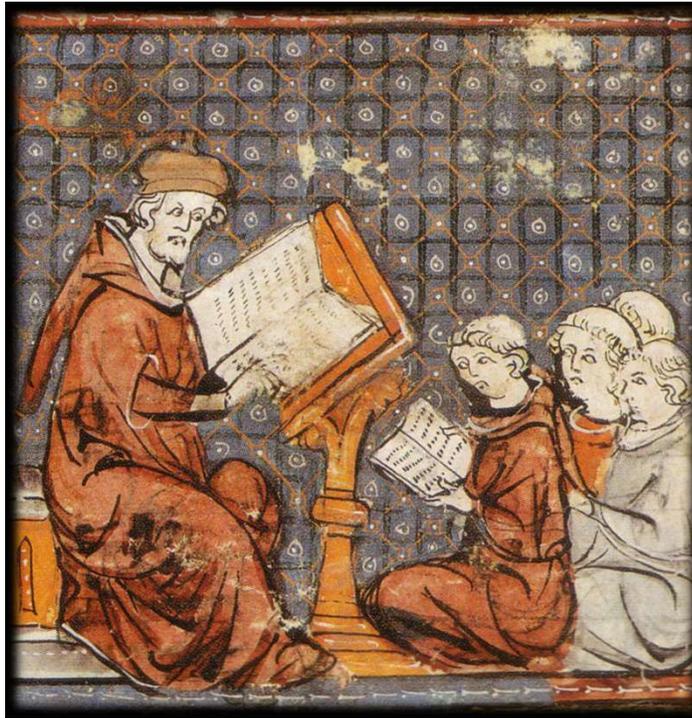
Michael Martin
(1932-2015)



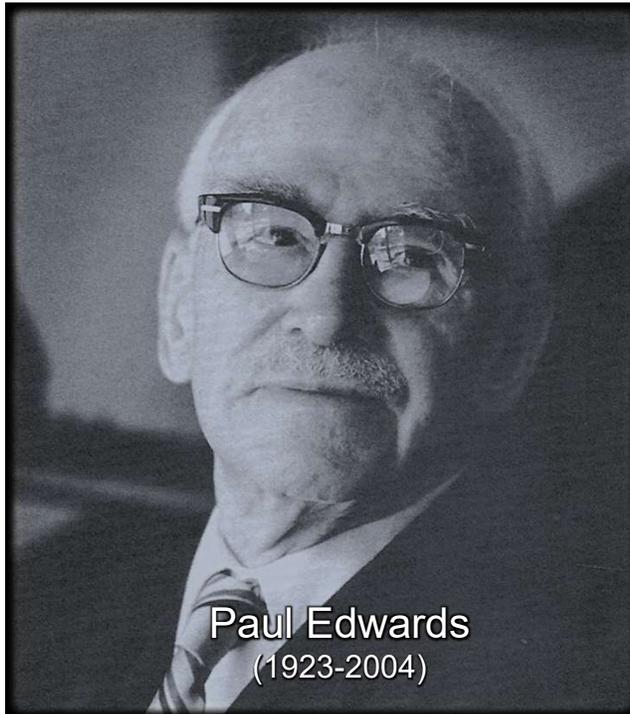
"If you look up 'atheism' in a dictionary, you will find it defined as the belief that there is no God. Certainly, many people understand 'atheism' in this way. Yet this is not what the term means if one considers it from the point of view of its Greek roots. In Greek 'a' means 'without' or 'not' and 'theos' 'god.' From this stand point, an atheist is someone without a belief in God; he or she need not be someone who believes that God does not exist."

[n.a., "General Introduction," in *The Cambridge Companion to Atheism* (Cambridge: Cambridge University Press, 2007), 1]

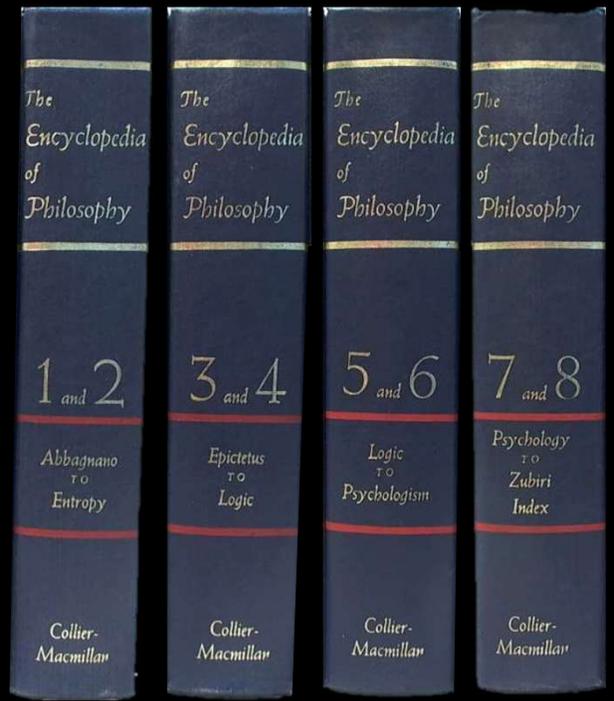
Michael Martin
(1932-2015)

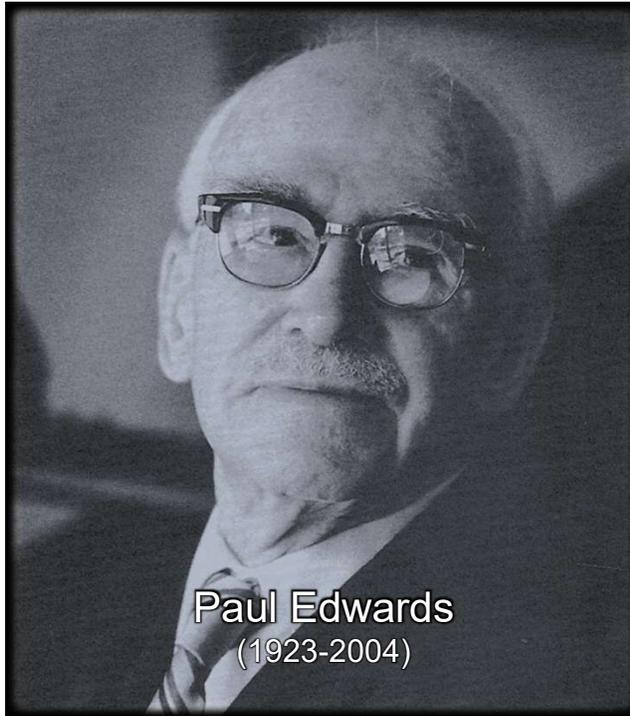


Second, this definition conflicts with the standard academic definition of atheism.



Paul Edwards
(1923-2004)

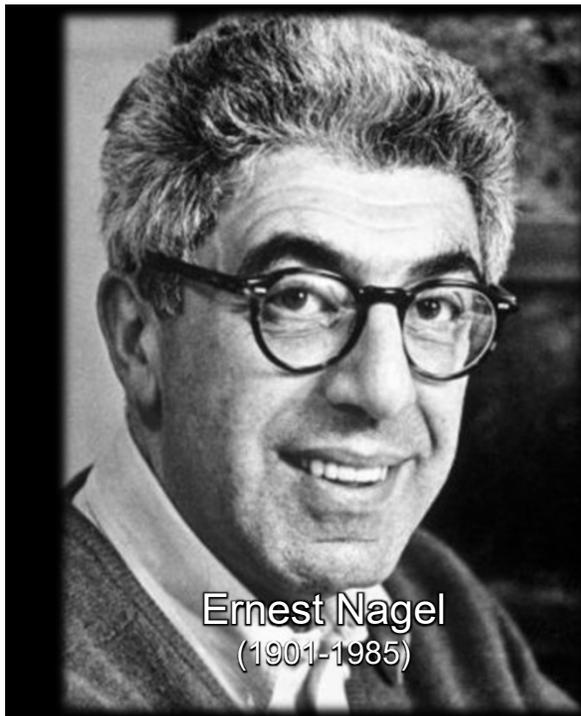




Paul Edwards
(1923-2004)

"According to the most usual definition, an 'atheist' is a person who maintains that there is no God, that is, that the sentence 'God exists' expresses a false proposition."

[Paul Edwards ed. in chief, *The Encyclopedia of Philosophy* (New York: Macmillan Publishing Co., Inc., 1967): s.v. "Atheism," p. 175.]



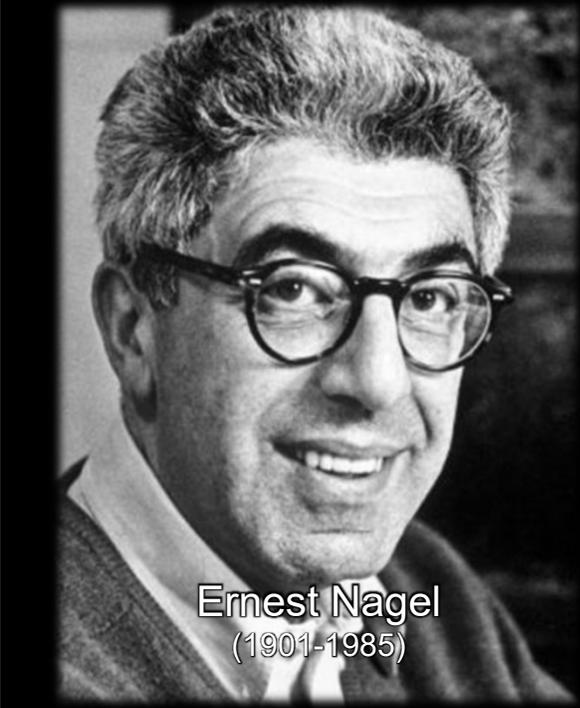
Ernest Nagel
(1901-1985)

Critiques of **GOD**

Making the case against
belief in God

- KURT BAIER
- JOHN DEWEY
- PAUL EDWARDS
- ANTONY FLEW
- SIGMUND FREUD
- ERICH FROMM
- SIDNEY HOOK
- WALTER KAUFMANN
- CORLISS LAMONT
- WALLACE I. MATSON
- H. J. McCLOSKEY
- ERNEST NAGEL
- KAI NIELSEN
- RICHARD ROBINSON
- BERTRAND RUSSELL
- MICHAEL SCRIVEN

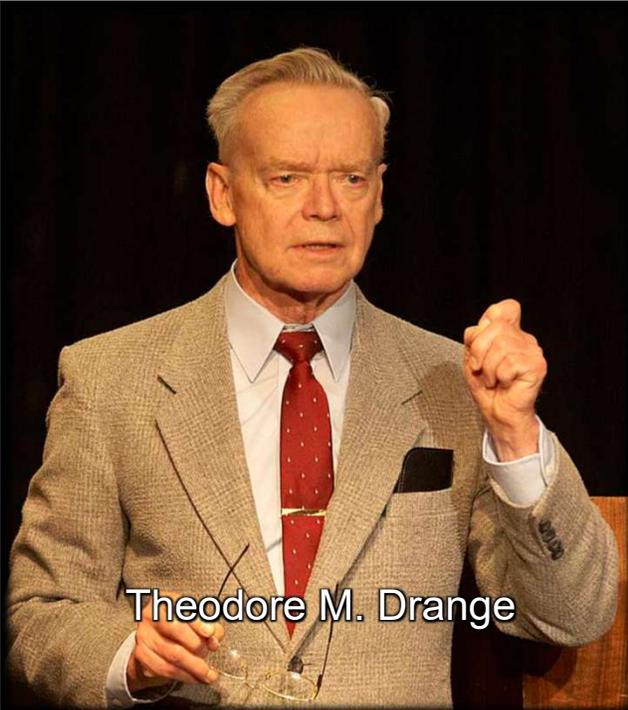
Edited by
PETER A. ANGELES



Ernest Nagel
(1901-1985)

"[A]theism is not to be identified with sheer unbelief.... A child who has received no religious instruction ... is not an atheist—for he is not denying any theistic claims."

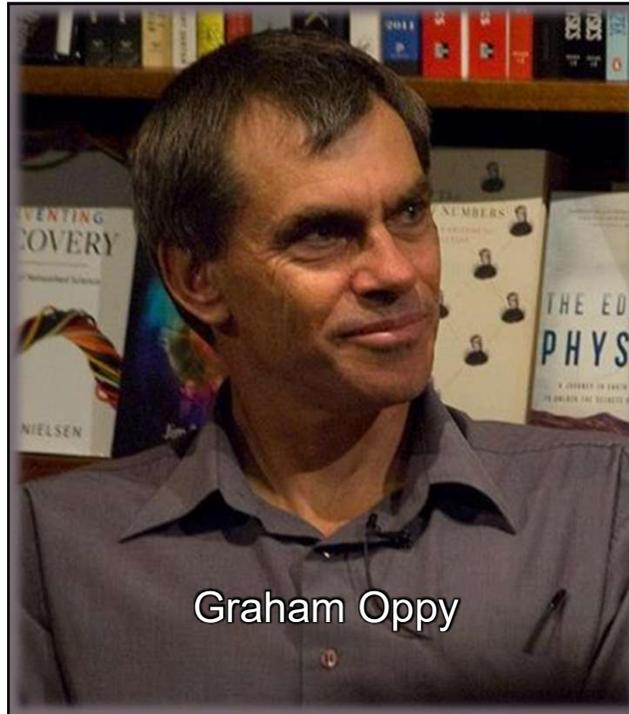
[Ernest Nagel, "Philosophical Concepts of Atheism" in *Critiques of God: Making the Case Against Belief in God*, Peter A. Angeles, ed. pp. 4-5]



Theodore M. Drange

"Is the proposition that God exists true or false? You are a theist if and only if you say that the proposition is true or probably true, you are an atheist if and only if you say that it is false or probably false, and you are an agnostic if and only if you understand what the proposition is, but resist giving either answer, and support your resistance by saying, 'The evidence is insufficient' (or words to that effect)."

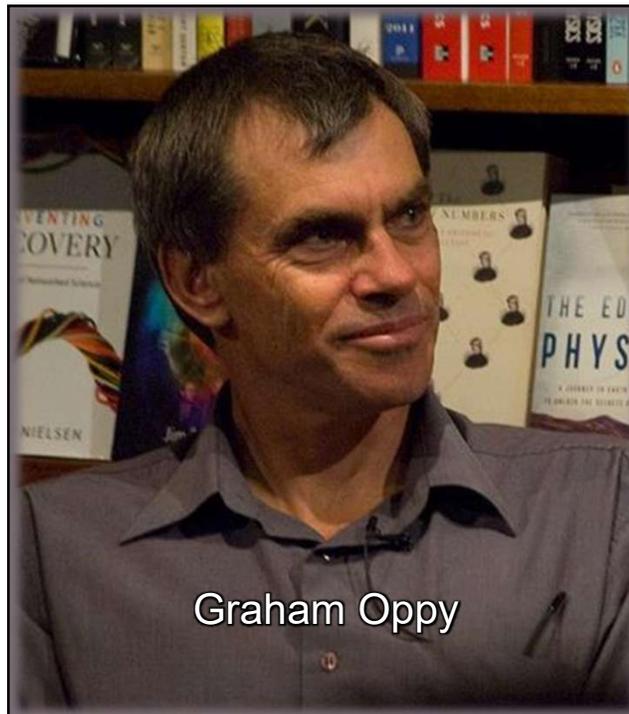
[Theodore M. Drange "Atheism, Agnosticism, Noncognitivism," from https://infidels.org/library/modern/theodore_drange/definition.html, accessed 01/15/19]



Graham Oppy

"Properly, we should define theism as the view that there's at least one god and atheism as the view that there are no gods, and monotheism then as the view that there is exactly one God and we call that one God with a capital 'G'. Atheists then are people who believe that there are no gods and particular in our context, they believe that God doesn't exist.

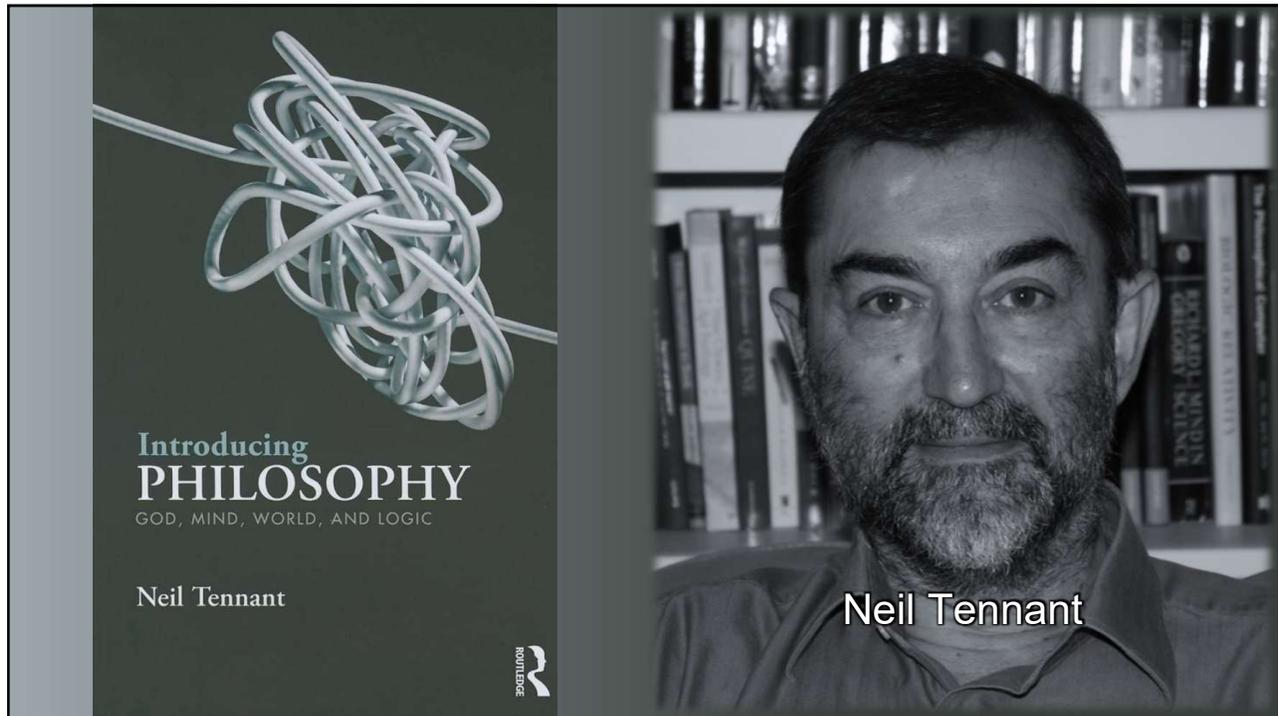
...



Graham Oppy

"Other people like to say that atheism is just lacking the belief that God exists which lumps together ... the class of agnostics with the class of atheists; if you define it that way, which I don't like."

[Graham Oppy vs. Ben Arbour, "The Ontological Argument" on *Capturing Christianity*; You Tube video <https://www.youtube.com/watch?v=udxfuPgq4TY>, @1:05:20, accessed 08/12/25]

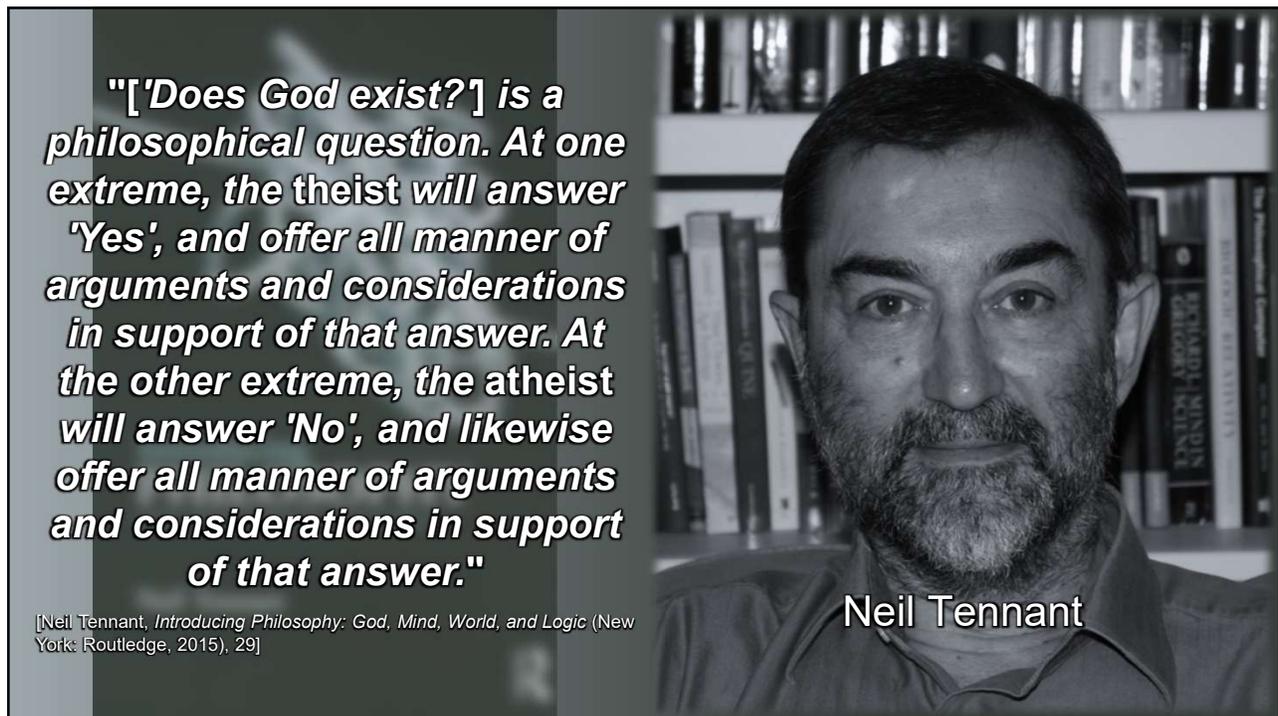


Introducing
PHILOSOPHY
GOD, MIND, WORLD, AND LOGIC

Neil Tennant

R
ROUTLEDGE

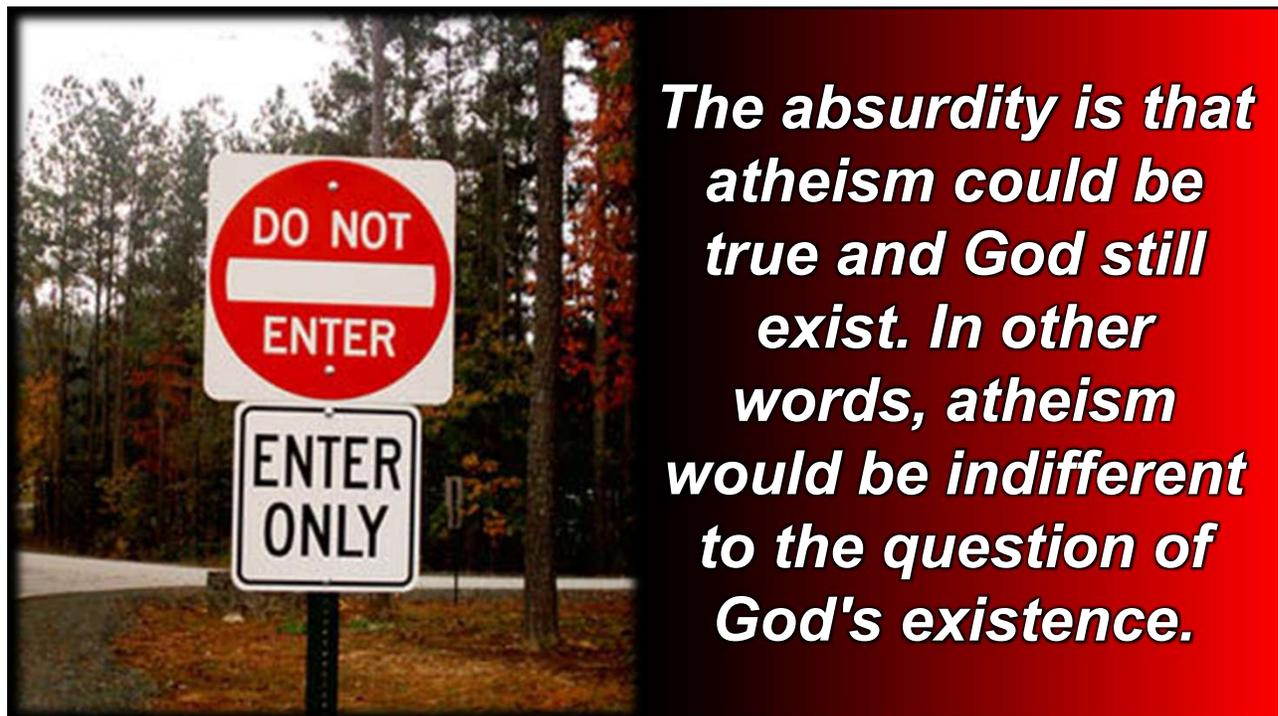
Neil Tennant

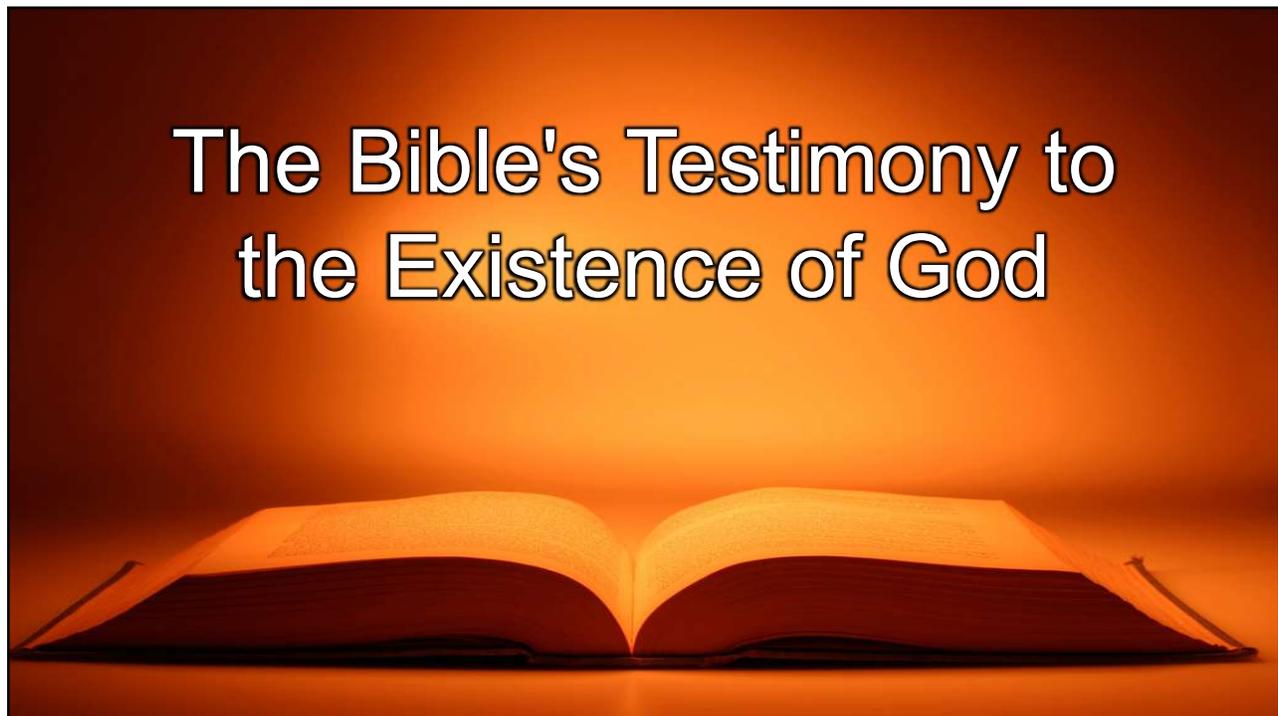


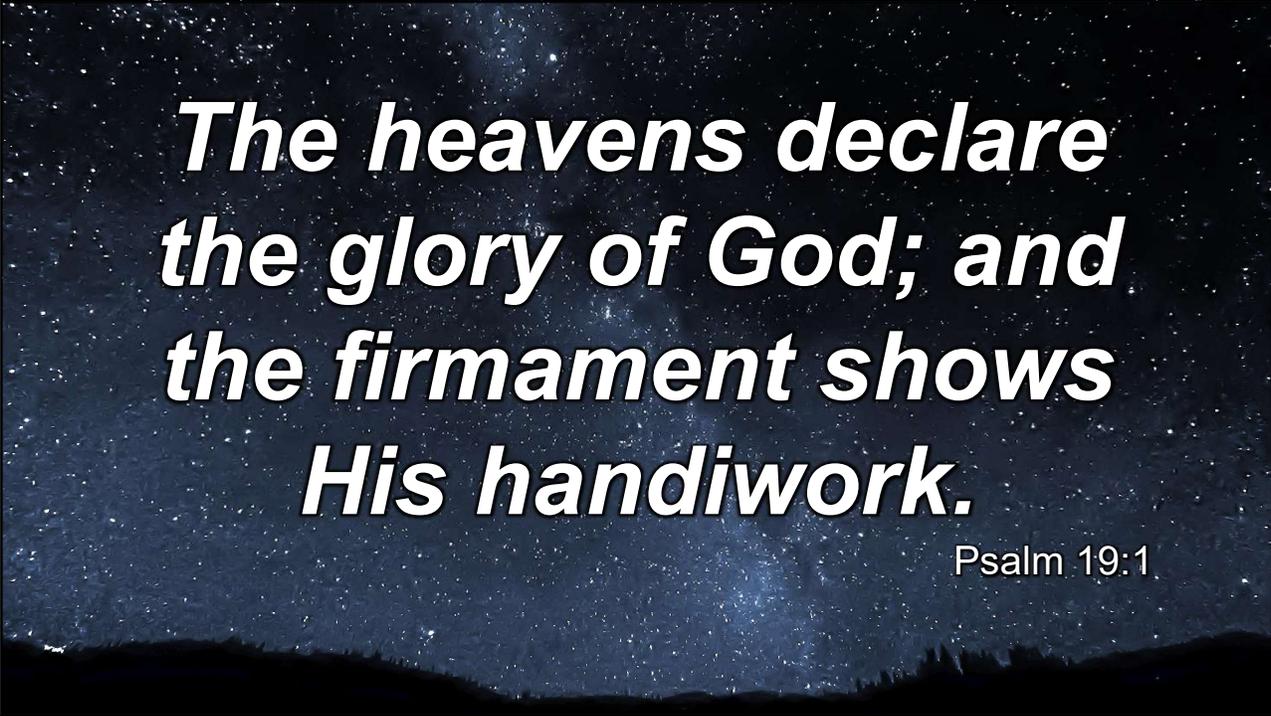
"['Does God exist?'] is a philosophical question. At one extreme, the theist will answer 'Yes', and offer all manner of arguments and considerations in support of that answer. At the other extreme, the atheist will answer 'No', and likewise offer all manner of arguments and considerations in support of that answer."

[Neil Tennant, *Introducing Philosophy: God, Mind, World, and Logic* (New York: Routledge, 2015), 29]

Neil Tennant

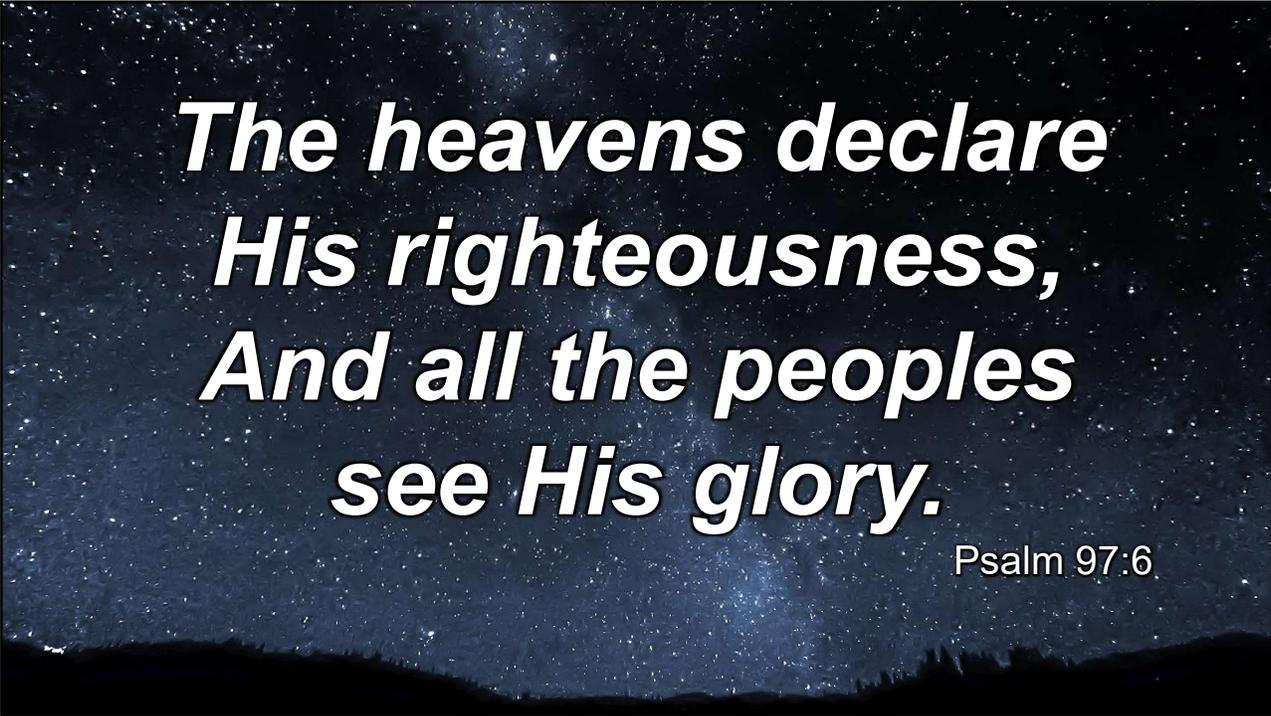






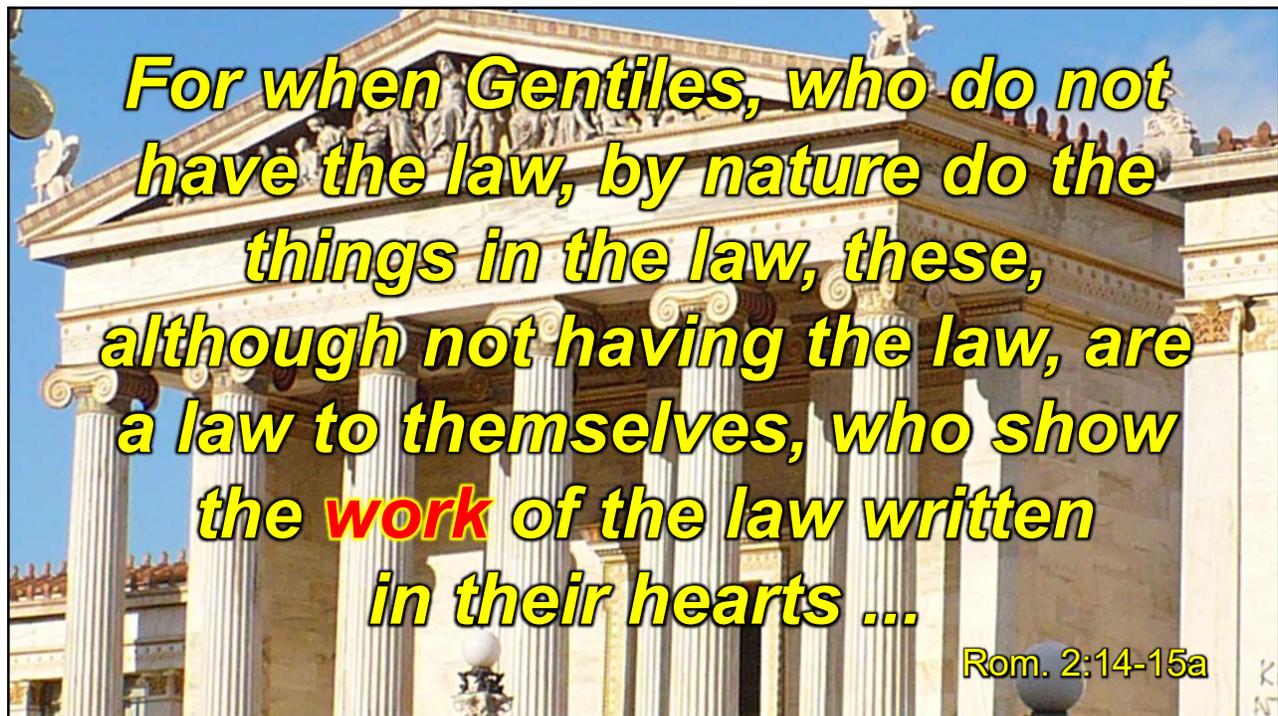
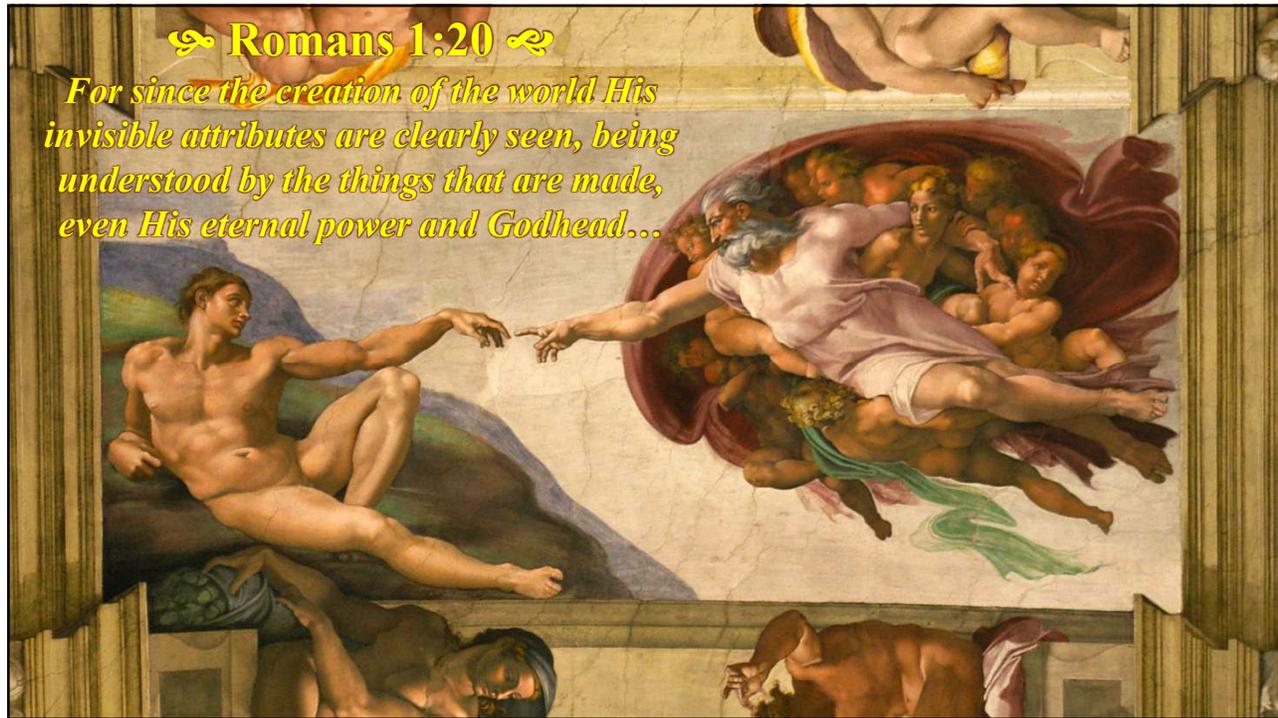
***The heavens declare
the glory of God; and
the firmament shows
His handiwork.***

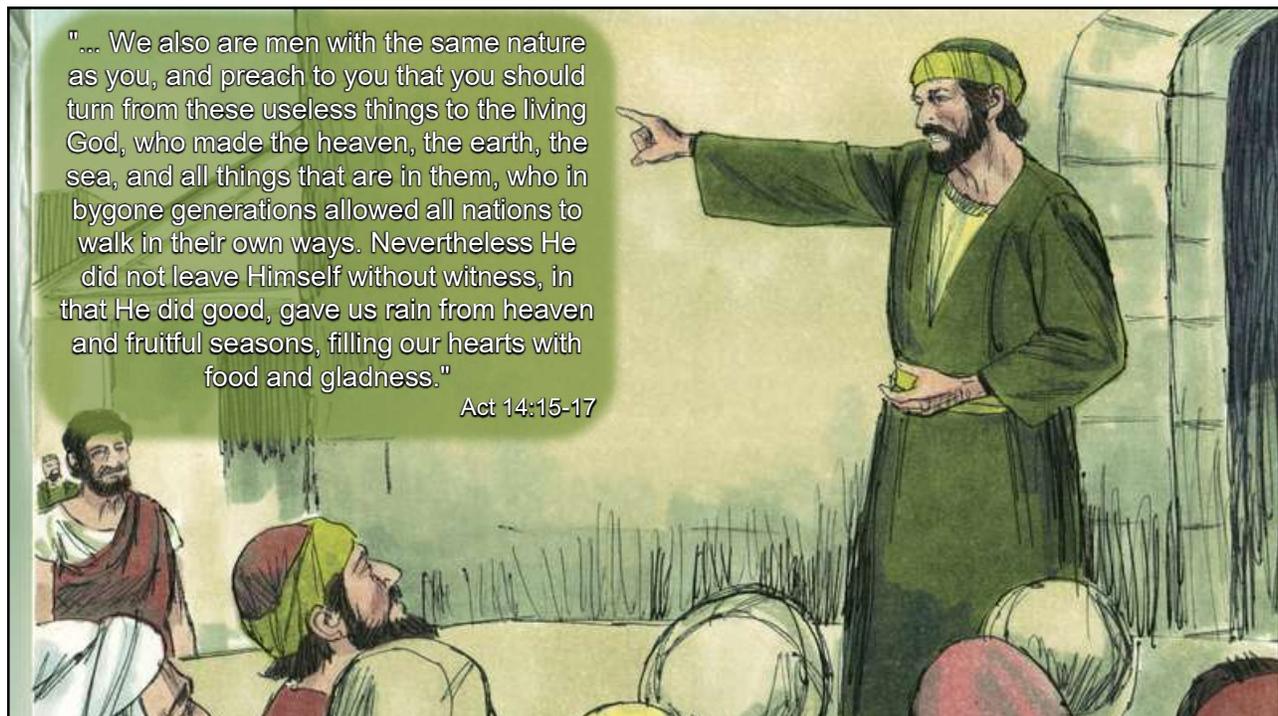
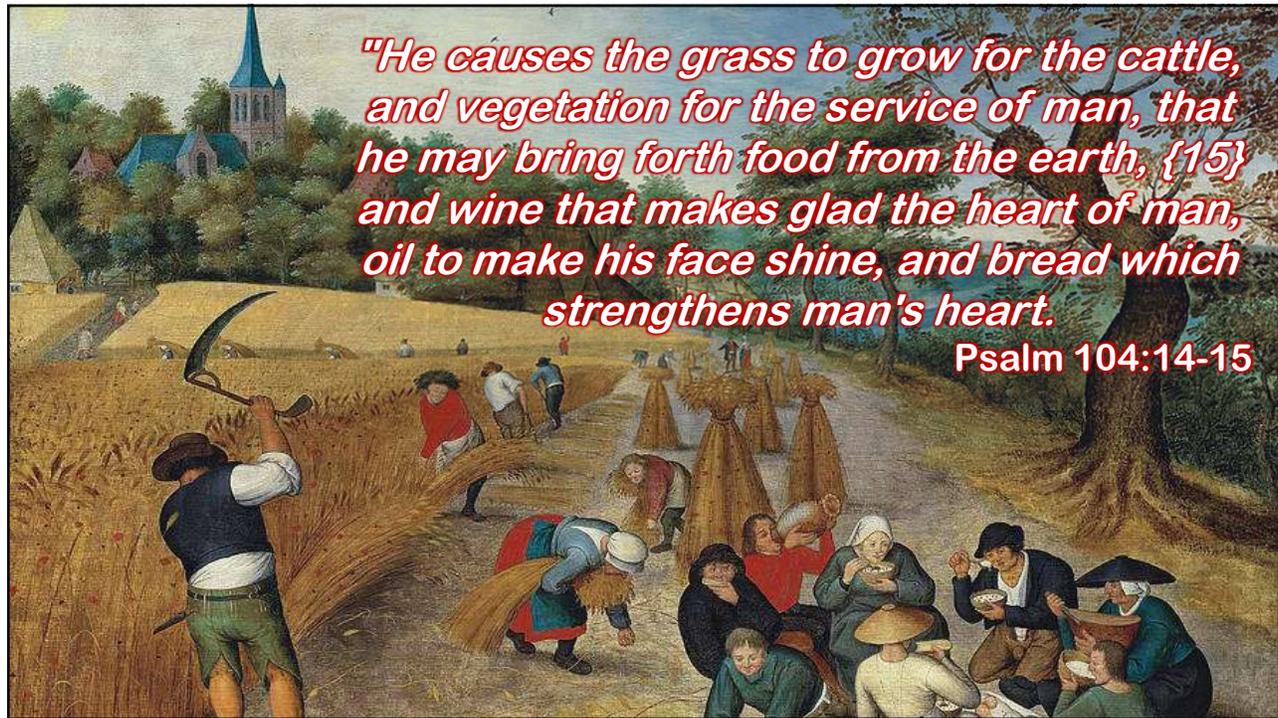
Psalm 19:1

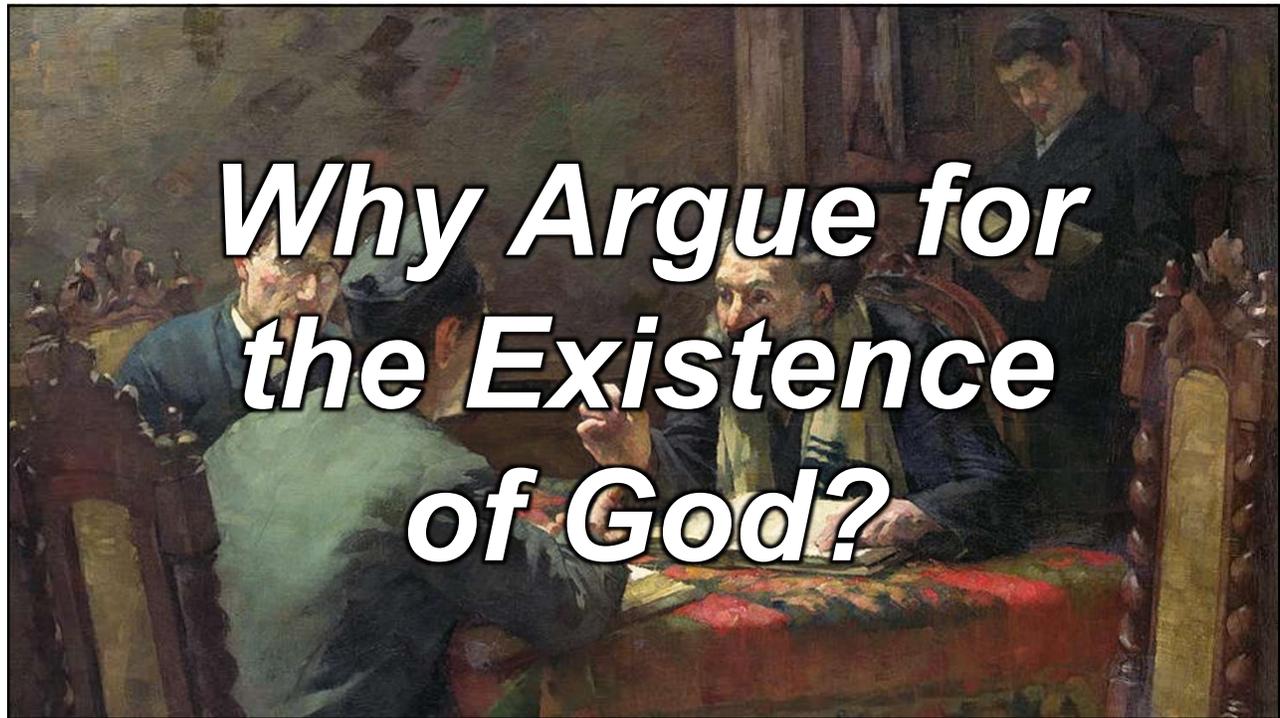


***The heavens declare
His righteousness,
And all the peoples
see His glory.***

Psalm 97:6





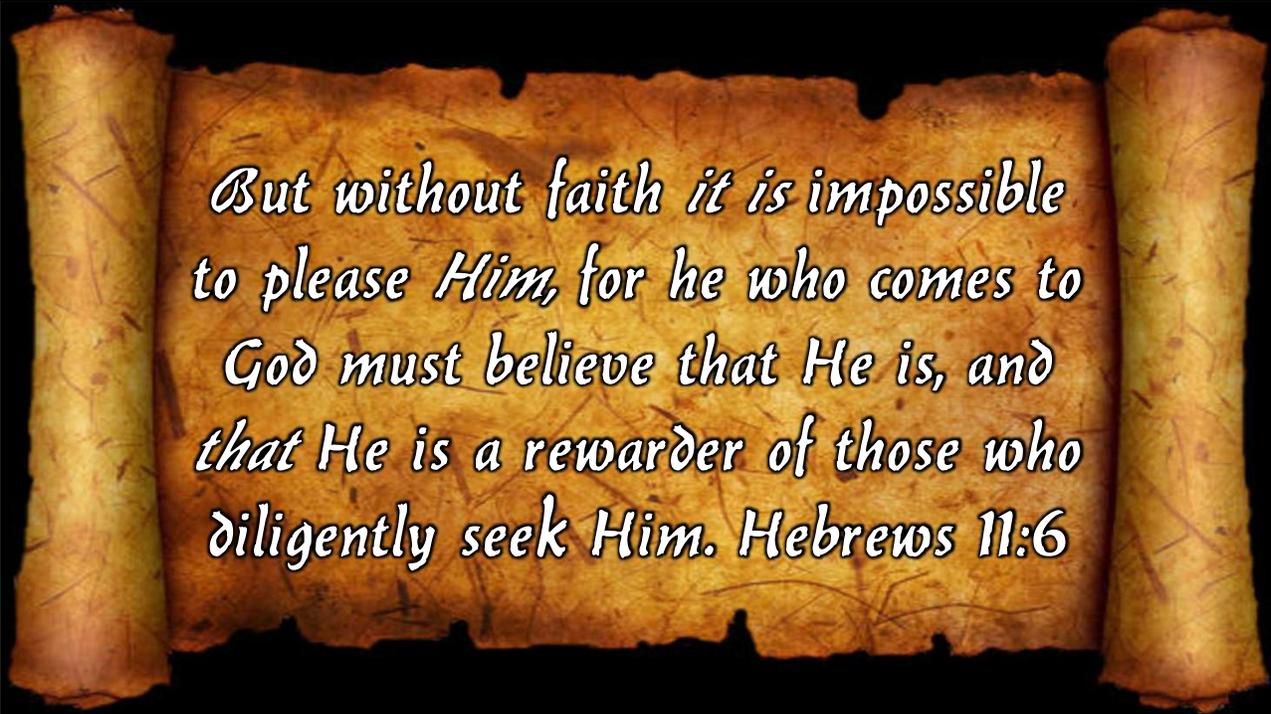


∞ Belief in God and Eternal Life ∞

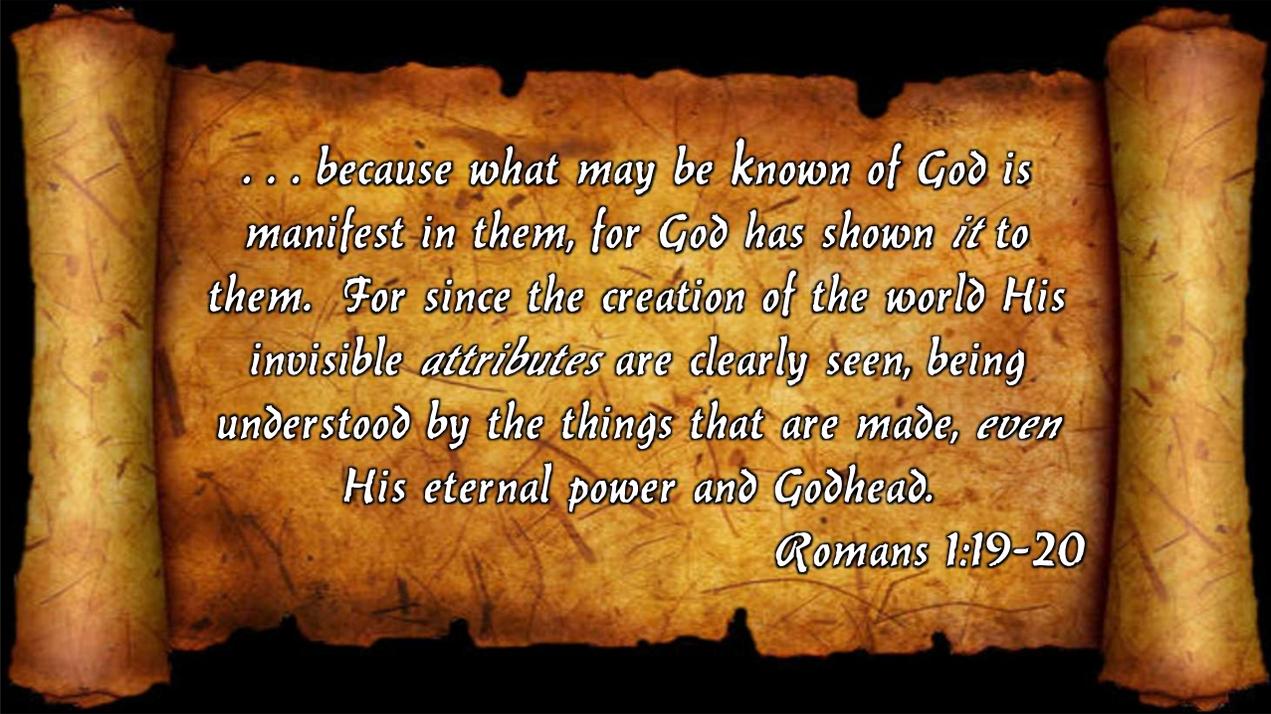
You can't argue someone into faith in Christ.

Belief in God is a necessary but not sufficient condition for salvation.

One can be lost and still believe in God's existence, but one cannot get saved without believing in God's existence.



But without faith it is impossible to please Him, for he who comes to God must believe that He is, and that He is a rewarder of those who diligently seek Him. Hebrews 11:6



. . . because what may be known of God is manifest in them, for God has shown it to them. For since the creation of the world His invisible attributes are clearly seen, being understood by the things that are made, even His eternal power and Godhead.

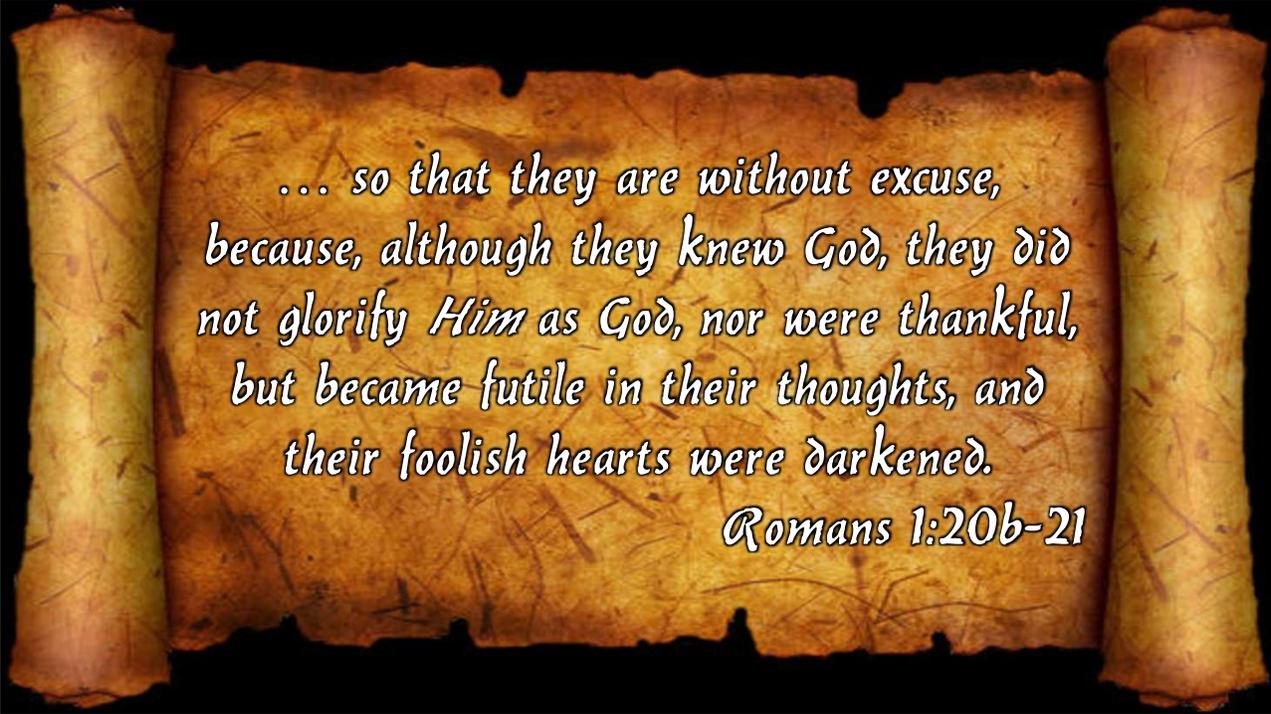
Romans 1:19-20

☞ Belief in God and the Evidence ☞

God may use the evidence to bring some to believe that God exists.

Evidence can expose the fact that, for some, the problem of unbelief is not a matter of their intellect.

Evidence can help strengthen the faith of those who already believe.

A scroll of aged parchment with a dark, textured surface, unrolled to reveal text. The scroll is set against a black background. The text is written in a white, serif font with a slight shadow effect.

*... so that they are without excuse,
because, although they knew God, they did
not glorify Him as God, nor were thankful,
but became futile in their thoughts, and
their foolish hearts were darkened.*

Romans 1:20b-21

*Now a certain Jew named Apollos, born at Alexandria, an eloquent man and mighty in the Scriptures, came to Ephesus. ... And when he desired to cross to Achaia, the brethren wrote, exhorting the disciples to receive him; and when he arrived, **he greatly helped those who had believed through grace**; for he vigorously refuted the Jews publicly, showing from the Scriptures that Jesus is the Christ.*

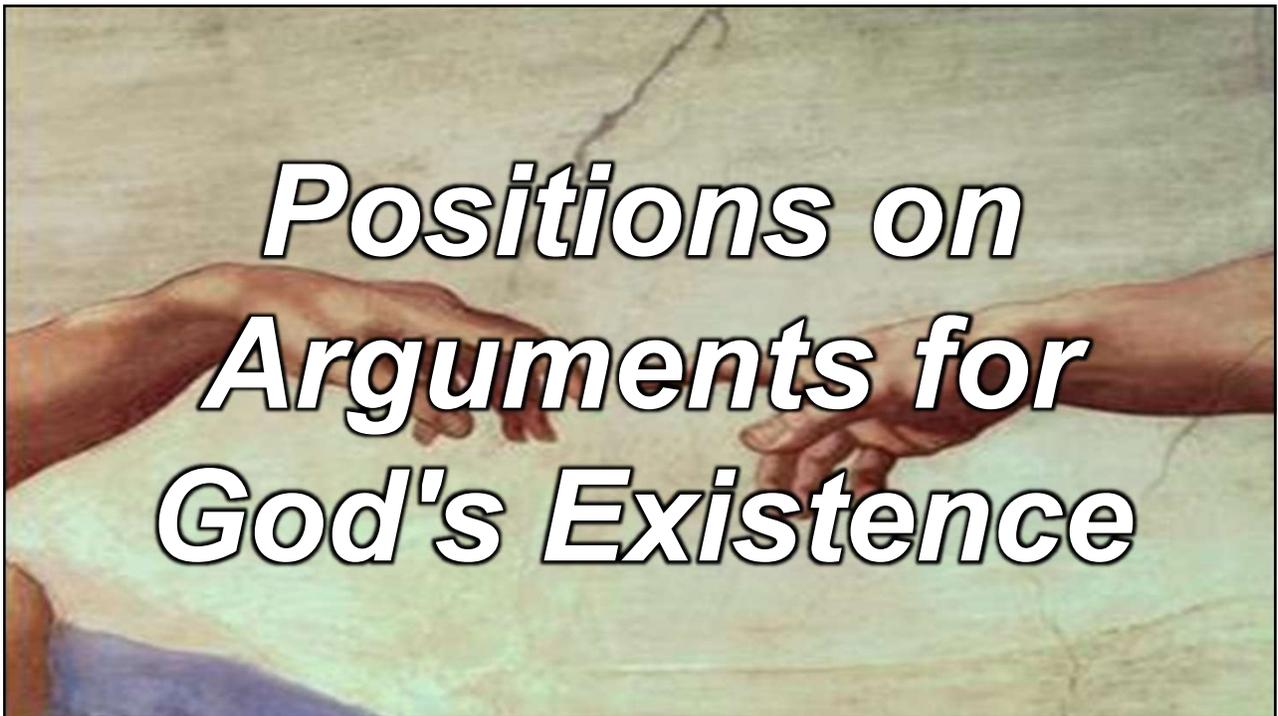
Acts 18:24, 27-28



∞ Belief in God and the World ∞

Belief in God is virtually universal geographically (all over the world) and chronologically (throughout all time).

This does not prove that God exists, but it may be an indicator that God exists.

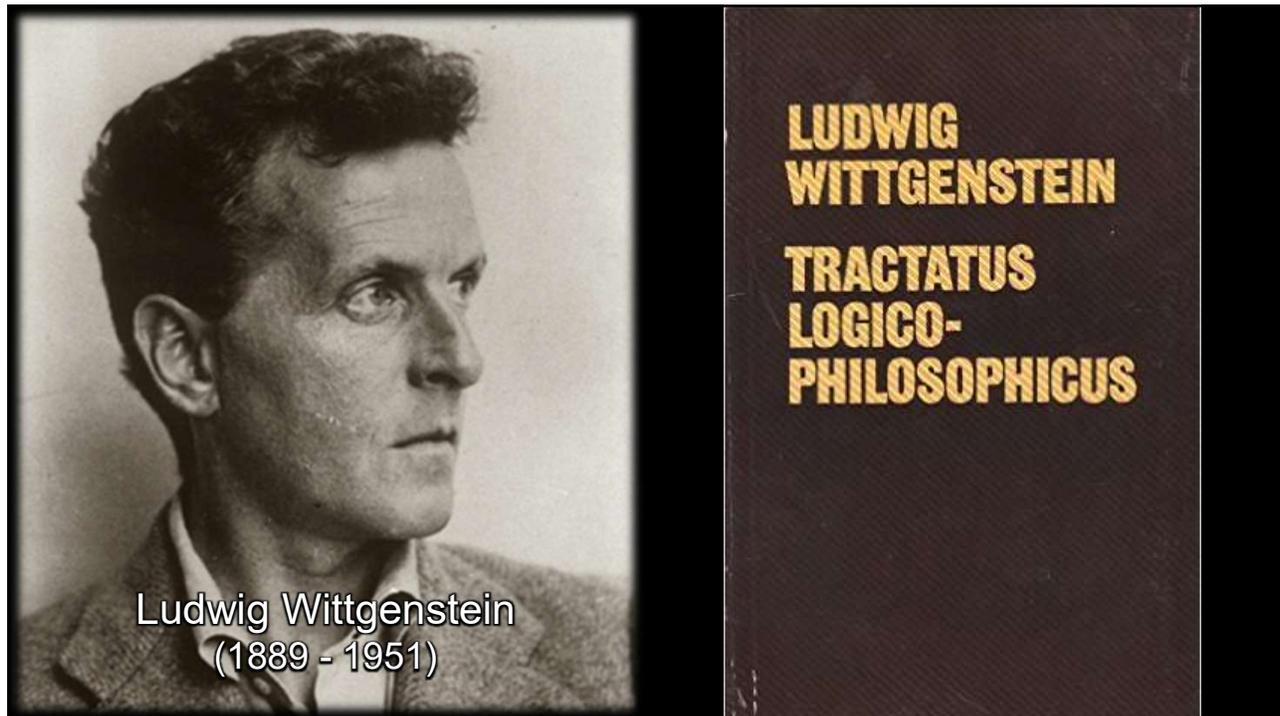
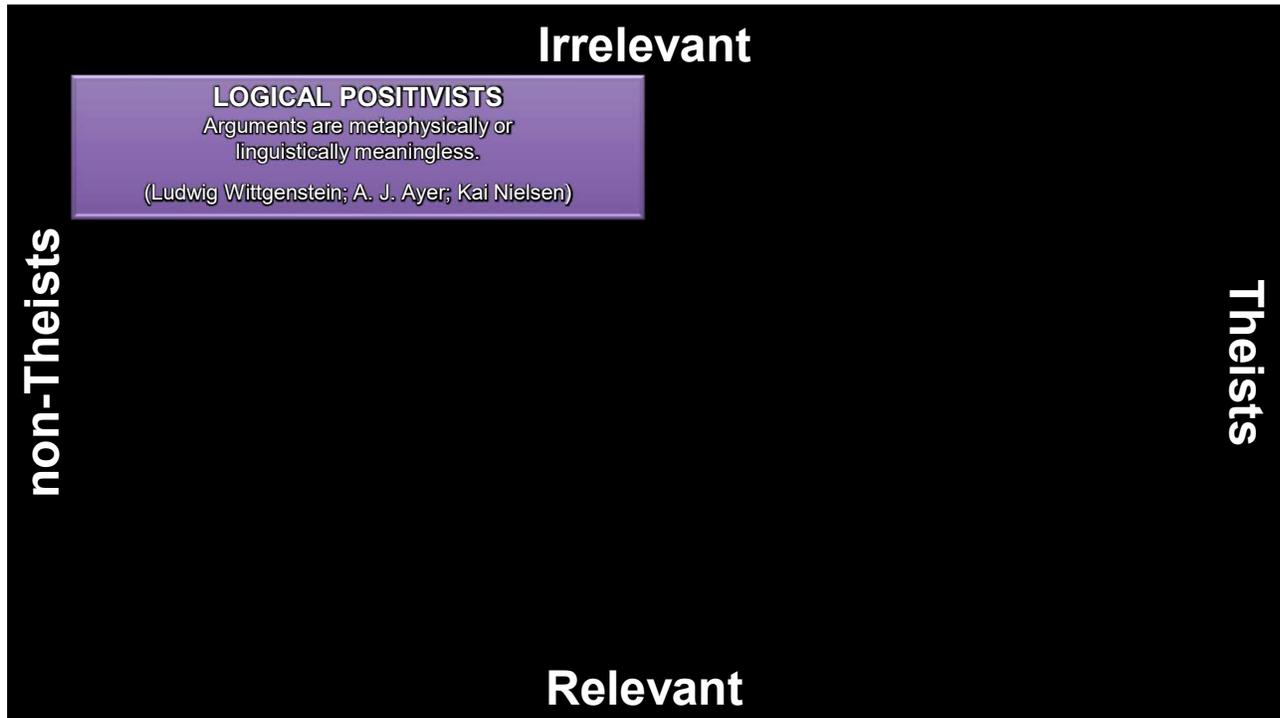


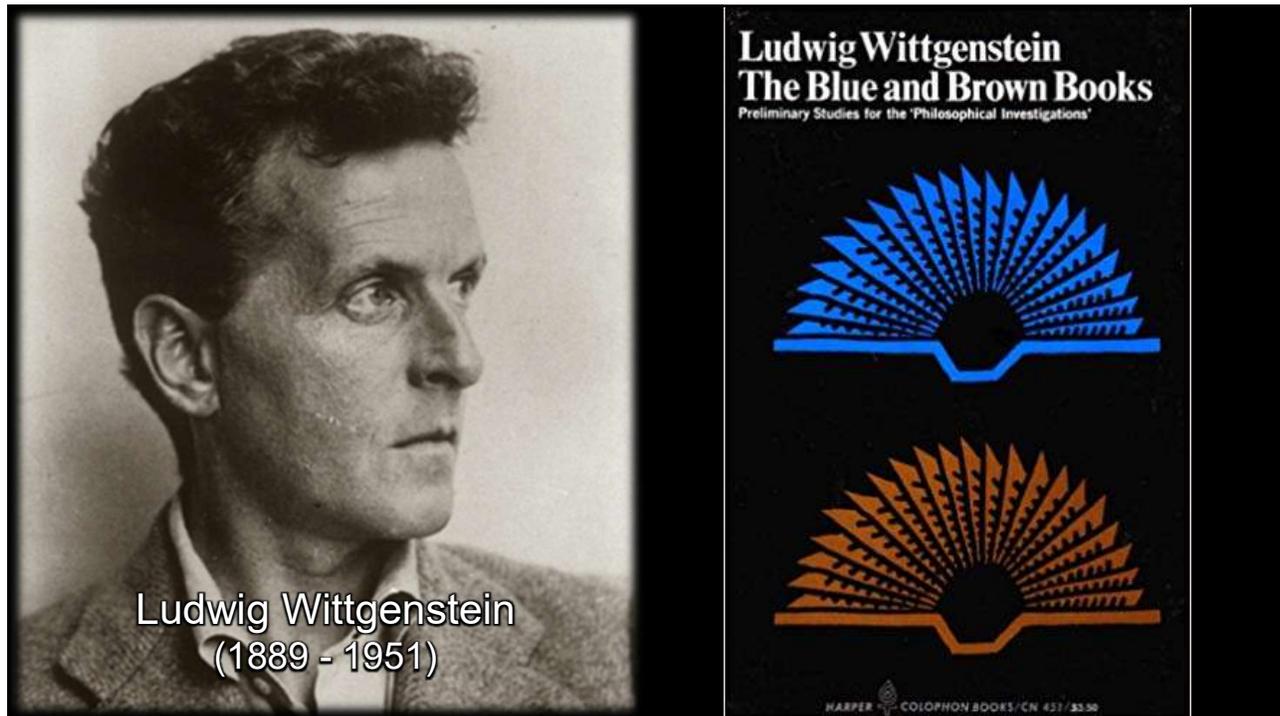
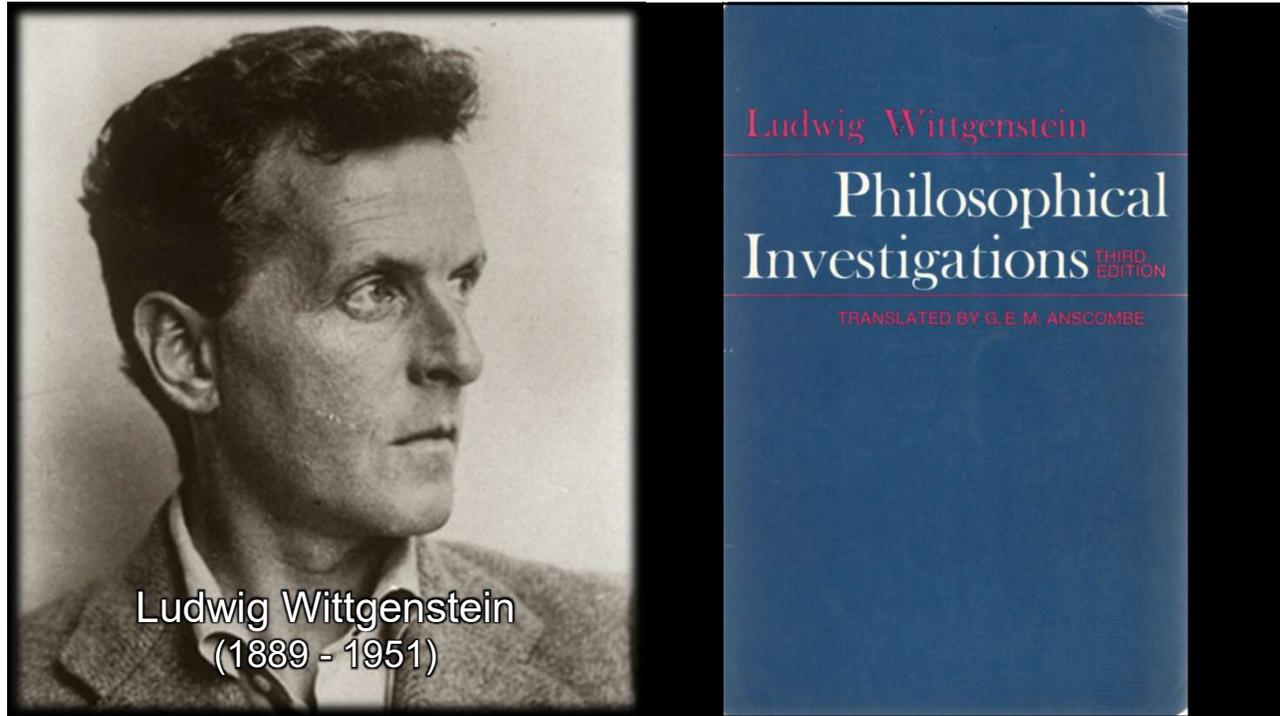
Perhaps it is not surprising that there are different views on whether or how there is any relevance for the arguments for the existence of God.

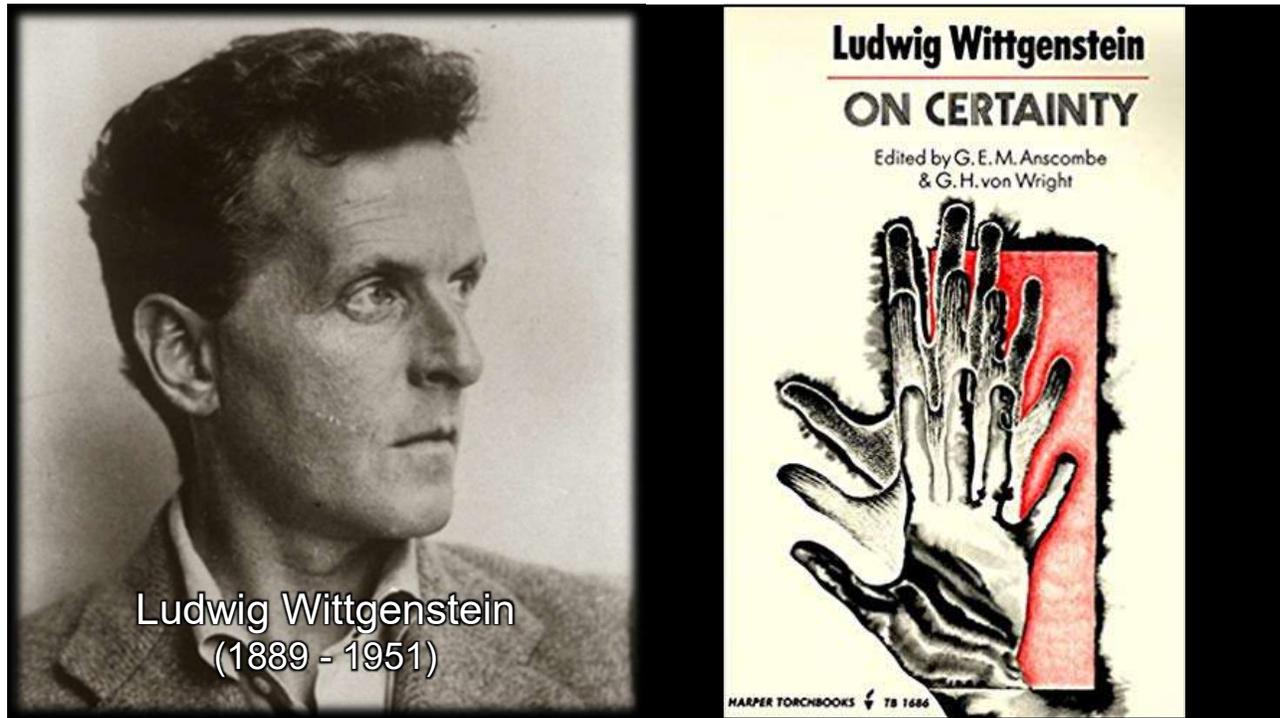
It might be surprising to some, however, that the different views do not fall along the lines of theists and non-theists.

In combining the options of theists and non-theists together with the options of relevant and irrelevant we get these results.

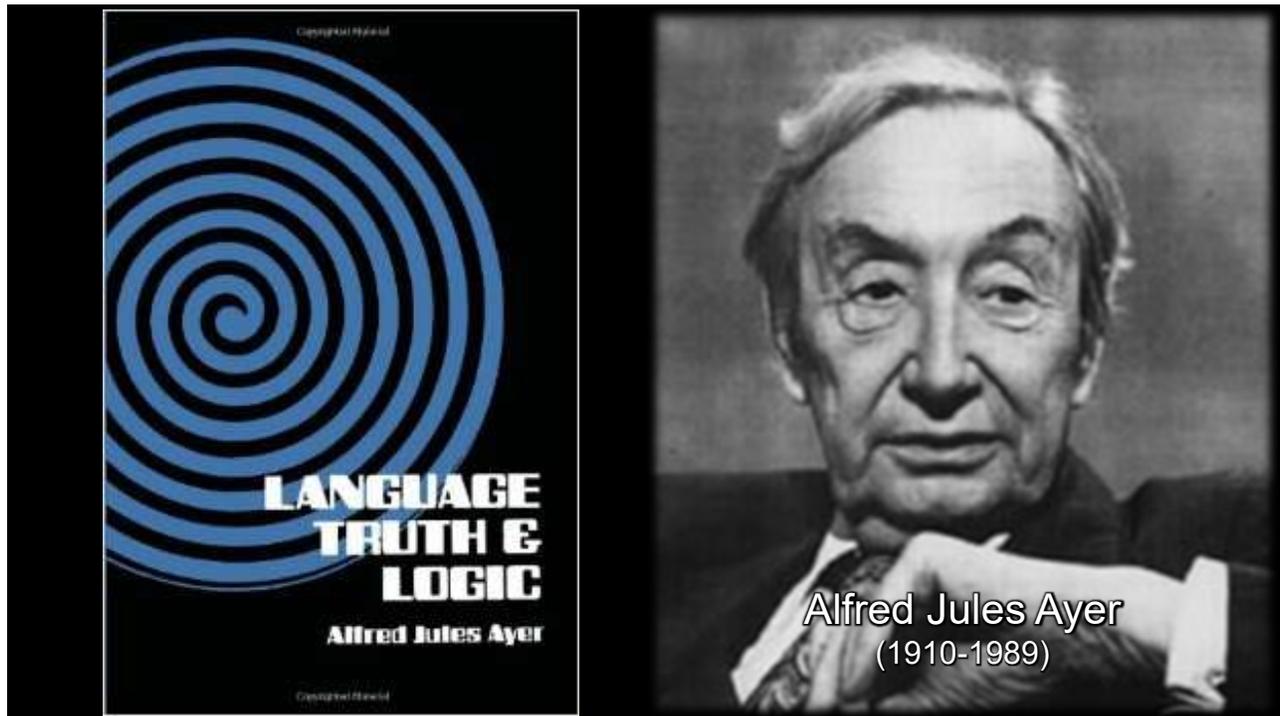
		Irrelevant		
non-Theists	non-Theists / Irrelevant	Theists / Irrelevant		Theists
	non-Theists / Relevant	Theists / Relevant		
		Relevant		



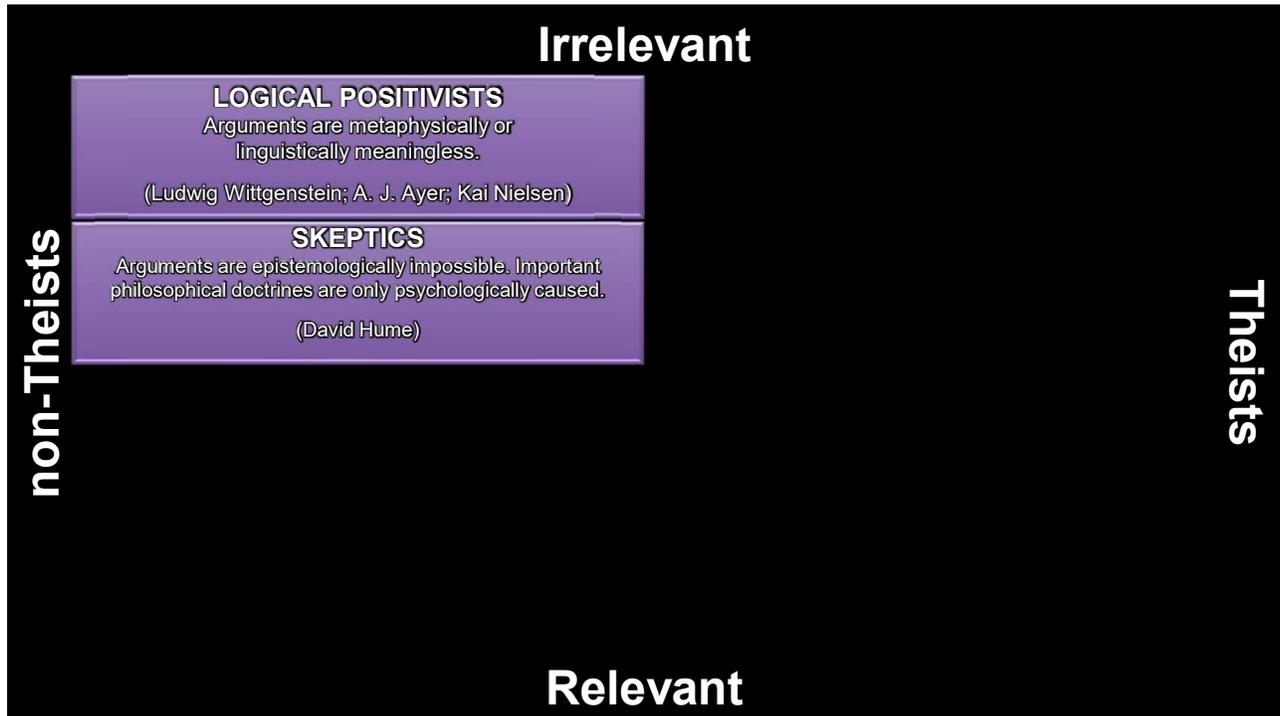
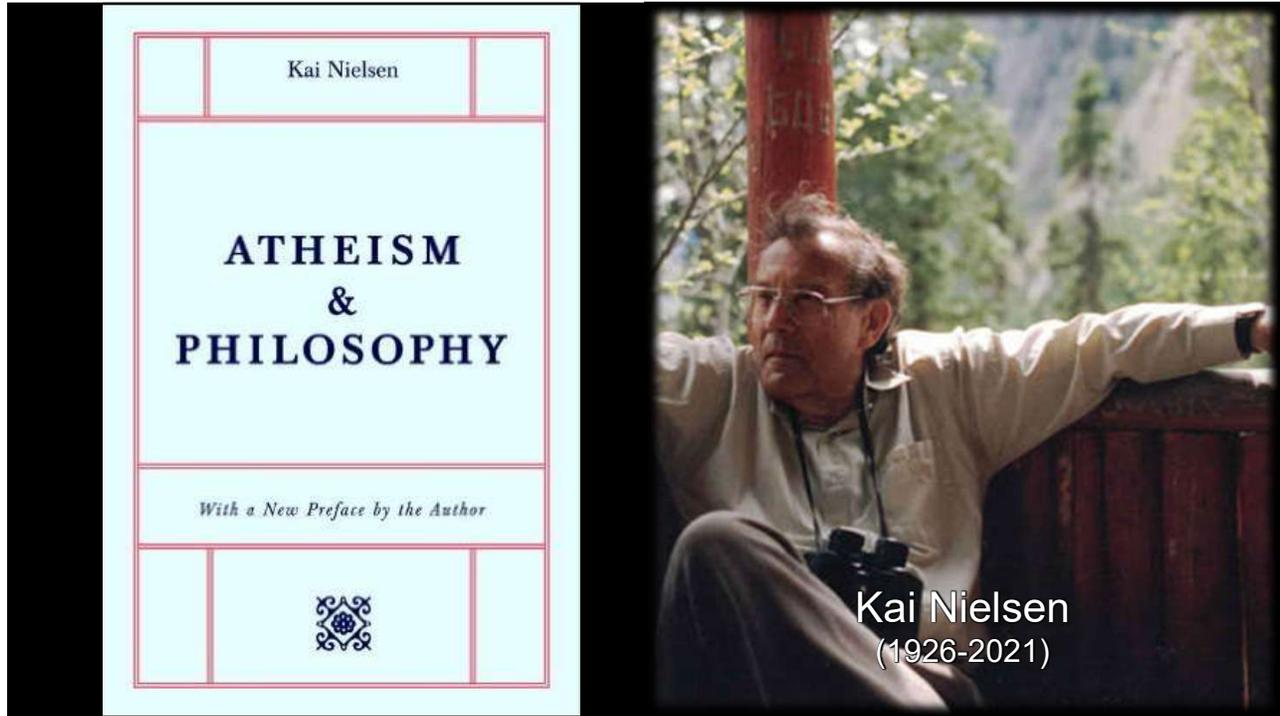


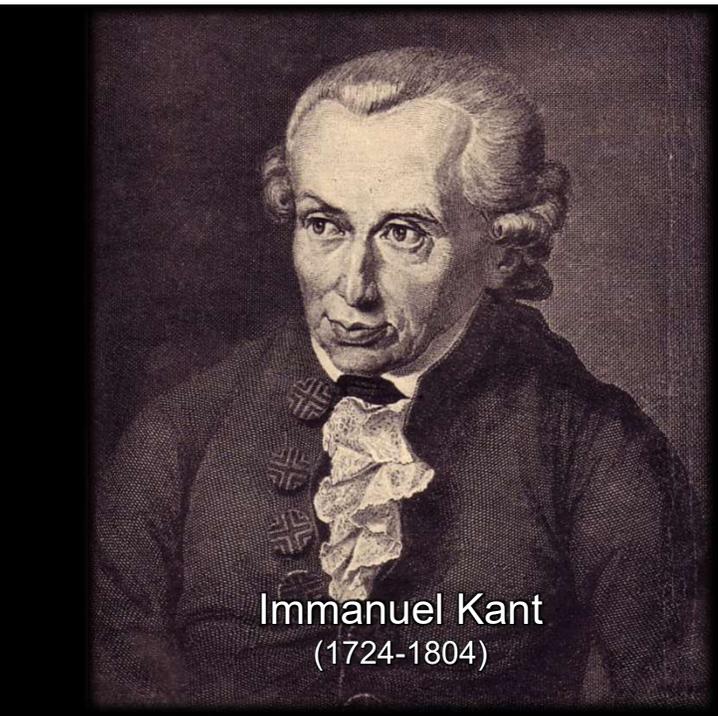
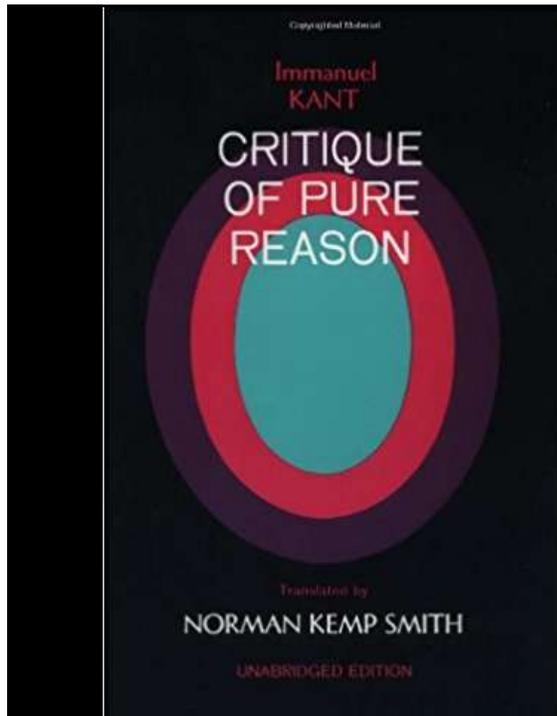
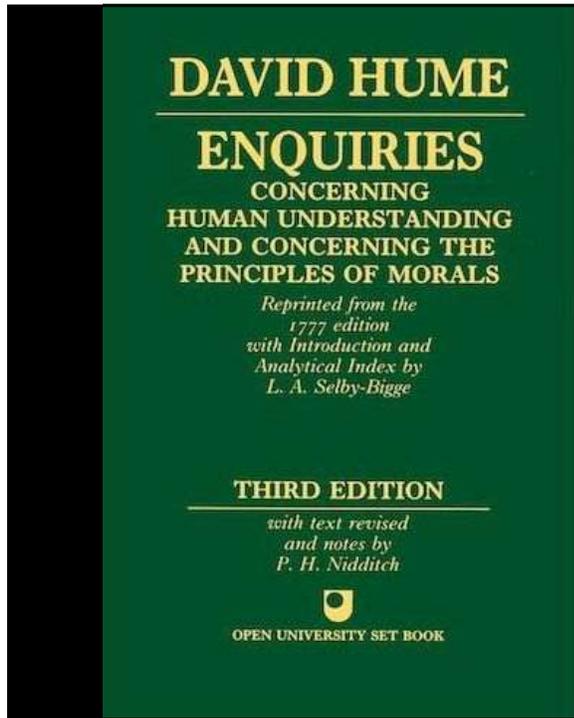


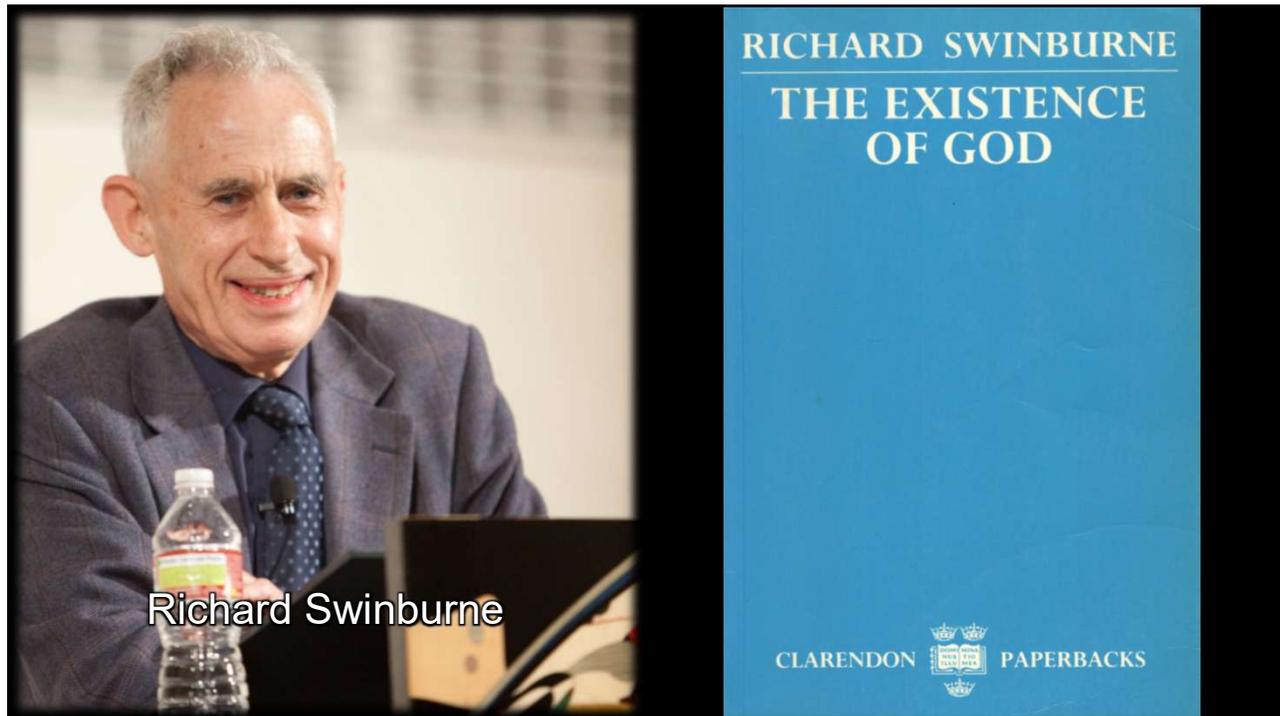
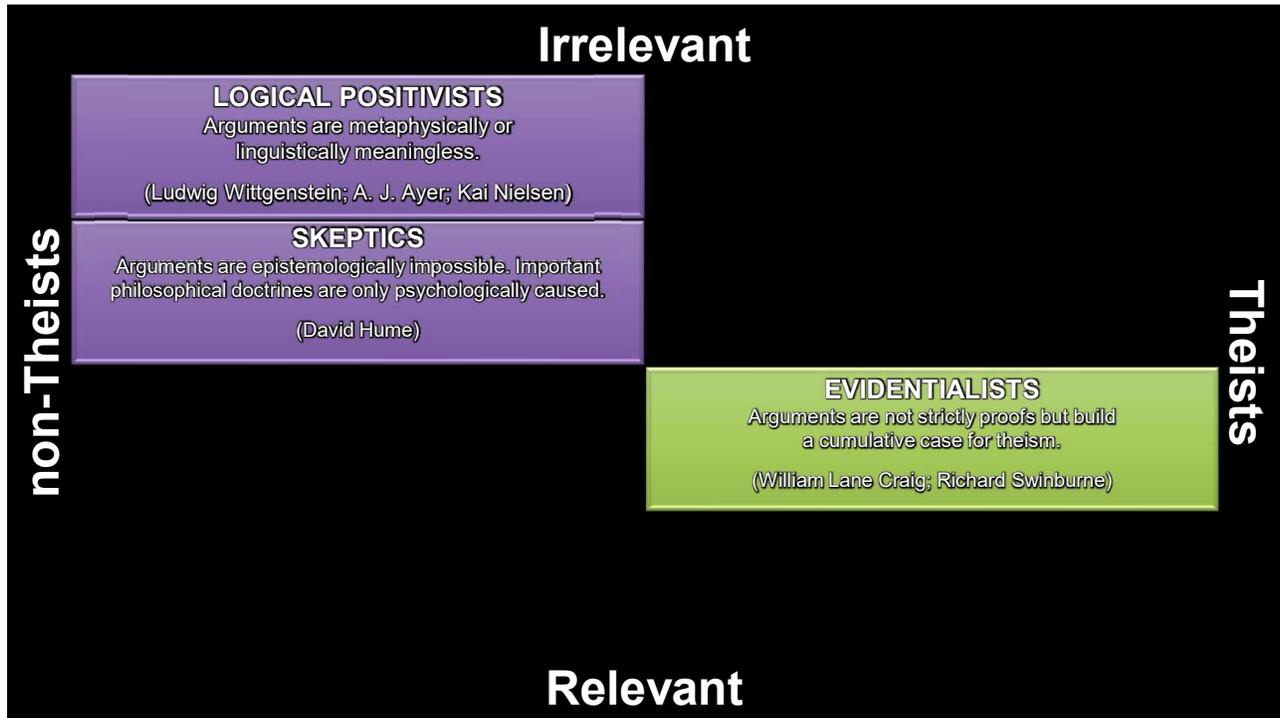
Ludwig Wittgenstein
(1889 - 1951)

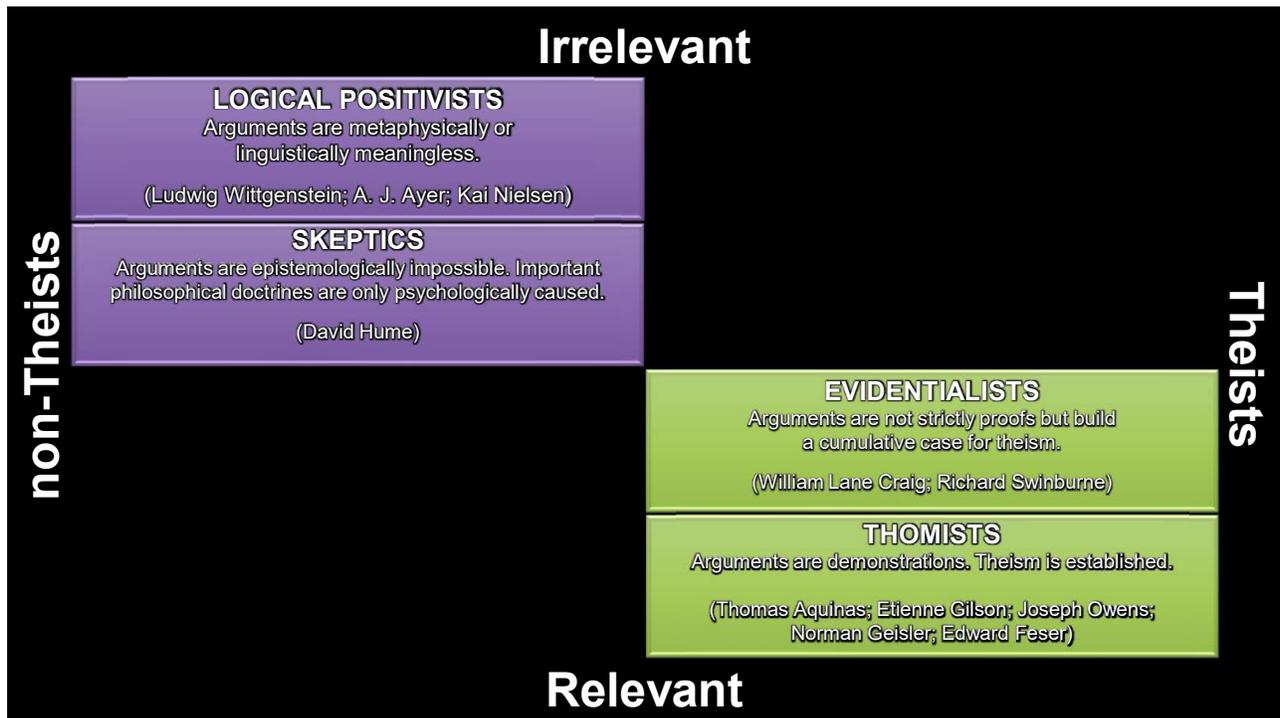
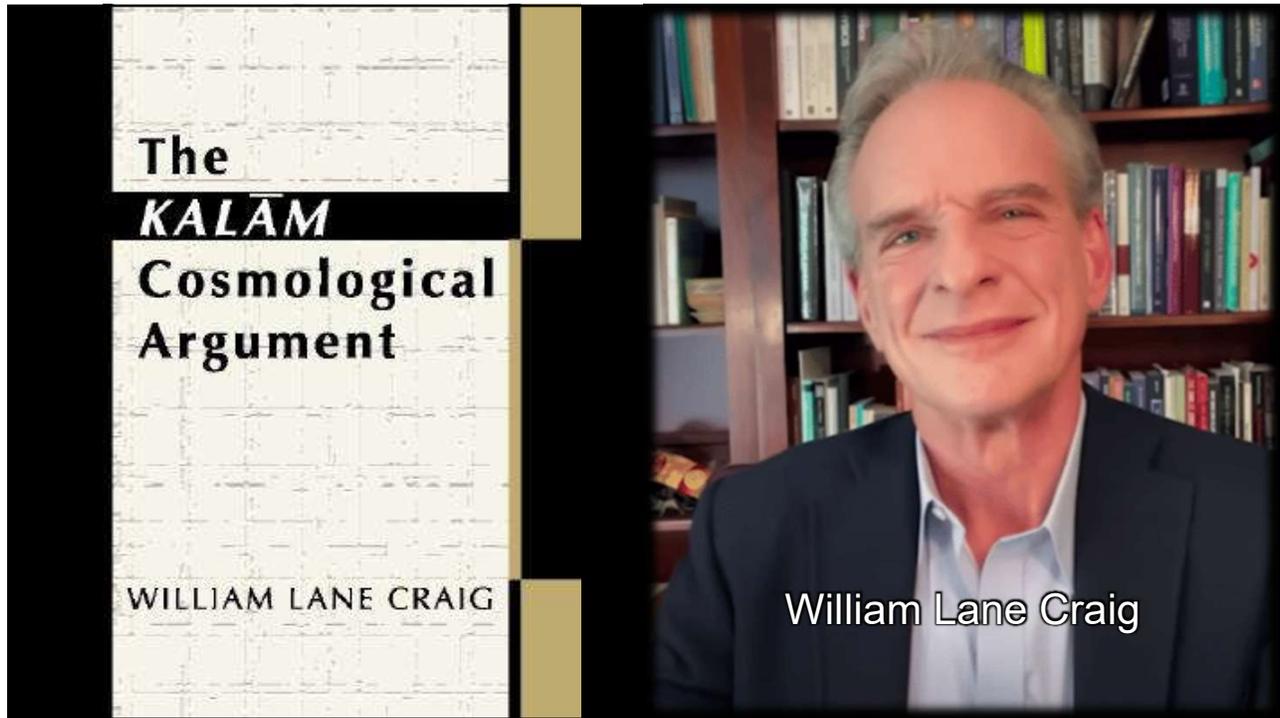


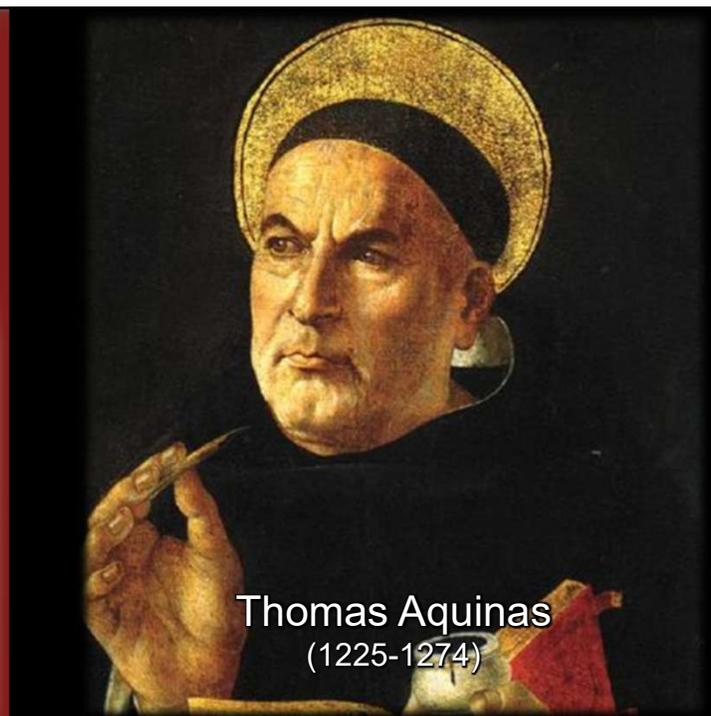
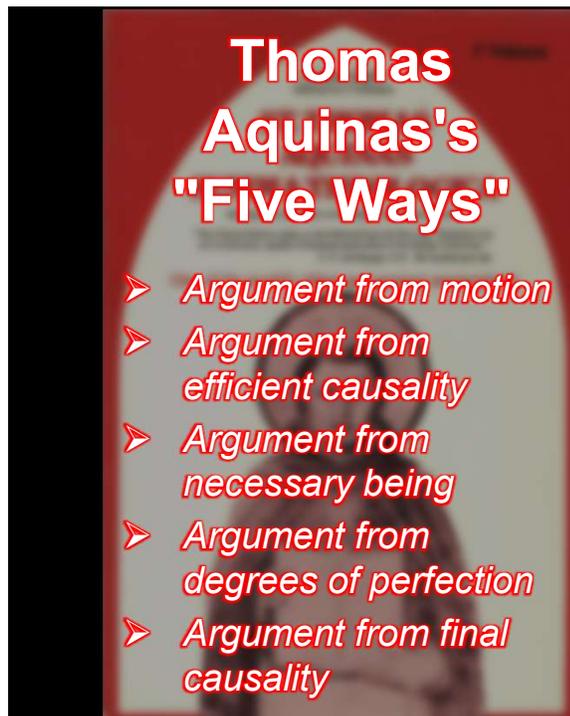
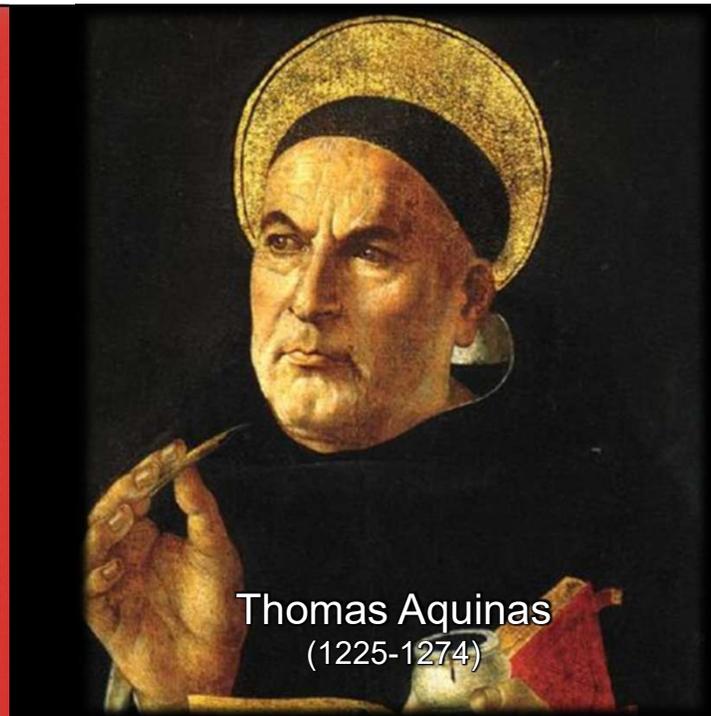
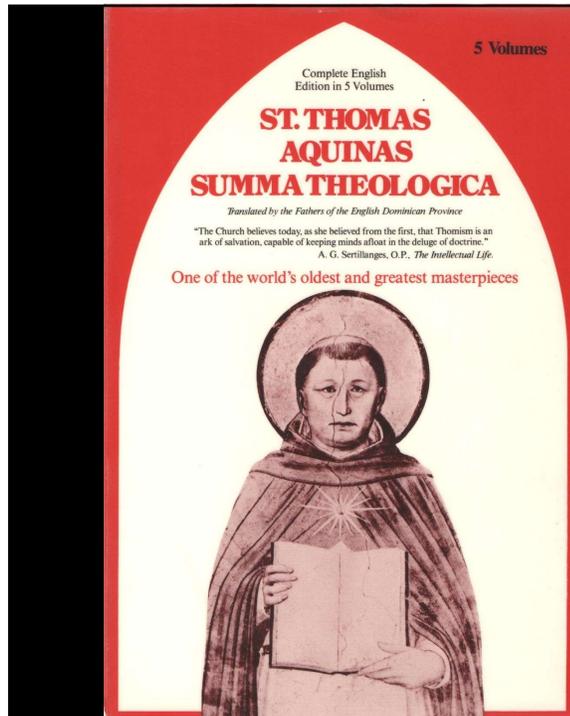
Alfred Jules Ayer
(1910-1989)

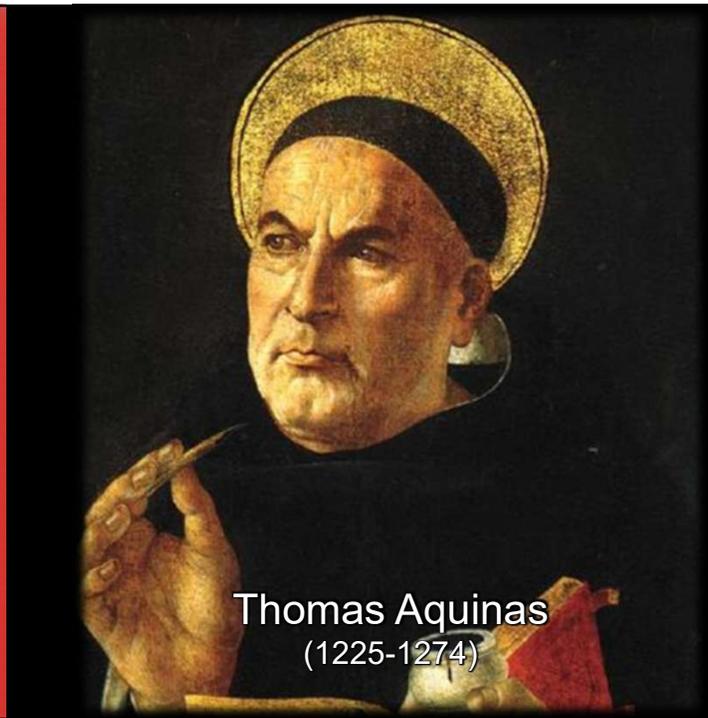
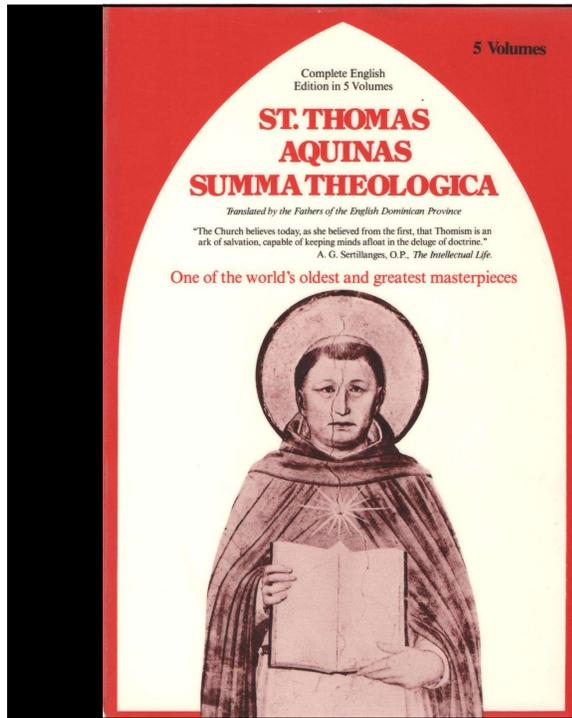




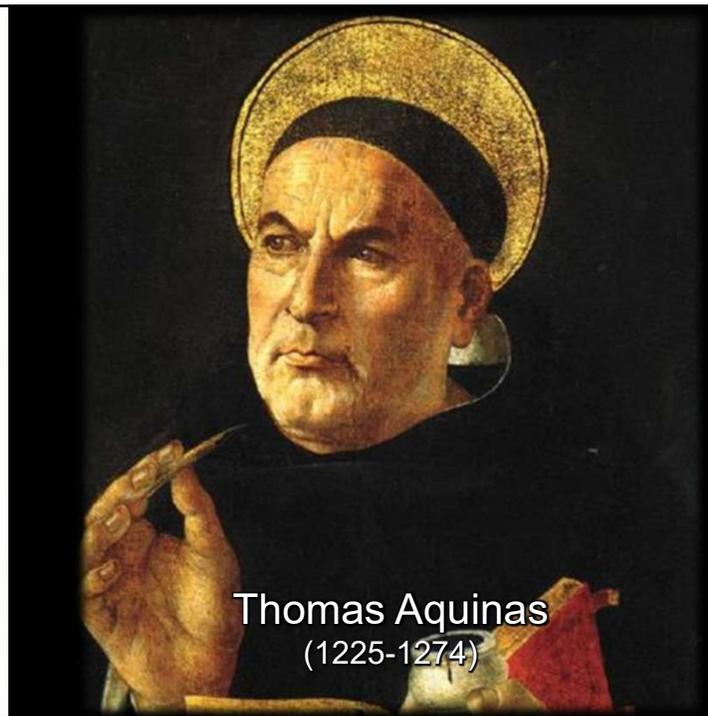
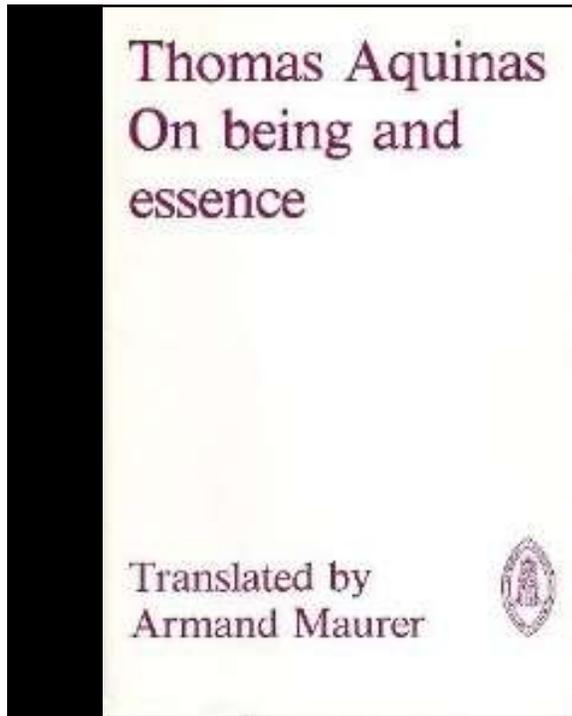








Thomas Aquinas
(1225-1274)

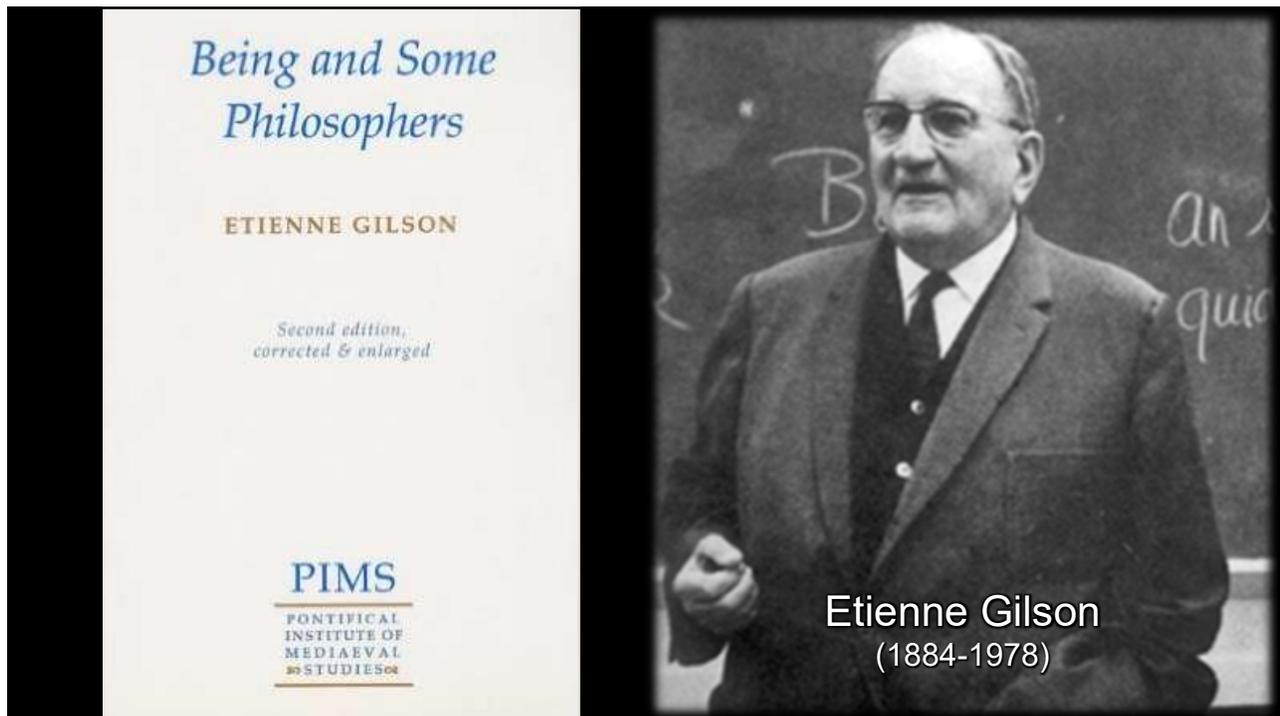


Thomas Aquinas
(1225-1274)



Gaven Kerr

GAVEN KERR, OP
Aquinas's Way to God
The Proof in *De Ente et Essentia*



Being and Some
Philosophers

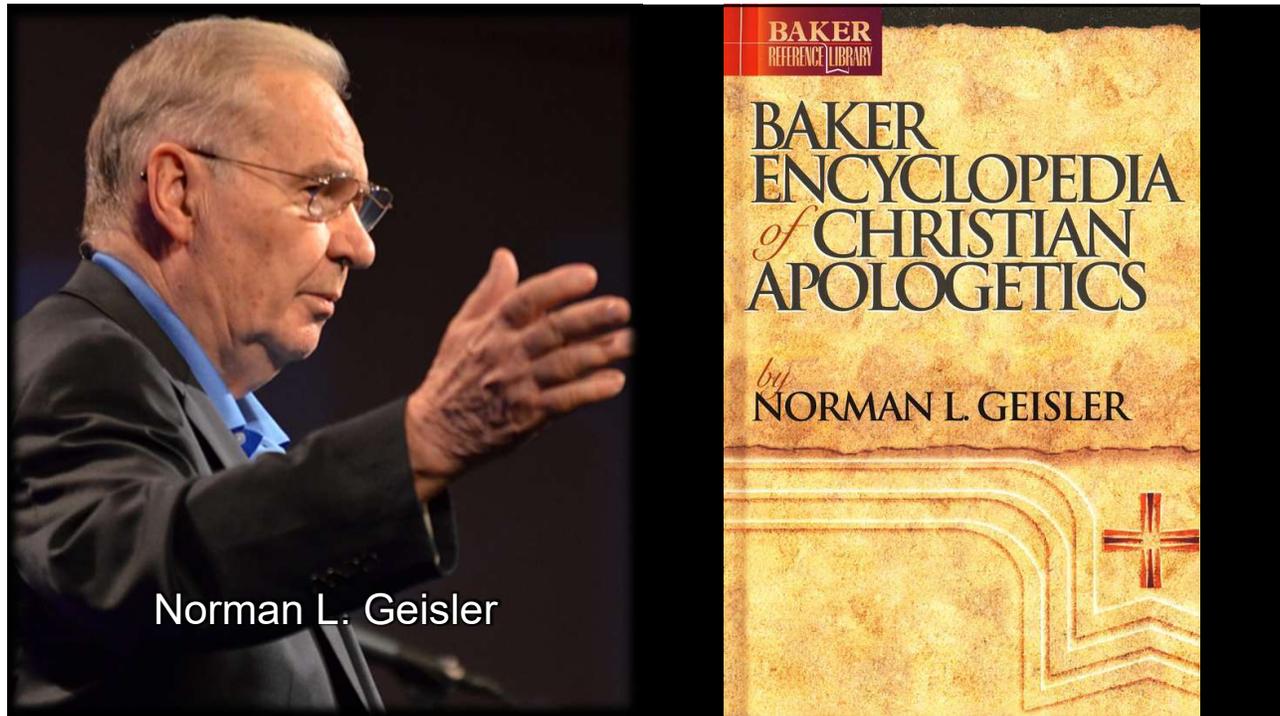
ETIENNE GILSON

Second edition,
corrected & enlarged

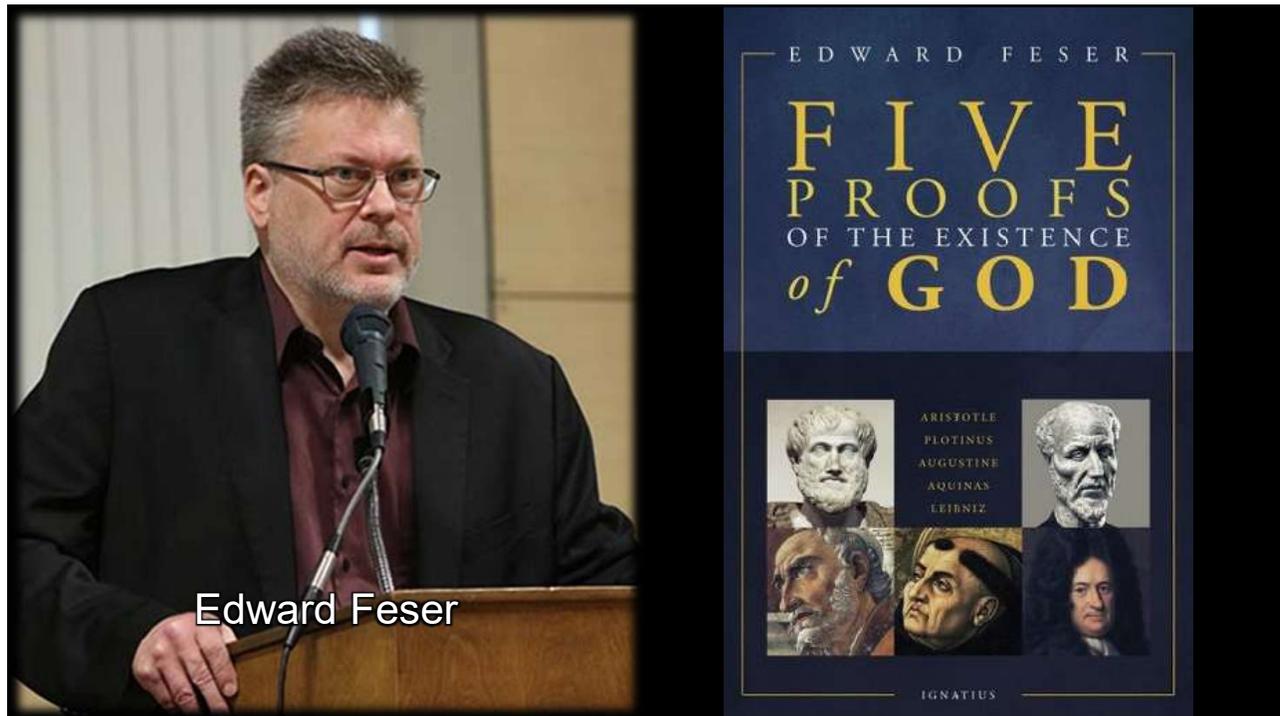
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STUDIES

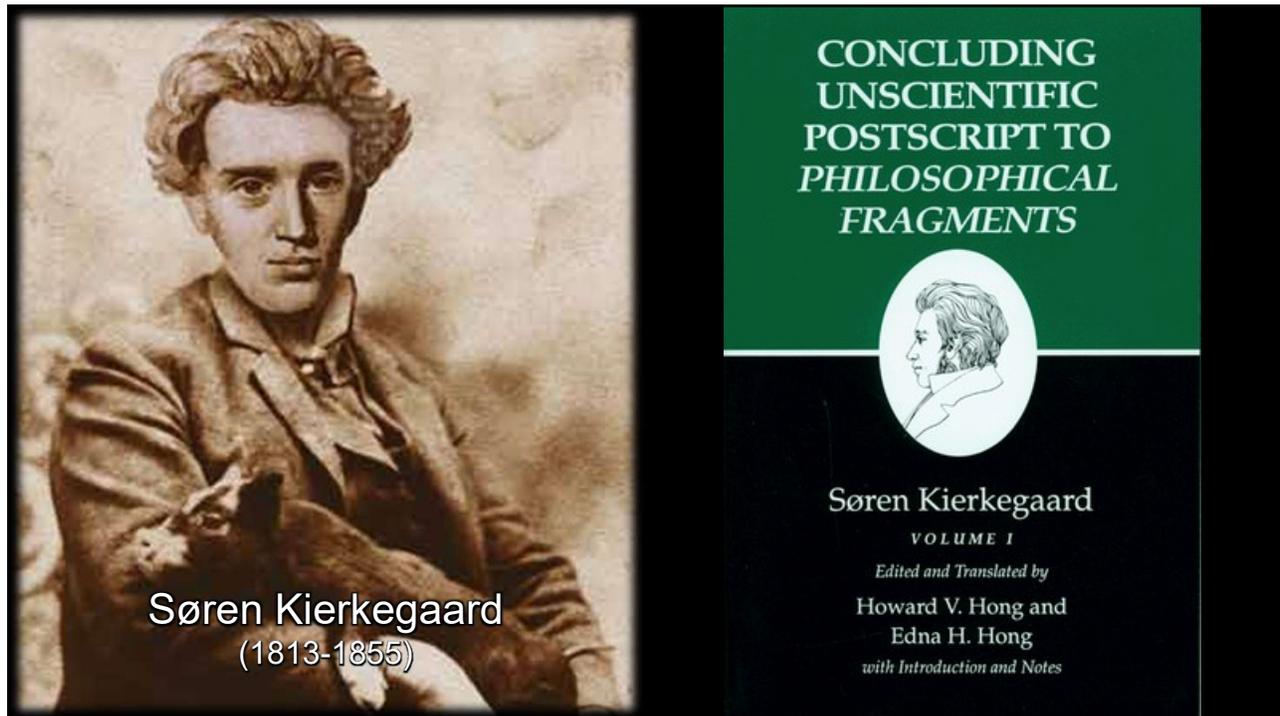
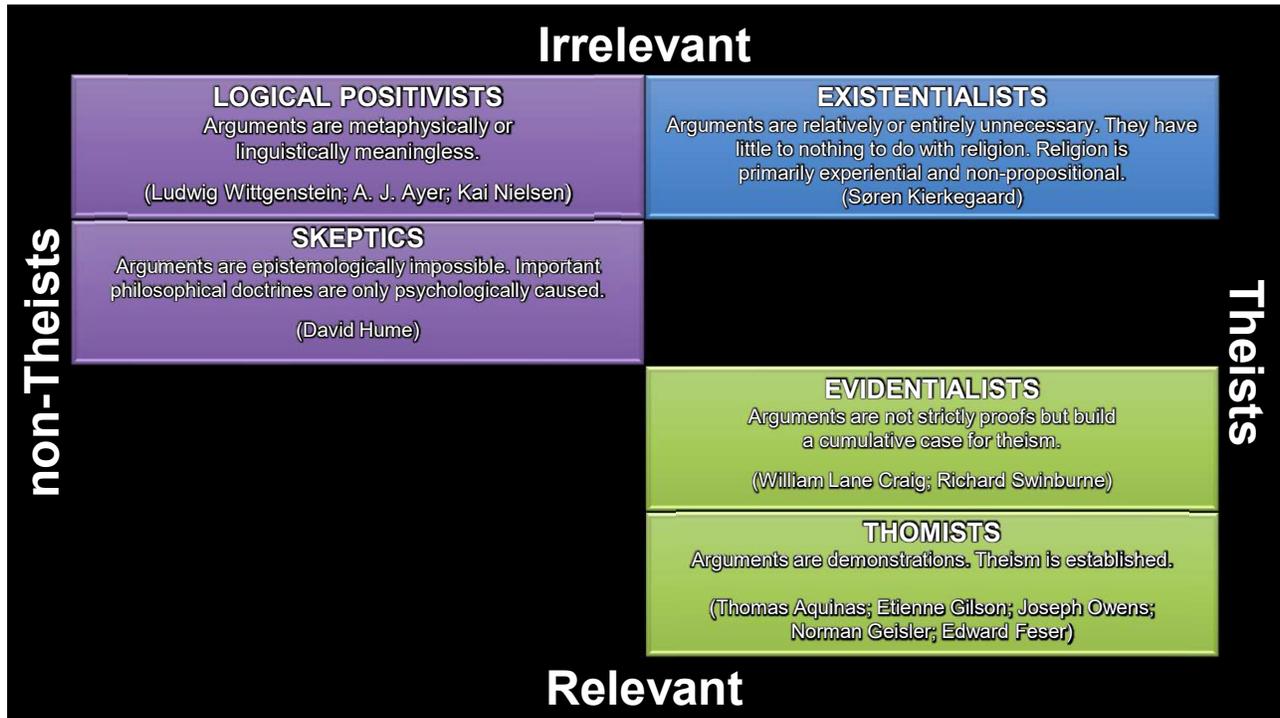
Etienne Gilson
(1884-1978)

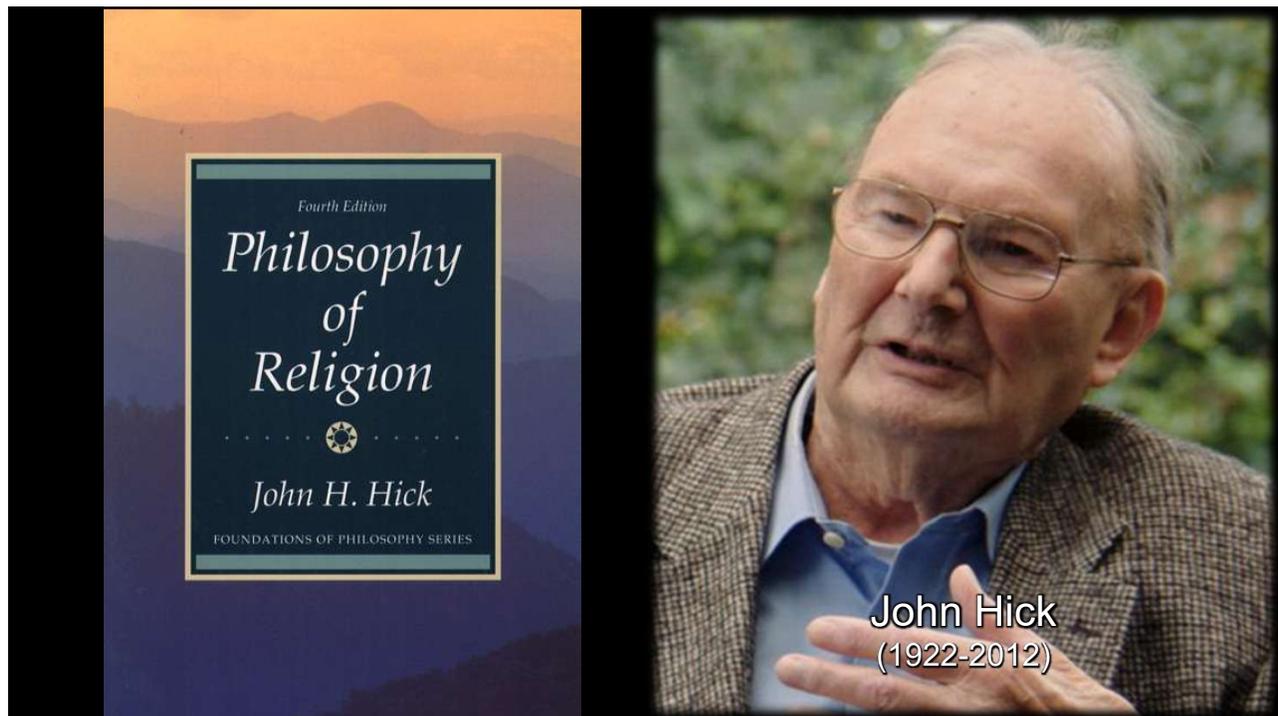
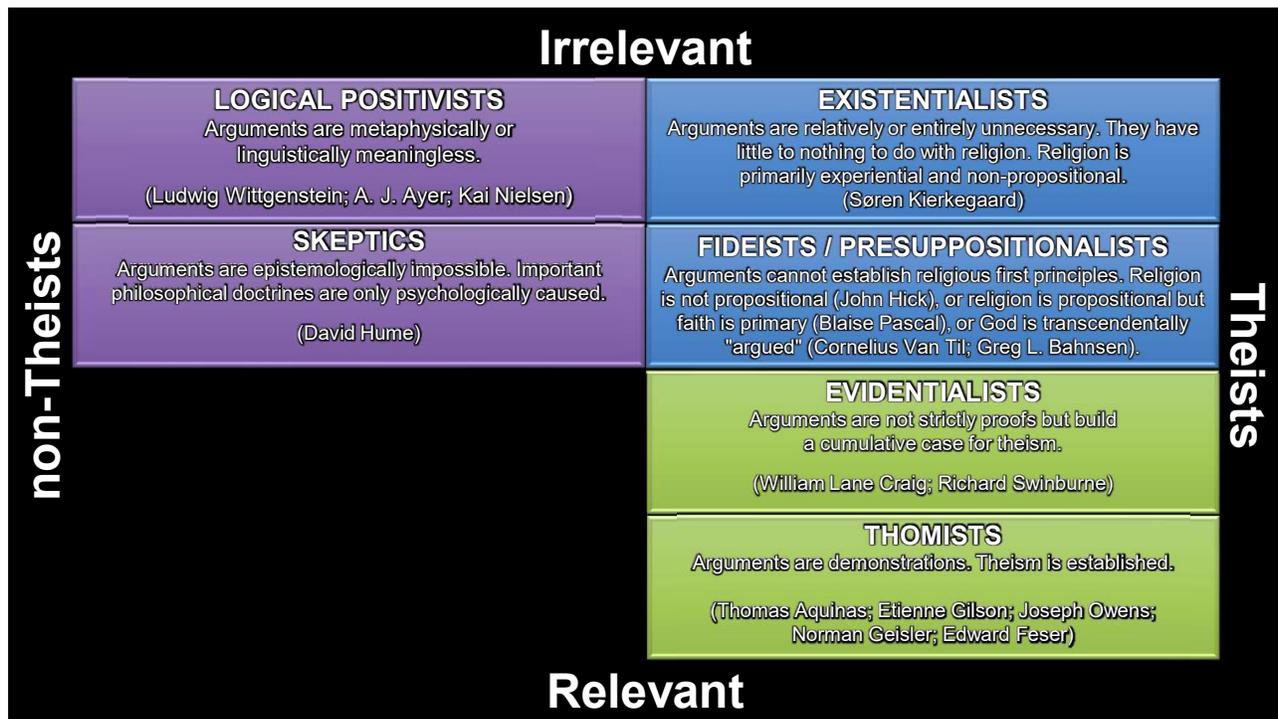


Norman L. Geisler

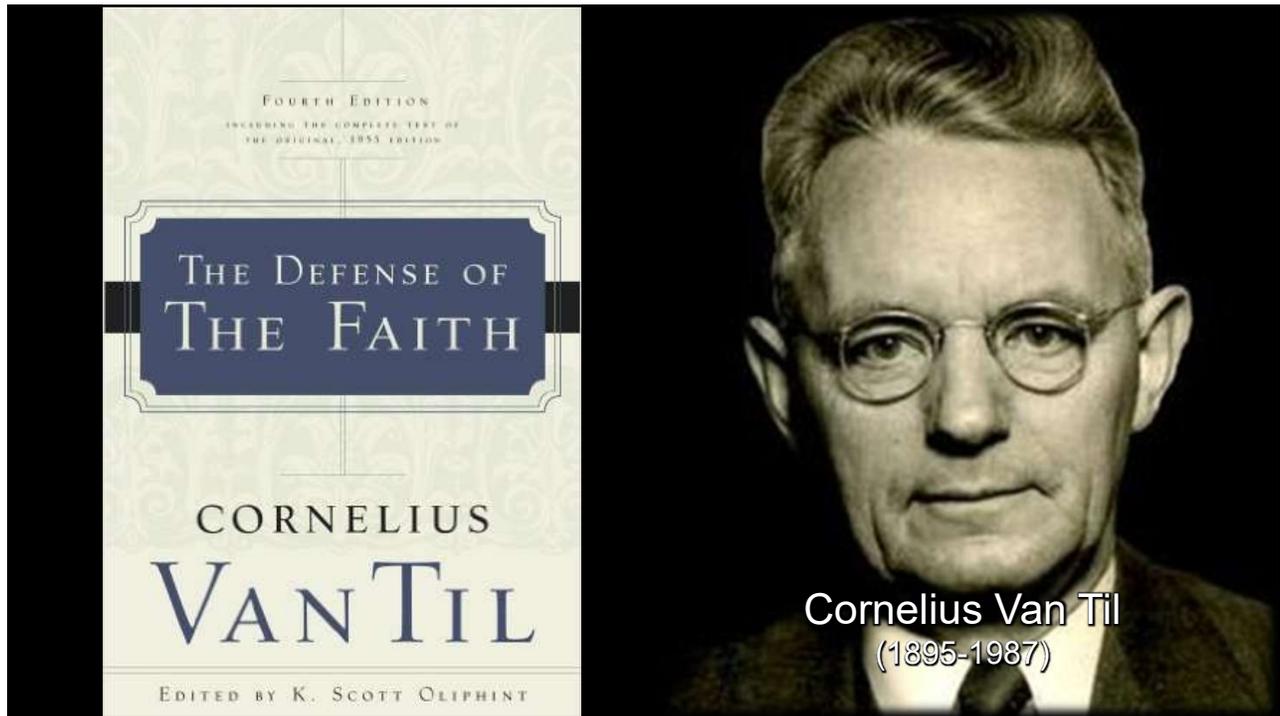


Edward Feser

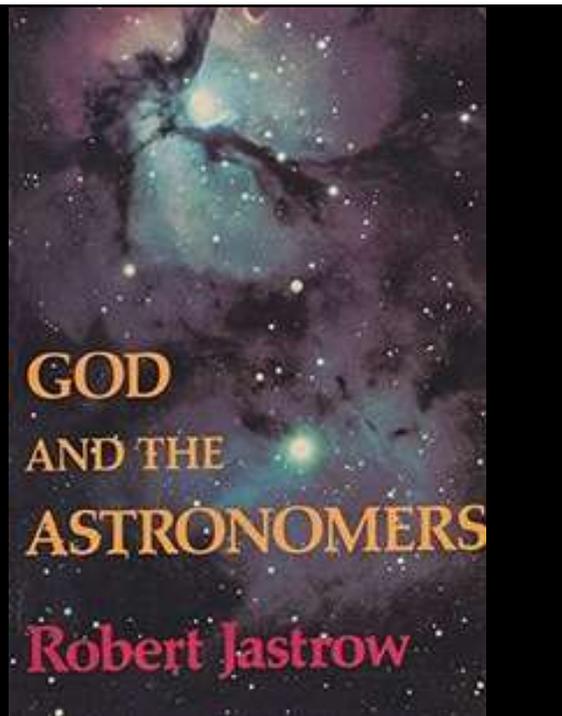




John Hick
(1922-2012)



Irrelevant		
non-Theists	<p>LOGICAL POSITIVISTS Arguments are metaphysically or linguistically meaningless. (Ludwig Wittgenstein; A. J. Ayer; Kai Nielsen)</p>	<p>EXISTENTIALISTS Arguments are relatively or entirely unnecessary. They have little to nothing to do with religion. Religion is primarily experiential and non-propositional. (Søren Kierkegaard)</p>
	<p>SKEPTICS Arguments are epistemologically impossible. Important philosophical doctrines are only psychologically caused. (David Hume)</p>	<p>FIDEISTS / PRESUPPOSITIONALISTS Arguments cannot establish religious first principles. Religion is not propositional (John Hick), or religion is propositional but faith is primary (Blaise Pascal), or God is transcendently "argued" (Cornelius Van Til; Greg L. Bahnsen).</p>
	<p>AGNOSTICS Not all of the evidence is in. Theism may be established with further proof. (Robert Jastrow; Anthony Kenny)</p>	<p>EVIDENTIALISTS Arguments are not strictly proofs but build a cumulative case for theism. (William Lane Craig; Richard Swinburne)</p>
		<p>THOMISTS Arguments are demonstrations. Theism is established. (Thomas Aquinas; Etienne Gilson; Joseph Owens; Norman Geisler; Edward Feser)</p>
	Relevant	
Theists		

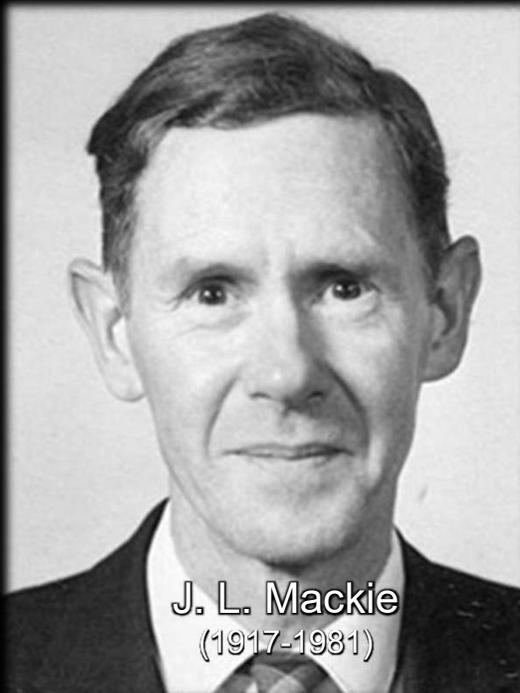


Irrelevant		
non-Theists	<p>LOGICAL POSITIVISTS Arguments are metaphysically or linguistically meaningless. (Ludwig Wittgenstein; A. J. Ayer; Kai Nielsen)</p>	<p>EXISTENTIALISTS Arguments are relatively or entirely unnecessary. They have little to nothing to do with religion. Religion is primarily experiential and non-propositional. (Søren Kierkegaard)</p>
	<p>SKEPTICS Arguments are epistemologically impossible. Important philosophical doctrines are only psychologically caused. (David Hume)</p>	<p>FIDEISTS / PRESUPPOSITIONALISTS Arguments cannot establish religious first principles. Religion is not propositional (John Hick), or religion is propositional but faith is primary (Blaise Pascal), or God is transcendently "argued" (Cornelius Van Til; Greg L. Bahnsen).</p>
	<p>AGNOSTICS Not all of the evidence is in. Theism may be established with further proof. (Robert Jastrow; Anthony Kenny)</p>	<p>EVIDENTIALISTS Arguments are not strictly proofs but build a cumulative case for theism. (William Lane Craig; Richard Swinburne)</p>
	<p>ATHEISTS Arguments surface important philosophical issues. The evidence proves atheism. (J. L. Mackie; early Antony Flew; Michael Scriven, Theodore Drange; Michael Martin)</p>	<p>THOMISTS Arguments are demonstrations. Theism is established. (Thomas Aquinas; Etienne Gilson; Joseph Owens; Norman Geisler; Edward Feser)</p>
Relevant		
Theists		

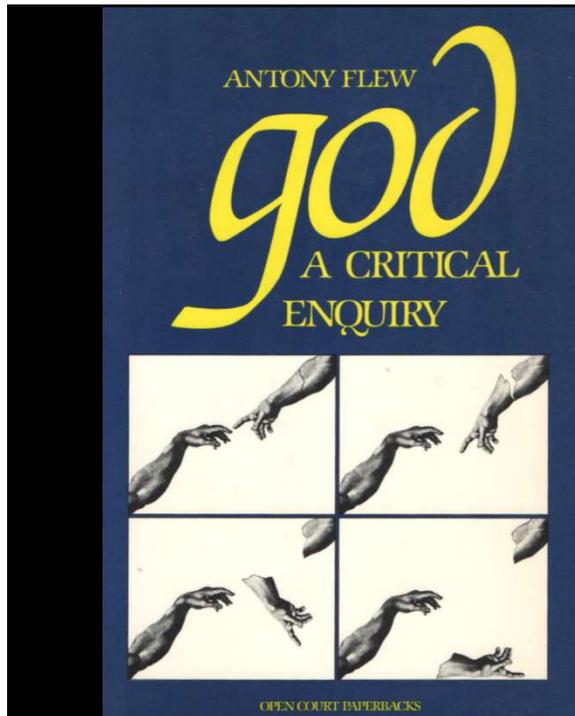
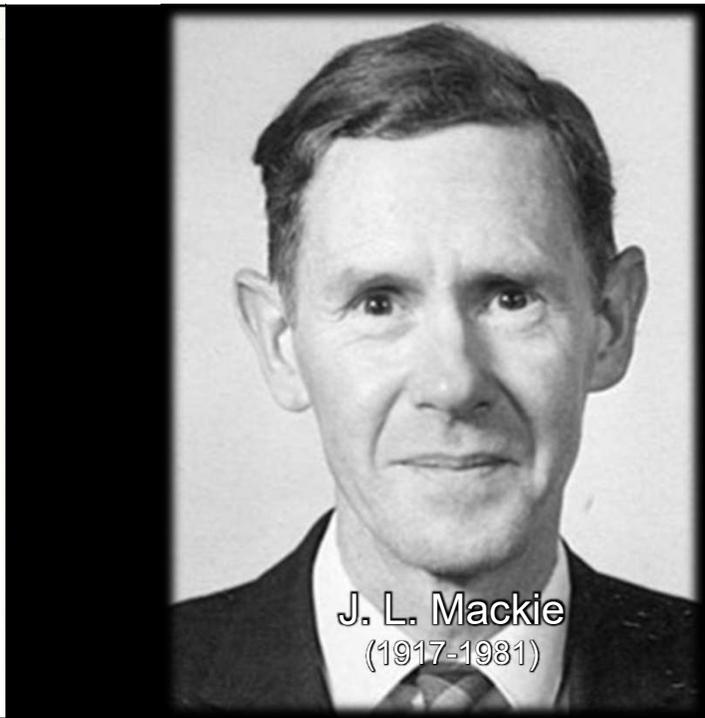
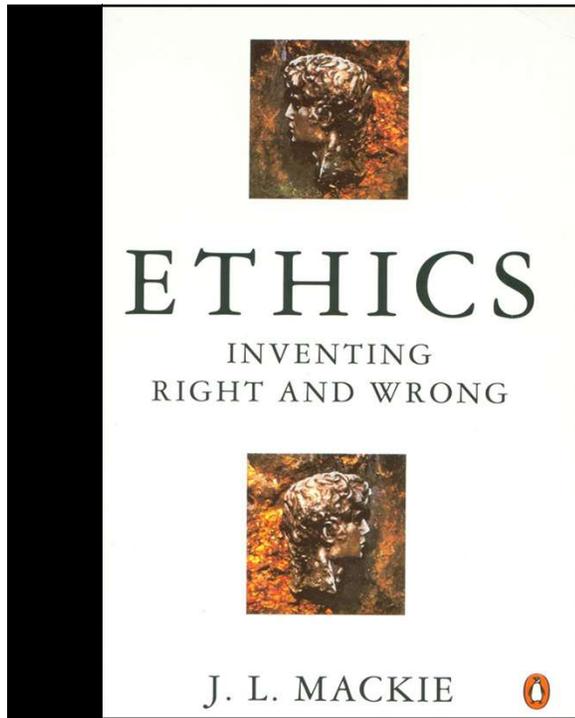
J.L. Mackie

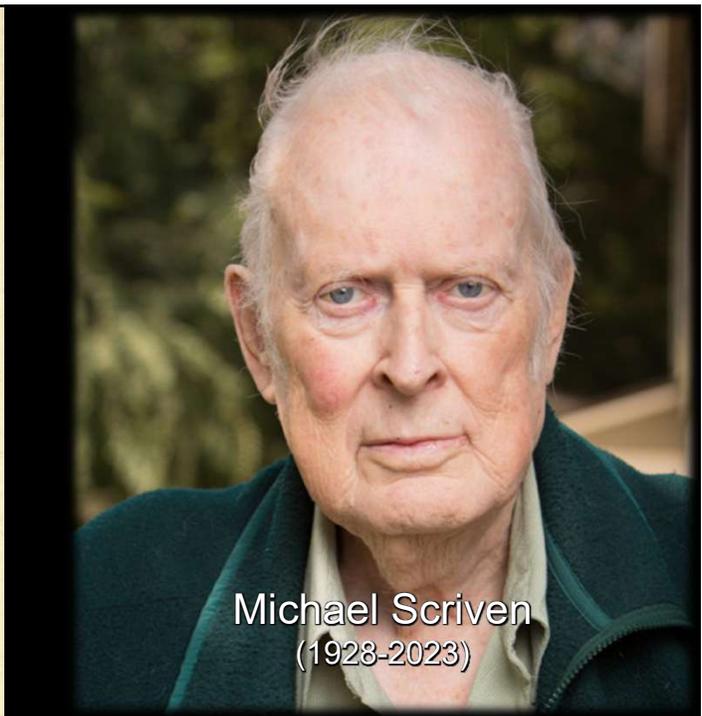
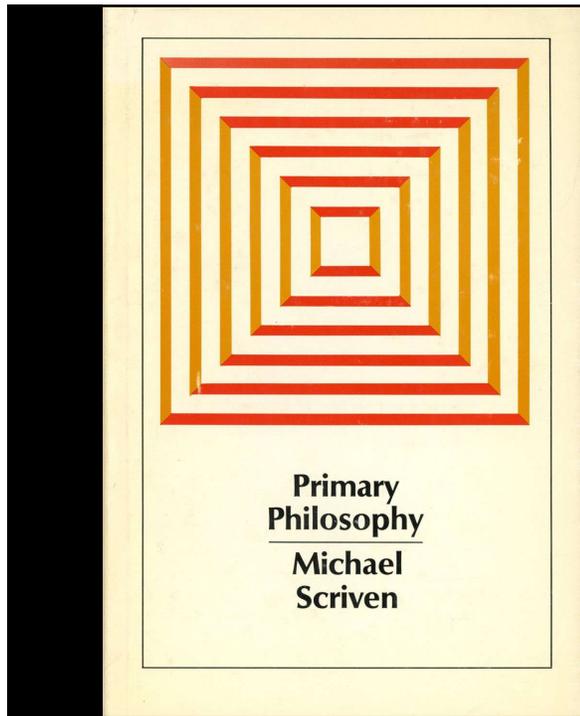
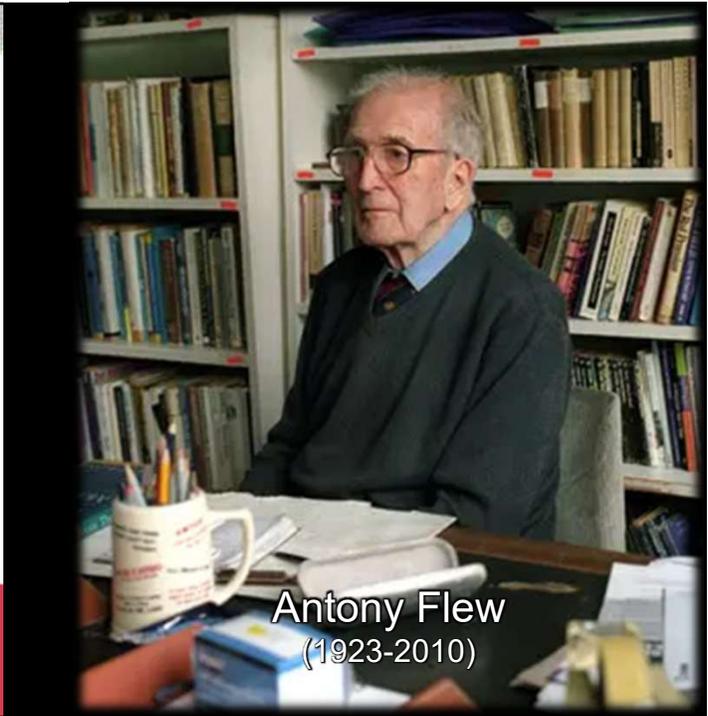
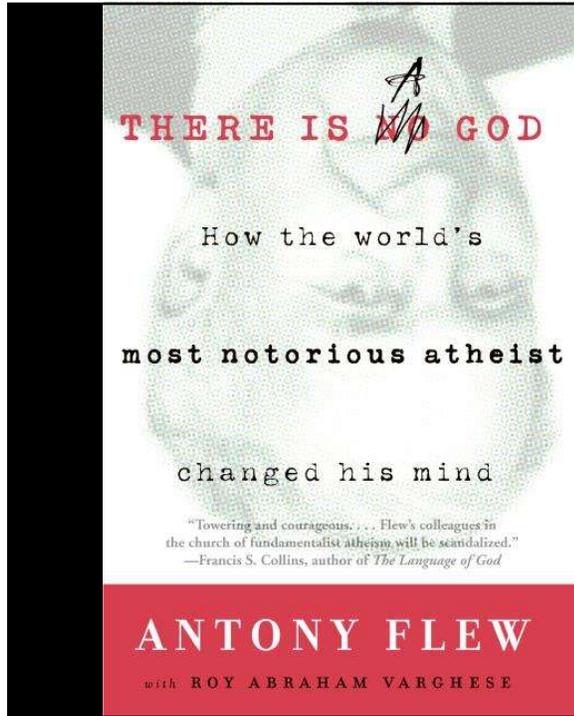
THE MIRACLE OF THEISM

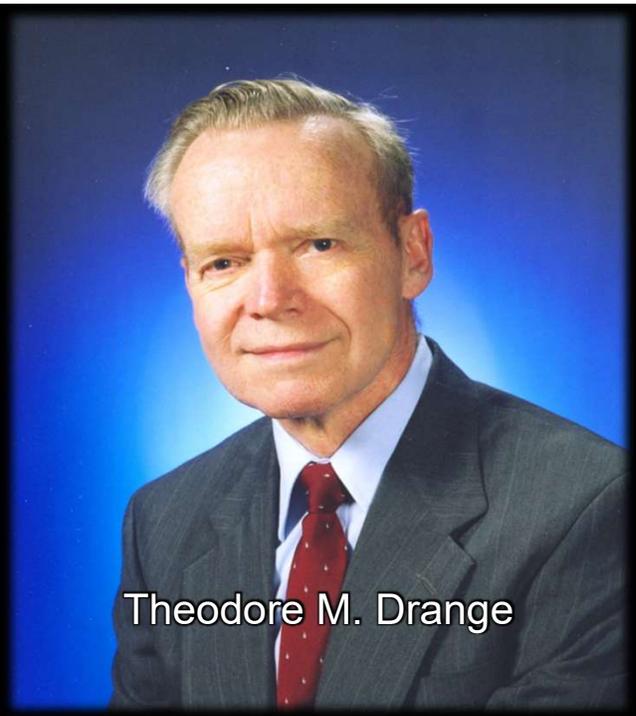
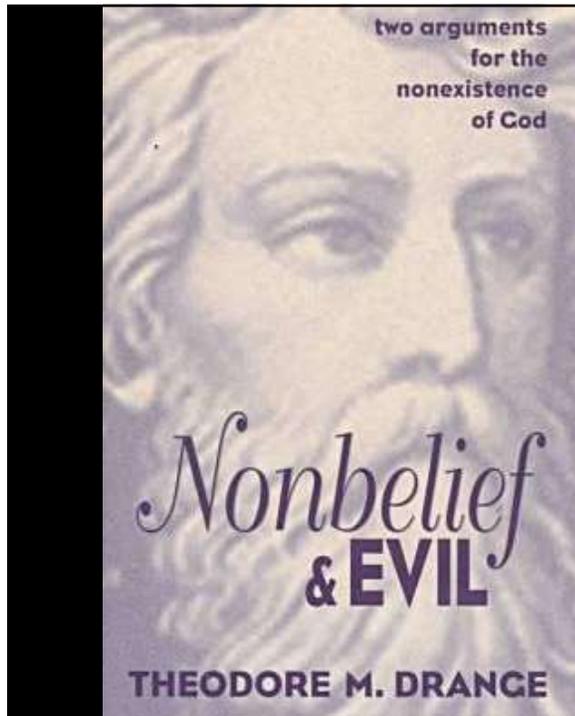
Arguments for
and against the
Existence of
God



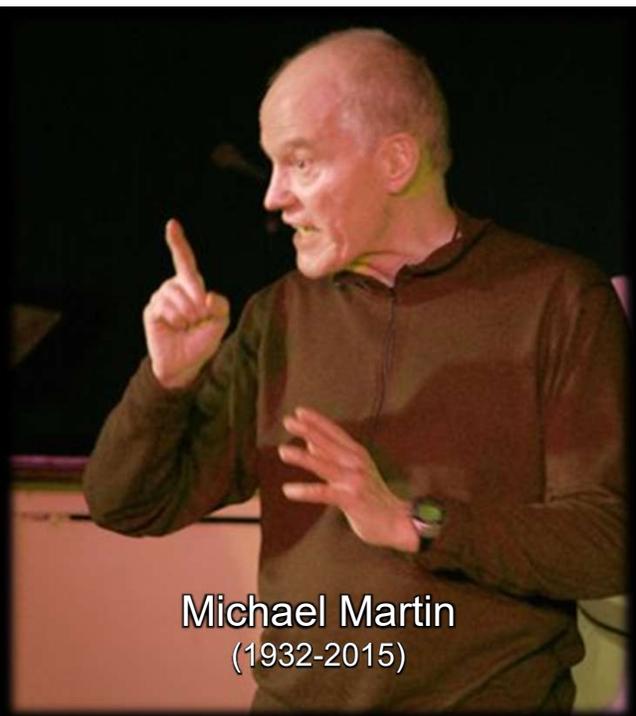
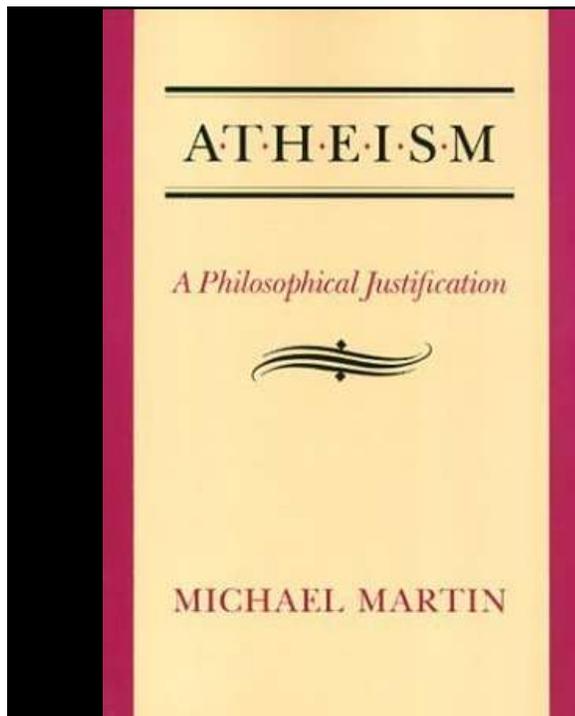
J. L. Mackie
(1917-1981)



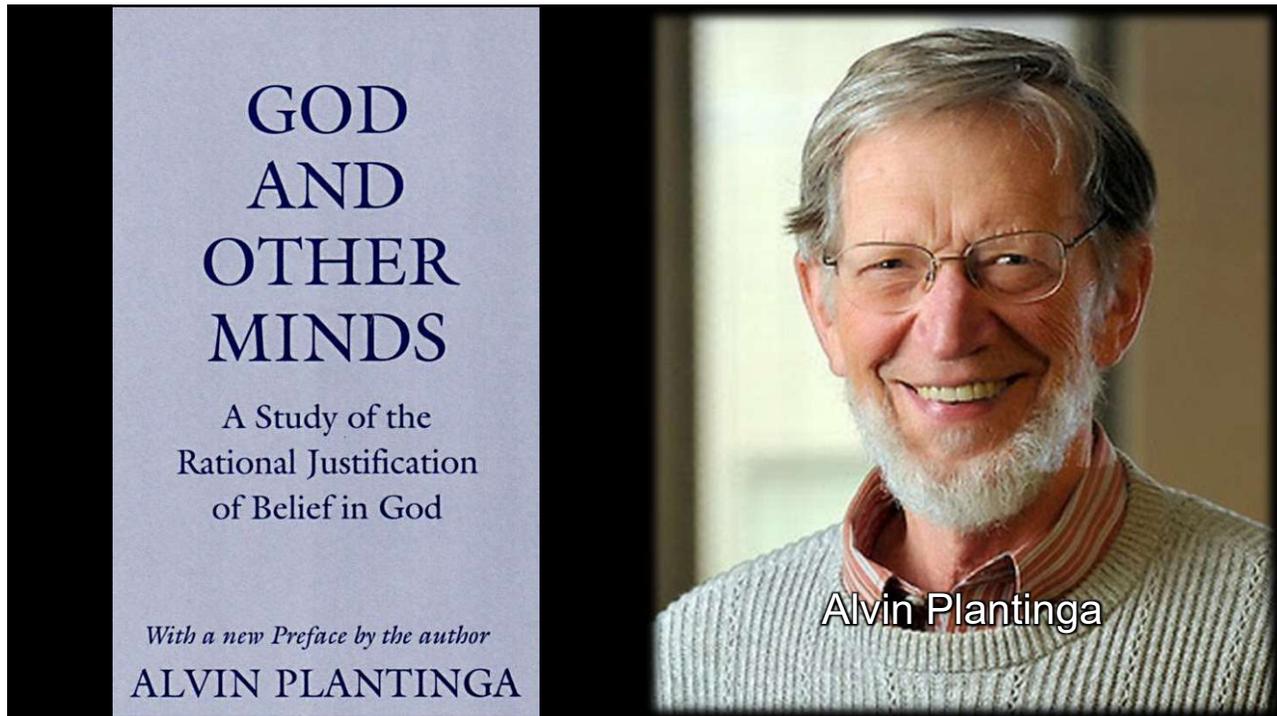
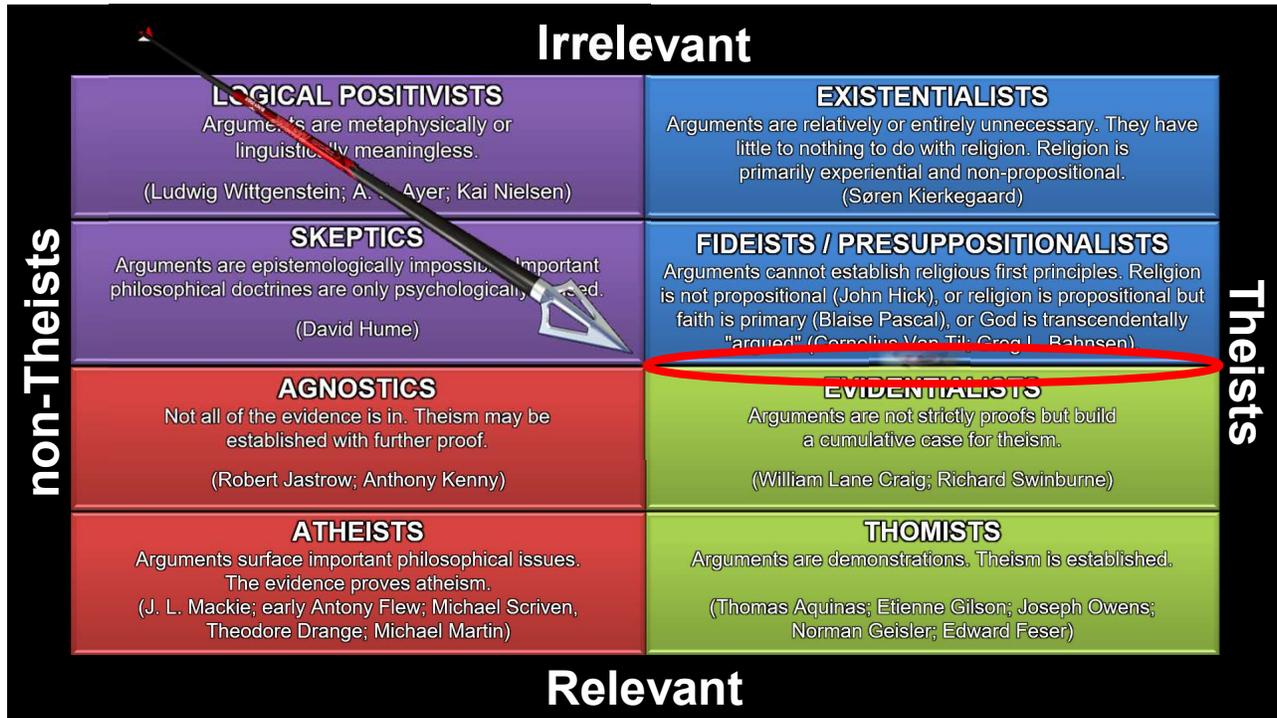


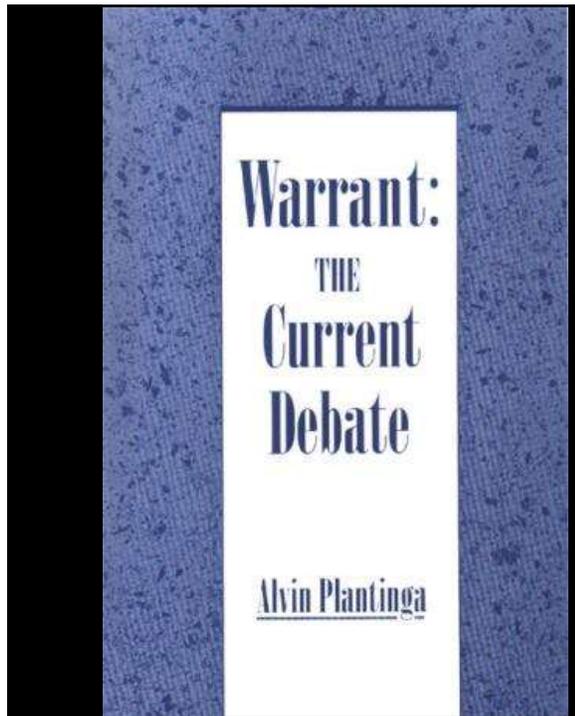
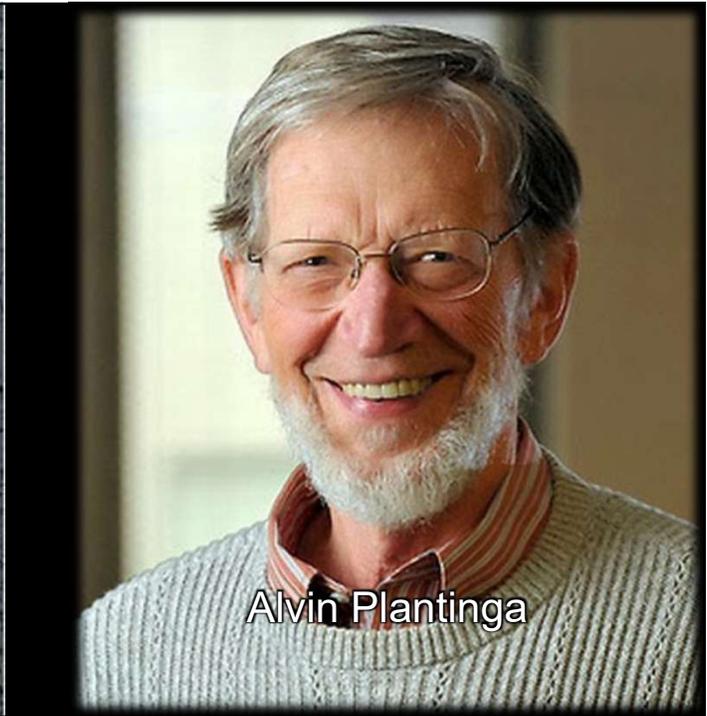
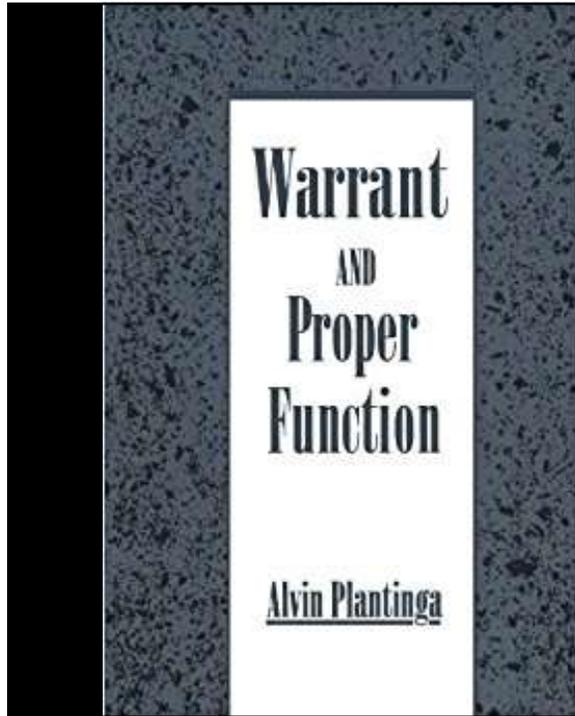


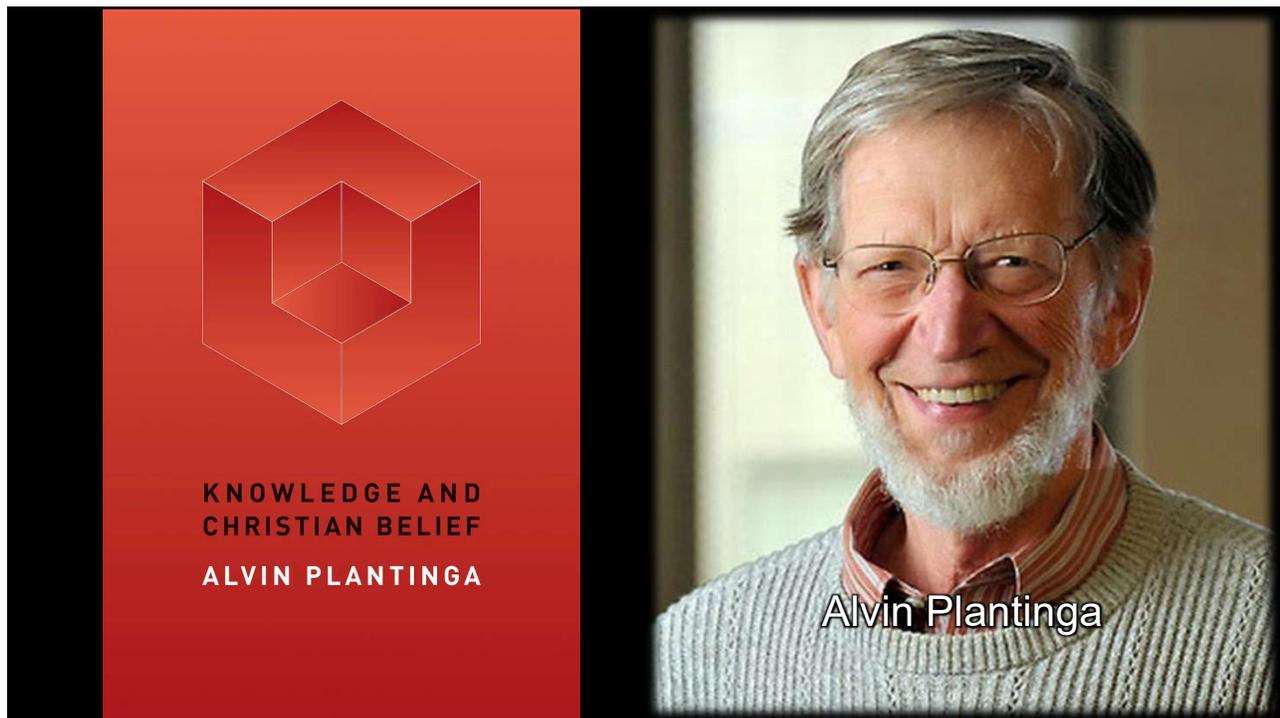
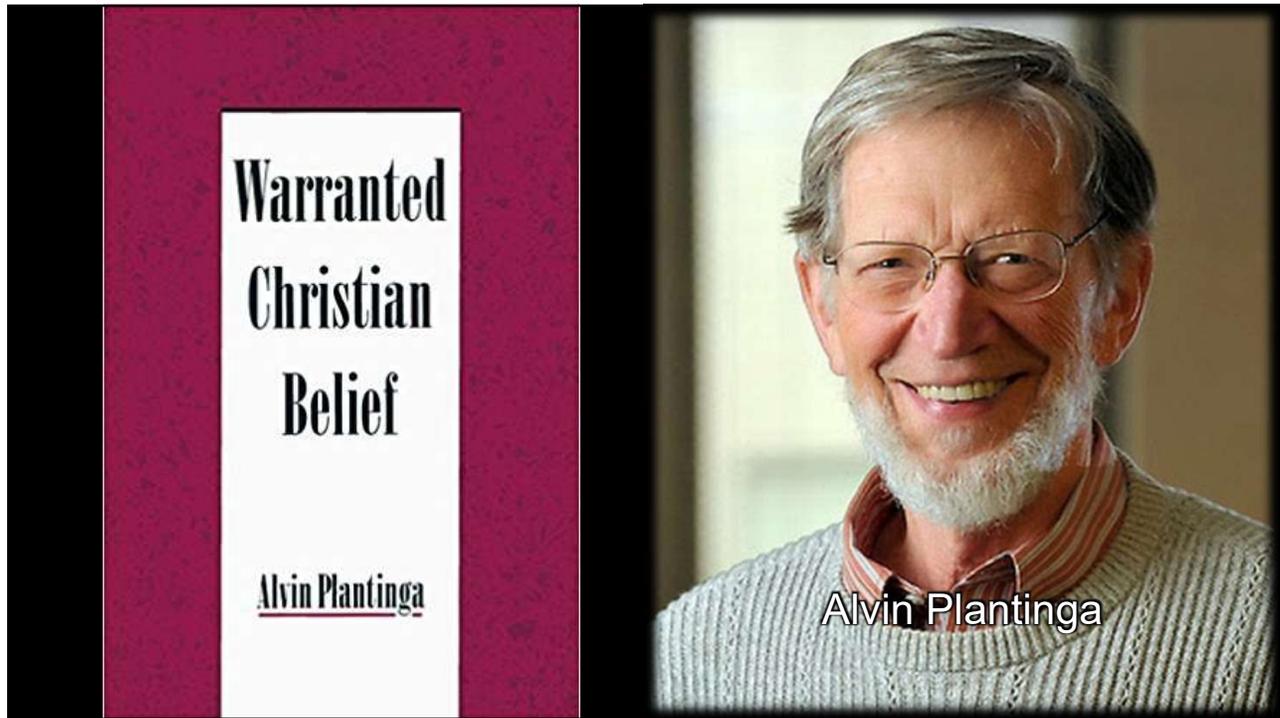
Theodore M. Drange



Michael Martin
(1932-2015)







The background of the title slide is a reproduction of Michelangelo's famous fresco, "The Creation of Adam," showing the hands of God and Adam reaching toward each other.

Types of Arguments for God's Existence

COSMOLOGICAL: based on the existence of the universe (cosmos)

DESIGN: based on the orderly or organized aspects of the universe; largely scientific evidence

TELEOLOGICAL: based on the directedness (teleology) of natural objects; philosophical evidence



THE DESIGN ARGUMENT: AQUINAS VS. PALEY

Richard G. Howe, Ph.D.

Provost
Norman L. Geisler Chair of Christian Apologetics
Professor of Philosophy and Apologetics
Southern Evangelical Seminary
Past President, International Society of Christian Apologetics

COSMOLOGICAL: based on the existence of the universe (cosmos)

DESIGN: based on the orderly or organized aspects of the universe; largely scientific evidence

TELEOLOGICAL: based on the directedness (teleology) of natural objects; philosophical evidence

ONTOLOGICAL: based on the concept of God as the greatest conceivable being

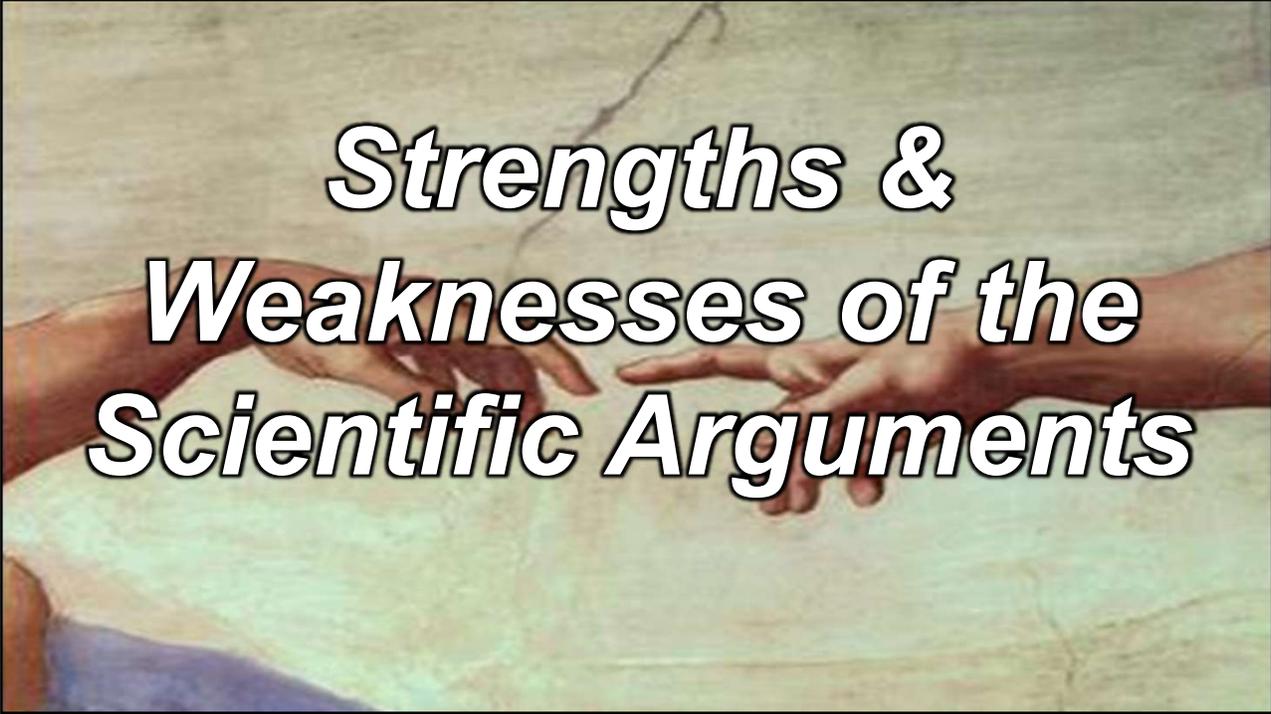
MORAL: based on the existence of moral truths



- ❖ *God as the cause of the beginning of the universe (i.e., the coming into existence of the universe): **Scientific***
- ❖ *God as the cause of the current existing of the universe: **Philosophical***
- ❖ *God as the cause of the design of the universe: **Scientific***
- ❖ *God as the cause of the teleology of the universe: **Philosophical***

Generally, the arguments utilizing the scientific evidence take the form of an "argument to the best explanation."

In contrast, the arguments utilizing the philosophical "evidence" seek to show how the existence of God (together with the classical attributes of God) follow inexorably from the basic tenets of metaphysics.



***Strengths &
Weaknesses of the
Scientific Arguments***



∞ Strengths ∞

The scientific arguments appeal to the common sense notion that something can only begin to exist by being caused to exist.



∞ Strengths ∞

They also appeal to the common sense notion that anything that exhibits sufficient evidence of design is likely caused by an intelligence.



➤ Strengths ➤

These arguments benefit from the academic and social clout enjoyed by the contemporary natural sciences.



➤ Strengths ➤

They generally avoid trafficking in the technicalities of academic philosophy which are less familiar than the general categories of the sciences.



Weaknesses

Without further arguments, the scientific arguments do not demonstrate that the cause of the universe still exists.



Weaknesses

Without further arguments, they do not demonstrate that the cause of the universe is God (i.e., that the cause has the attributes of classical theism).



Weaknesses

Without further arguments, they do not demonstrate that the cause of the universe is God (i.e., that the cause has the attributes of classical theism).



Weaknesses

Without further arguments, they do not demonstrate that the cause of the universe is good (even apart from the other attributes of classical theism).



☞ My Weaknesses ☞

Certain aspects of the science are disputed.

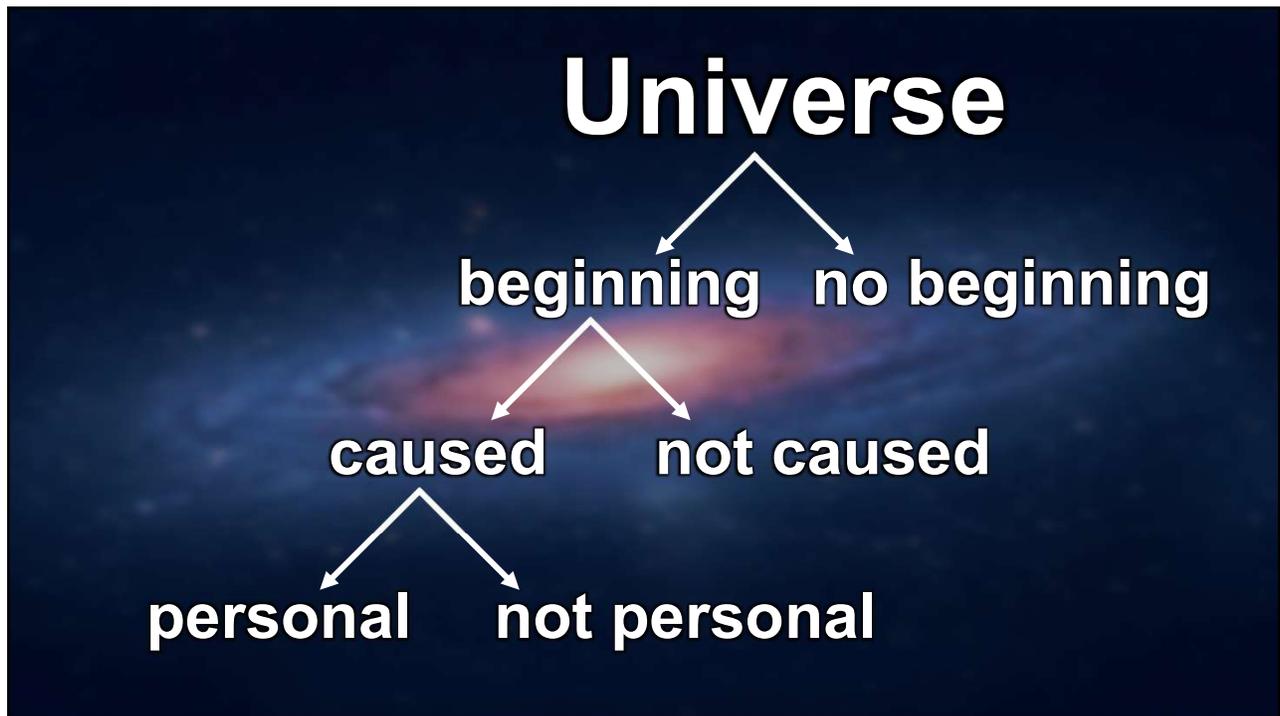
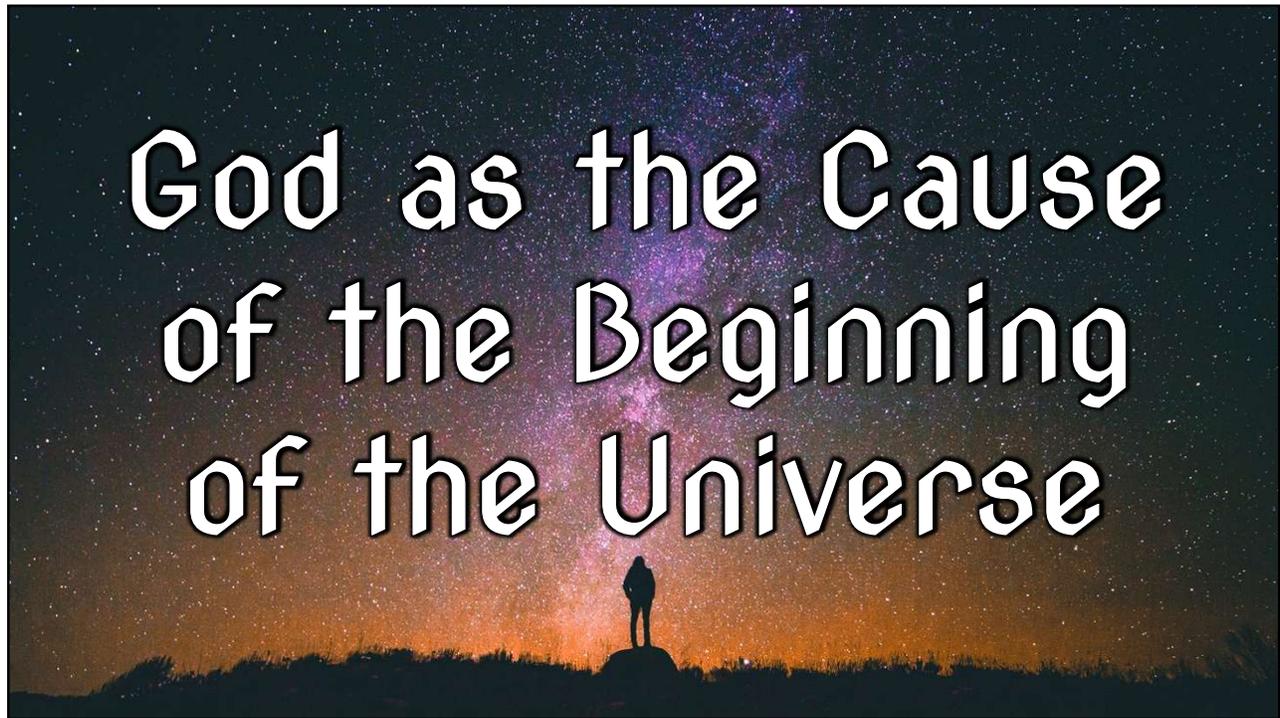
Such disputes can invariably get technical and, thus, are beyond the knowledge of the non-scientist like me.

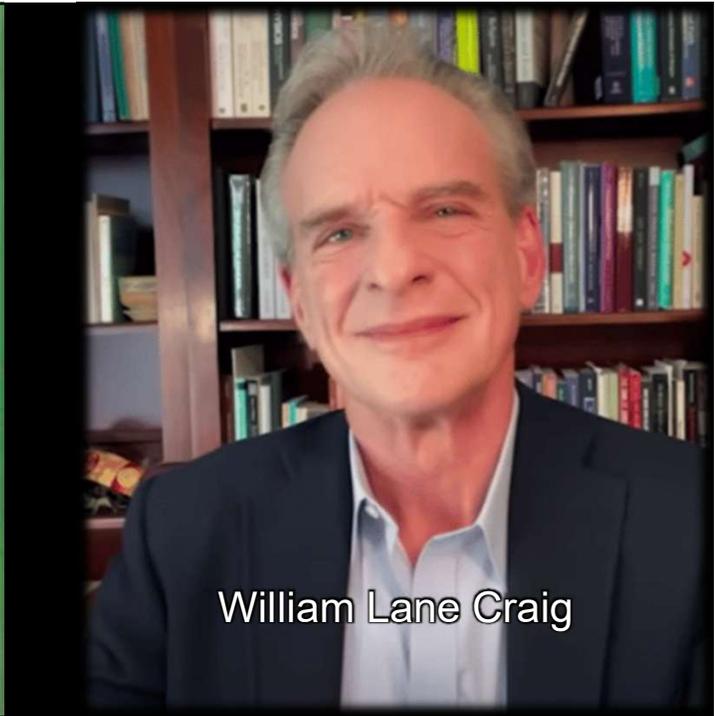
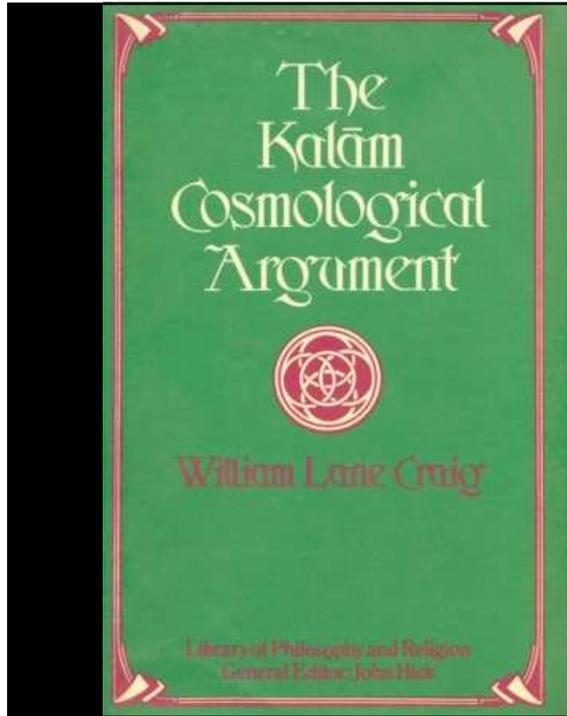


☞ My Weaknesses ☞

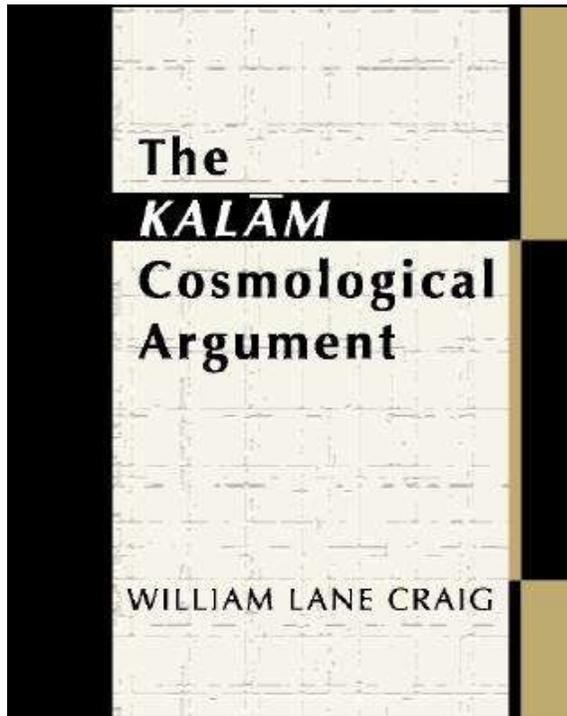
Granted, certain aspects of the philosophy are disputed as well.

However, as a philosopher, I am more accustomed to engaging the issue philosophically rather than scientifically.

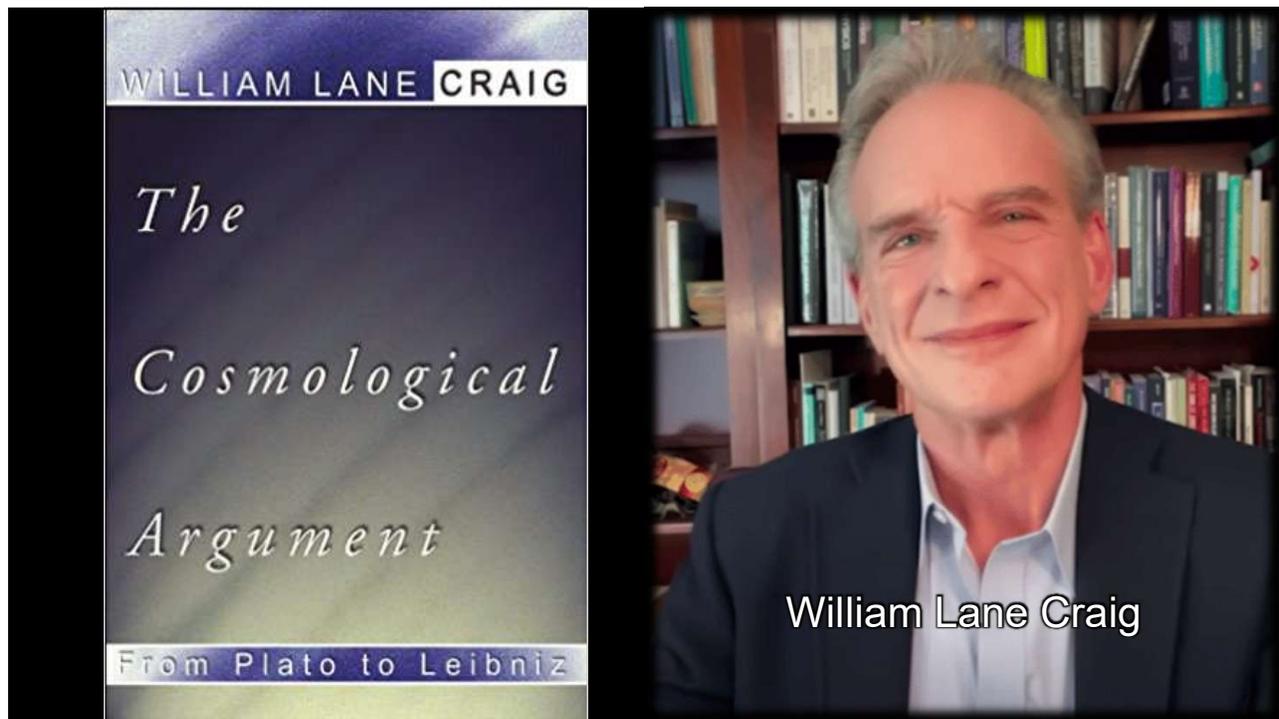




William Lane Craig

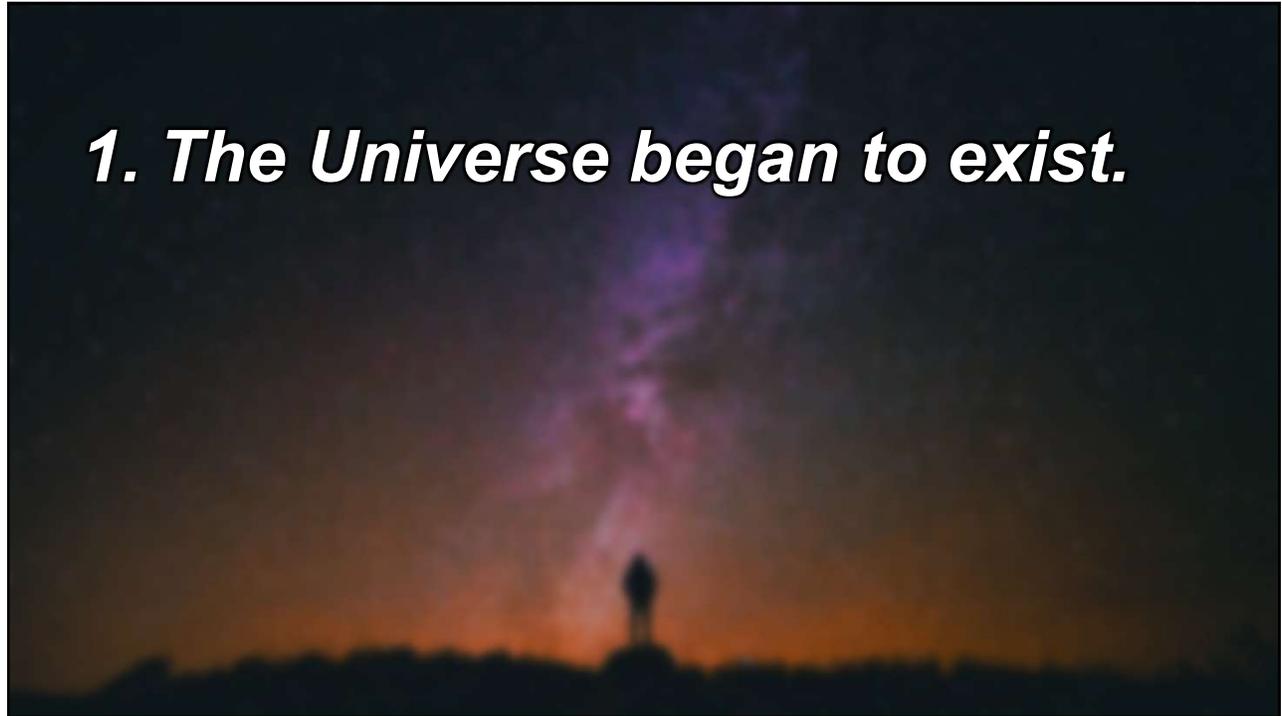


William Lane Craig

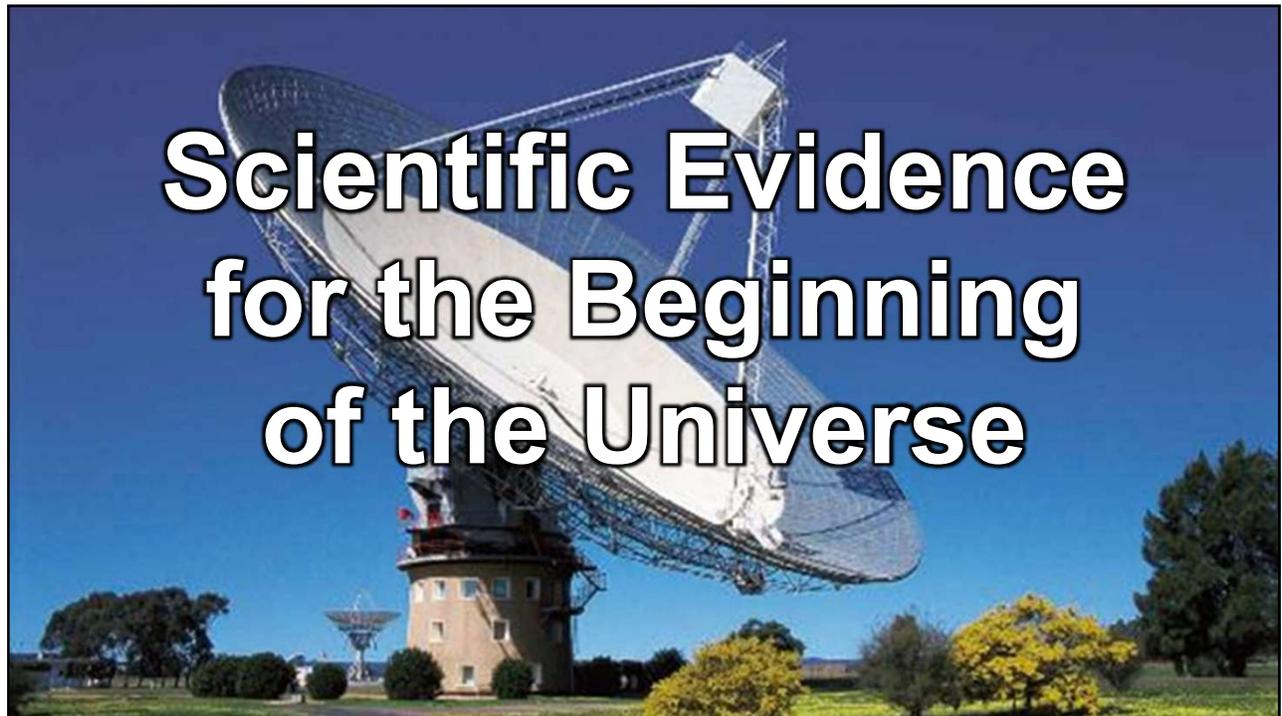


- 1. The Universe began to exist.***
 - 2. Whatever begins to exist has a cause of its existence.***
- Therefore, the universe has a cause of its existence.***

1. The Universe began to exist.



**Scientific Evidence
for the Beginning
of the Universe**



- ✓ *Big Bang Theory*
- ✓ *Expanding Universe*
- ✓ *Second Law of Thermodynamics*

The Big Bang Theory

∞ Definition ∞

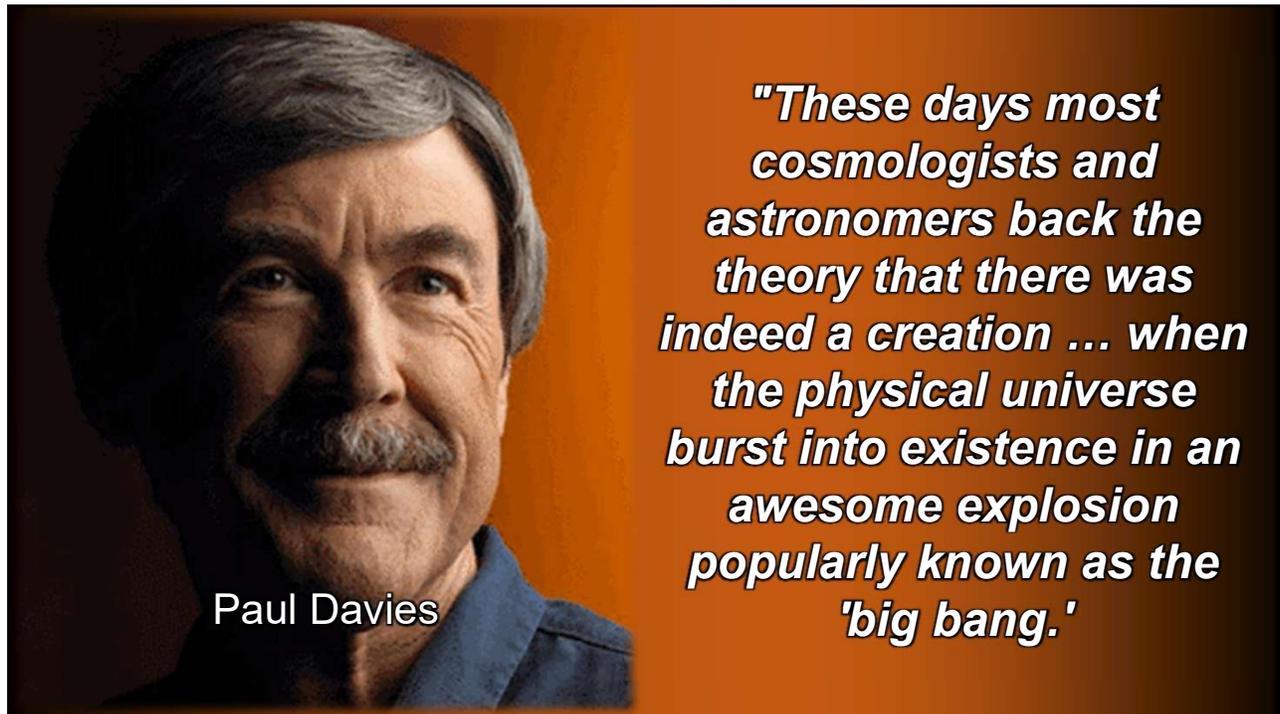
Scientists maintain that the universe began in a colossal explosion a finite time ago.

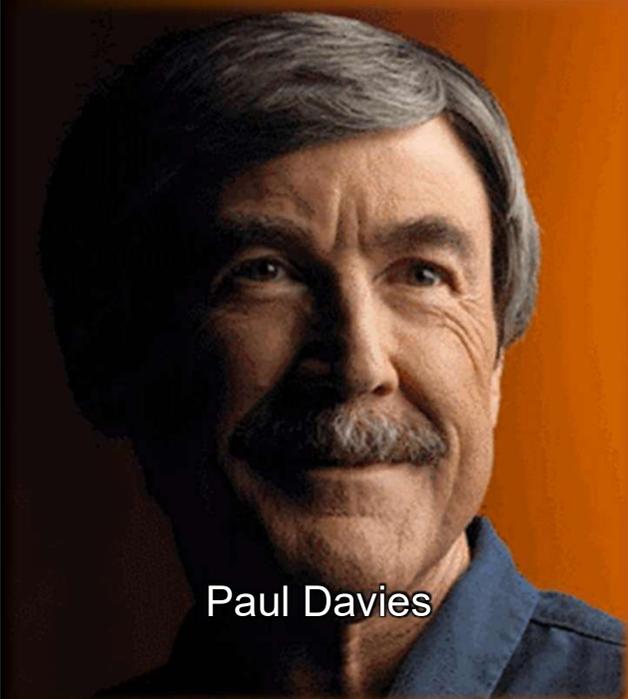
∞ Significance ∞

The universe has not existed from eternity, according to the Big Bang Theory.

∞ Significance ∞

Therefore, the universe began to exist a finite time ago.





Paul Davies

"Whether one accepts all the details or not, the essential hypothesis — that there was some sort of creation — seems, from the scientific point of view, compelling."

[Paul Davies, *God and the New Physics* (New York: Simon and Schuster, 1983): 10]



Steven Weinberg
(1933-2021)

"In the beginning there was an explosion. Not an explosion like those familiar on Earth . . . but an explosion which occurred simultaneously everywhere, filling all space from the beginning"

[Steven Weinberg, *The First Three Minutes* (Fontana Paperbacks, 14) available at <https://www.zuj.edu.jo/download/the-first-three-minutes-a-modern-view-of-the-origin-of-the-universe-s-weinberg-pdf/>, accessed 08/14/24]

"Recent developments in astronomy have implications that may go beyond their contribution to science itself."



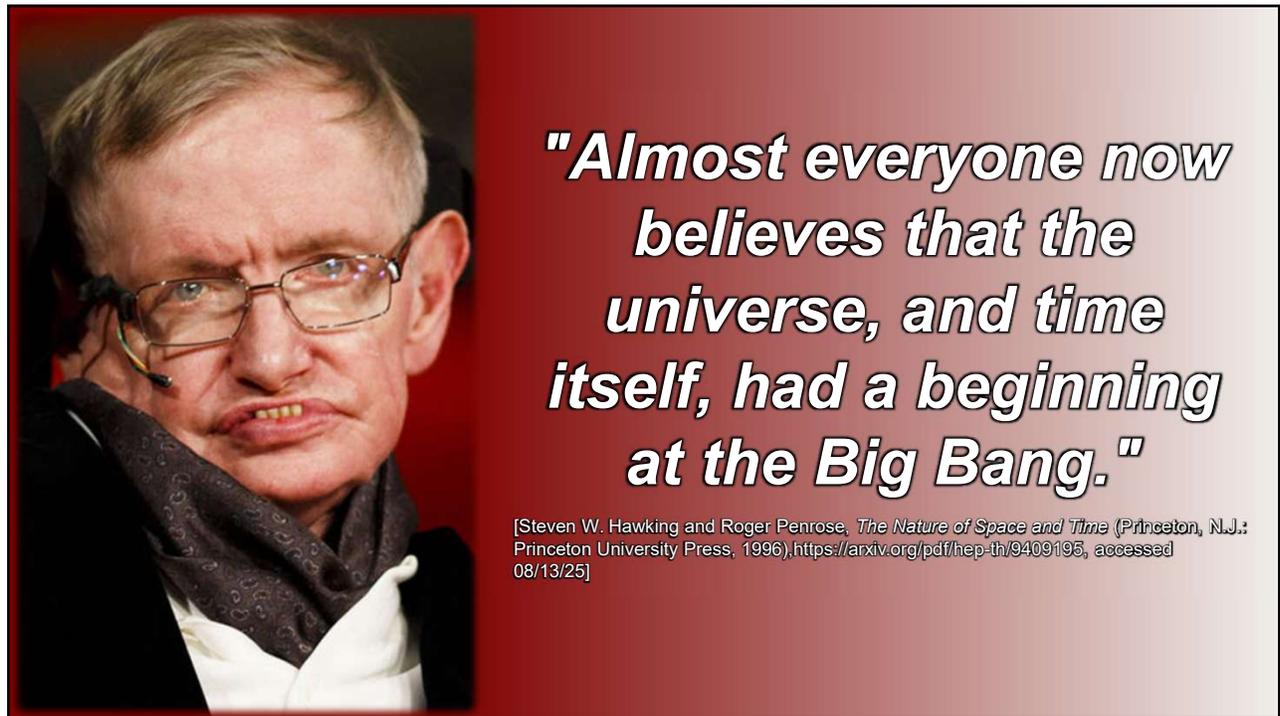
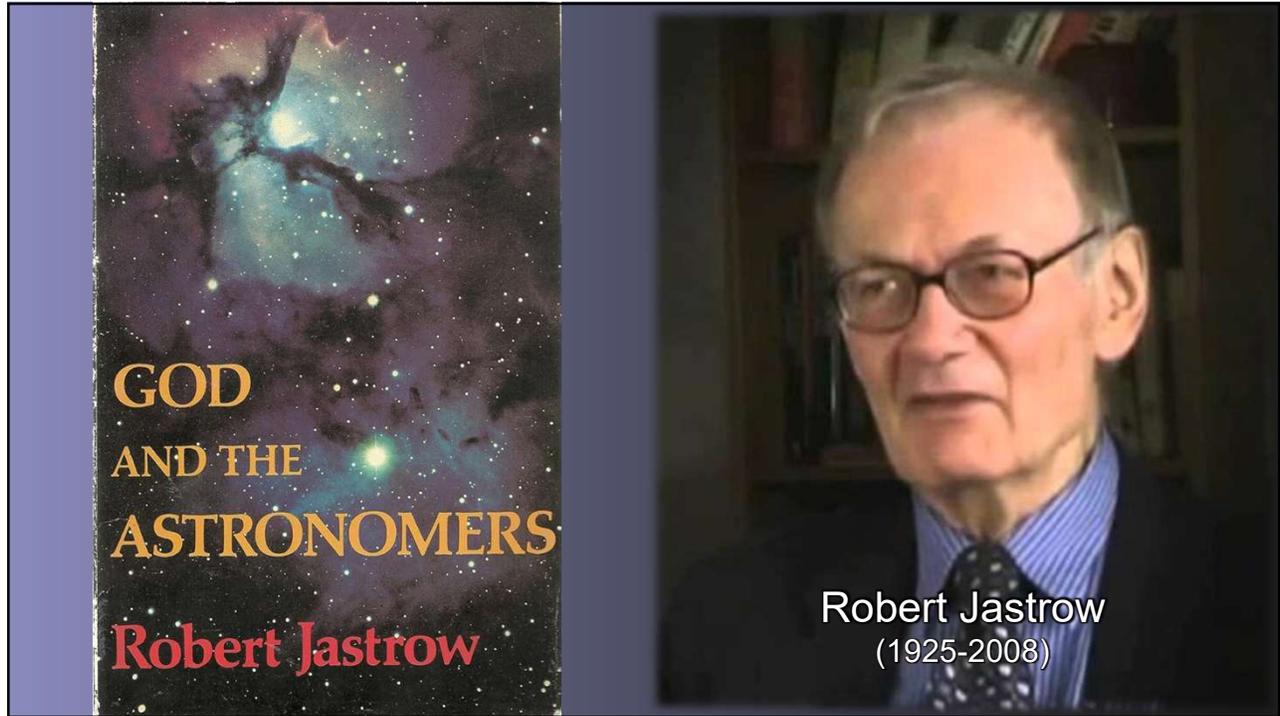
Robert Jastrow
(1925-2008)

"In a nutshell, astronomers, studying the Universe through their telescopes, have been forced to the conclusion that the world began suddenly, in a moment of creation, as the product of unknown forces."

[Robert Jastrow "Message from Professor Robert Jastrow, "
<http://www.leaderu.com/truth/1truth18b.html>, accessed 08/13/25]

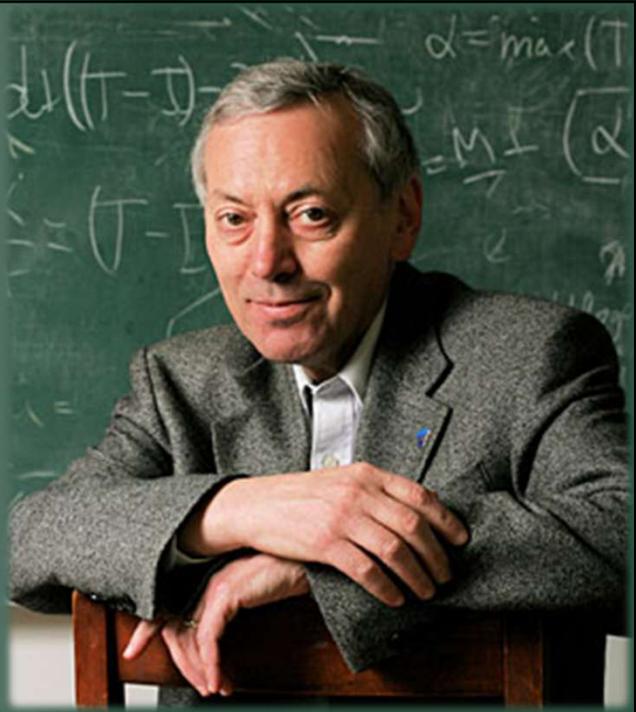


Robert Jastrow
(1925-2008)



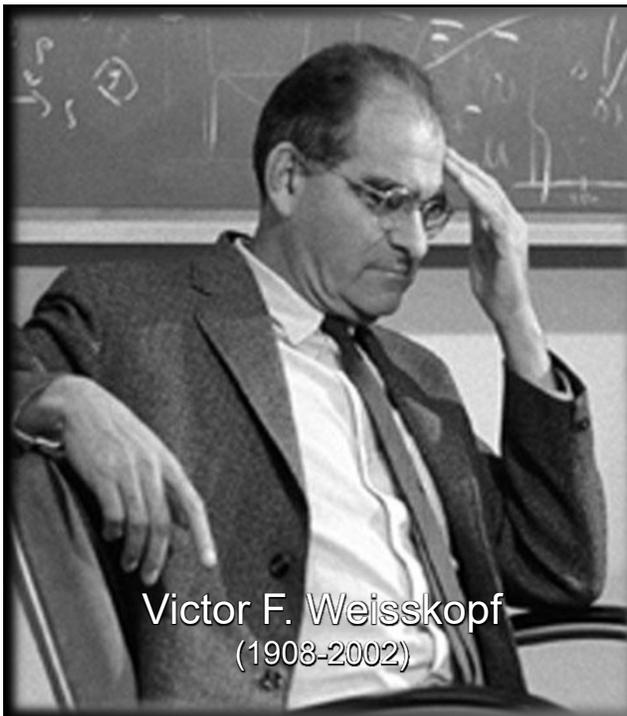
"With the proof now in place, cosmologists can no longer hide behind the possibility of a past-eternal universe. There is no escape, they have to face the problem of a cosmic beginning."

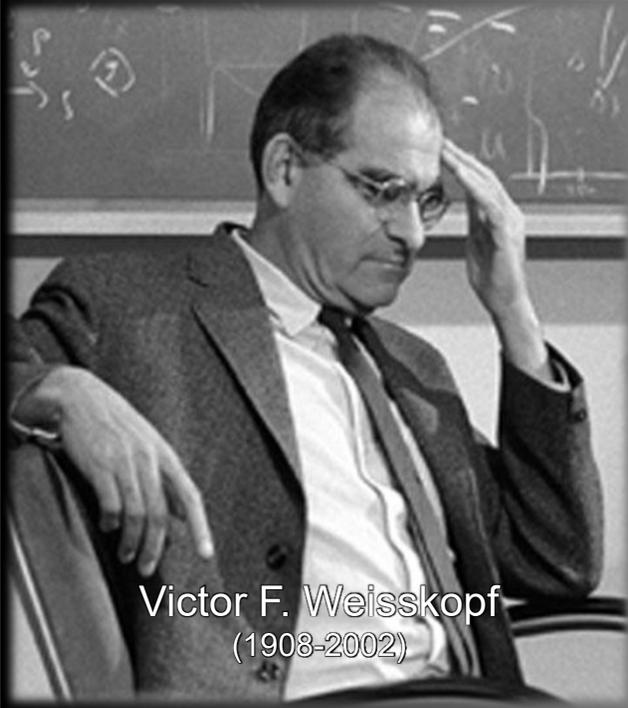
[Alexander Vilenkin, *Many Worlds in One: The Search for Other Universes* (New York: Hill and Wang, 2006), p.176]



"The question of the origin of the universe is one of the most exciting topics for a scientist to deal with. It reaches far beyond its purely scientific significance, since it is related to human existence, to mythology, and to religion. . . ."

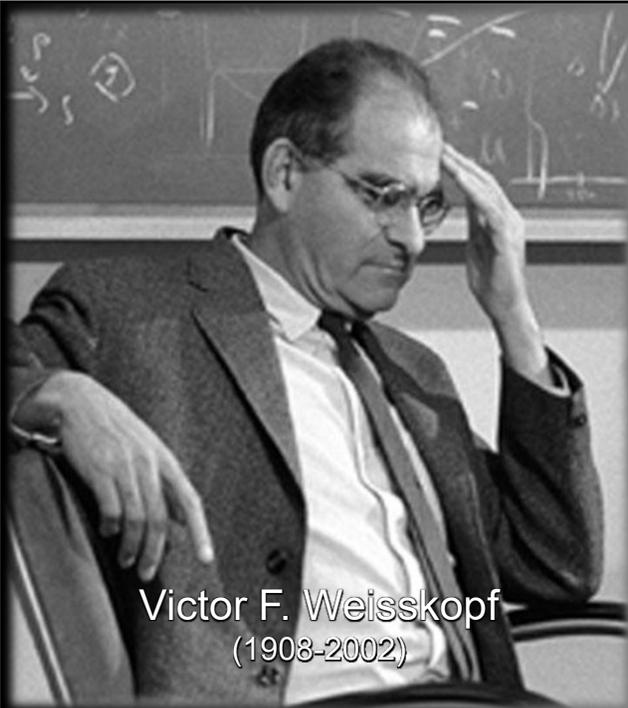
Victor F. Weisskopf
(1903-2002)





"It hits us in the heart, as it were. The origin of the universe can be talked about not only in scientific terms, but also in poetic and spiritual language, an approach that is complementary to the scientific one."

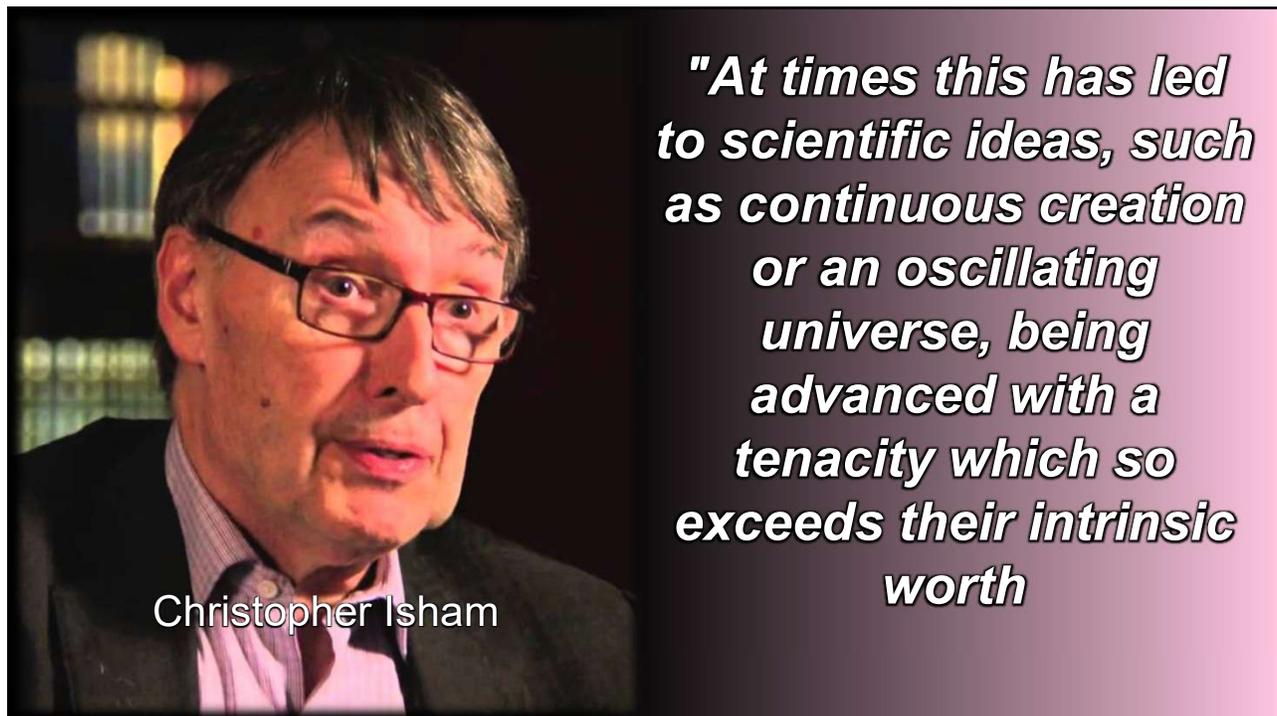
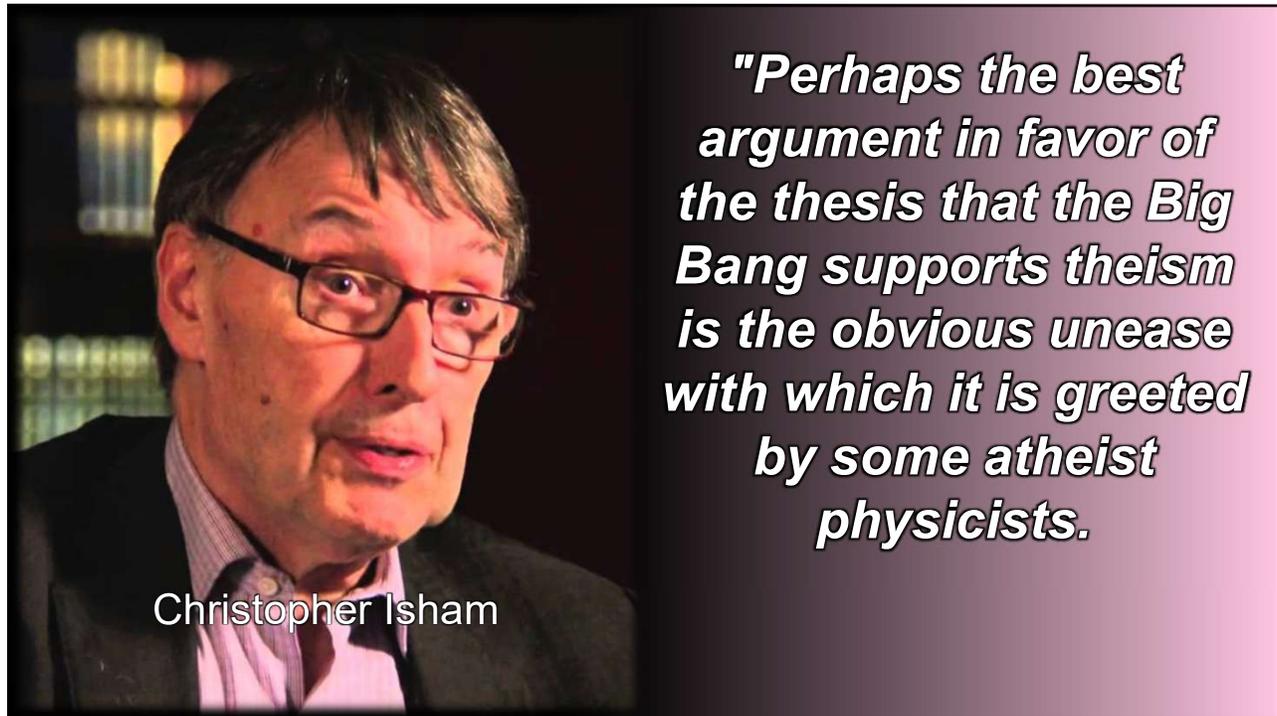
Victor F. Weisskopf
(1903-2002)



"Indeed, the Judeo-Christian tradition describes the beginning of the world in a way that is surprisingly similar to the scientific model."

[Victor F. Weisskopf, "The Origin of the Universe," *American Scientist*, Sep.-Oct. 1983, 71, pp. 473-480, reprinted in *The World of Physics: A Small Library of the Literature of Physics from Antiquity to the Present*, 3, vols. (New York: Simon and Schuster, 1987), vol. 3, pp. 300, 317]

Victor F. Weisskopf
(1903-2002)





"that one can only suspect the operation of psychological forces lying very much deeper than the usual academic desire for a theorist to support his or her theory."

Christopher Isham

[C. J. Isham, "Creation of the Universe as a Quantum Process," in R. J. Russell, W. R. Stoeger, and G. V. Coyne, eds., *Physics, Philosophy, and Theology* (Vatican City State: Vatican Observatory, 1988), 378, quoted in David Berlinski, *The Devils Delusion: Atheism and Its Scientific Pretensions* (New York: Crown Forum, 2008), 81]



∞ Definition ∞

Scientists maintain that every object in the universe is moving away from every other object such that even space itself is expanding.

∞ Significance ∞

The universe could not have been expanding from eternity otherwise it would be infinitely dispersed (which it is not).

∞ Significance ∞

Therefore, the universe began to exist a finite time ago.

Question

What does it mean when they say the universe is expanding?

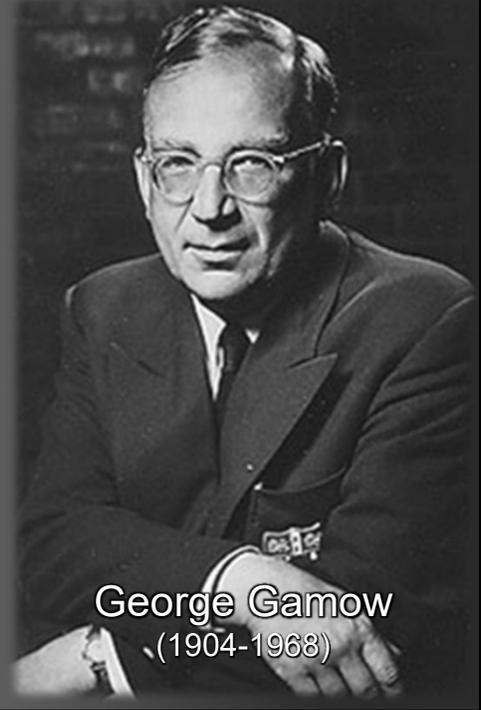
Answer

When scientists talk about the expanding universe, they mean that it has been growing ever since its beginning with the Big Bang.

[<https://www.loc.gov/everyday-mysteries/astronomy/item/what-does-it-mean-when-they-say-the-universe-is-expanding/>, accessed 08/13/25]

"The entire space of the universe, populated by billions of galaxies, is in a state of rapid expansion, with all its members flying away from one another at high speed."

[George Gamow, "Broadening Horizons," in *The World of Physics: A Small Library of the Literature of Physics from Antiquity to the Present*, 3. vols. (New York: Simon and Schuster, 1987), vol. 3, 239]

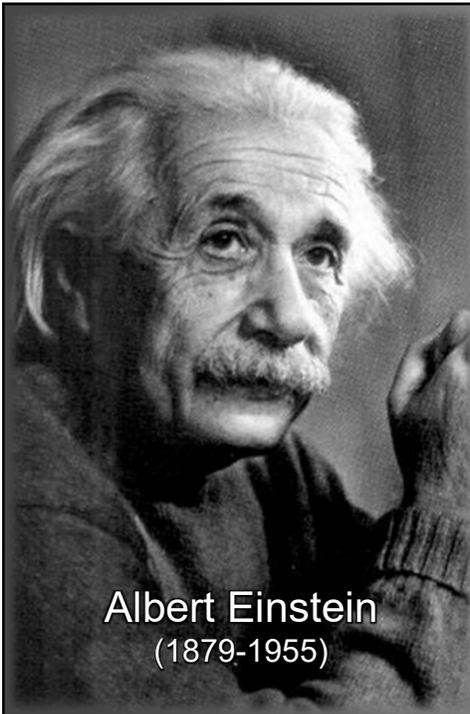


George Gamow
(1904-1968)

"Hubble's discovery can, therefore, be considered to some extent as a confirmation of the theory [of an expansion of space]."

Albert Einstein
(1879-1955)

[Albert Einstein, *Relativity: The Special and the General Theory*. (New York: Bonanza Books, 1961), 134]



"The old idea of an essentially unchanging universe that could have existed, and could continue to exist, forever was replaced by the notion of a dynamic, expanding universe that seemed to have begun a finite time ago, and that might end at a finite time in the future."

[Steven W. Hawking, *A Brief History of Time: From the Big Bang to Black Holes* (Toronto: Bantam Books, 1988), pp. 33-34]

Stephen Hawking
(1942-2018)



The Second Law of Thermodynamics

∞ Definition ∞

All isolated systems will tend toward a state of maximum disorder (entropy).

∞ Definition ∞

In an isolated system the amount of energy available to do work decreases and becomes uniform.

∞ Definition ∞

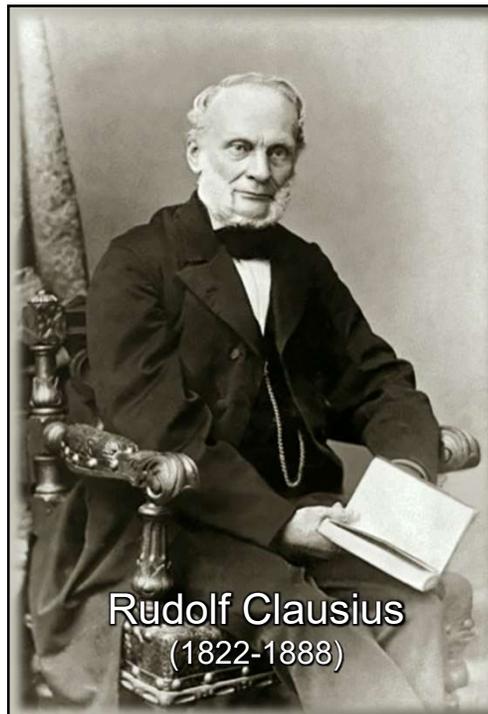
This amounts to saying that the universe is "running down."

∞ Significance ∞

The universe could not have been running down from eternity otherwise it would have run down by now (which it has not).

∞ Significance ∞

Therefore, the universe began
to exist a finite time ago.

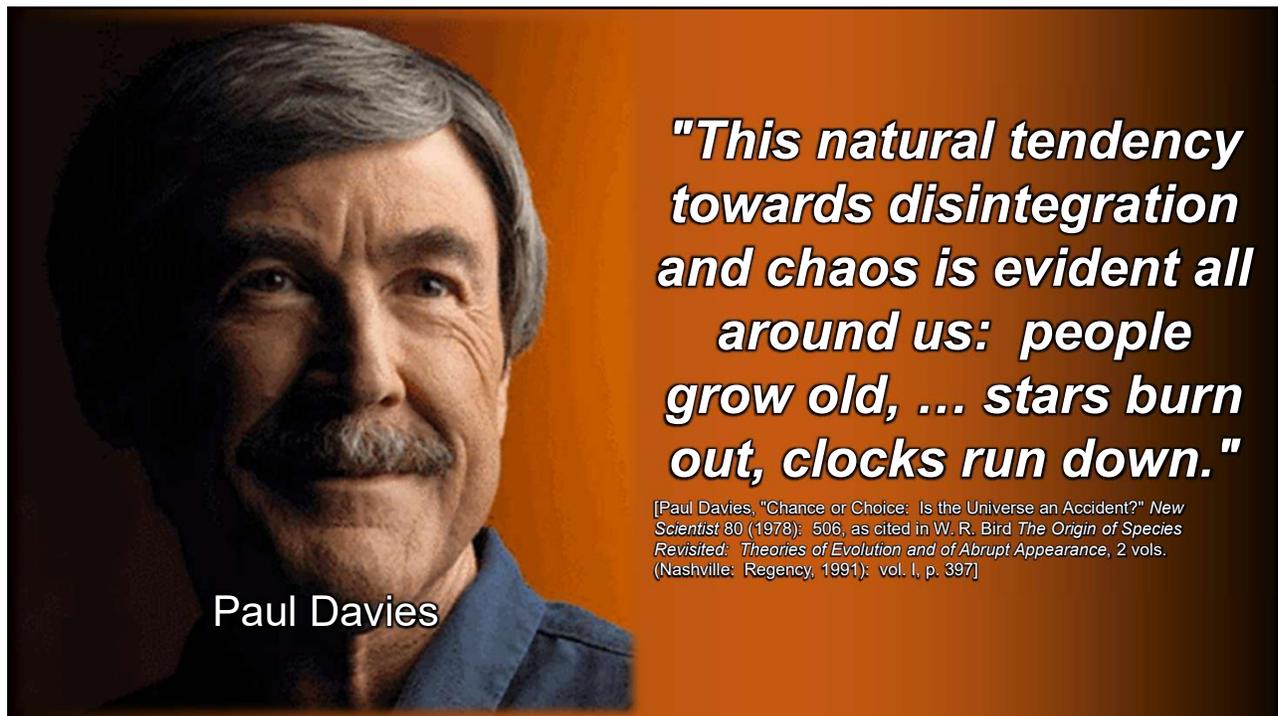
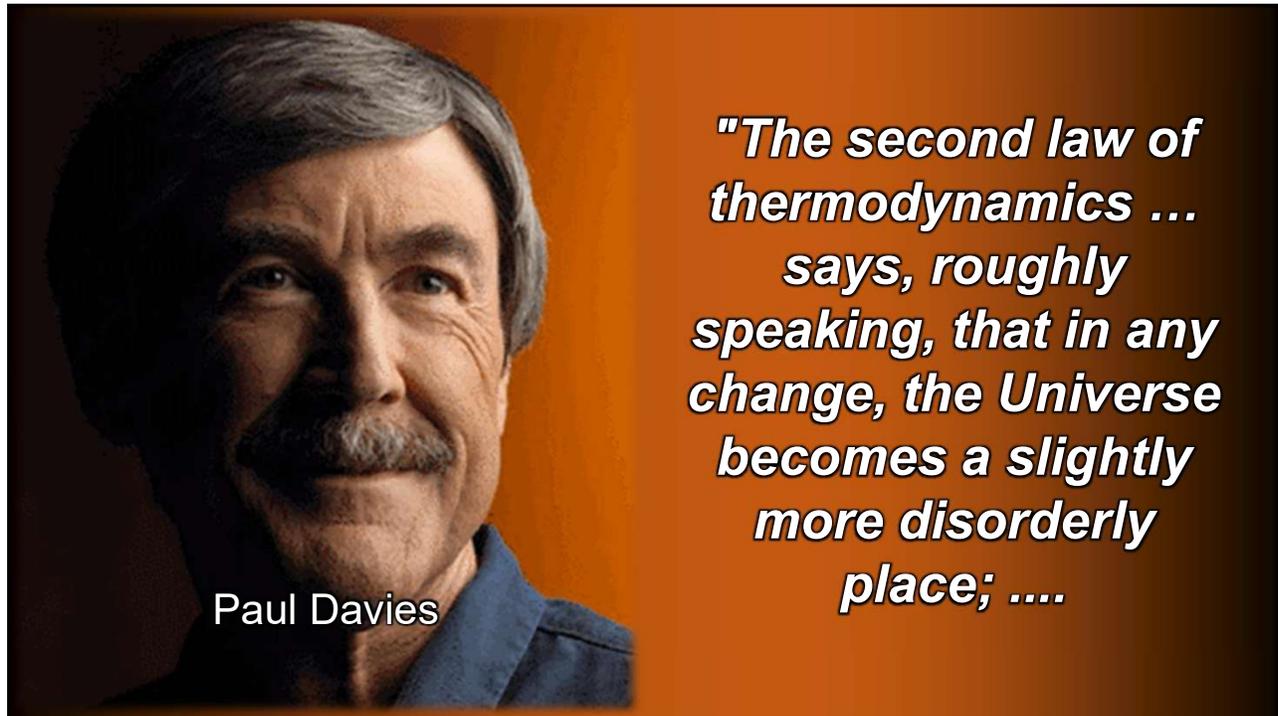


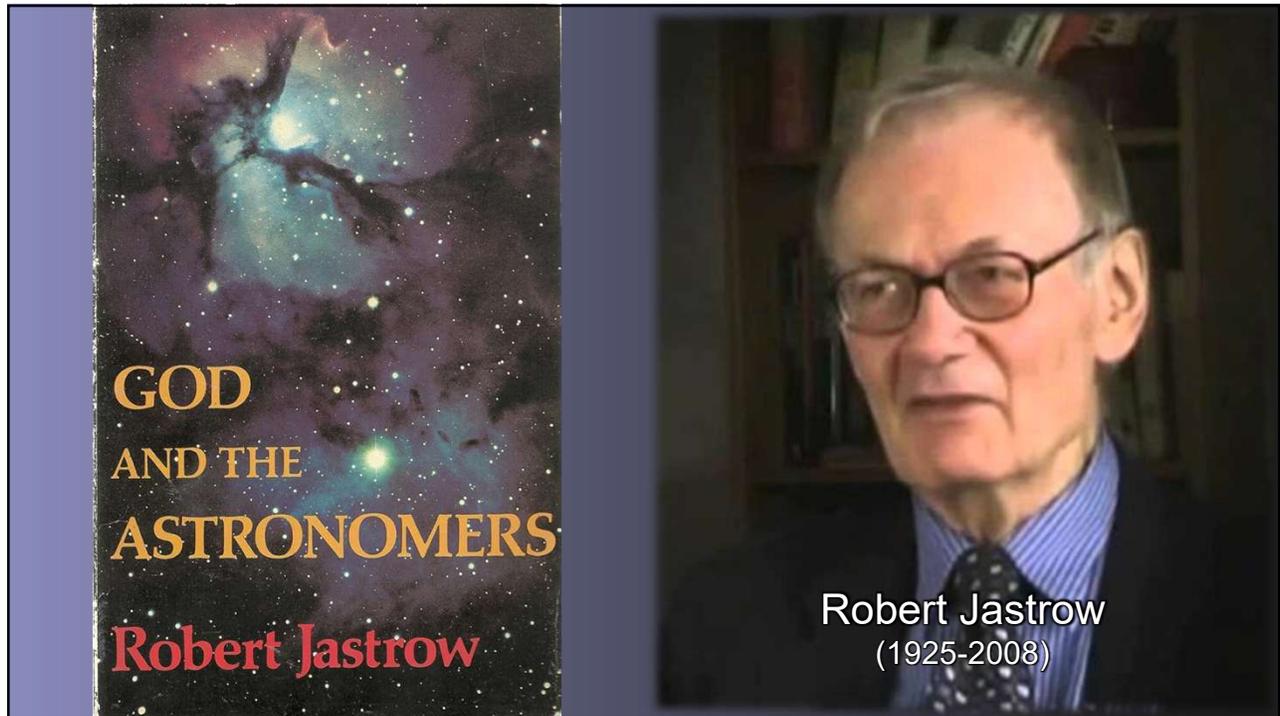
Rudolf Clausius
(1822-1888)

"We can express the fundamental laws of the universe which correspond to the two fundamental laws of the mechanical theory of heat in the following simple form:

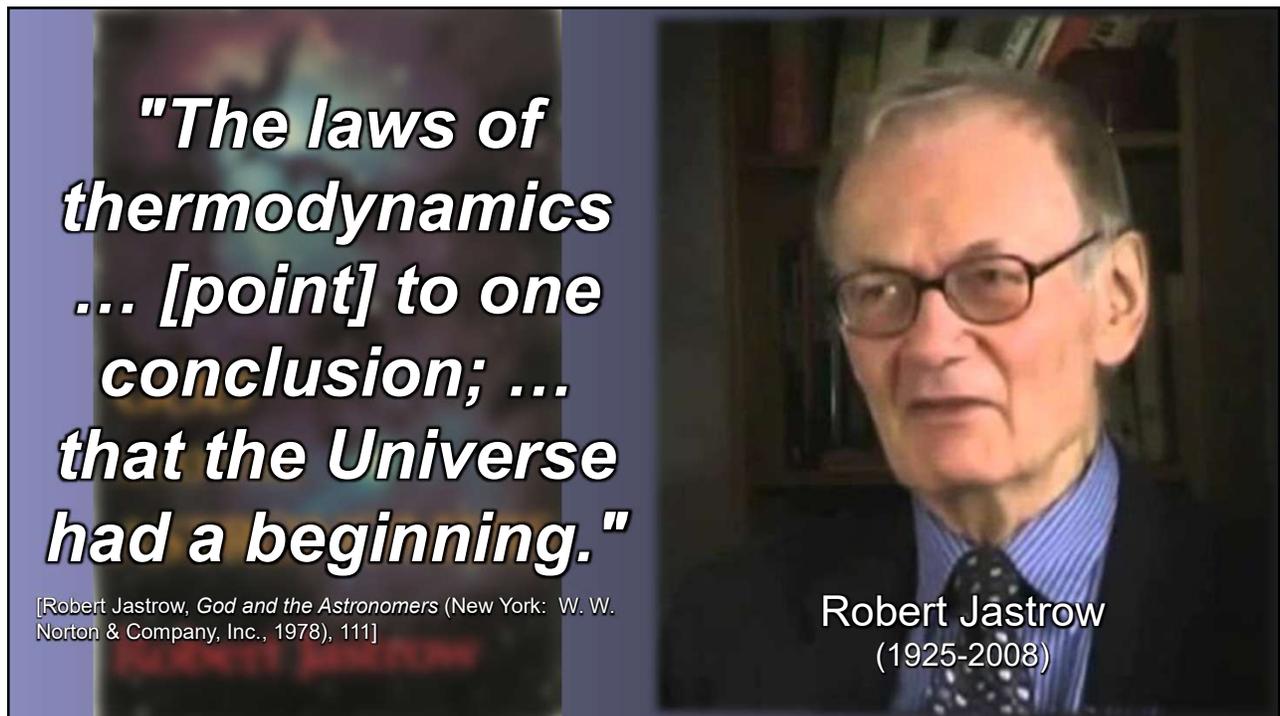
- 1. The energy of the universe is constant.*
- 2. The entropy of the universe tends toward a maximum."*

[Rudolf Clausius, "The Second Law of Thermodynamics," in *The World of Physics: A Small Library of the Literature of Physics from Antiquity to the Present*, 3. vols. (New York: Simon and Schuster, 1987), vol. 1, p. 734]





Robert Jastrow
(1925-2008)



"The laws of thermodynamics ... [point] to one conclusion; ... that the Universe had a beginning."

[Robert Jastrow, *God and the Astronomers* (New York: W. W. Norton & Company, Inc., 1978), 111]

Robert Jastrow
(1925-2008)

"For the scientist who has lived by his faith in the power of reason, the story ends like a bad dream. He has scaled the mountains of ignorance; he is about to conquer the highest peak; as he pulls himself over the final rock, he is greeted by a band of theologians who have been sitting there for centuries."

[Robert Jastrow, *God and the Astronomers* (New York: W. W. Norton & Company, Inc., 1978), 116]

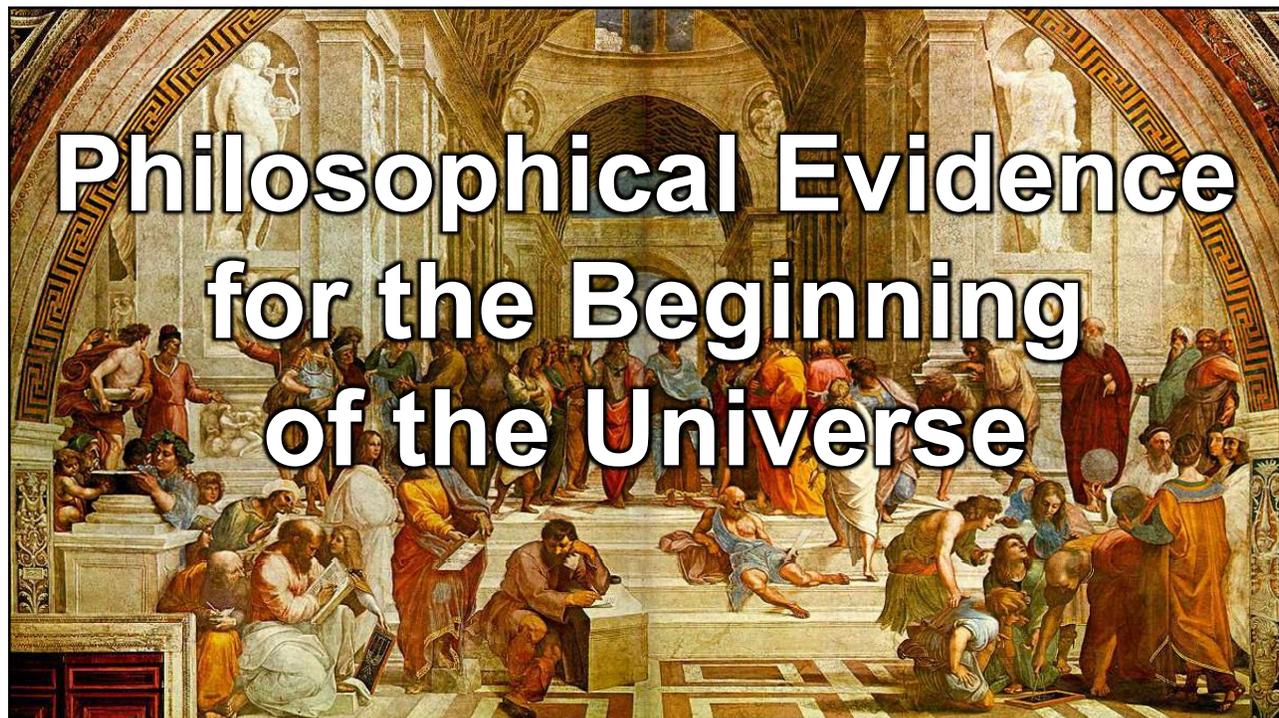
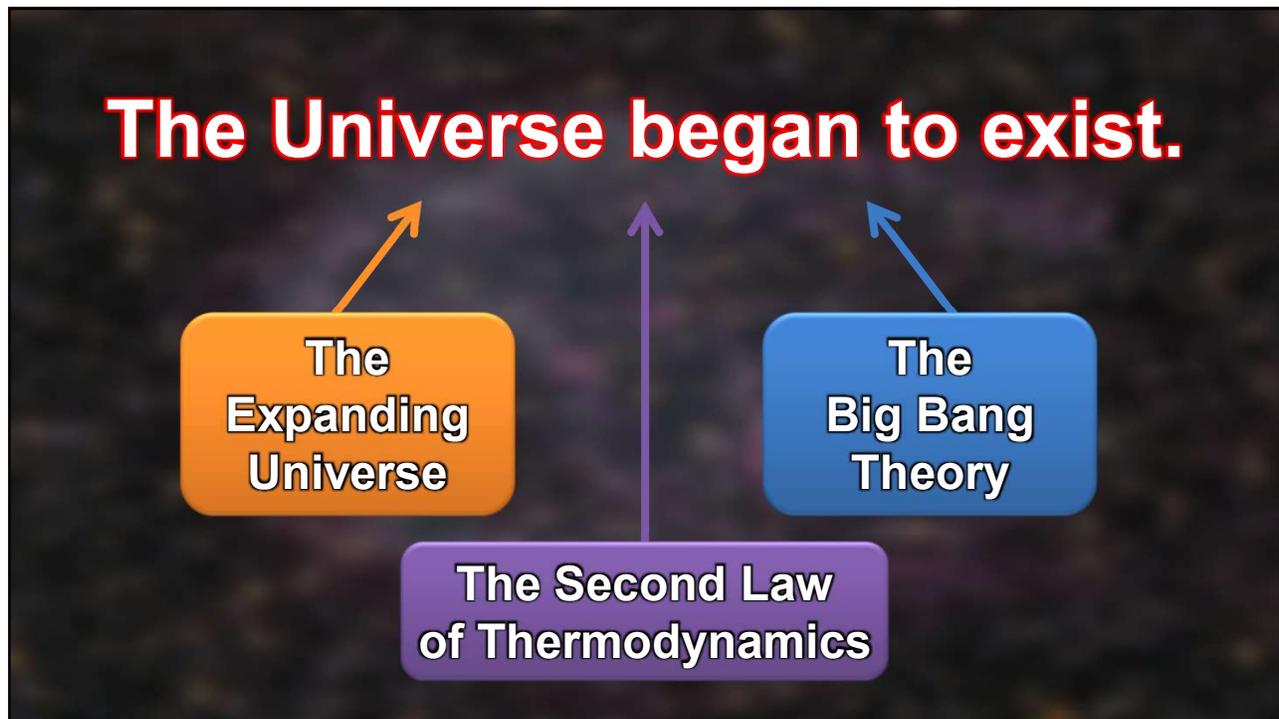


Robert Jastrow
(1925-2008)

The evidence for the Big Bang Theory shows that the universe has not always existed. Therefore, the universe began to exist a finite time ago.

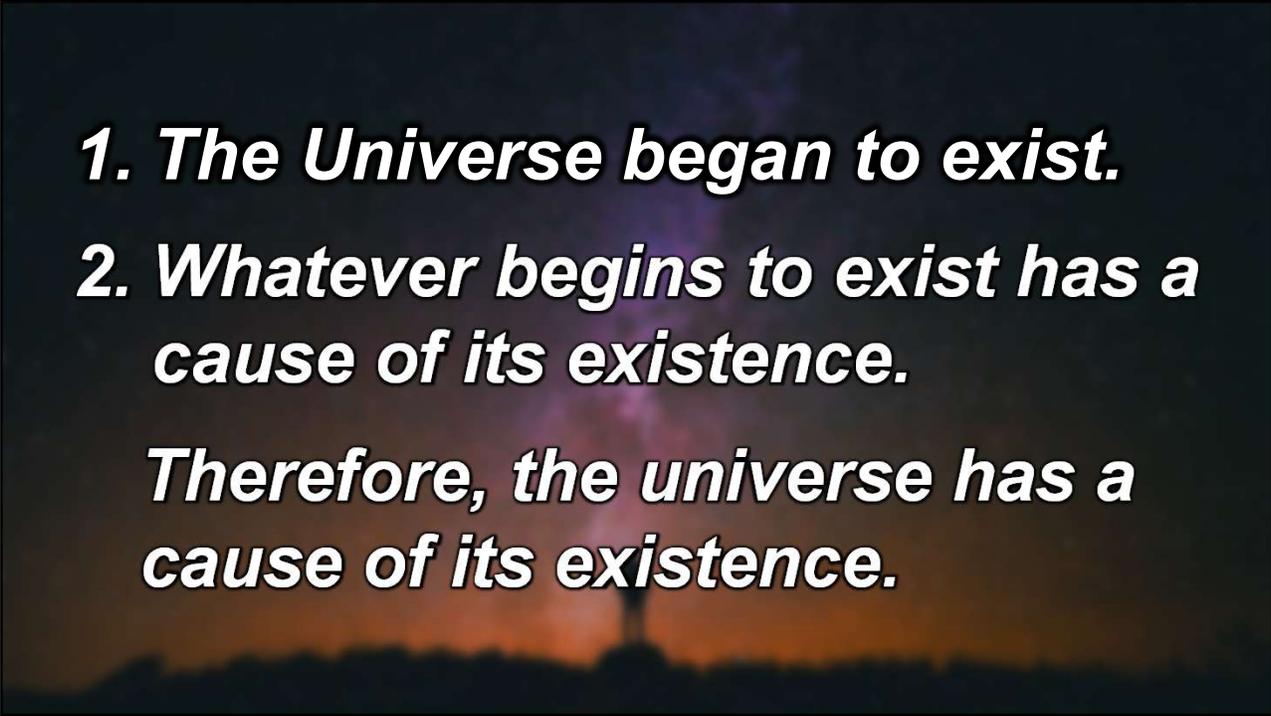
The evidence for the expansion of the universe shows that the universe could not have been expanding from eternity. Therefore the universe began to exist a finite time ago.

The evidence of the Second Law of Thermodynamics shows that the universe could not have been running down from eternity. Therefore, the universe began to exist a finite time ago.

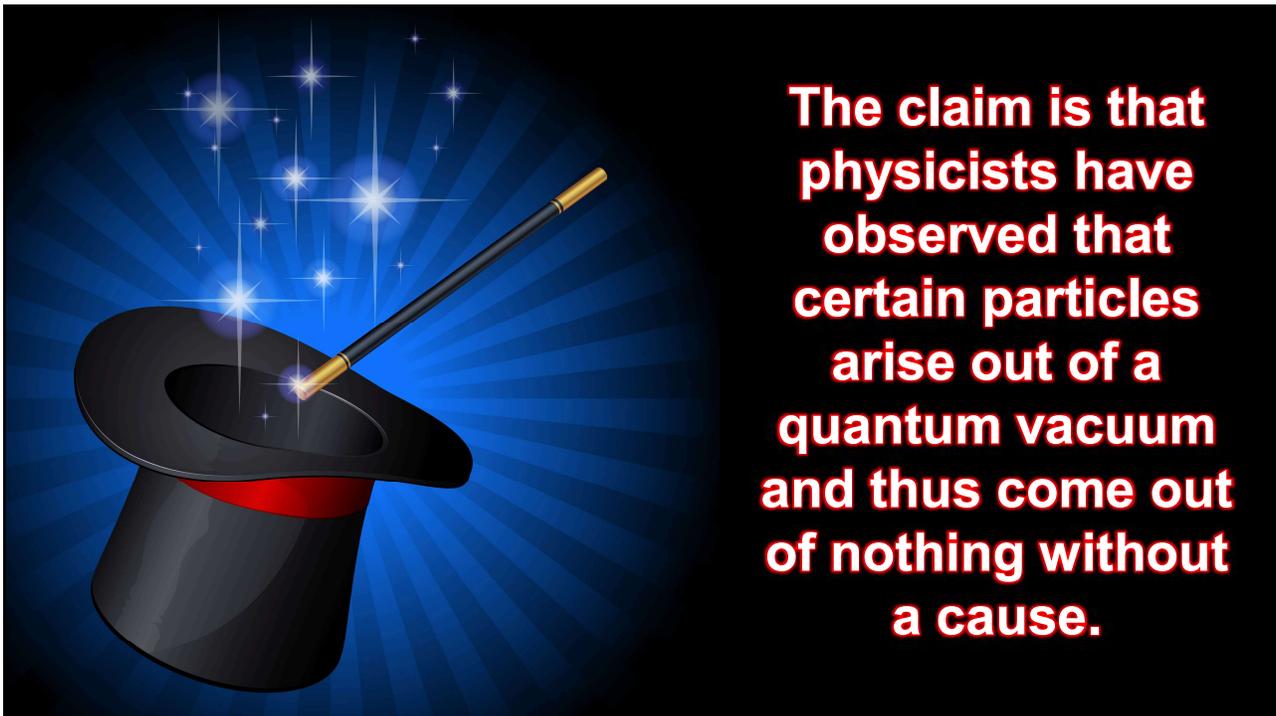


- 1. It is impossible to traverse an actual infinite length of time.***
 - 2. If the past had no beginning, then an actual infinite length of time has been traversed.***
- Therefore, the past had a beginning.***

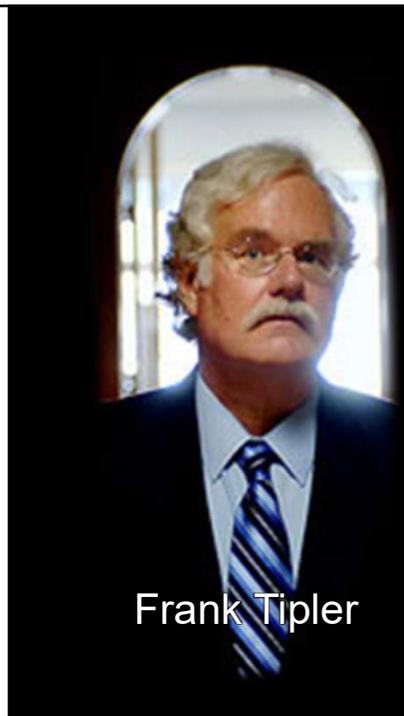
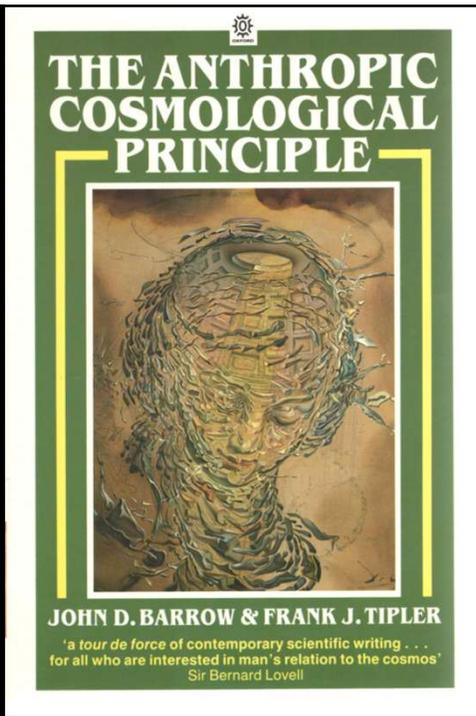
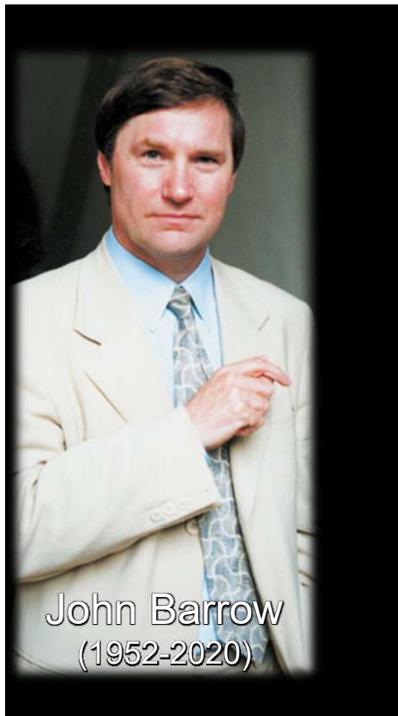
- 1. It is impossible for there to be an actual infinite quantity.***
 - 2. If the past had no beginning, then the past would be an actual infinite quantity.***
- Therefore, the past had a beginning.***

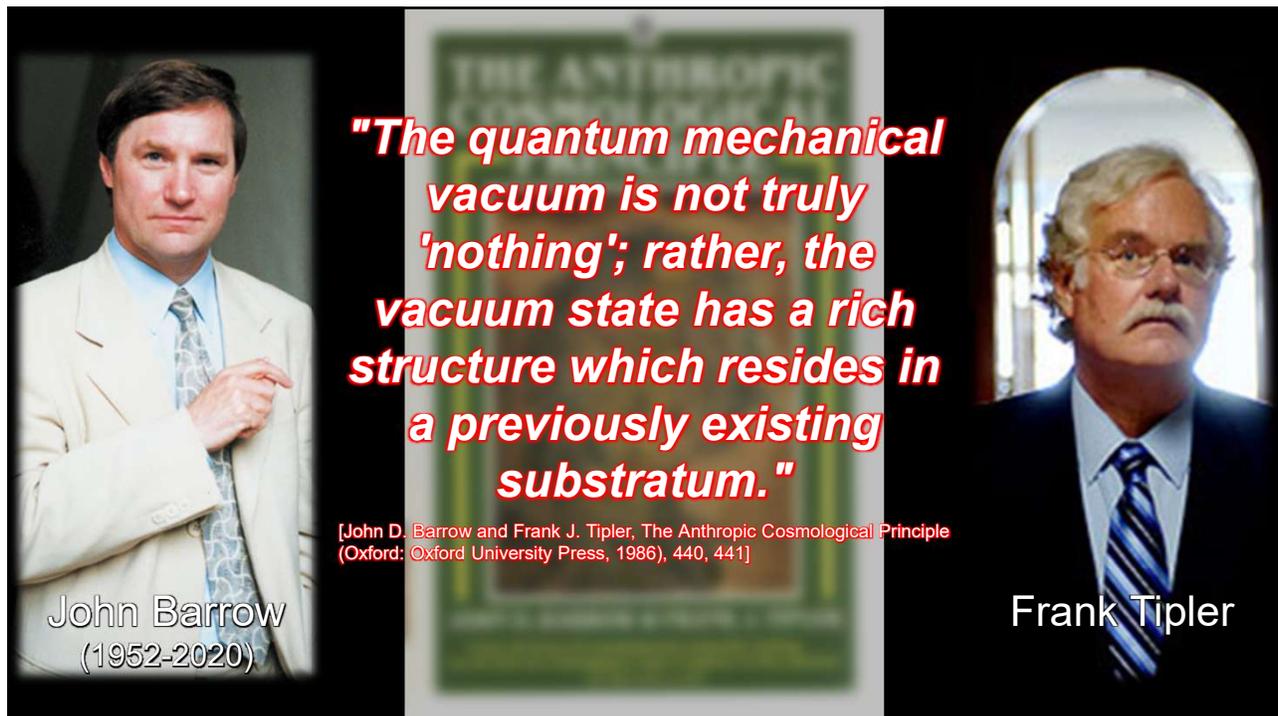
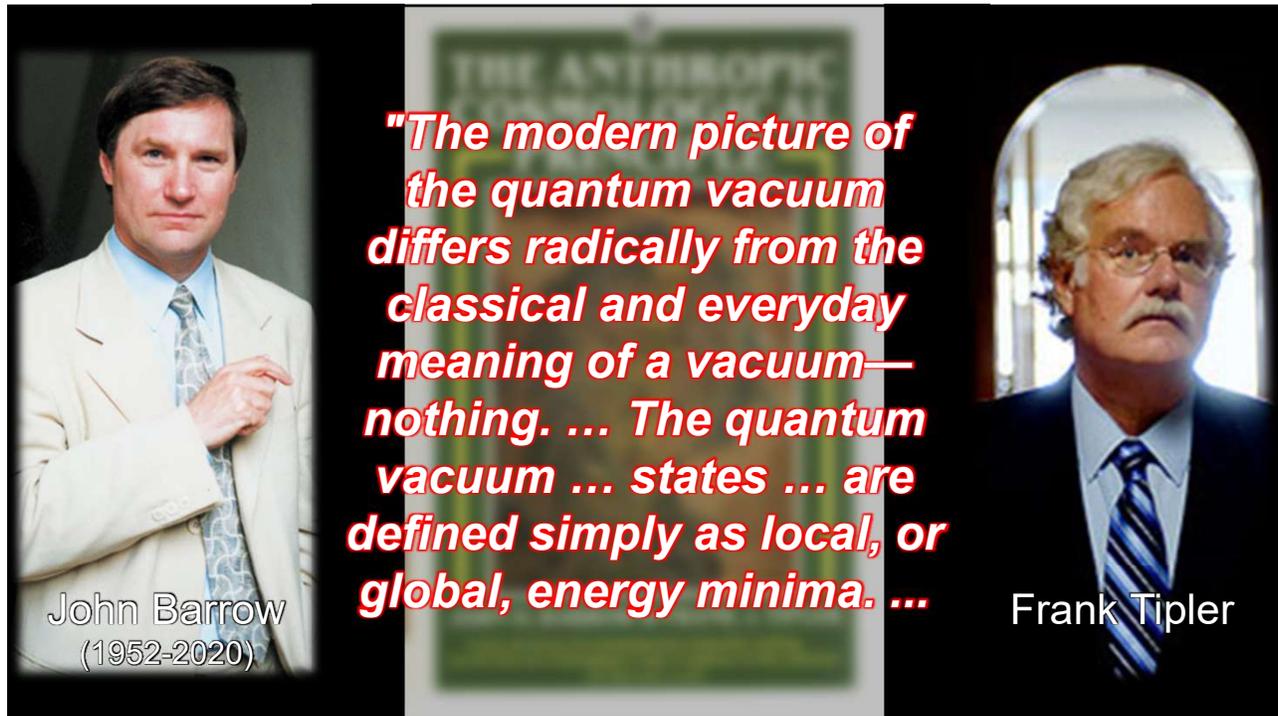
- 
- 1. The Universe began to exist.***
 - 2. Whatever begins to exist has a cause of its existence.***
- Therefore, the universe has a cause of its existence.***

- 
- 2. Whatever begins to exist has a cause of its existence.***

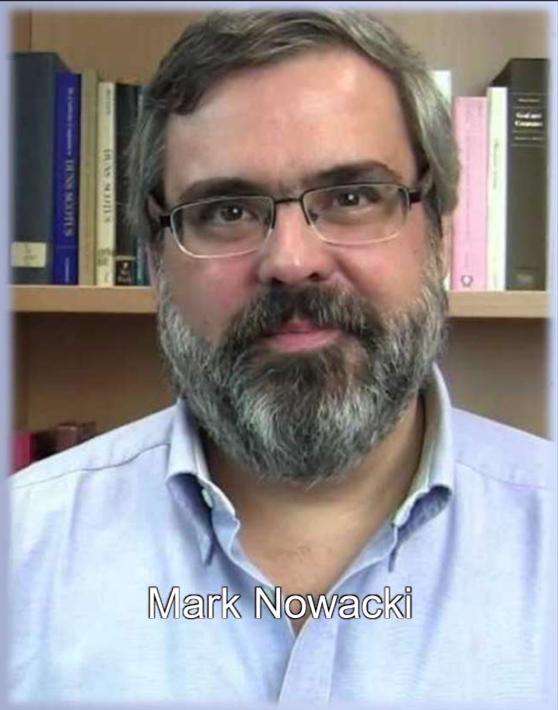


The claim is that physicists have observed that certain particles arise out of a quantum vacuum and thus come out of nothing without a cause.





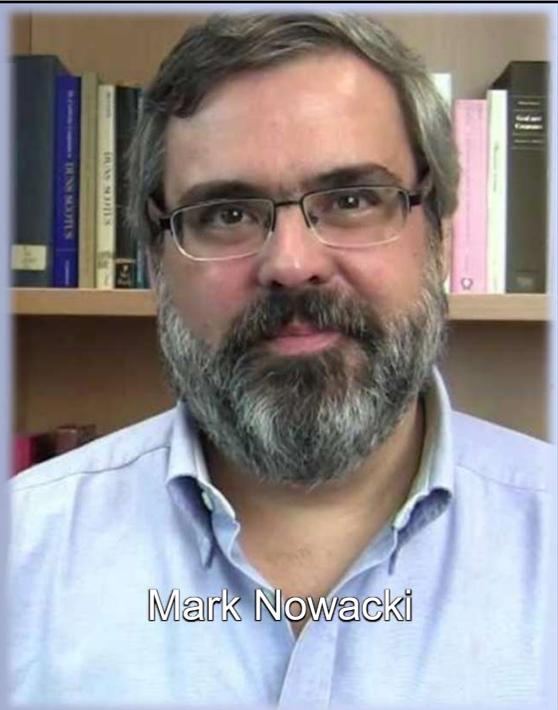
"... the quantum vacuum is very different from the void of Newton: the quantum vacuum is a soupy morass of energy and particles in constant flux; and virtual particles derive their existence from the surrounding quantum gumbo."



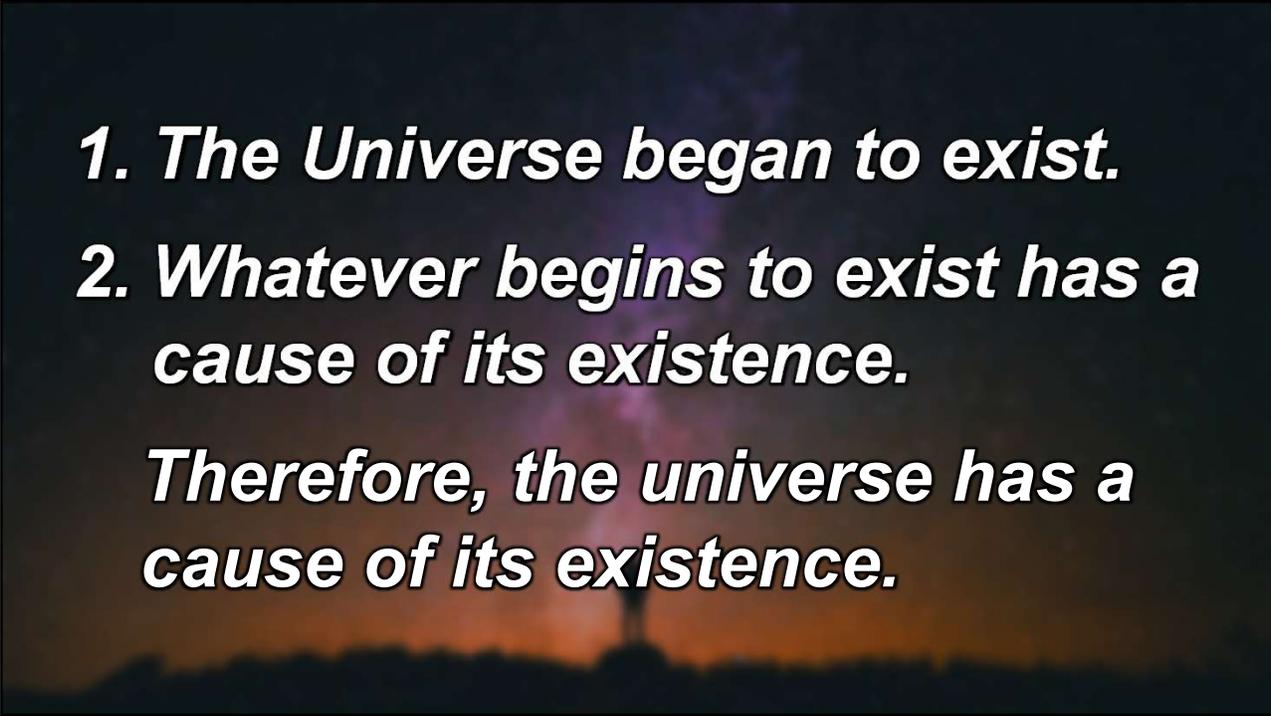
Mark Nowacki

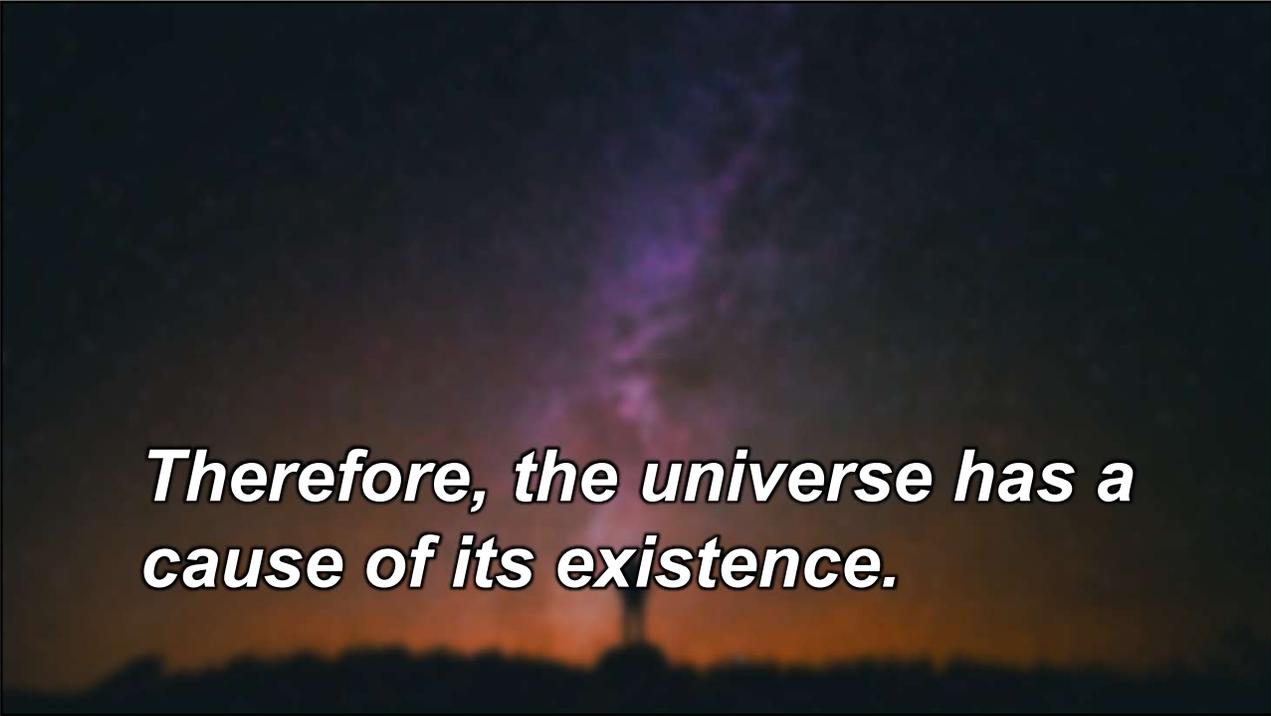
"So, whatever the full causal account of virtual particles might be, it is clear that their arising is not a case of something coming to be out of nothing."

[Mark R. Nowacki, "Whatever Comes to Be Has a Cause of Its Coming to Be: A Thomistic Defense of the Principle of Sufficient Reason" *The Thomist* 62 (1998): 291-302]

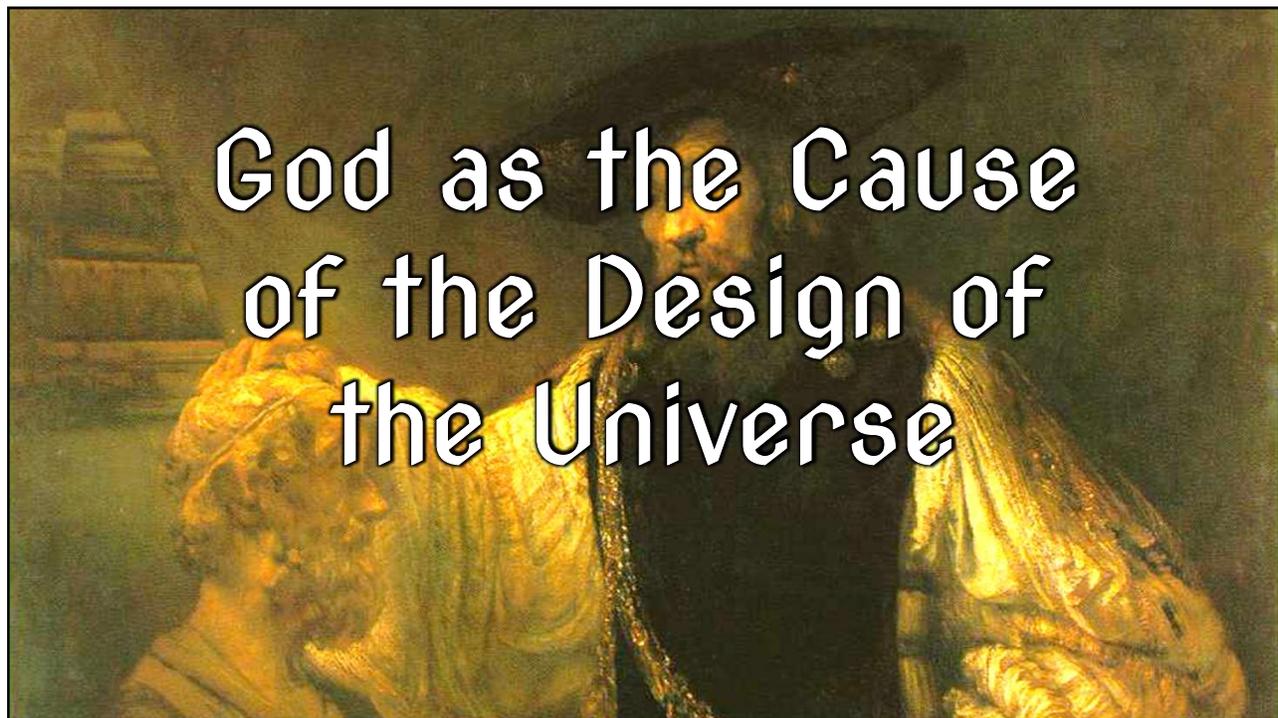
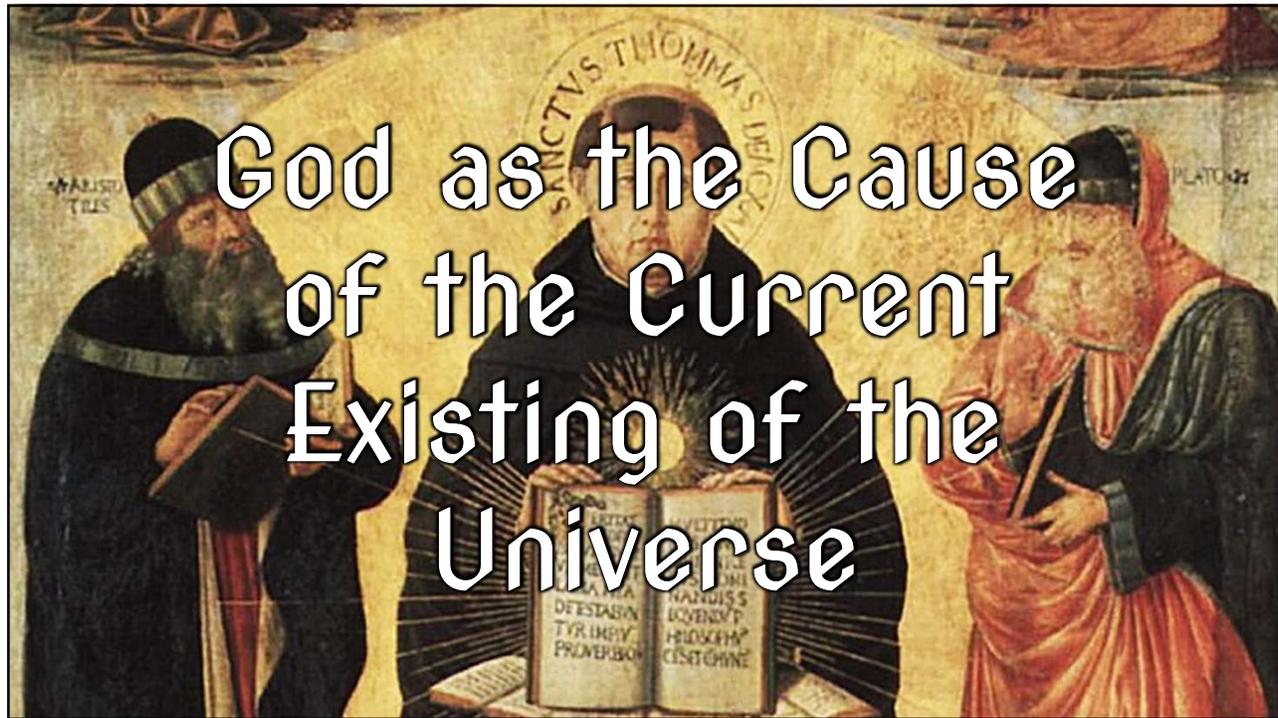


Mark Nowacki

- 
- 1. The Universe began to exist.***
 - 2. Whatever begins to exist has a cause of its existence.***
- Therefore, the universe has a cause of its existence.***



Therefore, the universe has a cause of its existence.

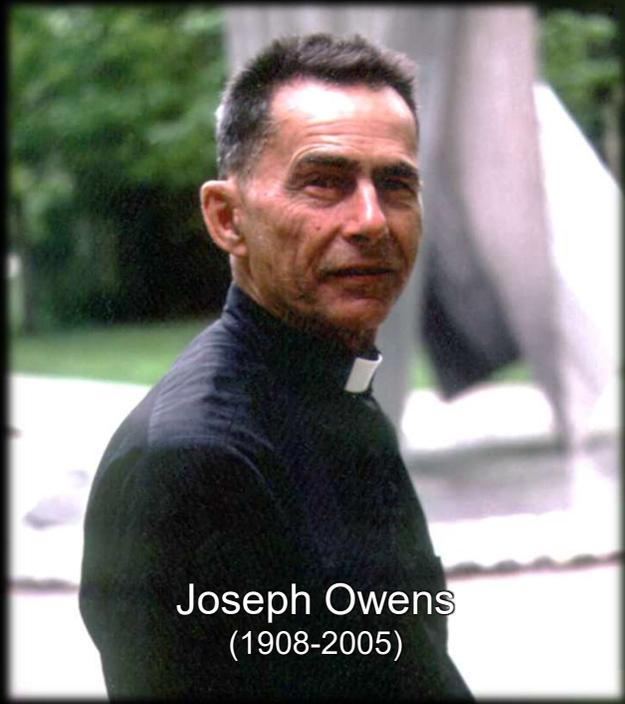




**THE DESIGN
ARGUMENT:
AQUINAS VS. PALEY**

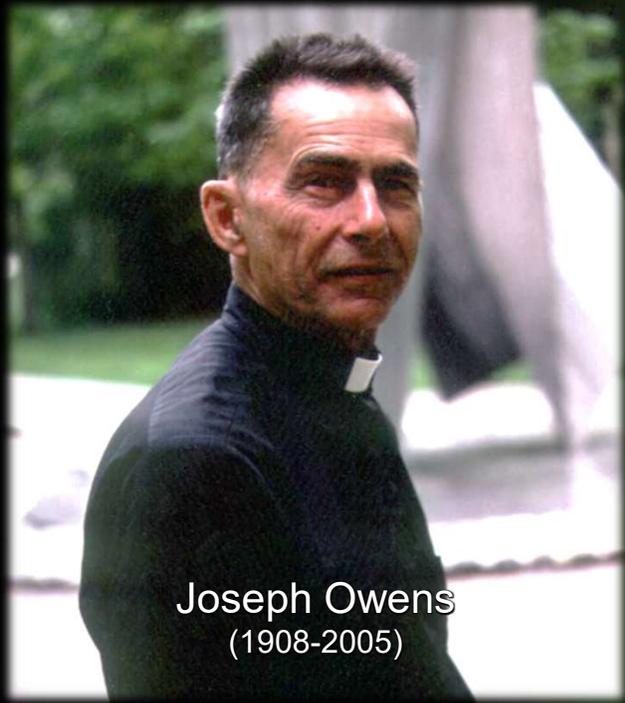
Richard G. Howe, Ph.D.

**Emeritus Professor of Philosophy and Apologetics, Southern Evangelical Seminary
Past President, International Society of Christian Apologetics**

A portrait of Joseph Owens, a man with short dark hair, wearing a black clerical shirt with a white collar. He is looking slightly to the right of the camera.

Joseph Owens
(1908-2005)

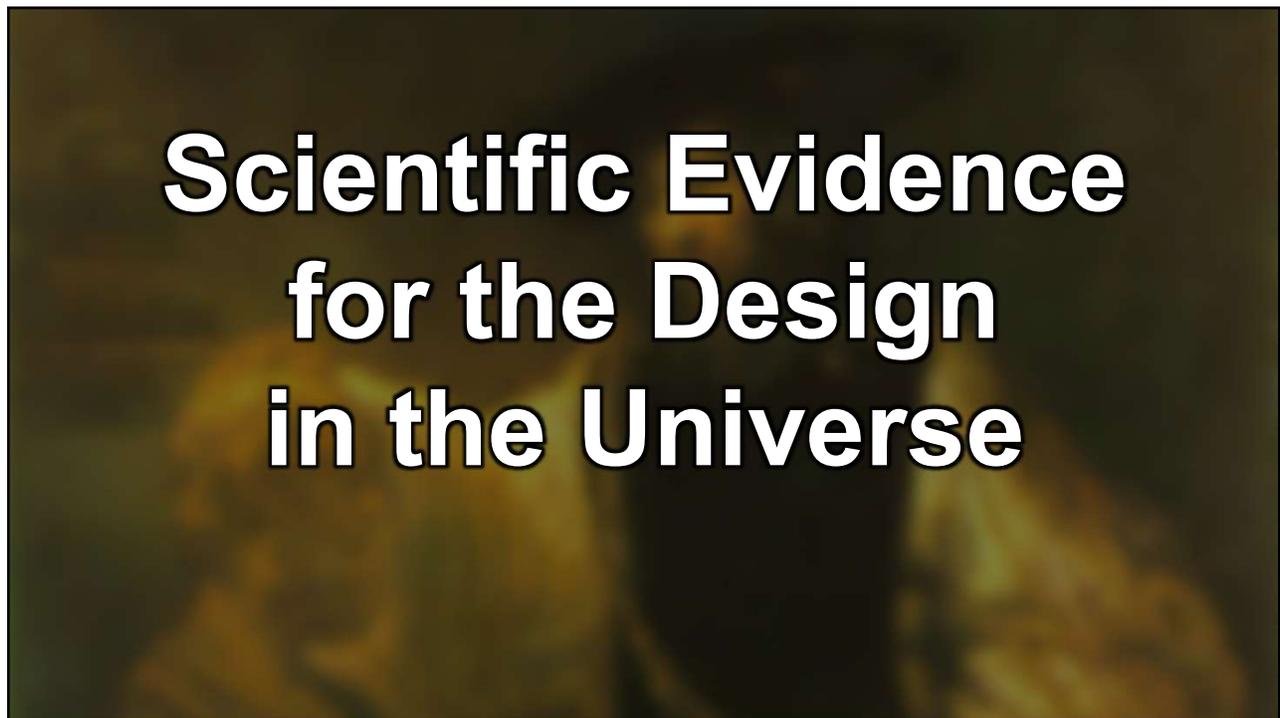
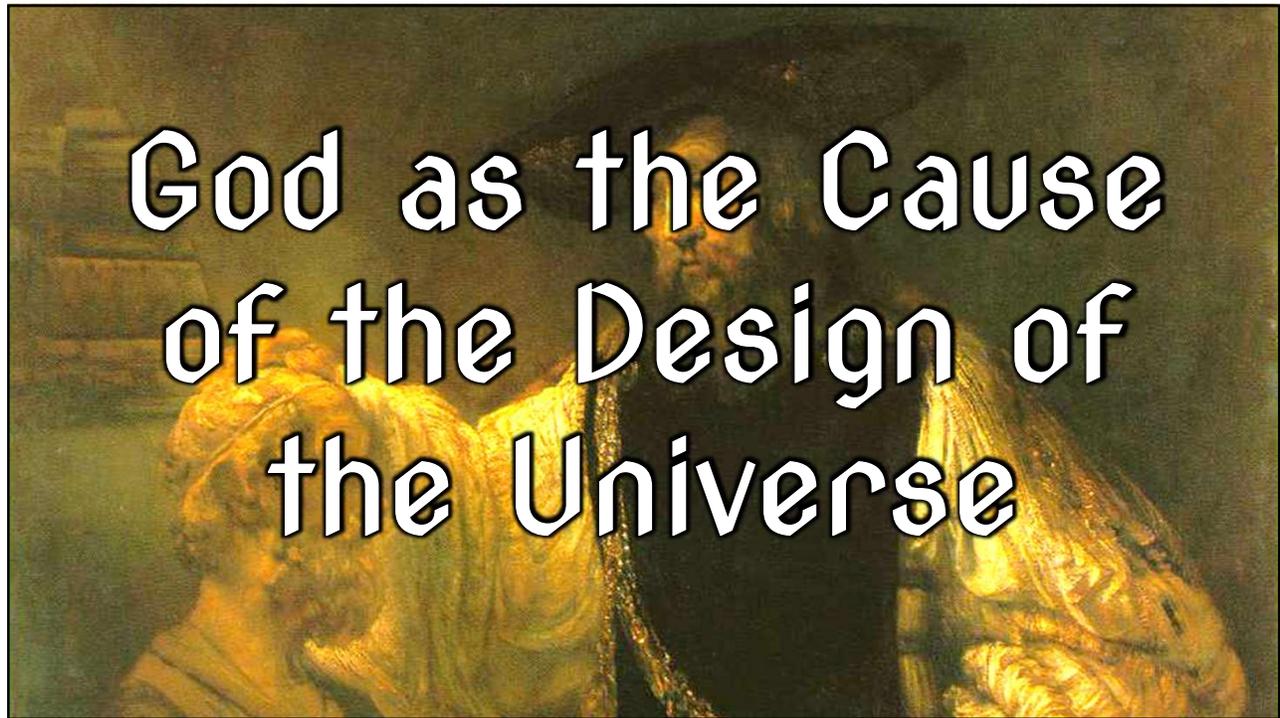
"Other arguments may vividly suggest the existence of God, press it home eloquently to human consideration, and for most people provide much greater spiritual and religious aid than difficult metaphysical demonstrations."

A portrait of Joseph Owens, a man with short dark hair, wearing a black clerical shirt with a white collar. He is looking slightly to the right of the camera.

Joseph Owens
(1908-2005)

"But on the philosophical level these arguments are open to rebuttal and refutation, for they are not philosophically cogent."

[Joseph Owens, "Aquinas and the Five Ways," *Monist* 58 (Jan. 1974): 16-35, p. 33]



∞ Design of the Universe ∞

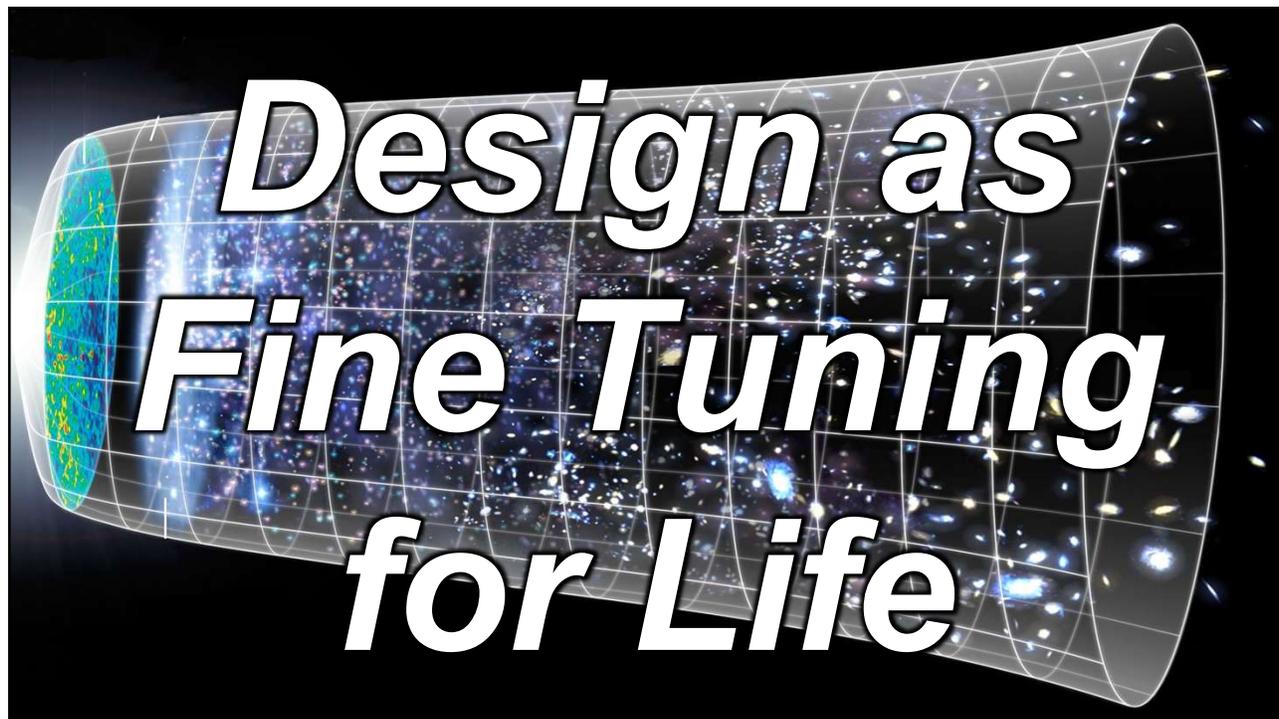
Design as fine tuning for life

Design as the origin of life

∞ Design of Living Systems ∞

Design as information

Design as irreducible complexity



∞ Definition ∞

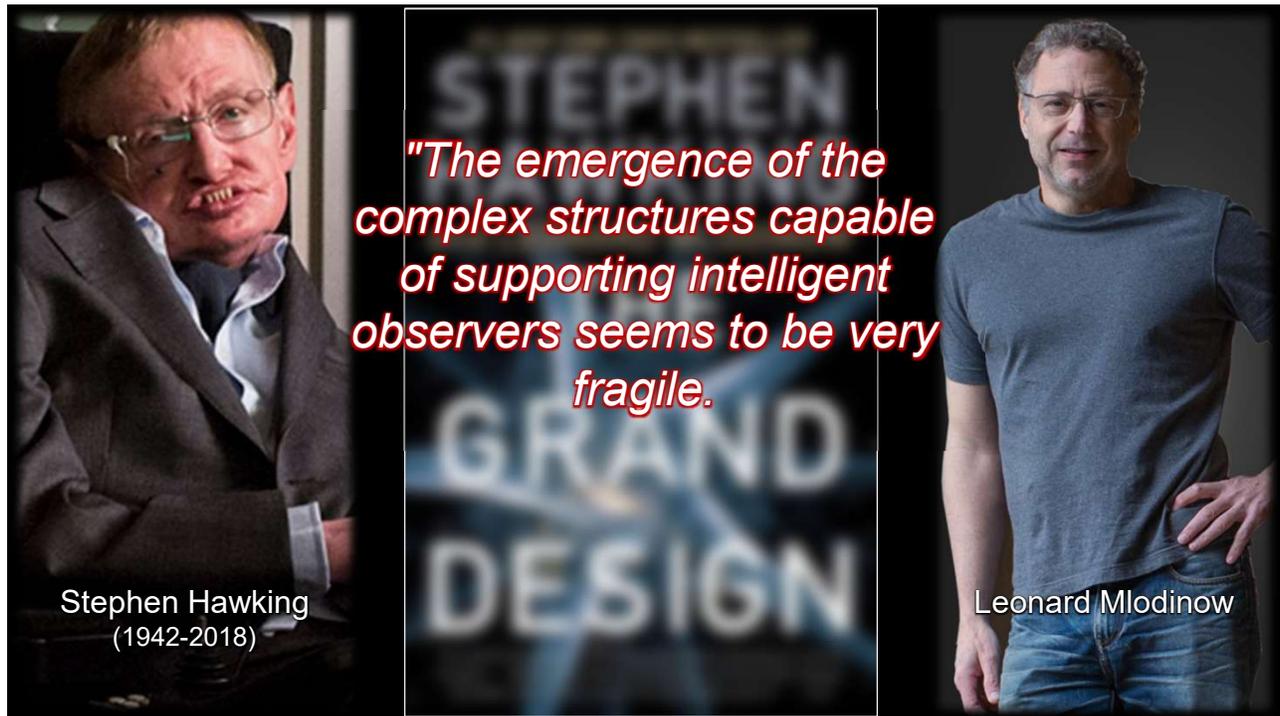
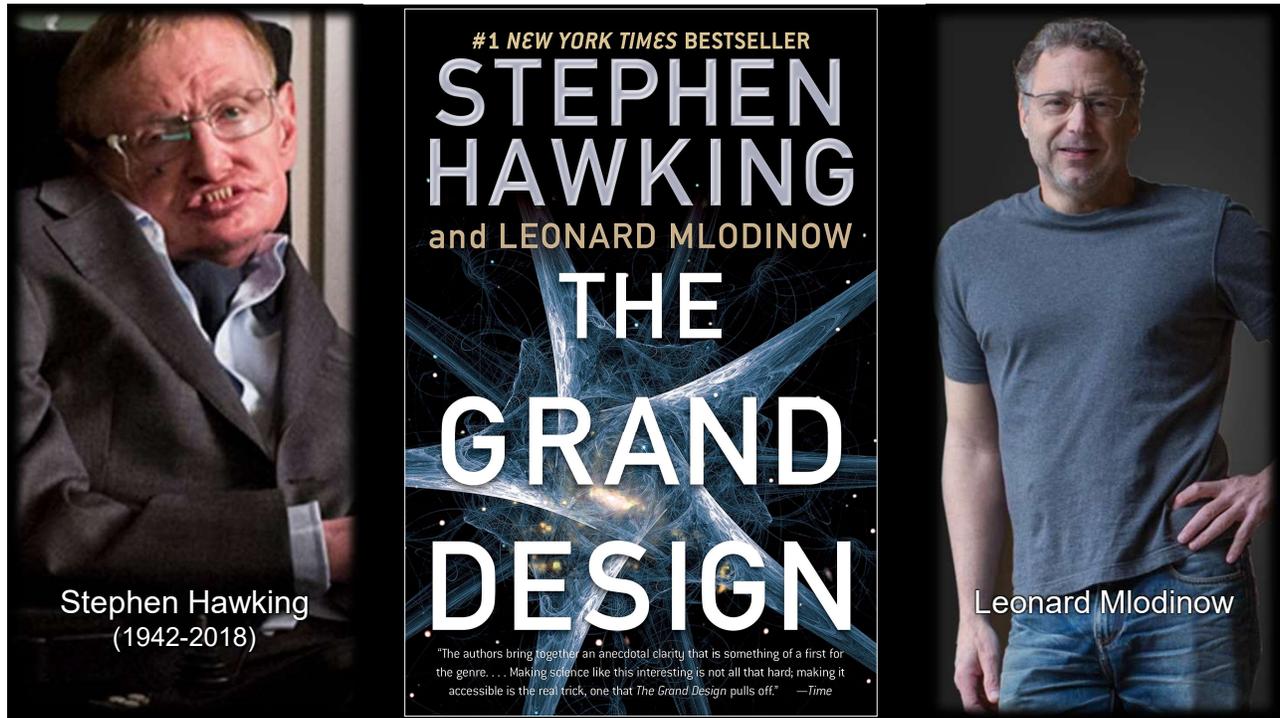
Scientists recognize that the universe's initial condition contained an array of physical values (constants) that are necessary for the universe to support life.

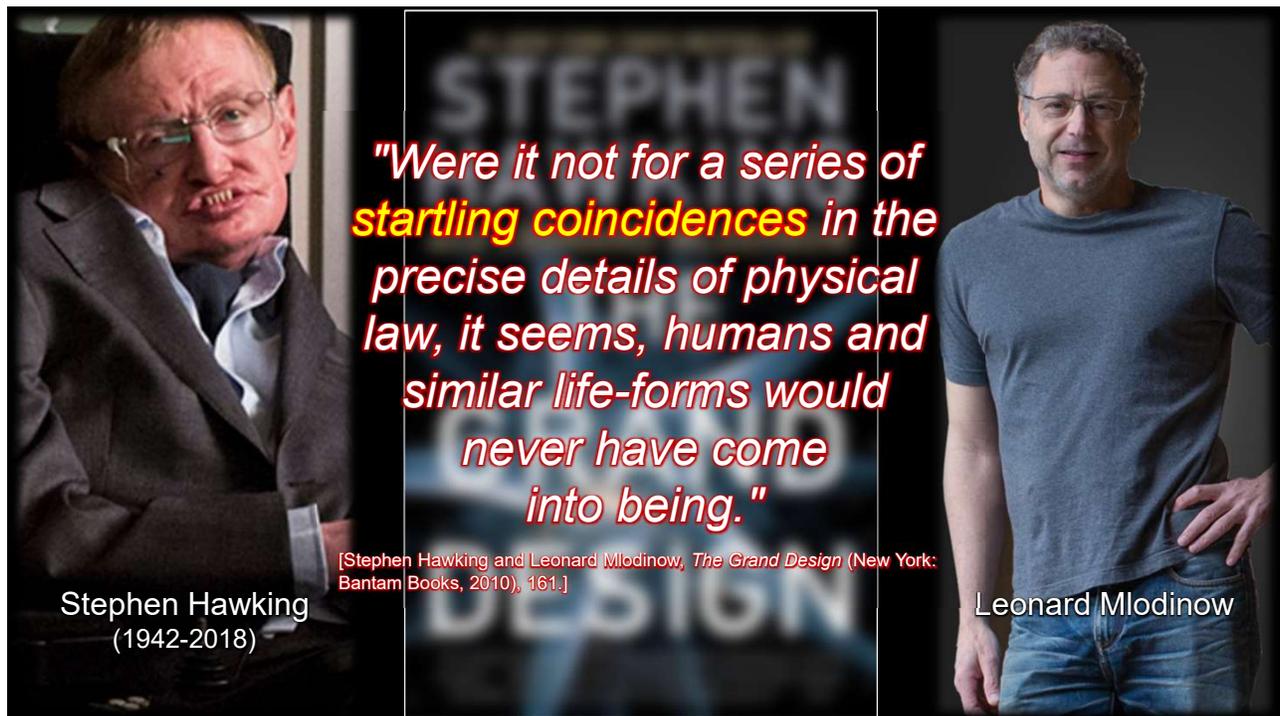
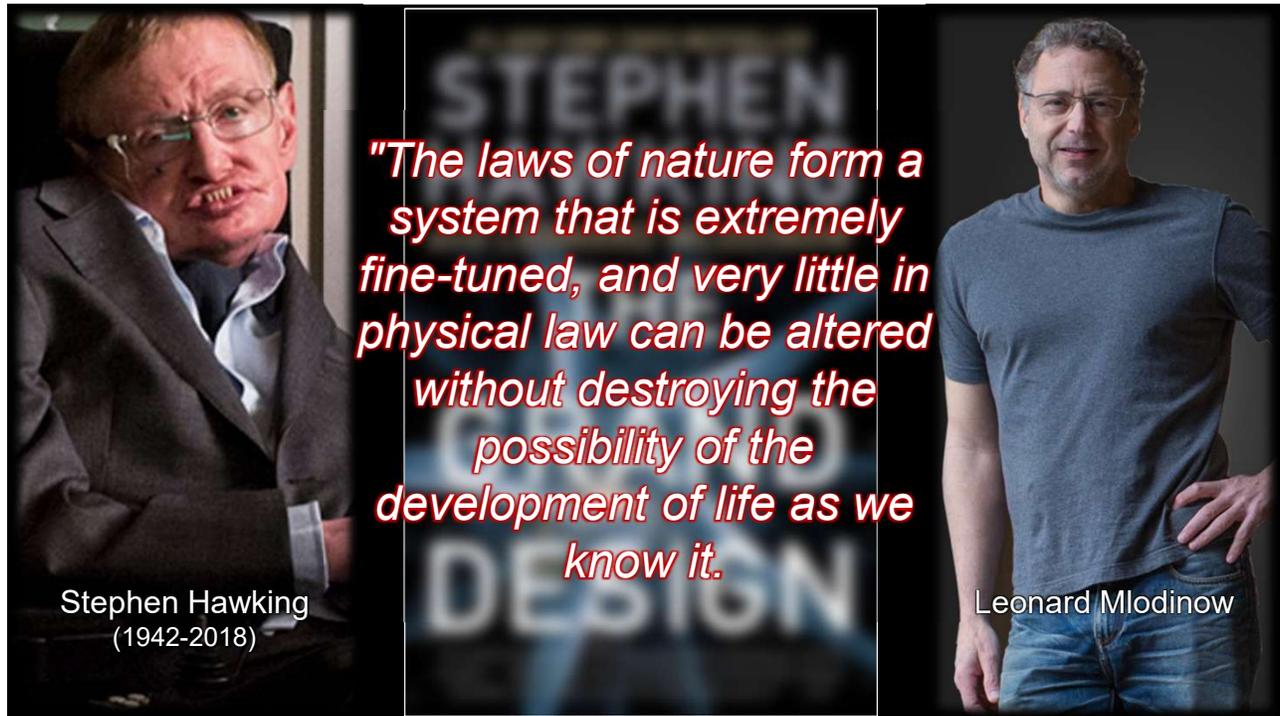
∞ Significance ∞

It would seem to some that the likelihood that these values could come about by chance is next to impossible.

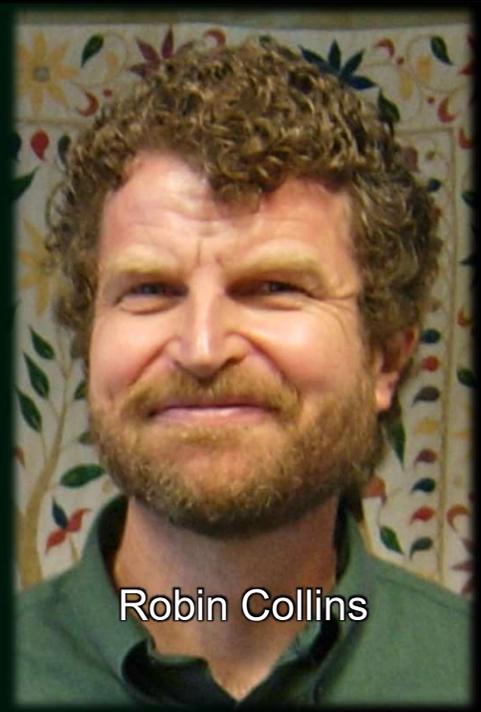
∞ Significance ∞

Therefore, the status of the universe to support life seems to have been designed deliberately by an intelligent cause.





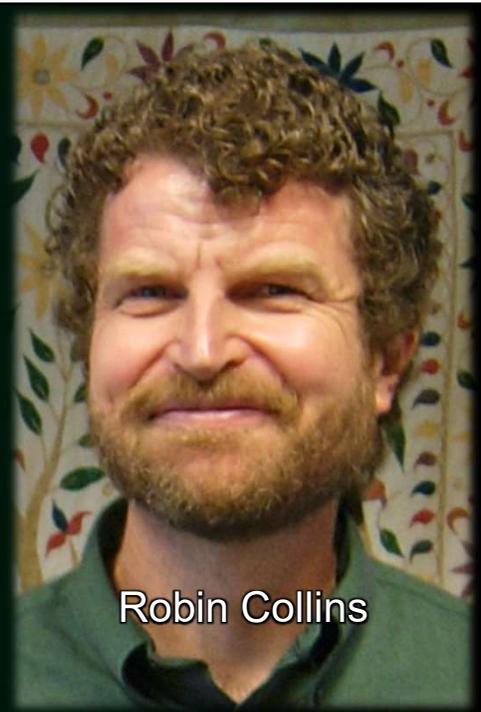
"When scientists talk about the fine-tuning of the universe they're generally referring to the extraordinary balancing of the fundamental laws and parameters of physics and the initial conditions of the universe."



Robin Collins

"Our minds can't comprehend the precision of some of them. The result is a universe that has just the right conditions to sustain life. The coincidences are simply too amazing to have been the result of happenstance."

[Robin Collins, "The Evidence of Physics: The Cosmos on a Razor's Edge" in Lee Strobel, *The Case for a Creator: A Journalist Investigates Scientific Evidence that Points Toward God* (Grand Rapids: Zondervan, 2004): 130]



Robin Collins

1. strong nuclear force constant
2. weak nuclear force constant
3. gravitational force constant
4. electromagnetic force constant
5. ratio of electromagnetic force constant to gravitational force constant
6. ratio of electron to proton mass
7. ratio of number of protons to number of electrons
8. expansion rate of the universe
9. entropy level of the universe
10. mass density of the universe
11. velocity of light
12. age of the universe
13. initial uniformity of radiation
14. average distance between galaxies
15. galaxy cluster density
16. average distance between stars
17. fine structure constant (a number used to describe the fine structure splitting of spectral lines)
18. decay rate of the proton
19. ^{12}C to ^{16}O nuclear energy level ratio
20. ground state energy level for ^4He
21. decay rate of ^9Be
22. mass excess of the neutron over the proton
23. initial excess of nucleons over anti-nucleons
24. polarity of the water molecule
25. degree of uncertainty in the Heisenberg uncertainty principle
26. size of the relativistic dilation factor
27. supernovae eruptions
28. number of white dwarf binaries
29. ratio of the mass of exotic matter to ordinary matter
30. ratio of number of dwarf galaxies to number of large galaxies
31. number of effective dimensions in the early universe
32. number of effective dimensions in the present universe
33. mass of the neutrino
34. size of big bang ripples
35. size of cosmological constant

[Hugh Ross, "Why I Believe in the Miracle of Divine Creation," in Norman L. Geisler and Paul K. Hoffman *Why I Am a Christian: Leading Thinkers Explain Why They Believe* (Grand Rapids: Baker Books, 2001): 138-139]

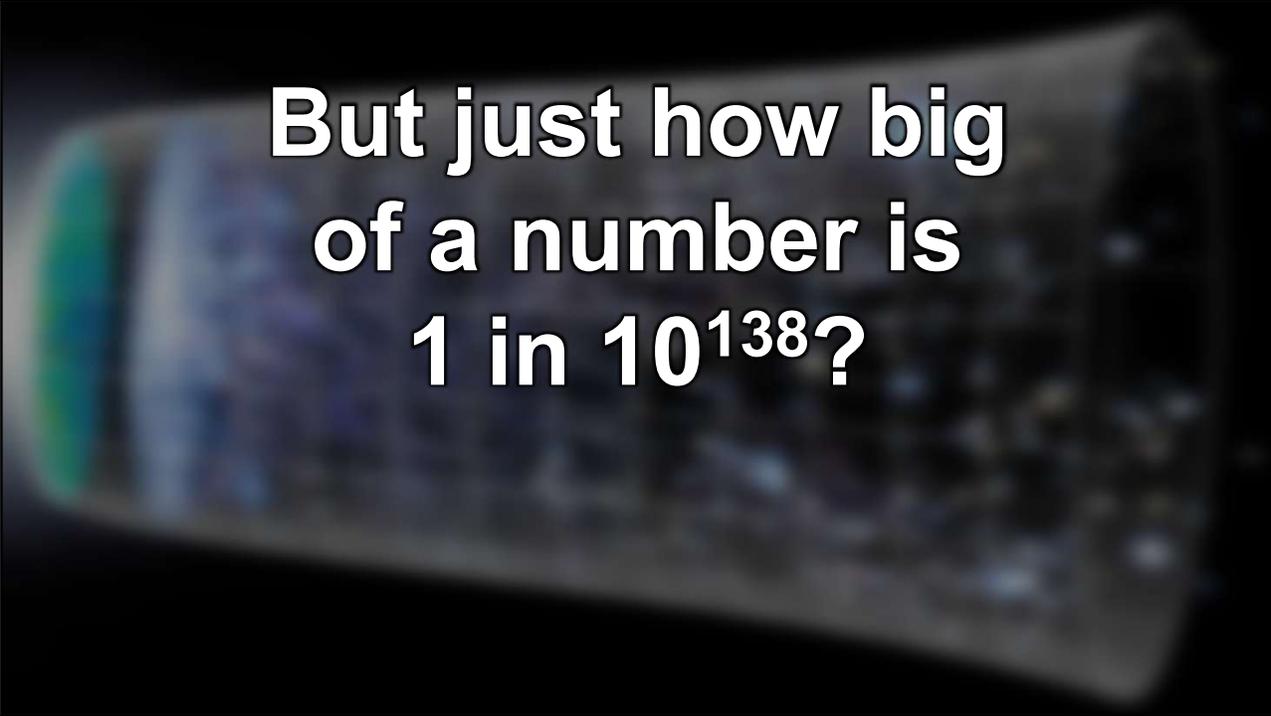
- ❖ **Had the rate of expansion of the big bang been different, no life would have been possible.**
- ❖ **If Earth's magnetic field were stronger, electromagnetic storms would be too severe. If it were weaker, we would have inadequate protection from hard stellar radiation.**

❖ If Earth's gravitational interaction with the moon were greater, then tidal effects on the oceans, atmosphere, and rotational period would be too severe. If it were less, orbital changes would cause climactic instabilities.

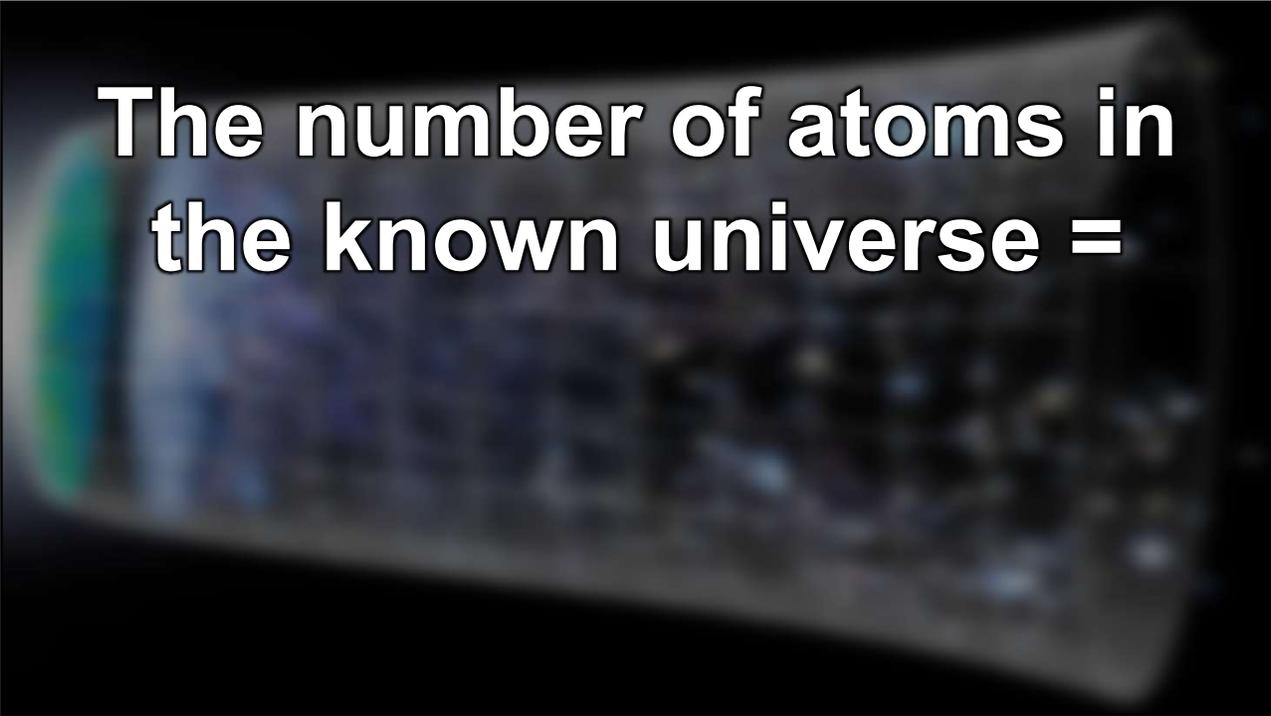
- ❖ If Earth's axial tilt were any greater or less, surface temperatures would be too great.
- ❖ If Earth's rotational period were longer, diurnal temperature differences would be too great. If it were shorter, atmospheric wind velocities would be too great.

❖ Had the values of the gravitational constant, the strong force constant (the force binding protons and neutrons in the nucleus), the weak force (the force responsible for many nuclear processes), and the electromagnetic force been slightly greater or smaller, no life would have been possible.

With an estimate of 10^{22} planets in the universe the odds of one life-supporting planet = 1 in 10^{138} .



**But just how big
of a number is
1 in 10^{138} ?**



**The number of atoms in
the known universe =**

The number of atoms in
the known universe =
 10^{79} .

Estimating the number of atoms in the observable universe

Step 1: Estimate the number of atoms in a typical star (the sun)

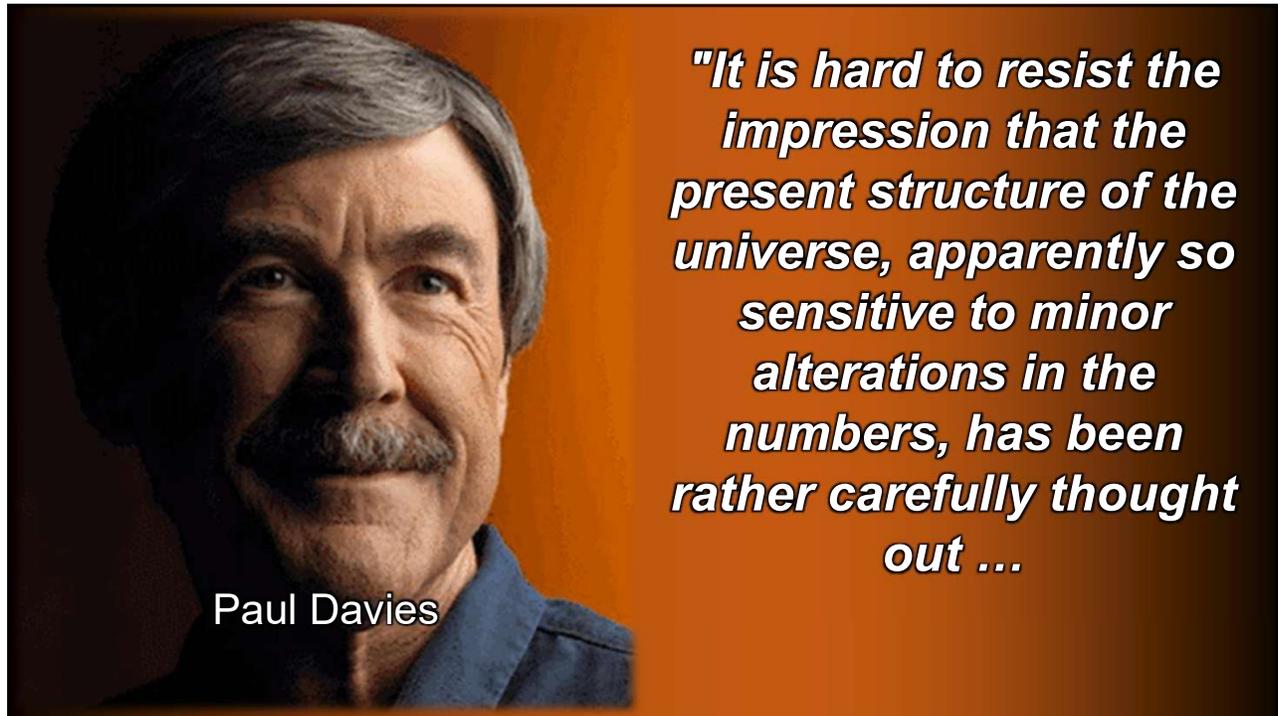
Step 2: Estimate the number of stars in a typical galaxy (the milky way)

Step 3: Estimate the number of galaxies in the observable universe.

Step 4: Put it all together

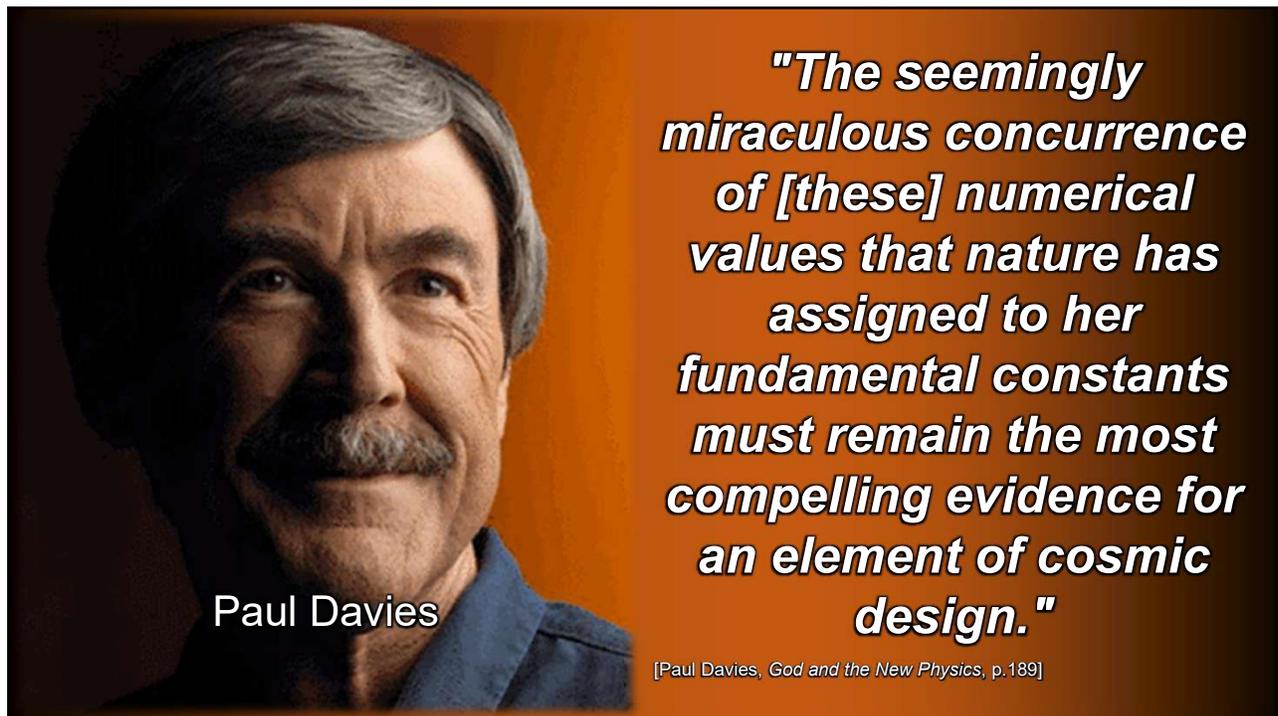
<https://www.youtube.com/watch?v=74EGTJEIxGQ>





Paul Davies

"It is hard to resist the impression that the present structure of the universe, apparently so sensitive to minor alterations in the numbers, has been rather carefully thought out ..."

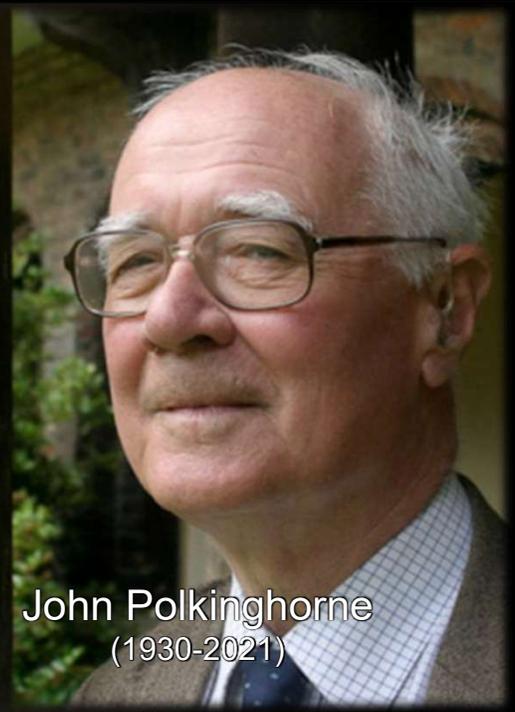


Paul Davies

"The seemingly miraculous concurrence of [these] numerical values that nature has assigned to her fundamental constants must remain the most compelling evidence for an element of cosmic design."

[Paul Davies, *God and the New Physics*, p.189]

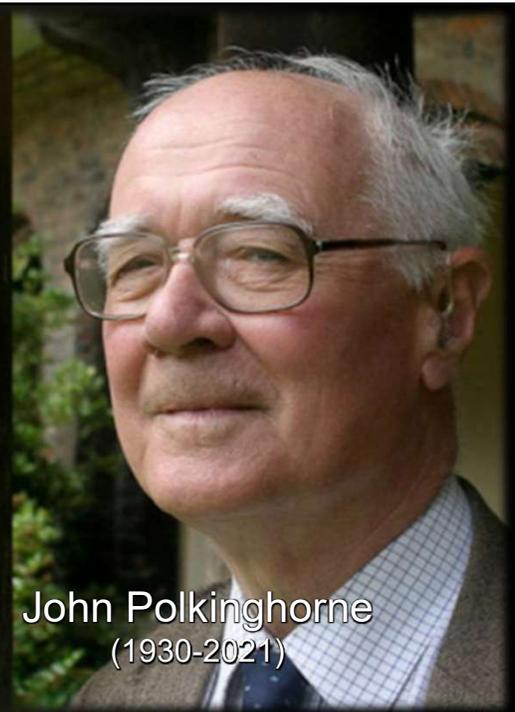
"There seems to be the chance of a revised and revived argument from design . . . appealing to a cosmic planner who has endowed the world with a potentiality implanted within the delicate balance of the laws of nature themselves,



John Polkinghorne
(1930-2021)

"which laws science cannot explain because it assumes them as the basis for its explanation of the process. In short, the claim would be that the universe is indeed . . . the carefully calculated construct of its Creator."

[John Polkinghorne, *Serious Talk: Science and Religion in Dialogue* (Valley Forge: Trinity Press International, 1995), 69-70]

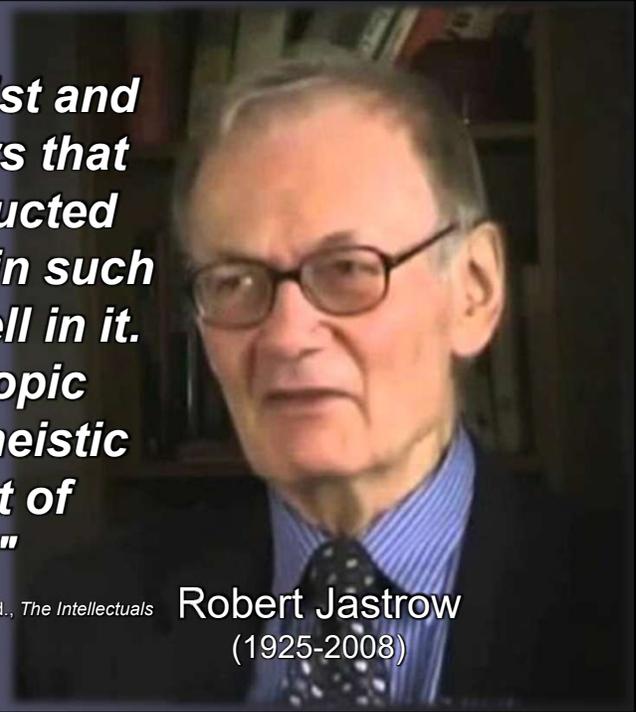


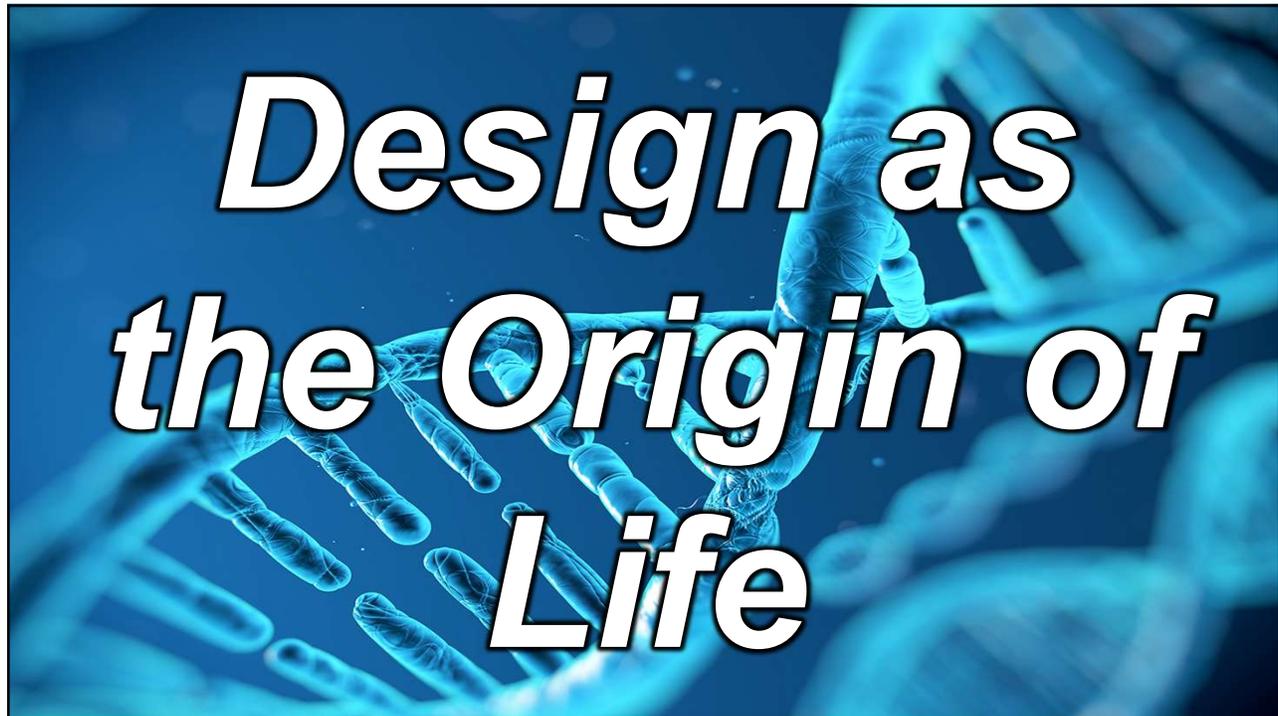
John Polkinghorne
(1930-2021)

"According to the physicist and the astronomer, it appears that the Universe was constructed within very narrow limits, in such a way that man could dwell in it. This is called the anthropic principle. It is the most theistic result ever to come out of science, in my view."

[Robert Jastrow "The Astronomer and God," in Roy Abraham Varghese, ed., *The Intellectuals Speak Out About God* (Chicago: Regnery Gateway, 1984): 22]

Robert Jastrow
(1925-2008)





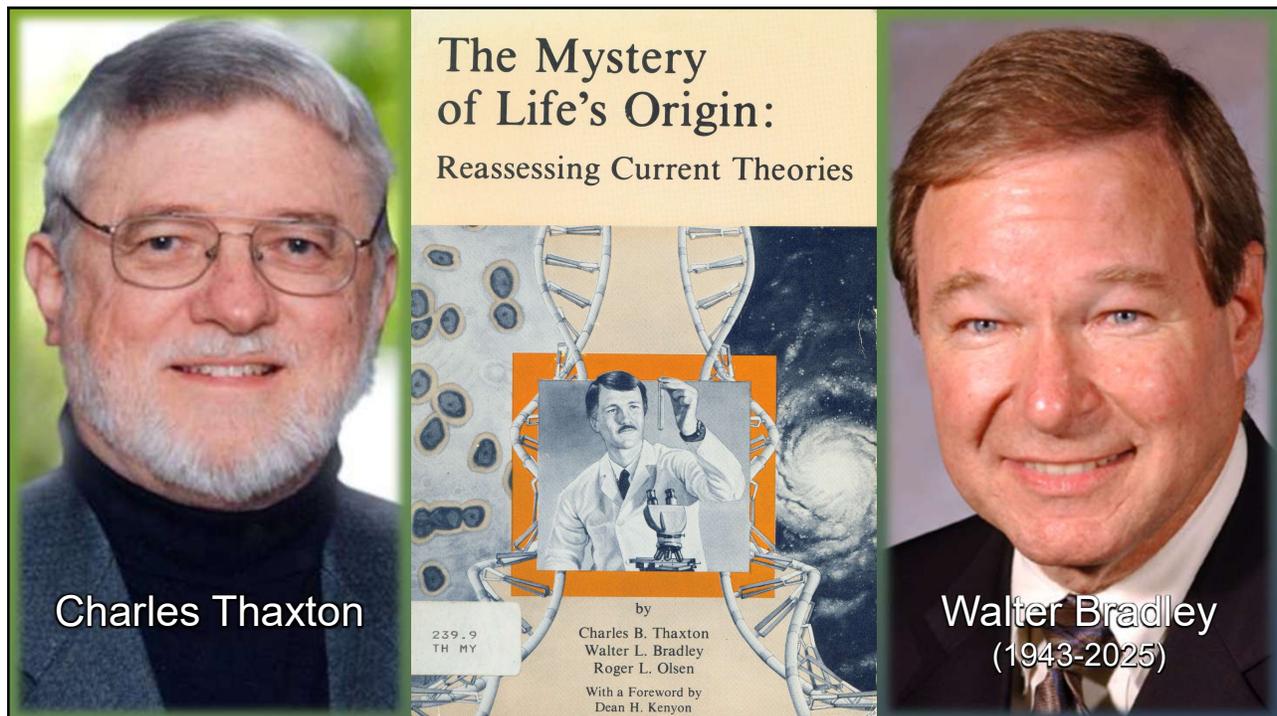
Design as the Origin of Life

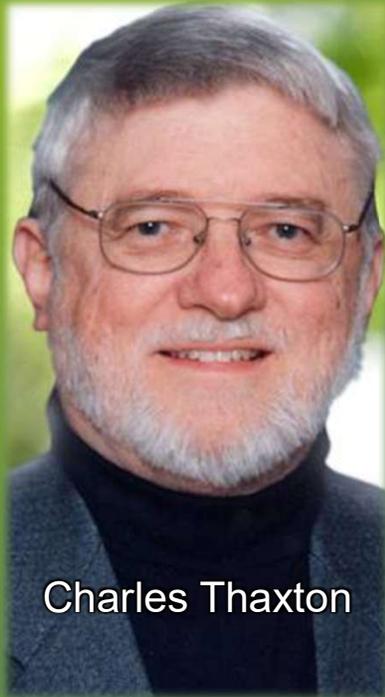
∞ Definition ∞

Biologically speaking, life is physically possible only given certain elements and processes, the existence of which require biological life itself.

∞ Significance ∞

If the necessary ingredients for biological life themselves require biological life, then biological life could not have come from non-life.





"Without a doubt, the atoms and molecules which comprise living cells individually obey the laws of chemistry and physics. The enigma is the origin of so unlikely an organization of these atoms and molecules

Charles Thaxton

Walter Bradley
(1943-2025)

...



"It is apparent that 'chance' should be abandoned as an acceptable model for coding of the macromolecules essential in living systems."

Charles Thaxton

Walter Bradley
(1943-2025)

[Charles B. Thaxton, Walter L. Bradley, and Roger L. Olsen, *The Mystery of Life's Origin: Reassessing Current Theories* (New York: Philosophical Library, 1984), 128, 146]



Sir Frederick Hoyle
(1915-2001)

"Any theory with a probability of being correct that is larger than one part in 10 to the 40,000th power must be judged superior to random shuffling.



Chandra Wickramasinghe

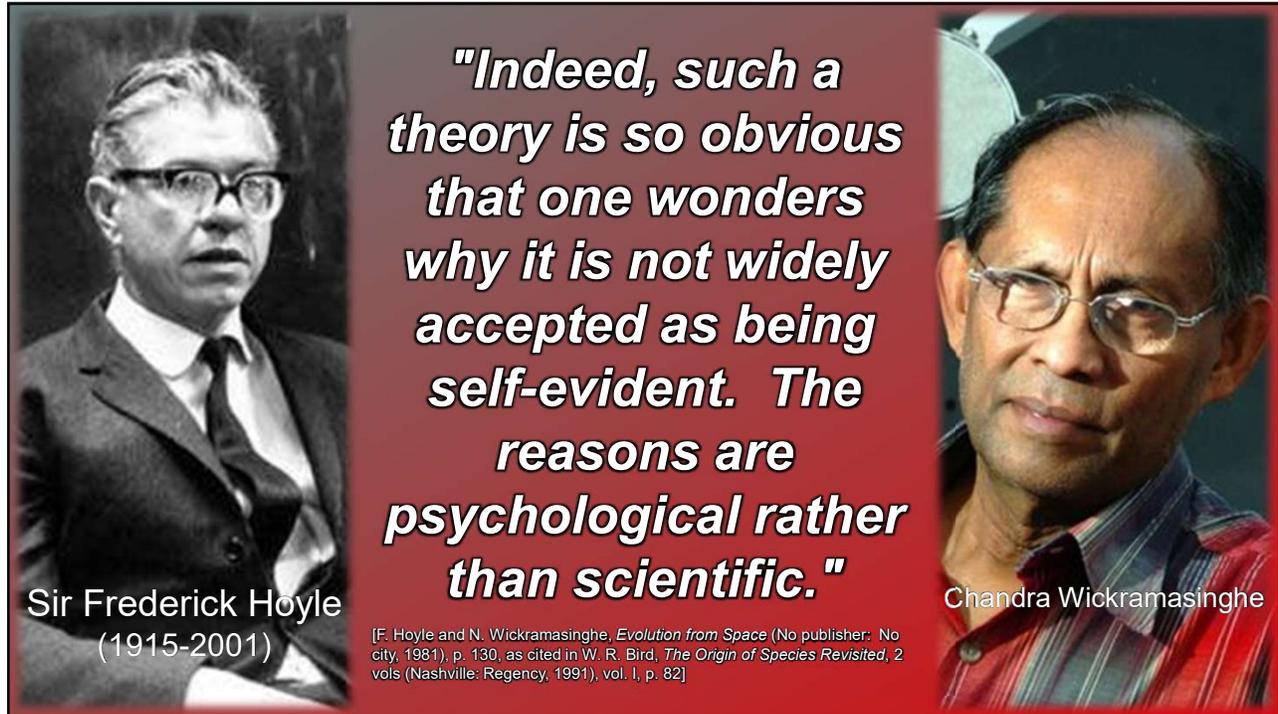


Sir Frederick Hoyle
(1915-2001)

"The theory that life was assembled by an intelligence has, we believe, a probability vastly higher than one part in 10 to the 40,000th power of being the correct explanation ...



Chandra Wickramasinghe

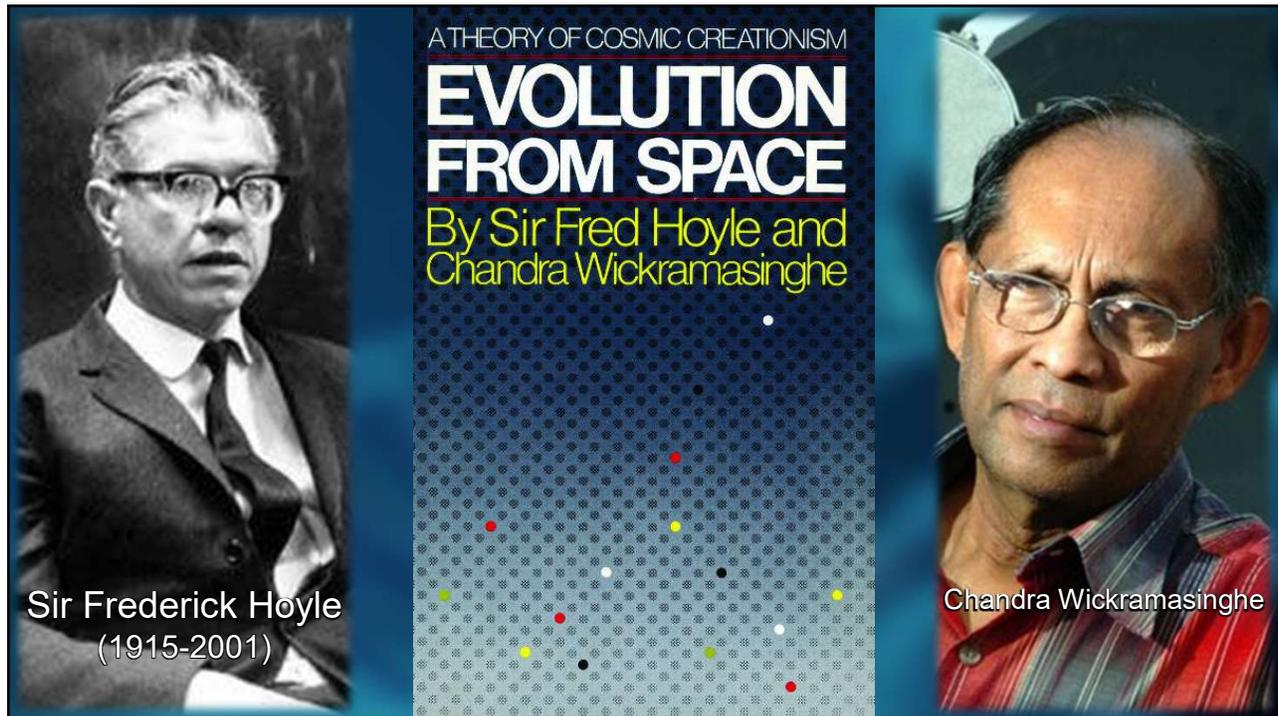


"Indeed, such a theory is so obvious that one wonders why it is not widely accepted as being self-evident. The reasons are psychological rather than scientific."

Sir Frederick Hoyle
(1915-2001)

Chandra Wickramasinghe

[F. Hoyle and N. Wickramasinghe, *Evolution from Space* (No publisher: No city, 1981), p. 130, as cited in W. R. Bird, *The Origin of Species Revisited*, 2 vols (Nashville: Regency, 1991), vol. I, p. 82]



A THEORY OF COSMIC CREATIONISM

EVOLUTION FROM SPACE

By Sir Fred Hoyle and Chandra Wickramasinghe

Sir Frederick Hoyle
(1915-2001)

Chandra Wickramasinghe



Enzymes and other biochemicals

promotes, because the reaction takes place in three dimensions the situation is actually far more specific than a diagram in two dimensions can possibly illustrate.

Surface shape is therefore all-important to the function of an enzyme. Surface shape is determined by the particular sequence of amino acids in the polypeptide structure. One can think of getting the surface shape right in two stages of approximation. There are some ten to twenty distinct amino acids which determine the basic backbone of the enzyme and these simply must be in the correct position in the polypeptide structure. The rest of the amino acids, usually numbering a hundred or more, then control the finer details of the surface shape. There are also the active sites that eventually promote the biochemical reactions in question, and these too must be correct in their atomic forms and locations.

Consider now the chance that in a random ordering of the twenty different amino acids which make up the polypeptides it just happens that the different kinds fall into the order appropriate to a particular enzyme. The chance of obtaining a suitable backbone can hardly be greater than one part in 10^{15} , and the chance of obtaining the appropriate active site can hardly be greater than one part in 10^5 . Because the fine details of the surface shape can be varied we shall take the conservative line of not 'piling on the agony' by including any further small probability for the rest of the enzyme. The two small probabilities we are including are quite enough. They have to be multiplied, when they yield a chance of one part in 10^{20} of obtaining the required enzyme in a functioning form.

By itself, this small probability could be faced, because one must contemplate not just a single shot at obtaining the enzyme, but a very large number of trials such as are supposed to have occurred in an organic soup early in the history of the Earth. **The trouble is that there are about two thousand enzymes, and the chance of obtaining them all in a random trial is only one part in $(10^{20})^{2000} = 10^{4000}$, an outrageously small probability that could not be faced even if the whole universe consisted of organic soup.**

If one is not prejudiced either by social beliefs or by a scientific training into the conviction that life originated on the Earth, this simple calculation wipes the idea entirely out of court. But if one is so prejudiced it is possible, in the fashion of a grand master with a lost game of chess, to wriggle ingeniously for a while. He would make a series of postulates (for which there is no evidence) in the following way.

Suppose at each place where a wanted enzyme happened to arise by

24



Enzymes and other biochemicals

"The two small probabilities we are including are quite enough. They have to be multiplied, when they yield a chance of one part in 10^{20} of obtaining the required enzyme in a functioning form. By itself, this small probability could be faced, because one must contemplate not just a single shot at obtaining the enzyme, but a very large number of trials such as are supposed to have occurred in an organic soup early in the history of the Earth.

24



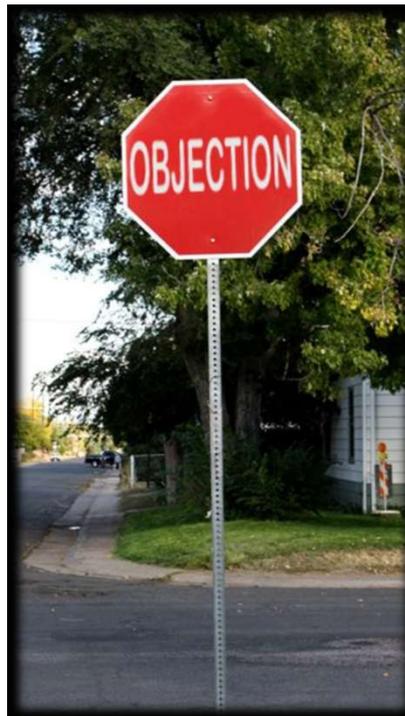


Enzymes and other biochemicals

"The trouble is that there are about two thousand enzymes, and the chance of obtaining them all in a random trial is only one part in $(10^{20})^{2000} = 10^{40,000}$, an outrageously small probability that could not be faced even if the whole universe consisted of organic soup."

[Sir Fred Hoyle and Chandra Wickramasinghe, *Evolution from Space: A Theory of Cosmic Creationism* (New York: Simon & Schuster), 24]

24



"If the universe wasn't fine tuned to be able to support life, we wouldn't be here to observe it!"

↻ The Response ↻



The Firing Squad Example

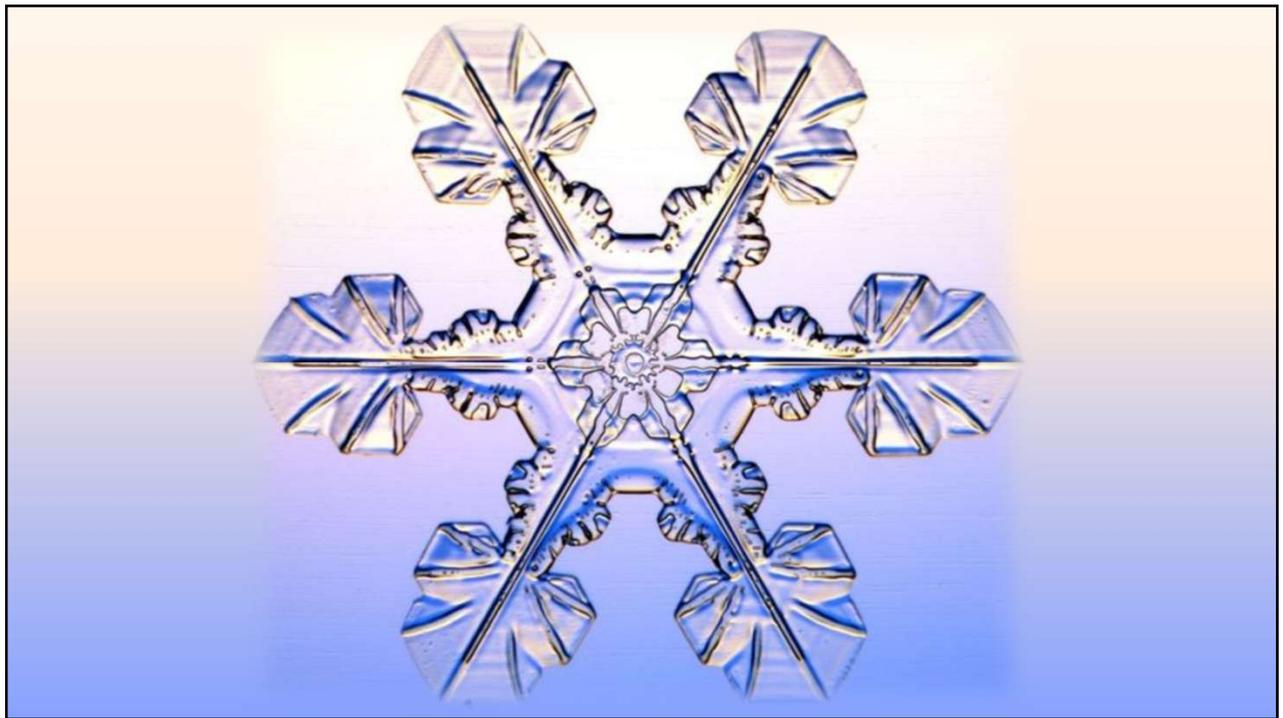
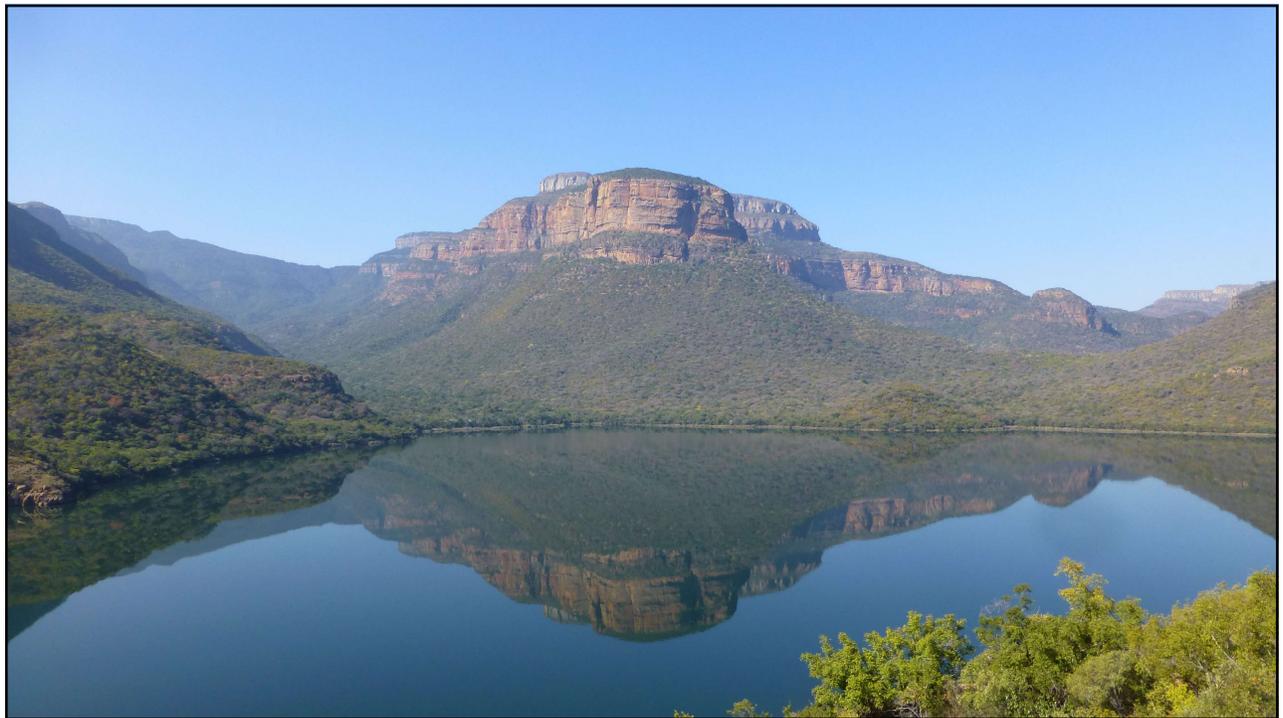
***Design as
Information***

Definition

Information, known also as specified complexity, is physically distinguishable from simple complexity and simple order.

Significance

The presence of information always points to an intelligent cause.





"Proponents of an intelligent origin of life note that molecular biology has uncovered an analogy between DNA and language ... The genetic code functions exactly like a language code"



Charles Thaxton

Walter Bradley
(1943-2025)

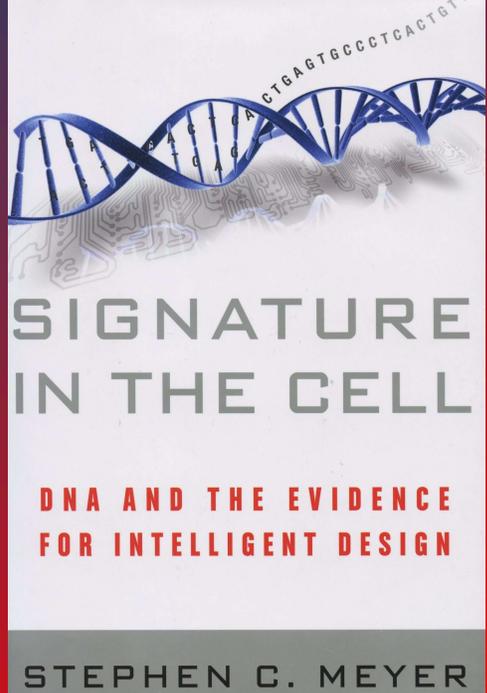
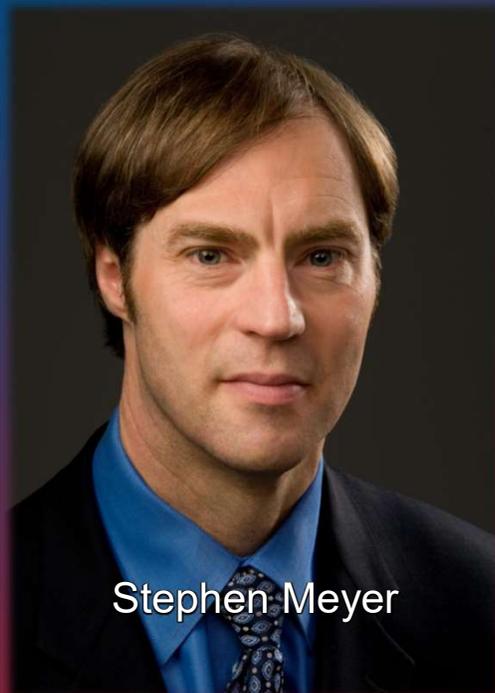


"Indeed it is a code. It is a molecular communications system: a sequence of chemical 'letters' stores and transmits the communication in each living cell."

[Walter L. Bradley and Charles B. Thaxton "Information and the Origin of Life," in J. P. Moreland, ed. *The Creation Hypothesis: Scientific Evidence for and Intelligent Designer* (Downers Grove, IL: InterVarsity Press, 1994): 205]

Charles Thaxton

Walter Bradley
(1943-2025)

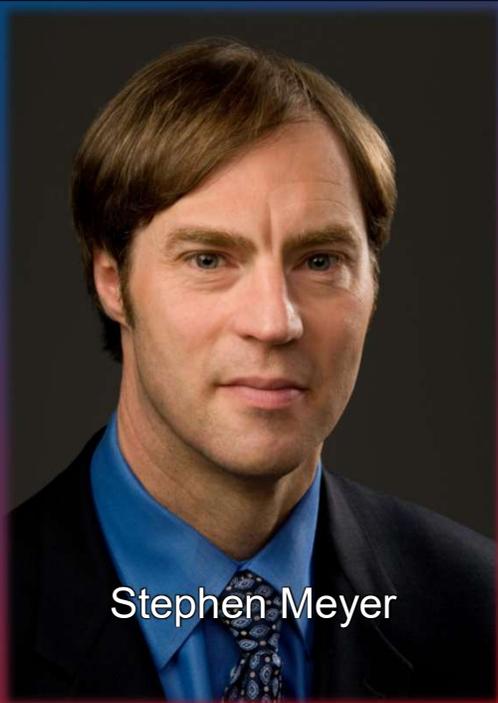


Stephen Meyer

SIGNATURE IN THE CELL

DNA AND THE EVIDENCE FOR INTELLIGENT DESIGN

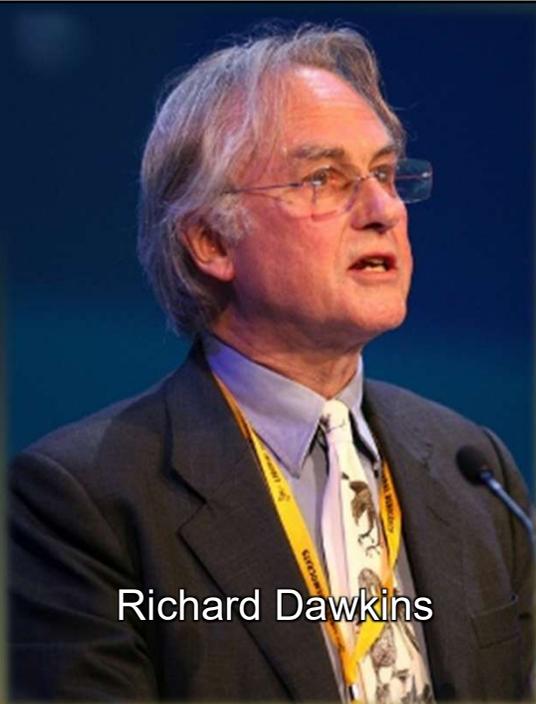
STEPHEN C. MEYER



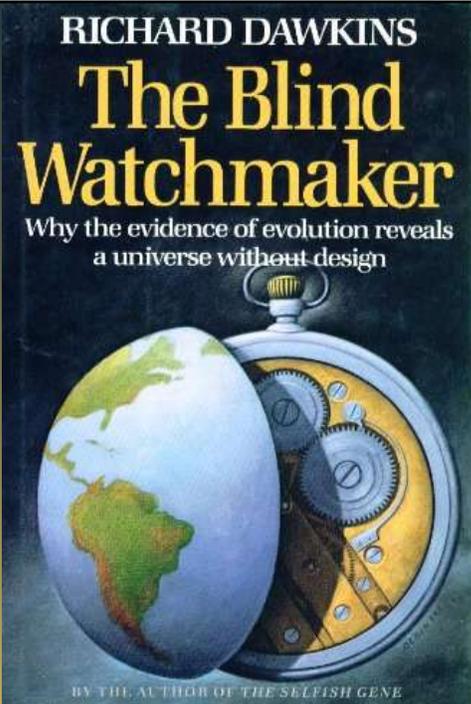
Stephen Meyer

"At nearly the same time that computer scientists were beginning to develop machine languages, molecular biologists were discovering that living cells had been using something akin to machine code or software all along."

[Stephen C. Meyer, *Signature in the Cell: DNA and the Evidence for Intelligent Design* (New York: Harper Collins, 2009), 110]



Richard Dawkins



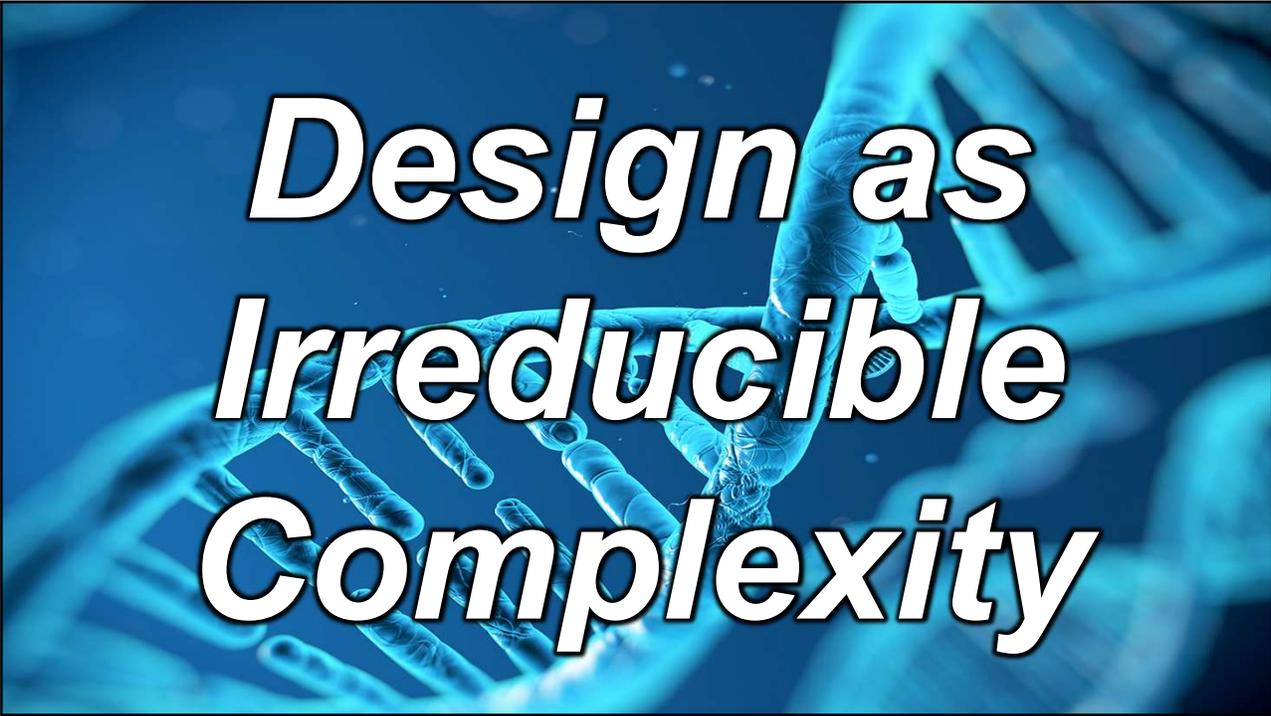
RICHARD DAWKINS
The Blind Watchmaker
Why the evidence of evolution reveals a universe without design

BY THE AUTHOR OF THE SELFISH GENE



"There is enough information capacity in a single human cell to store the Encyclopedia Britannica, all 30 volumes of it, three or four times over."

[Richard Dawkins, *The Blind Watchmaker: Why the Evidence of Evolution Reveals a Universe Without Design* (New York: W. W. Norton, 1987): 115-116]



***Design as
Irreducible
Complexity***

∞ Definition ∞

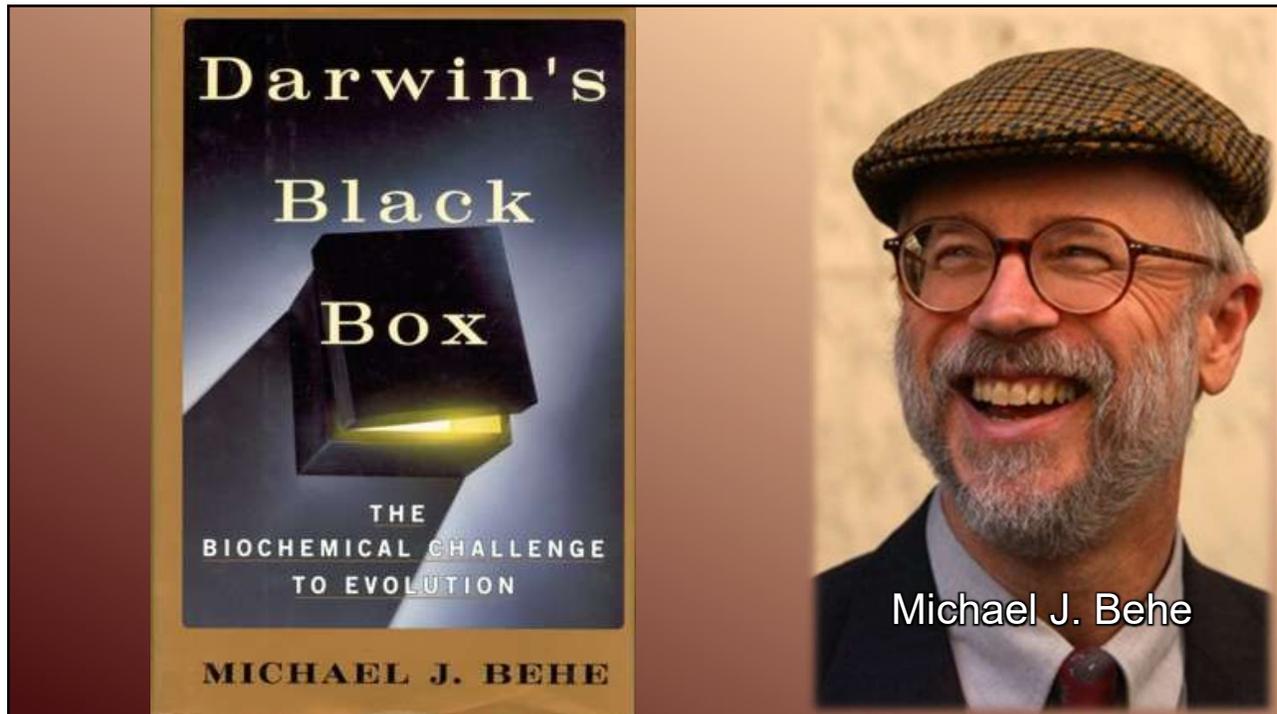
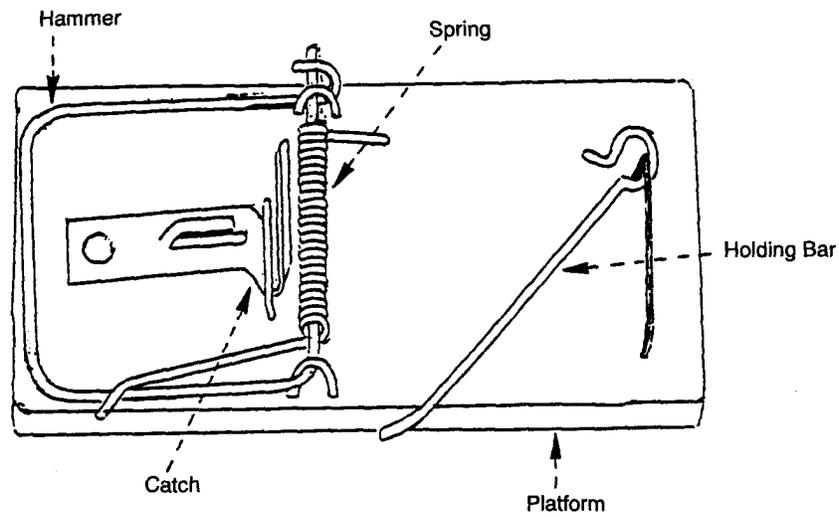
Some biological systems consist of several interlocking parts that must be in place before the system can function at all.

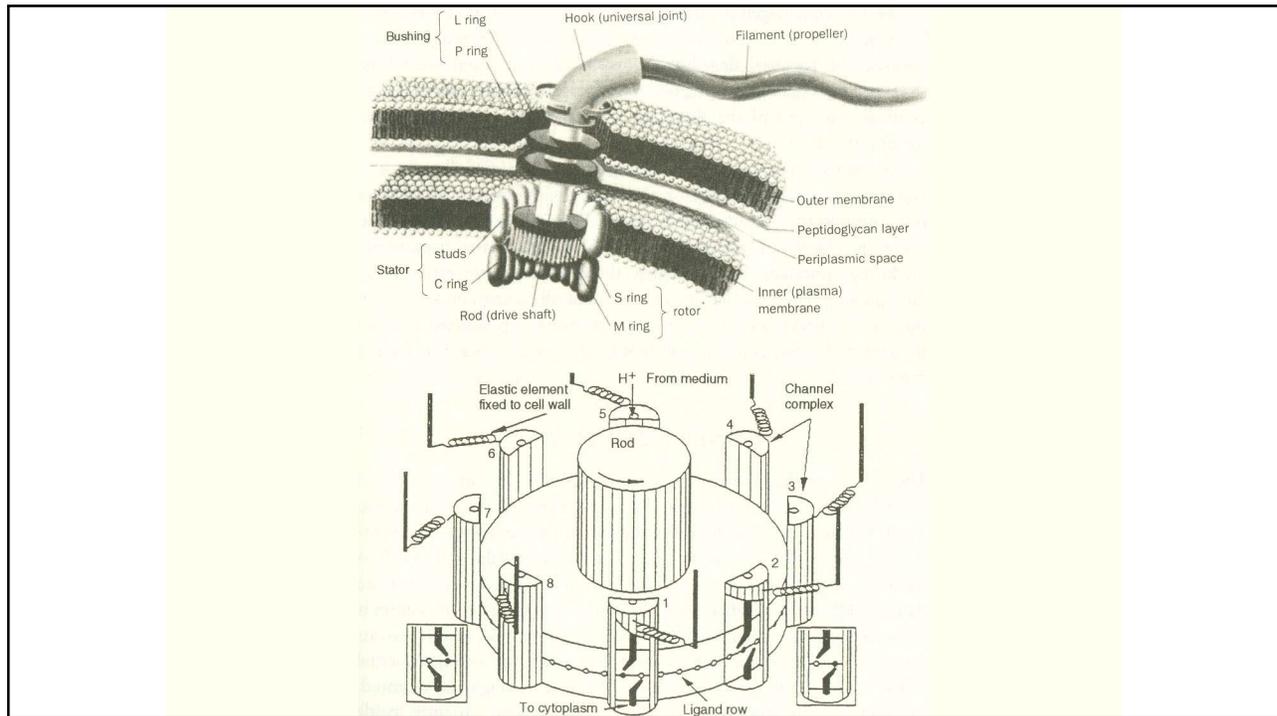
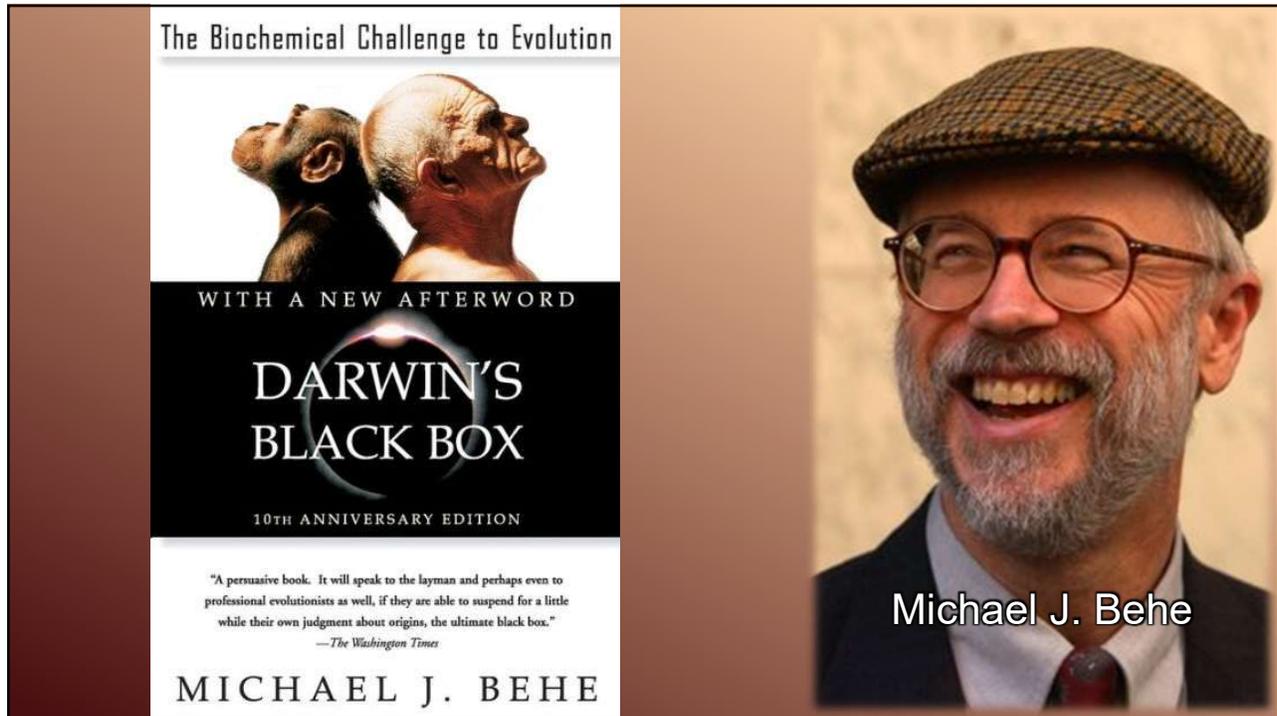
∞ Significance ∞

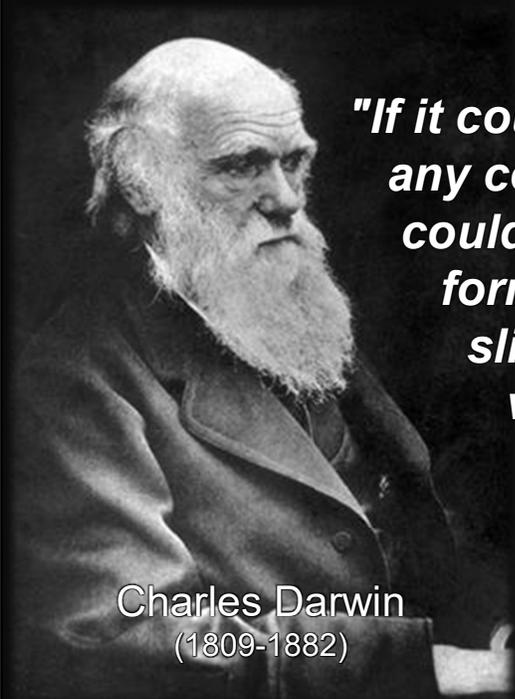
Since such complexity cannot be accounted for by gradual accumulations of random mutations, the systems must have arisen all at once by an intelligent cause.

FIGURE 2-2

A HOUSEHOLD MOUSETRAP.



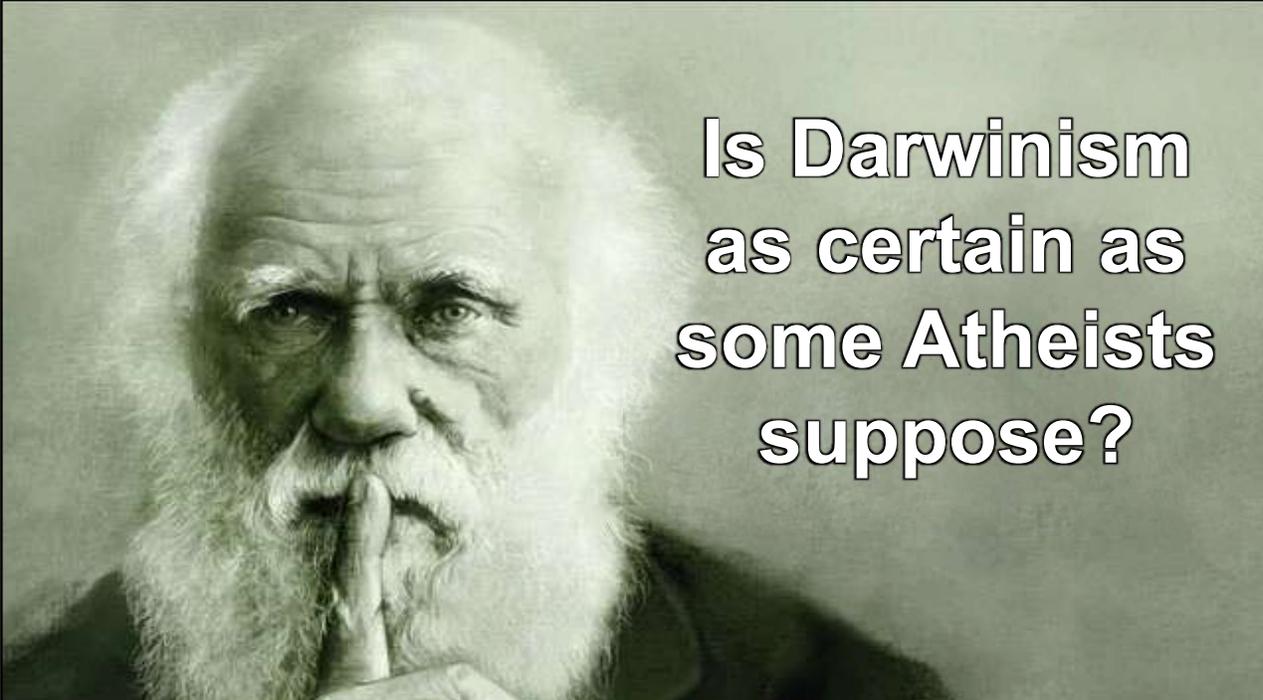




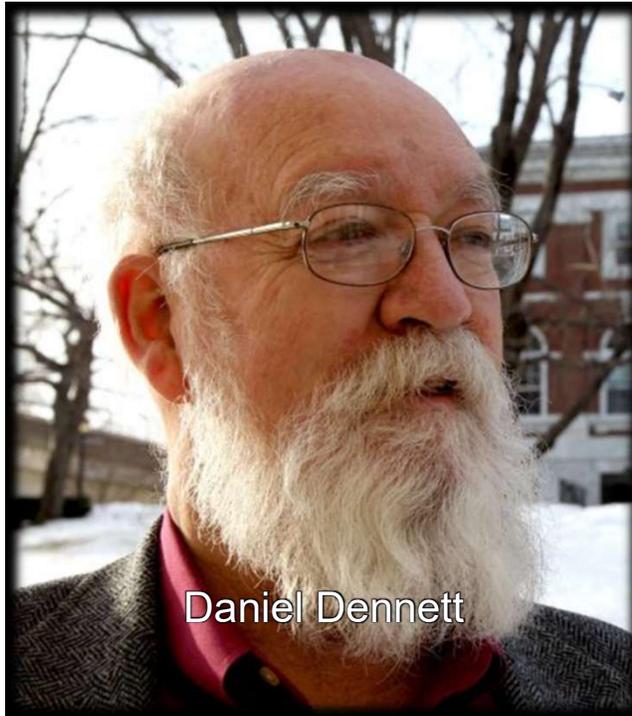
"If it could be demonstrated that any complex organ existed which could not possibly have been formed by numerous, successive, slight modifications, my theory would absolutely break down."

[Charles Darwin, *Origin of Species*, Chapter 6 "Difficulties of the Theory" section "Modes of Transition." in Robert Maynard Hutchins, Ed. in Chief, *Great Books of the Western World*, vol. 49 (Chicago: Encyclopedia Britannica, Inc.): 87.]

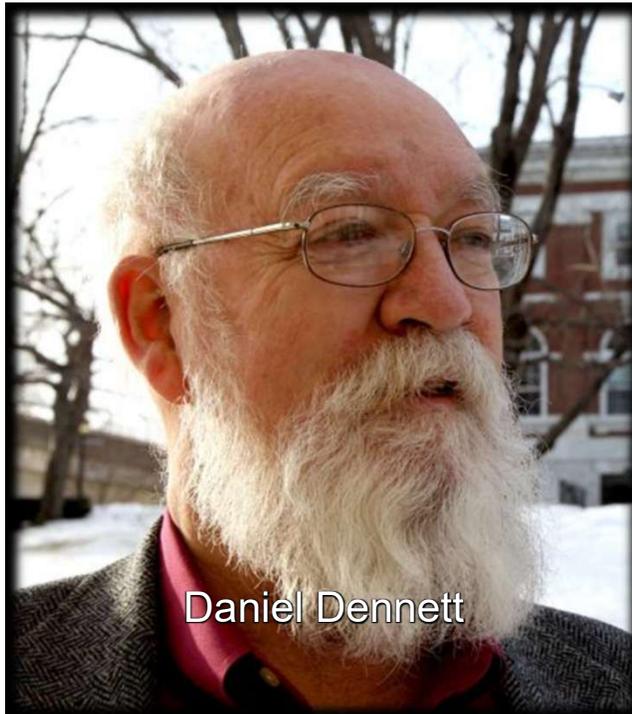
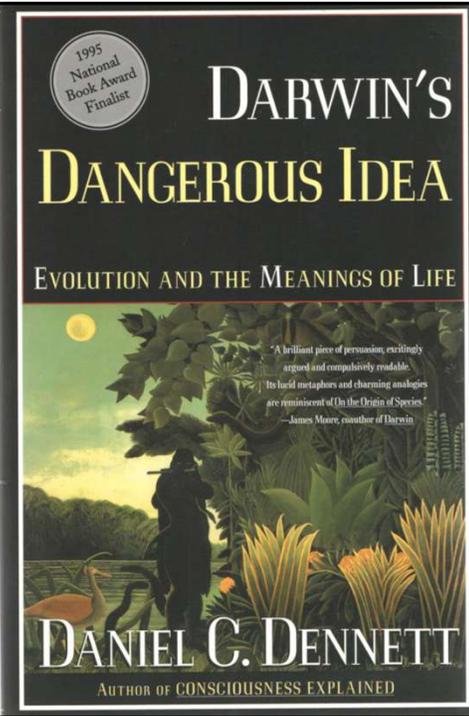
Charles Darwin
(1809-1882)



**Is Darwinism
as certain as
some Atheists
suppose?**



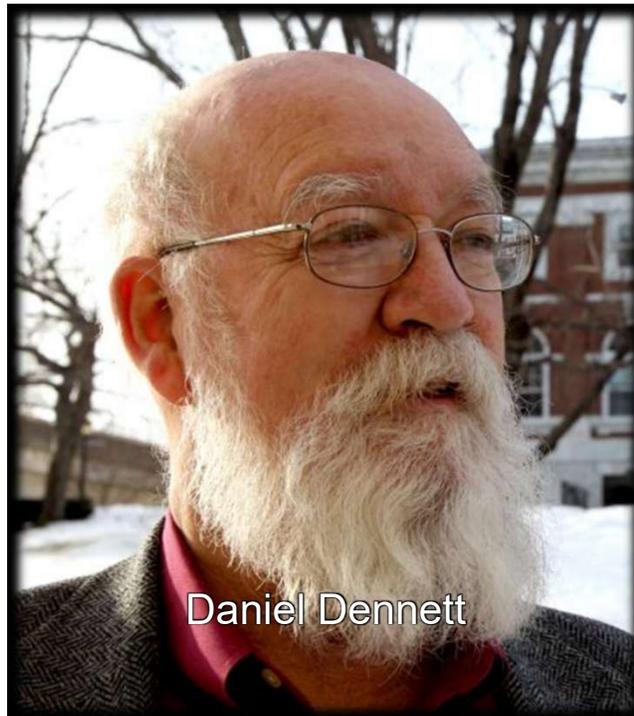
Daniel Dennett



Daniel Dennett

*"There are vigorous controversies swirling around in evolutionary theory, but those who feel threatened by Darwinism should not take heart from this fact. ... **The basic Darwinian idea ... is about as secure as any in science**"*

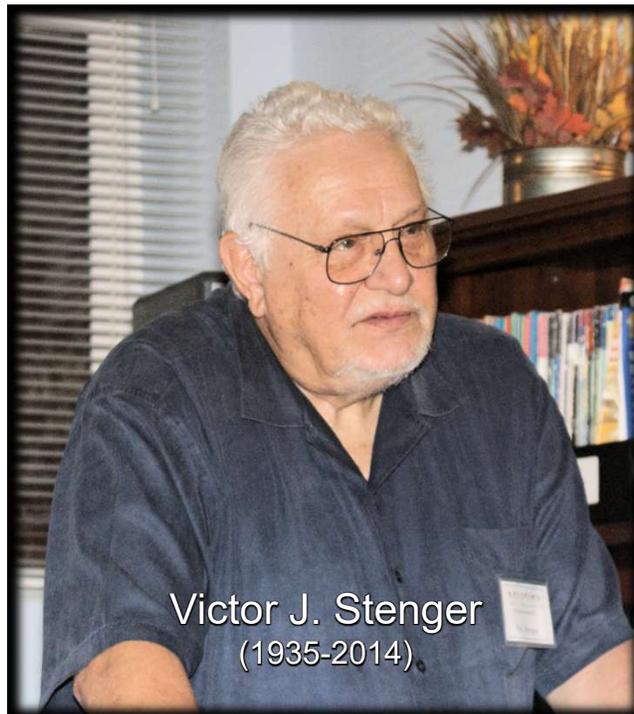
[Daniel C. Dennett, *Darwin's Dangerous Idea*, p. 19]



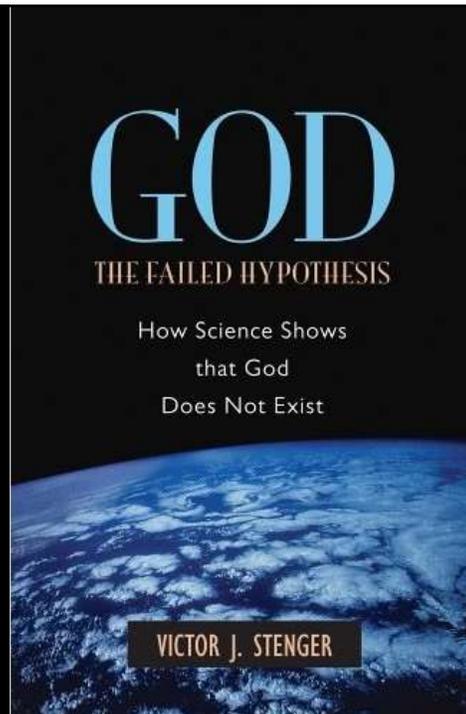
Daniel Dennett

"If you insist on teaching your children falsehoods—that the **Earth is flat, that 'Man' is not a product of evolution** by natural selection—then ... we will ... describe your teachings as the spreading of falsehoods, and will attempt to demonstrate this to your children at our earliest opportunity."

[Daniel Dennett, *Darwin's Dangerous Idea: Evolution and the Meaning of Life* (New York: Simon & Schuster, 1995), 519]



Victor J. Stenger
(1935-2014)



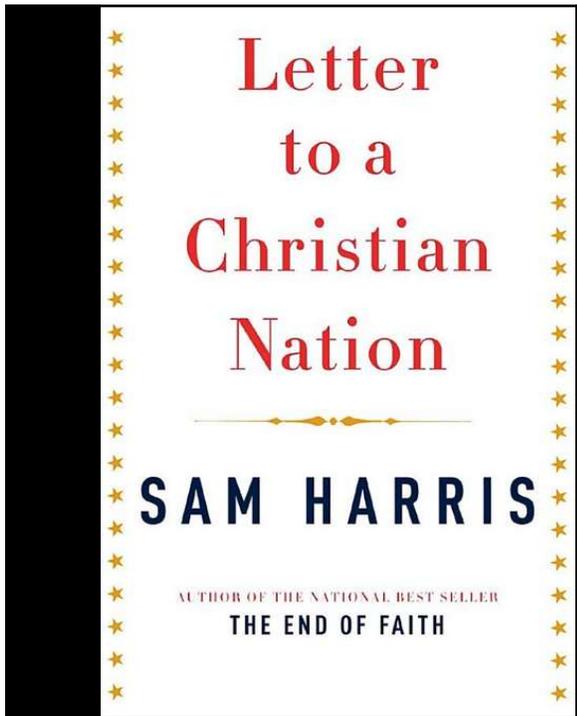
VICTOR J. STENGER



Victor J. Stenger
(1935-2014)

"In terms of the same strict standards of empirical evidence that apply in all the natural science, Darwinian evolution is a well-established theory that has passed many critical tests."

[Victor J. Stenger, *God: The Failed Hypothesis*, p. 50.]



Letter
to a
Christian
Nation

SAM HARRIS

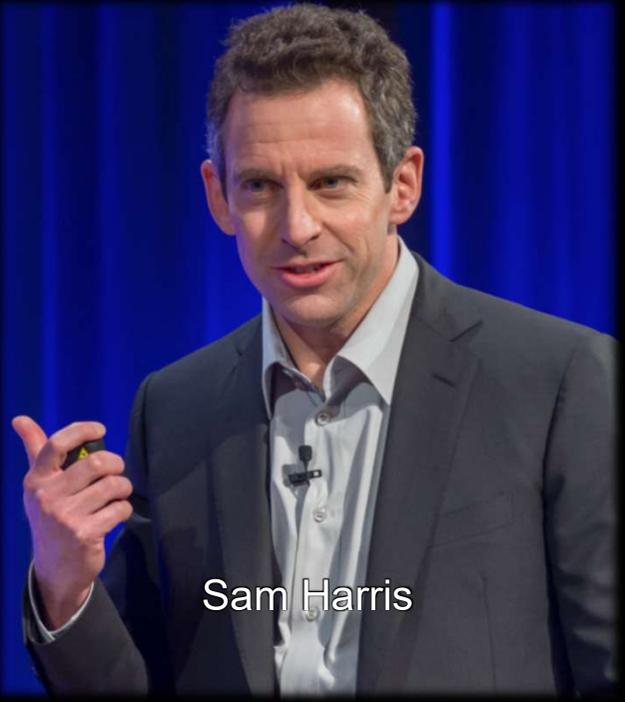
AUTHOR OF THE NATIONAL BEST SELLER
THE END OF FAITH



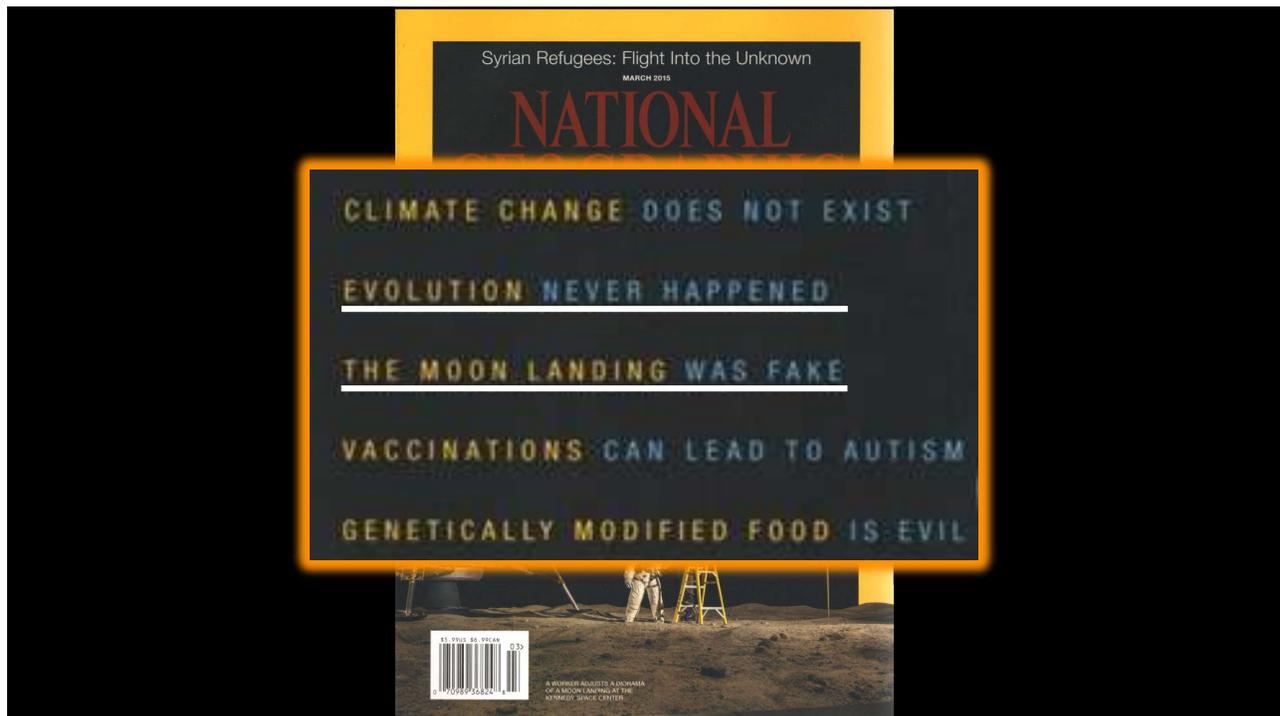
Sam Harris

*"Here is what we know. ... **There is no question** that human beings evolved from nonhuman ancestors ... There is no reason whatsoever to believe that individual species were created in their present forms."*

[Sam Harris, *Letter to a Christian Nation*, pp. 71]



Sam Harris



"The basic Darwinian idea . . . is about as secure as any in science ..."

Challenging evolution is on par with believing in a flat Earth.

"Darwinian evolution is a well-established theory. "

"There is no question . . ."

Challenging evolution is on par with challenging the Moon landing.

Is this so?

**There Is Scientific
Dissent From Darwinism.**
It deserves to be heard.

"Scientific journals now document many scientific problems and criticisms of evolutionary theory and students need to know about these as well. ... Many of the scientific criticisms of which I speak are well known by scientists in various disciplines, including the disciplines of chemistry and biochemistry, in which I have done my work."

Philip S. Skell, Member National Academy of Sciences, Emeritus Evan Pugh Professor at Pennsylvania State University

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A SCIENTIFIC DISSENT FROM DARWINISM

“We are skeptical of claims for the ability of random mutation and natural selection to account for the complexity of life. Careful examination of the evidence for Darwinian theory should be encouraged.”

This was last publicly updated July 2025. Scientists listed by doctoral degree or current position.

Philip Skell*	Emeritus, Evan Pugh Prof. of Chemistry, Pennsylvania State University	Member of the National Academy of Sciences
Lyle H. Jensen*	Professor Emeritus, Dept. of Biological Structure & Dept. of Biochemistry	University of Washington, Fellow AAAS
Maciej Giertych	Full Professor, Institute of Dendrology	Polish Academy of Sciences
Lev Belousov*	Prof. of Embryology, Honorary Prof., Moscow State University	Member, Russian Academy of Natural Sciences
Eugene Buff	Ph.D. Genetics	Institute of Developmental Biology, Russian Academy of Sciences
Emil Palecek	Prof. of Molecular Biology, Masaryk University; Leading Scientist	Inst. of Biophysics, Academy of Sci., Czech Republic
K. Mosto Onuoha	Shell Professor of Geology & Deputy Vice-Chancellor, Univ. of Nigeria	Fellow, Nigerian Academy of Science
Ferenc Jeszenszky	Former Head of the Center of Research Groups	Hungarian Academy of Sciences
M.M. Ninan	Former President	Hindustan Academy of Science, Bangalore University (India)
Denis Fesenko	Junior Research Fellow, Engelhardt Institute of Molecular Biology	Russian Academy of Sciences (Russia)
Sergey I. Vdovenko	Senior Research Assistant, Department of Fine Organic Synthesis	Institute of Bioorganic Chemistry and Petrochemistry Ukrainian National Academy of Sciences (Ukraine)
Henry Schaefer	Director, Center for Computational Quantum Chemistry	University of Georgia
Paul Ashby	Ph.D. Chemistry	Harvard University
Israel Hanukoglu	Professor of Biochemistry and Molecular Biology Chairman	The College of Judea and Samaria (Israel)
Alan Linton	Emeritus Professor of Bacteriology	University of Bristol (UK)
Dean Kenyon	Emeritus Professor of Biology	San Francisco State University
David W. Forslund	Ph.D. Astrophysics, Princeton University	Fellow of American Physical Society
Robert W. Bass*	Ph.D. Mathematics (also: Rhodes Scholar, Post-Doc at Princeton)	Johns Hopkins University
John Hey	Associate Clinical Prof. (also: Fellow, American Geriatrics Society)	Dept. of Family Medicine, Univ. of Mississippi
Daniel W. Heinze	Ph.D. Geophysics (also: Post-Doc Fellow, Carnegie Inst. of Washington)	Texas A&M University
Donald Ewert	Ph.D. Microbiology	University of Georgia
Russell Carlson	Emeritus Professor of Biochemistry & Molecular Biology	University of Georgia
David Chapman*	Senior Scientist	Woods Hole Oceanographic Institution
Giuseppe Sermonti*	Professor of Genetics, Ret. (Editor, Rivista di Biologia/Biology Forum)	University of Perugia (Italy)
Stanley Salthé	Emeritus Professor Biological Sciences	Brooklyn College of the City University of New York
Marcos N. Eberlin	Professor, The State University of Campinas (Brazil)	Member, Brazilian Academy of Science

Bernard d'Abrera*	Visiting Scholar, Department of Entomology	British Museum (Natural History)
John C. Walton	Professor of Reactive Chemistry (Ph.D. & D.Sc.)	University of St. Andrews (UK)
	Fellow	Royal Society of Chemistry
	Fellow	Royal Society of Edinburgh
Mae-Wan Ho*	Ph.D. Biochemistry	The University of Hong Kong
Scott Minnich	Associate Professor of Microbiology	University of Idaho
Jeffrey Schwartz	Assoc. Res. Psychiatrist, Dept. of Psychiatry & Biobehavioral Sciences	University of California, Los Angeles
Alexander F. Pugach	Ph.D. Astrophysics	Ukrainian Academy of Sciences (Ukraine)
Ralph Seeke*	Professor Emeritus, Molecular and Cellular Biology	University of Wisconsin, Superior
Annikka Parantainen	Ph.D. Biology	University of Turku (Finland)
Fred Schroeder*	Ph.D. Marine Geology	Columbia University
David Snoke	Associate Professor of Physics & Astronomy	University of Pittsburgh
Frank Tipler	Prof. of Mathematical Physics	Tulane University
John A. Davison*	Emeritus Associate Professor of Biology	University of Vermont
James Tour	Chao Professor of Chemistry	Rice University
Pablo Yepes	Research Associate Professor of Physics & Astronomy	Rice University
David Bolender	Assoc. Prof., Dept. of Cell Biology, Neurobiology & Anatomy	Medical College of Wisconsin
Leo Zacharski*	Professor of Medicine	Dartmouth Medical School
Joel D. Hetzer	Ph.D. Statistics	Baylor University
Michael Behe	Professor of Biological Science	Lehigh University
Michael Atchison	Professor of Biochemistry	University of Pennsylvania, Vet School
Thomas G. Guillems	Ph.D. Molecular Biology	The Medical College of Wisconsin
Arthur B. Robinson	Professor of Chemistry	Oregon Institute of Science & Medicine
Joel Adams	Professor of Computer Science	Calvin College
Abraham S. Feigenbaum	Ph.D. Nutritional Biochemistry	Rutgers University
Yasuo Yoshida	Ph.D. Physics	Kyushu University (Japan)
Domingo Aerden	Professor of Geology	Universidad de Granada (Spain)
Kevin Farmer	Adjunct Assistant Professor (Ph.D. Scientific Methodology)	University of Oklahoma
D.R. Eiras-Stofella	Director, Electron Microscopy Center (Ph.D. Molecular Biology)	Parana Federal University (Brazil)
Neal Adrian	Ph.D. Microbiology	University of Oklahoma
Kerry N. Jones	Professor of Mathematical Sciences	Ball State University
Ge Wang	Professor of Radiology & Biomedical Engineering	University of Iowa
Moorad Alexanian	Professor of Physics	University of North Carolina, Wilmington
Richard Spencer	Professor (Ph.D. Stanford)	University of California, Davis, Solid-State Circuits Research Laboratory
Mark Krejchl	Ph.D. Polymer Science & Engineering (Post-docs, Stanford & Caltech)	University of Massachusetts
Braxton Alfred	Emeritus Professor, Anthropology	University of British Columbia (Canada)
R. Craig Henderson	Associate Professor, Dept. of Civil & Environmental Engineering	Tennessee Tech University
Michael J. Kavaya	Senior Scientist	NASA Langley Research Center
Wesley Allen	Professor of Computational Quantum Chemistry	University of Georgia
James Pierre Hauck	Professor of Physics & Astronomy	University of San Diego
Olen R. Brown	Former Professor of Molecular Microbiology & Immunology	University of Missouri, Columbia
Eshan Dias	Ph.D. Chemical Engineering	King's College, Cambridge University (UK)
Joseph Atkinson	Ph.D. Organic Chemistry	Massachusetts Institute of Technology
Dennis Dean Rathman*	Staff Scientist	MIT Lincoln Laboratory

Richard Austin	Assoc. Prof. & Chair, Biology & Natural Sciences	Piedmont College
Richard Anderson	Assistant Professor of Environmental Science and Policy	Duke University
Raymond C. Mjolsness*	Ph.D. Physics	Princeton University
John Baumgardner	Ph.D. Geophysics & Space Physics	University of California, Los Angeles
Glenn R. Johnson	Adjunct Professor of Medicine	University of North Dakota School of Medicine
George Bennett	Associate Professor of Chemistry	Millikin University
Robert L. Waters	Lecturer, College of Computing	Georgia Institute of Technology
David Berlinski	Ph.D. Philosophy	Princeton University
James Robert Dickens	Ph.D. Mechanical Engineering	Texas A&M University
Phillip Bishop	Professor of Kinesiology	University of Alabama
Jeffrey M. Jones	Professor Emeritus in Medicine (Ph.D. Microbiology and M.D.)	University of Wisconsin-Madison
Donald R. Mull	Ph.D. Physiology	University of Pittsburgh
John Bloom	Ph.D. Physics	Cornell University
William Dembski	Ph.D. Mathematics	University of Chicago
Ben J. Stuart	Ph.D. Chemical & Biochemical Engineering	Rutgers University
Raymond Bohlin	Ph.D. Molecular & Cell Biology	University of Texas, Dallas
Christa R. Koval	Ph.D. Chemistry	University of Colorado at Boulder
John Bordenon*	Ph.D. Electrical Engineering	Georgia Institute of Technology
David Richard Carta	Ph.D. Bio-Engineering	University of California, San Diego
Lydia G. Thebeau	Ph.D. Cell & Molecular Biology	Saint Louis University
David Bossard	Ph.D. Mathematics	Dartmouth College
Robert W. Kelley	Ph.D. Entomology	Clemson University
David Bourell	Professor Mechanical Engineering	University of Texas, Austin
Carlos M. Murrillo*	Professor of Medicine (Neurosurgery)	Autonomous University of Guadalajara (Mexico)
Walter Bradley*	Distinguished Professor of Engineering	Baylor University
Sami Palonen	Ph.D. Analytical Chemistry	University of Helsinki (Finland)
John Brejda	Ph.D. Agronomy	University of Nebraska, Lincoln
Bradley R. Johnson	Ph.D. Materials Science	University of Illinois at Urbana-Champaign
Rudolf Ems	Ph.D. Nuclear Chemistry	University of Stellenbosch (South Africa)
Gary Kastello	Ph.D. Biology	University of Wisconsin-Milwaukee
Karen Rispin	Assistant Professor of Biology	LeTourneau University
Frederick Brooks*	Kenan Professor of Computer Science	University of North Carolina at Chapel Hill
Omer Faruk Noyan	Assistant Professor (Ph.D. Paleontology)	Celal Bayar University (Turkey)
Neil Broom	Associate Professor, Chemical & Materials Engineering	University of Auckland (New Zealand)
Malcolm D. Chisholm	Ph.D. Insect Ecology (M.A. Zoology, Oxford University)	University of Bristol (UK)
John Brown	Research Meteorologist	National Oceanic and Atmospheric Administration
Joseph A. Kunicki	Associate Professor of Mathematics	The University of Findlay
John Brumbaugh*	Emeritus Professor of Biological Sciences	University of Nebraska, Lincoln
Thomas M. Stackhouse	Ph.D. Biochemistry	University of California, Davis
Nancy Bryson	Associate Professor of Chemistry	Mississippi University for Women
Walter L. Starkey*	Professor Emeritus of Mechanical Engineering	The Ohio State University
Donald Calbreath	Professor, Department of Chemistry	Whitworth College
Pingnan Shi	Ph.D. Electrical Engineering (Artificial Neural Networks)	University of British Columbia (Canada)
John B. Cannon	Ph.D. Organic Chemistry	Princeton University
John L. Burba	Ph.D. Physical Chemistry	Baylor University

Stephen J. Cheesman	Ph.D. Geophysics	University of Toronto
Mike Forward	Ph.D. Applied Mathematics (Chaos Theory)	Imperial College, University of London (UK)
Lowell D. White	Industrial Hygiene Specialist (Ph.D. Epidemiology)	University of New Mexico
Brian Landrum	Associate Professor of Mechanical & Aerospace Engineering	University of Alabama, Huntsville
David Chambers	Physicist	Lawrence Livermore National Laboratory
Michael T. Goodrich	Professor of Computer Science	University of California, Irvine
Timothy E. McDevitt	Ph.D. Mechanical Engineering	Pennsylvania State University
Arlen R. Severson	Professor of Anatomy and Cell Biology	University of Minnesota Medical School, Duluth
Winston Ewert	Ph.D. Electrical and Computer Engineering	Baylor University
Mohamed Mahmoud Shohayeb	Professor of Microbiology and Molecular Biology	Tanta University
Young Chang	Professor of Mechanical Engineering Technology	Oklahoma State University
Alan K. Walker	Ph.D. Plant Breeding and Cytogenetics	Iowa State University
Jurgis Suba	Ph.D. in Biology, Zoology	University of Latvia
Gerald R. Chester	Ph.D. Physics	University of Texas, Austin
Abdul Hadi Aldmairi	Ph.D. Organic Synthesis	Cardiff University
Eungchun Cho	Ph.D. Mathematics	Rutgers University
Paul Madtes, Jr.	Professor and Chair of Biology	Mount Vernon Nazarene University
Curtis M. Beechan	Ph.D. Organic Chemistry	Stanford University
Ola Hössjer	Professor of Mathematical Statistics	Stockholm University
David Rodda	Ph.D. Quantitative Genetics	University of Guelph (Canada)
Ivan E.B. Saraiva	Assistant Professor of Medicine	University of Kentucky
Nicholas J. Fuller	Ph.D. Microbiology	University of Warwick
Umberto Cerruti	Professor of Computational Algebra	University of Turin
T. Timothy Chen	Ph.D. Statistics	University of Chicago
Sarah M. Williams	Ph.D. Environmental Engineering (emphasis in microbiology)	Stanford University
Donald Clark	Ph.D. Physical Biochemistry	Louisiana State University
John Frederick Zino	Ph.D. Nuclear Engineering	Georgia Institute of Technology
Shing-Yan Chiu	Professor of Physiology	University of Wisconsin, Madison
Todd A. Anderson	Ph.D. Computer Science	University of Kentucky
John Cimbala	Professor of Mechanical Engineering	Pennsylvania State University
Chris Swanson	Tutor (Ph.D. Physics, University of Oregon)	Gutenberg College
Kieran Clements	Assistant Professor, Natural Sciences	Toccoa Falls College
John K. Herdtklotz	Ph.D. Physical Chemistry	Rice University
Jan Chatham	Ph.D. Neurophysiology	University of North Texas
George A. Gates	Emeritus Professor of Otolaryngology-Head and Neck Surgery	University of Washington
John Cogdell	Professor of Electrical & Computer Engineering	University of Texas, Austin
David R. Beaucage	Ph.D. Mathematics	State University of New York at Stony Brook
Leon Combs	Professor & Chair, Chemistry & Biochemistry	Kennesaw State University
Laraba P. Kendig	Ph.D. Materials Science & Engineering	University of Michigan
Nicholas Cominellis	Associate Professor of Community and Family Medicine	University of Missouri-Kansas City
William J. Arion*	Emeritus Professor of Biochemistry	Cornell University
Stephen Crouse	Professor of Kinesiology	Texas A&M University
Cham Dallas	Professor, Pharmaceutics & Biomedical Science	University of Georgia
Charles N. Verheyden	Professor of Surgery	Texas A&M College of Medicine
Melody Davis	Ph.D. Chemistry	Princeton University

Thomas Deahl	Ph.D. Radiation Biology	The University of Iowa
Shun Yan Cheung	Associate Professor of Computer Science	Emory University
Robert DeHaan*	Ph.D. Human Development	University of Chicago
Gage Blackstone	Doctor of Veterinary Medicine	Texas A&M University
Harold Delaney	Professor of Psychology	University of New Mexico
Jonathan C. Boomgaarden	Ph.D. Mechanical Engineering	University of Wisconsin
Greg Tate	Ph.D. Plant Pathology	University of California, Davis
William Bordeaux	Chair, Department of Natural & Mathematical Science	Huntington College
Michael Delp	Professor of Physiology	Texas A&M University
Keith F. Conner	Ph.D. Electrical Engineering	Clemson University
David DeWitt	Chair, Department of Biology & Chemistry	Liberty University
Aaron J. Miller	Ph.D. Physics	Stanford University
Gary Dilts	Ph.D. Mathematical Physics	University of Colorado
Gerald Chubb	Associate Professor of Aviation	Ohio State University
Robert DiSilvestro	Ph.D. Biochemistry	Texas A & M University
Daniel Dix	Associate Professor of Mathematics	University of South Carolina
Allison Dobson	Assistant Professor, Chemistry	Georgia Southern University
David Prentice	Professor, Department of Life Sciences	Indiana State University
Kenneth Dormer	Ph.D. Biology & Physiology	University of California, Los Angeles
Ernest Prabhakar	Ph.D. Experimental Particle Physics	California Institute of Technology
John Doughty	Ph.D. Aerospace & Mechanical Engineering	University of Arizona
Jeanne Drisko	Clinical Assistant Professor of Alternative Medicine	University of Kansas, School of Medicine
Robert Eckel	Professor of Medicine, Physiology & Biophysics	University of Colorado Health Sciences Center
Seth Edwards	Associate Professor of Geology	University of Texas, El Paso
Eduard F. Schmitter	Ph.D. Astronomy	University of Wisconsin
Lee Eimers*	Professor of Physics & Mathematics	Cedarville University
William J. Hedden	Ph.D. Geology	Missouri University of Science & Technology
Daniel Ely	Professor, Biology	University of Akron
Pattie Pun	Professor of Biology	Wheaton College
Thomas English	Adjunct Professor of Physics & Engineering	Palomar College
Rosalind Picard	Sc.D. Electrical Engineering & Computer Science	Massachusetts Institute of Technology
Danielle Datafave	Associate Professor of Physics	The College of New Jersey
Richard Erdiac	Ph.D. Structural Geology	University of Texas (Austin)
Michael C. Reynolds	Assistant Professor of Mechanical Engineering	University of Arkansas-Fort Smith
Bruce Evans	Ph.D. Neurobiology	Emory University
Gary Achtemeier	Ph.D. Meteorology	Florida State University
William Everson	Ph.D. Human Physiology	Penn State College of Medicine
Susan L.M. Huck*	Ph.D. Geology/Geography	Clark University
James Florence	Associate Professor, Department of Public Health	East Tennessee State University
Douglas R. Buck	Ph.D. Nutrition and Food Sciences	Utah State University
	Fellow	American College of Nutrition
Margaret Flowers	Professor of Biology	Wells College
Etienne Windisch	Ph.D. Engineering	McGill University (Canada)
Mark Foster	Ph.D. Chemical Engineering	University of Minnesota
Suzanne Sawyer Vincent	Ph.D. Physiology & Biophysics	University of Washington

Clarence Fouche	Professor of Biology	Virginia Intermont College
Robert Blomgren	Ph.D. Mathematics	University of Minnesota
Kenneth French	Chairman, Division of Natural Science	Blinn College
Richard N. Taylor	Professor of Information & Computer Science	University of California, Irvine
Stephen C. Knowles	Ph.D. Marine Science	University of North Carolina, Chapel Hill
Marvin Fritzier	Professor of Biochemistry & Molecular Biology	University of Calgary Medical School (Canada)
Mark L. Psiaki	Professor of Mechanical and Aerospace Engineering (Ph.D., Princeton)	Cornell University
Walter E. Lillo	Ph.D. Electrical Engineering	Purdue University
Mark Fuller	Ph.D. Microbiology	University of California, Davis
Daniel Galassini	Doctor of Veterinary Medicine	Kansas State University
Stanley E. Zager*	Professor Emeritus, Chemical Engineering	Youngstown State University
Andrew Fong	Ph.D. Chemistry	Indiana University
John Garth	Ph.D. Physics	University of Illinois, Champaign-Urbana
John K. G. Kramer	Adjunct Professor, Dept. of Human Biology & Nutrition Sciences	University of Guelph (Canada)
Glen O. Brindley*	Professor of Surgery, Director of Ophthalmology	Scott & White Clinic, Texas A&M University H.S.C.
Ann Gauger	Ph.D. Zoology	University of Washington
Pamela Faith Fahey	Ph.D. Physiology & Biophysics	University of Illinois
Paul Brown	Assistant Professor of Environmental Studies	Trinity Western University (Canada)
Mark Geil	Ph.D. Biomedical Engineering	Ohio State University
Ibrahim Barsoum	Ph.D. Microbiology	The George Washington University
Jim Gibson	Ph.D. Biology	Loma Linda University
John W. Balliet*	Ph.D. Molecular & Cellular Biology	University of Pennsylvania,
William Gilbert	Emeritus Professor of Biology	Simpson College
Joe R. Eagleman	Professor Emeritus, Department of Physics & Astronomy	University of Kansas
Dexter F. Speck	Associate Professor of Physiology	University of Kentucky Medical Center
Warren Gilson	Associate Professor, Dairy Science	University of Georgia
Raul Leguizamón	Professor of Medicine (Pathology)	Autonomous University of Guadalajara (Mexico)
Steven Gollmer	Ph.D. Atmospheric Science	Purdue University
Sun Uk Kim	Ph.D. Biochemical Engineering	University of Delaware
Gene B. Chase*	Professor of Mathematics and Computer Science (Ph.D. Cornell)	Messiah College
Chris Grace	Associate Professor of Psychology	Biola University
James A. Ellard, Sr.	Ph.D. Chemistry	University of Kentucky
Richard Gunasekera	Ph.D. Biochemical Genetics	Baylor University
Jennifer M. Cohen	Ph.D. Mathematical Physics	New Mexico Institute of Mining and Technology
Russel Peak	Senior Researcher, Engineering Information Systems	Georgia Institute of Technology
Graham Gutsche	Emeritus Professor of Physics	U.S. Naval Academy
Olivia A. Henderson	Ph.D. Pharmaceuticals	University of Missouri, Kansas City
Dan Hale	Professor of Animal Science	Texas A&M University
Robert L. Jones	Associate Professor, Department of Ophthalmology	University of California, Irvine
James Harbrecht	Clinical Associate Professor, Division of Cardiology	University of Kansas Medical Center
George W. Benthien	Ph.D. Mathematics	Carnegie Mellon University
James Harman	Associate Chair, Dept. of Chemistry & Biochemistry	Texas Tech University
Frederick T. Zugibe*	Emeritus Adjunct Associate Professor of Pathology	Columbia Univ. College of Physicians and Surgeons
William Harris	Ph.D. Nutritional Biochemistry	University of Minnesota
Thomas H. Johnson	Ph.D. Mathematics	University of Maryland

Paul Hausgen	Ph.D. Mechanical Engineering	Georgia Institute of Technology
Gregory A. Snyder	Ph.D. Geochemistry	Colorado School of Mines
Walter Hearn*	Ph.D. Biochemistry	University of Illinois
Janice Arion	Ph.D. Animal Science	Cornell University
Howard Martin Whitcraft*	Ph.D. Mathematics	University of St. Louis
Nolan Hertel	Professor, Nuclear & Radiological Engineering	Georgia Institute of Technology
Joseph Francis	Associate Professor of Biology	Cedarville University
Roland Hirsch	Ph.D. Analytical Chemistry	University of Michigan
Todd Peterson	Ph.D. Plant Physiology	University of Rhode Island
Charles Edward Noman*	Ph.D. Electrical Engineering	Carleton University (Canada)
Dewey Hodges	Professor, Aerospace Engineering	Georgia Institute of Technology
James P. Russum	Ph.D. Chemical Engineering	Georgia Institute of Technology
Marko Horb	Ph.D. Cell & Developmental Biology	State University of New York
Joe Watkins	Military Professor, Department of Mechanical Engineering	United States Military Academy
Barton Houseman	Emeritus Professor of Chemistry	Goucher College
Mark Pritt	Ph.D. Mathematics	Yale University
Edward Peltzer	Ph.D. Oceanography	University of California, San Diego (Scripps Institute)
Cornelius Hunter	Ph.D. Biophysics	University of Illinois
Rodney Ice	Principle Research Scientist, Nuclear & Radiological Engineering	Georgia Institute of Technology
Malcolm W. MacArthur	Ph.D. Molecular Biophysics	University of London (UK)
Rafe Payne	Ph.D. Biology	University of Nebraska
Muzaffar Iqbal	Ph.D. Chemistry	University of Saskatchewan (Canada)
Mark P. Bowman	Ph.D. Organic Chemistry	Pennsylvania State University
David L. Elliott	Chair, Division of Natural Sciences/Mathematics	Louisiana College
David Ives	Emeritus Professor of Biochemistry	Ohio State University
Stephan J. G. Gift	Professor of Electrical Engineering	The University of the West Indies
Tony Jelsma	Ph.D. Biochemistry	McMaster University (Canada)
George C. Wells	Professor of Computer Science	Rhodes University (South Africa)
Fred Johnson	Ph.D. Pathology	Vanderbilt University
Raleigh R. White, IV	Professor of Surgery	Texas A&M University, College of Medicine
Jerry Johnson	Ph.D. Pharmacology & Toxicology	Purdue University
Harold D. Cole	Professor of Physiology	Southwestern Oklahoma State University
Yongsoon Park	Ph.D. Nutritional Biochemistry	Washington State University
Richard Johnson	Professor of Chemistry	Le Toumeau University
David Hagen	Ph.D. Mechanical Engineering	University of Minnesota
David Johnson	Associate Professor of Pharmacology & Toxicology	Duquesne University
Jay Hollman	Assistant Clinical Professor of Cardiology	Louisiana State University Health Science Center
Lawrence Johnston*	Emeritus Professor of Physics	University of Idaho
Albert J. Starshak*	Ph.D. Physical Chemistry	Illinois Institute of Technology
Robert Jones	Associate Professor of Mechanical Engineering	University of Texas-Pan America
Scott T. Dreher*	Ph.D. Geology (Royal Society USA Research Fellow)	University of Alaska, Fairbanks
David Jones	Professor of Biochemistry & Chair of Chemistry	Grove City College
Robert Kaita	Ph.D. Nuclear Physics	Rutgers University
Kenneth Demarest	Professor of Electrical Engineering	University of Kansas
Edwin Karlow	Chair, Department of Physics	LaSierra University

Francis M. Donahue	Professor Emeritus, Chemical Engineering	The University of Michigan
James Keener	Professor of Mathematics & Adjunct of Bioengineering	University of Utah
Shawn Wright	Ph.D. Crop Science	North Carolina State University
Douglas Keil	Ph.D. Plasma Physics	University of Wisconsin, Madison
Dave Finnegan	Staff Member (Ph.D. Chemistry, University of Maryland)	Los Alamos National Laboratory
Micheal Kelleher	Ph.D. Biophysical Chemistry	University of Ibadan (Nigeria)
Christine B. Beaucage	Ph.D. Mathematics	State University of New York at Stony Brook
Rebecca Keller	Research Professor, Department of Chemistry	University of New Mexico
Gerald E. Hoyer	Retired Forrest Scientist (Ph.D. Silviculture, University of Washington)	Washington State Department of Natural Resources
Michael Kent	Ph.D. Materials Science	University of Minnesota
Richard Kinch	Ph.D. Computer Science	Cornell University
Irhan Yilmaz	Professor of Biology (Ph.D. Systematic Zoology)	Dokuz Eylul University (Turkey)
Bretta King	Assistant Professor of Chemistry	Spelman College
Mauricio Alcocer	Director of Graduate Studies (Ph.D. Plant Science, University of Idaho)	Autonomous University of Guadalajara (Mexico)
R. Barry King	Prof. of Environmental Safety & Health	Albuquerque Technical Vocational Institute
Hiroshi Ishii	M.D., Ph.D. Behavioral Neurology	Tohoku University (Japan)
Michael Kinnaird	Ph.D. Organic Chemistry	University of North Carolina, Chapel Hill
Lasse Uotila	M.D., Ph.D. Medicinal Biochemistry	University of Helsinki (Finland)
Donald Kobe*	Professor of Physics	University of North Texas, Denton
Martin Emery	Ph.D. Chemistry	University of Southampton (UK)
Charles Koons*	Ph.D. Organic Chemistry	University of Minnesota
Miguel A. Rodriguez	Undergraduate Lab. Coordinator for Biochemistry	University of Ottawa (Canada)
Carl Koval	Full Professor, Chemistry & Biochemistry	University of Colorado, Boulder
Magda Narciso Leite	Professor, College of Pharmacy & Biochemistry	Universidade Federal de Juiz de Fora (Brazil)
Bruce Krogh	Professor of Electrical & Computer Engineering	Carnegie Mellon University
Tetsuichi Takagi	Senior Research Scientist	Geological Survey of Japan
William Notz	Professor of Statistics	Ohio State University
Don Ranney*	Emeritus Professor of Anatomy and Kinesiology	University of Waterloo (Canada)
Wesley Nyborg*	Emeritus Professor of Physics	University of Vermont
Peter William Holyland	Ph.D. Geology	University of Queensland (Australia)
Paul Kuld	Associate Professor of Biological Science	Biola University
Larry B. Rainey	Principal Space Systems Engineer	Missile Defense Agency
Heather Kuruvilla	Ph.D. Biological Sciences	State University of New York, Buffalo
Nancy L. Swanson	Ph.D. Physics	Florida State University
Martin LaBar	Ph.D. Genetics & Zoology	University of Wisconsin, Madison
William B. Hart	Assistant Professor of Mathematics	University of Illinois at Urbana-Champaign
Teresa Larranaga	Ph.D. Pharmacology	University of New Mexico
Yuri Zhanikov	Post-Doctoral Research Fellow (Ph.D. Zoology)	Simon Fraser University (Canada)
Ronald Larson	Professor and (Former) Chair of Chemical Engineering	University of Michigan
Wolfgang Hutter	Ph.D. Chemistry	University of Ulm (Germany)
Robert Lattimer	Ph.D. Chemistry	University of Kansas, Lawrence
Robert J. Graham	Ph.D. Chemical Engineering	Iowa State University
M. Harold Laughlin	Professor & Chair, Department of Biomedical Sciences	University of Missouri
Samuel C. Winchester	Klopman Distinguished Professor Emeritus (Ph.D. Princeton)	North Carolina State University
George Lebo	Associate Professor of Astronomy	University of Florida

Kurt J. Henle	Professor Emeritus (Ph.D. Biophysics, University of Pennsylvania)	University of Arkansas for Medical Sciences
J.B. Lee	Assistant Professor of Electrical Engineering	University of Texas, Dallas
James O. Dritt*	Ph.D. Civil Engineering & Environmental Science	University of Oklahoma
Matti Leisola	Professor, Laboratory of Bioprocess Engineering	Helsinki University of Technology
Manuel Garcia Lilloa Gomez	Director of Marine Sciences Laboratory	Autonomous University of Guadalajara (Mexico)
E. Lennard	Sc. D. Surgical Infections & Immunology	University of Cincinnati
Glen E. Deal	Ph.D. Electrical Engineering	Florida Institute of Technology
Lane Lester	Ph.D. Genetics	Purdue University
Paul Whitehead	Ph.D. Chemical Thermodynamics	University of Natal (South Africa)
Catherine Lewis	Ph.D. Geophysics	Colorado School of Mines
John R. Goltz	Ph.D. Electrical Engineering	University of Arizona
Peter Line	Ph.D. Neuroscience	Swinburne University of Technology (Australia)
Gerald P. Bodey*	Emeritus Professor of Medicine, Former Chairman	Department of Medical Specialties, University of Texas M.D. Anderson Cancer Center
Garrick Little	Ph.D. Organic Chemistry	Texas A & M University
John Nichols	Ph.D. Mathematics	University of Tennessee
Mark Bearden	Ph.D. Electrical & Computer Engineering	Carnegie Mellon University
Harry Lubansky	Ph.D. Biological Chemistry	University of Illinois, Chicago
Daniel L. Moran	Ph.D. Molecular & Cellular Biology	Ohio University
Ken Ludema*	Emeritus Professor of Mechanical Engineering	Fulbright Scholar
Jed Macosko	Ph.D. Chemistry	University of Michigan
Nigel Sumidge	Ph.D. Electrochemistry & Photochemistry	University of California, Berkeley
Christopher Macosko	Ph.D. Chemical Engineering	University of North Carolina, Chapel Hill
David Keller	Associate Professor of Chemistry	Princeton University
Allen Magnuson	Ph. D. Theoretical & Applied Mechanics	University of New Hampshire
Amy Ward	Ph.D. Mathematics	Clemson University
Donald Mahan*	Professor of Animal Nutrition	Ohio State University
Shane A. Kasten	Post-Doctoral Fellow (Ph.D. Biochemistry, Kansas State University)	Virginia Commonwealth University
Robert Marks	Distinguished Professor, Electrical & Computer Engineering	Baylor University
Chi-Deu Chang	Ph.D. Medicinal Chemistry	State University of New York, Buffalo
Jesus Ambriz	Professor of Medicine	Autonomous University of Guadalajara (Mexico)
Julie Marshall	Ph.D. Chemistry	Texas Tech University
Jay L. Wile	Ph.D. Nuclear Chemistry	University of Rochester
Manfredo Pansa	Ph.D. Computer Science	University of Turin (Italy)
David McClellan	Assistant Professor of Family & Community Medicine	Texas A&M University College of Medicine
Evgeny Shirokov	Faculty Lecturer (Nuclear and Particle Physics)	Moscow State University (Russia)
Charles E. Hunt	Professor of Electrical & Computer Engineering, Professor of Design Also, Visiting Professor of Physics	University of California, Davis University of Barcelona (Spain)
Andy McIntosh	Full Professor of Thermodynamics and Combustion Theory	University of Leeds (UK)
Mark A. Robinson	Ph.D. Environmental Science	Lacrosse University
Hsin-Yi Lin	Assistant Professor, Dept. of Chemical Engineering & Biotechnology	National Taipei University of Technology (Taiwan)
Tom McMullen	Ph.D. History & Philosophy of Science	Indiana University
David G. Durrett	Ph.D. Chemistry	Louisiana State University
Haim Shore	Professor of Quality and Reliability Engineering (Ph.D. Statistics)	Ben-Gurion University of the Negev (Israel)

Tony Mega	Ph.D. Biochemistry	Purdue University
Carl Poppe	Ph.D. Physics	University of Wisconsin
Keith P. Birch	Ph.D. Atmospheric Physics	University of Southampton (UK)
James Menart	Associate Professor of Mechanical Engineering	Wright State University
Theodor Liss	Ph.D. Chemistry	Massachusetts Institute of Technology
James Keesling	Professor of Mathematics	University of Florida
Brian Miller	Ph.D. Physics	Duke University
Christopher D. Beling*	Associate Professor of Physics	The University of Hong Kong (China)
Art Nitz	Ph.D. Anatomy & Neurobiology	University of Kentucky
Thomas Milner	Associate Professor of Biomedical Engineering	University of Texas, Austin
David Ness	Ph.D. Anthropology	Temple University
Christian W. Puritz	Ph.D. Mathematics	University of Glasgow (UK)
Forrest Mims	Atmospheric Researcher	Geronimo Creek Observatory
S. W. Pelletier*	Emeritus Distinguished Professor of Chemistry	University of Georgia, Athens
Richard L. Carpenter, Jr.	Ph.D. Meteorology	University of Oklahoma
Paul Missel	Ph.D. Physics	Massachusetts Institute of Technology
Jeffrey Sabburg	Ph.D. Physics	Queenland University of Technology (Australia)
Dónal O'Mathúna	Ph.D. Pharmacognosy	Ohio State University
Steve D. Figard	Ph.D. Biochemistry	Florida State University
Lennart Möller	Professor, Center for Nutrition & Toxicology	Karolinska Institute (Sweden)
Victoriano Saenz	Professor of Medicine	Autonomous University of Guadalajara (Mexico)
Takeo Nakagawa	Chancellor (Ph.D. Physics, Monash University, Australia)	White Mountains Academy (Japan)
David Monson	Ph.D. Analytical Chemistry	Indiana University
James T. Fowler	Ph.D. Mathematics	University of Durham (UK)
Hugh Nutley*	Professor Emeritus of Physics & Engineering	Seattle Pacific University
Terry Morrison	Ph.D. Chemistry	Syracuse University
Bijan Nemati	Ph.D. High Energy Physics	University of Washington
William Russell Belding	Ph.D. Mathematics	University of Notre Dame
Bridget Ingham	Ph.D. Physics	Victoria University of Wellington (New Zealand)
Paul Nesselroade	Professor of Psychology and Department Chair	Asbury University
Kevin L. Kendig	Ph.D. Materials Science & Engineering	University of Michigan
Marco Bernardes	Professor & Chair, Department of Mechanical Engineering	Federal Center of Tech. Ed., Minas Gerais (Brazil)
Robert Newman	Ph.D. Astrophysics	Cornell University
Angus Menuge	Ph.D. Philosophy of Psychology	University of Wisconsin-Madison
Khawar Sohail Siddiqui	Senior Research Associate (Protein Chemistry)	University of New South Wales (Australia)
Janet Parker	Professor of Medical Physiology	Texas A&M University, Health Science Center
Scott Northrup*	Chair and Professor of Chemistry	Tennessee Tech University
John Omdahl*	Professor of Biochemistry & Molecular Biology	University of New Mexico
Matthew A. Jenks	Professor of Horticultural Science	Purdue University
Fazale Rana	Ph.D. Chemistry	Ohio University
Cevat Babuna*	Professor Emeritus of Gynecology (Post-doc, University of Chicago)	Istanbul University (Turkey)
Bruce L. Gordon	Ph.D. Philosophy of Physics	Northwestern University
Lawrence Overzet	Professor of Engineering & Computer Science	University of Texas, Dallas
J. C. Meredith	Assistant Professor, Chemical Engineering	Georgia Institute of Technology
Siddarth Pandey	Assistant Professor of Chemistry	New Mexico Institute of Mining and Technology

Bruce Holman, III	Ph.D. Organic Chemistry	Northwestern University
Gordon Mills	Emeritus Professor of Biochemistry	University of Texas, Medical Branch
A. Clyde Hill	Ph.D. Soil Chemistry	Rutgers University
Aric D. Blumer	Ph.D. Computer Engineering	Virginia Tech
Stephen C. Meyer	Ph.D. Philosophy of Science	Cambridge University (UK)
William Purcell*	Ph.D. Physical Chemistry	Princeton University
Paul Randolph	Ph.D. Mathematical Statistics	University of Minnesota
Christopher Morbey*	Astronomer (Ret.)	Herzberg Institute of Astrophysics, National Research Council of Canada
Stephen C. Tentarelli	Ph.D. Mechanical Engineering	Lehigh University
David Reed*	Ph.D. Entomology	University of California, Riverside
Charles D. Johnson	Ph.D. Chemistry	University of Minnesota
J. Ishizaki	Associate Professor of Neuropsychology (M.D., Ph.D. Medicine)	Kobe Gakuin University (Japan)
David Rogstad*	Ph.D. Physics	California Institute of Technology
Mark Shlapobersky	Ph.D. Virology	Bar-Ilan University (Israel)
Arthur John Jones	Ph.D. Zoology & Comparative Physiology	Birmingham University (UK)
Patricia Reiff	Director, Rice Space Institute	Rice University
Oleh Havrysh	Senior Research Assistant, Protein & Peptide Structure & Function Dept.	Institute of Bioorganic Chemistry & Petrochemistry Ukrainian National Academy of Sciences (Ukraine)
W. Christopher Schroeder	Associate Professor of Mathematics	Morehead State University
Gail H. Allwine	Professor of Electrical Engineering (retired)	Gonzaga University
Dan Reynolds	Ph.D. Organic Chemistry	University of Texas, Austin
Gildo Magalhães	Professor of the History of Science & Technology	University of São Paulo (Brazil)
Andrew Steckley	Ph.D. Civil Engineering	University of Western Ontario (Canada)
Terry Rickard	Ph.D. Engineering Physics	University of California, San Diego
Arlen W. Siert	Ph.D. Environmental Health	Colorado State University
Mubashir Hanif	Ph.D. Plant Biology	University of Helsinki (Finland)
Eliot Roberts*	Ph.D. Soil Chemistry	Rutgers University
Mario Beauregard	Associate Researcher, Department of Psychology (Ph.D. Neuroscience)	University of Montreal (Canada)
Mehmet Pakdemirli	Professor of Mechanical Engineering	Celal Bayar University (Turkey)
Quinton Rogers	Prof. of Physiological Chemistry, Dept. of Molecular Biosciences	Univ. of California, Davis, School of Vet. Medicine
Liang Hong	Associate Professor, Dept. of Dental Public Health & Behavioral Science	University of Missouri, Kansas City
Daniel Romo	Professor of Chemistry	Texas A&M University
David Sabatini	Professor Civil Engineering & Environmental Science	University of Oklahoma
Richard Buggs	DPhil Plant Ecology & Evolution	Oxford University (UK)
Etienne Y. Vernaz	Professor & Director of Research Director	CEA (French Atomic Energy Agency) (France)
Theodore Saito	Ph.D. Physics	Pennsylvania State University
Jussi Meriluoto	Professor, Department of Biochemistry & Pharmacy	Abo Akademi University (Finland)
Kay Roscoe	Ph.D. High Energy Particle Physics	University of Manchester (UK)
Thomas Saleska	Professor of Biology	Concordia University
James F. Drake	Ph.D. Atmospheric Science	University of California, Los Angeles
Daniel M. Brown	Ph.D. Physics	Catholic University of America
Fernando Saravi	Professor, Department of Morphology and Physiology	Med. Sciences, Univ. Nacional de Cuyo (Argentina)
Harold Toups	Ph.D. Chemical Engineering	Louisiana State University
Raúl Erlando López*	Ph.D. Atmospheric Science	Colorado State University

Beverly W. Miller	Ph.D. Biology	Carnegie Mellon University
Seyyed Imran Husnain	Ph.D. Bacterial Genetics	University of Sheffield (UK)
Gayle Livingston Birchfield	Ph.D. Biology	University of Missouri, Columbia
Dale Schaefer	Professor, Materials Science & Engineering	University of Cincinnati
Russell C. Healey	Ph.D. Electrical Engineering	University of Cambridge (UK)
James Gilchrist	Ph.D. Physics	University of Texas, Austin
Stuart C. Burgess	Professor of Design & Nature, Dept. of Mechanical Engineering	Bristol University (UK)
Charles W. Bell*	Professor Emeritus of Biological Sciences	San Jose State University
Norman Schmidt	Professor of Chemistry	Georgia Southern University
Flemming Nyboe	Ph.D. Electrical Engineering	Technical University of Denmark (Denmark)
Steve Maxwell	Associate Professor of Molecular and Cellular Medicine	Texas A&M University, H.S.C.
Rowan Seymour	Ph.D. Computer Science	Queen's University, Belfast (Northern Ireland)
Leslie J. Wiemerslage	Emeritus Professor (Ph.D. Cell Biology, Univ. of Pennsylvania)	Southwestern Illinois College
Andrew Schmitz	Ph.D. Inorganic Chemistry	University of Iowa
Anne E. Vravick	Ph.D. Environmental Toxicology	University of Wisconsin, Madison
Granville Sewell	Professor of Mathematics	University of Texas, El Paso
Richard A. Strong	Ph.D. Chemistry	Northeastern University
Marshall Adams	Ph.D. Marine Sciences	University of North Carolina, Chapel Hill
Stephen Sewell	Assistant Professor of Family Medicine	Texas A&M University
Mark C. Biedebach	Professor Emeritus of Physiology	California State University, Long Beach
Gregory Shearer	Ph.D. Physiology	University of California, Davis
Douglas Nelson Rose	Research Physicist	United States Army
David Shormann	Ph.D. Limnology	Texas A&M University
Paul Lorenzini	Ph.D. Nuclear Engineering	Oregon State University
Mark Apkarian	Ph.D. Exercise Physiology	University of New Mexico
Dale Spence	Emeritus Professor of Kinesiology	Rice University
Edson R. Rocha	Research Assistant Professor, Microbiology	East Carolina University
David W. Dykstra	Ph.D. Computer Science	University of Illinois, Urbana-Champaign
Arnold Sikkema	Associate Professor of Physics	Dordt College
Larry S. Helmick	Senior Professor of Chemistry	Cedarville University
Georgia Purdom	Ph.D. Molecular Genetics	Ohio State University
John Silvius	Ph.D. Plant Physiology	West Virginia University
Philip S. Taylor	Research Fellow, Computer Science	Queen's University Belfast (UK)
Fred Skiff	Professor of Physics	University of Iowa
Giulio D. Guerra	First Researcher of the Italian National Research Council (Chemistry)	Istituto Materiali Compositi e Biomedici, CNR (Italy)
Ken Smith	Professor of Mathematics	Central Michigan University
Audris Zidermanis	Ph.D. Nutrition & Molecular Biology	Texas Woman's University
Jeff Tomkins	Ph.D. Genetics	Clemson University
Lakhi Goenka	Ph.D. Fluid Dynamics	University of Texas at Austin
Stephen A. Batzer	Ph.D. Mechanical Engineering	Michigan Technological University
Jacquelyn W. McClelland	Professor (Ph.D. Nutritional Biochemistry)	North Carolina State University, NCCE
Robert Smith	Professor of Chemistry	University of Nebraska, Omaha
Fred Van Dyke	Professor of Biology and Chair of the Biology Department	Wheaton College (Illinois)
Ian C. Fuller	Senior Lecturer in Physical Geography	Massey University (New Zealand)
Wolfgang Smith*	Emeritus Professor of Mathematics	Oregon State University

Jorge Pimentel Cintra	University Professor, Earth Sciences	University of São Paulo (Brazil)
Wayne L. Cook	Ph.D. Inorganic Chemistry	University of Kentucky
John Stamper*	Research Physicist	Naval Research Laboratory
Alfred Tang	Visiting Scholar (Ph.D. Physics, University of Wisconsin, Madison)	The Chinese University of Hong Kong (China)
Jeffrey L. Vaughn	Ph.D. Engineering	University of California, Irvine
Timothy Standish	Ph.D. Environmental Biology	George Mason University
Robert W. Kopitzke	Professor of Chemistry	Winona State University
William Hankley	Professor of Computer Science	Kansas State University
Walt Stangl	Associate Professor of Mathematics	Biola University
Karl Stephan	Associate Professor, Dept. of Technology	Texas State University, San Marcos
Cahit Babuna*	Ph.D. Radiology	Istanbul University (Turkey)
Richard Sternberg	Ph.D. Biology (Molecular Evolution)	Florida International University
	Also: Ph.D. Systems Science (Theoretical Biology)	Binghamton University
	P.E., Ph.D. Structural Engineering	University of Texas, Austin
Reid W. Castrodale	Associate Professor of Physics	University of Oklahoma
Michael Strauss	Associate Professor of Physics	University of Oklahoma
Jason David Ward	Ph.D. Molecular Biology and Biochemistry	Glasgow University (UK)
Scott A. Renner	Ph.D. Computer Science	University of Illinois at Urbana-Champaign
John Studenroth	Ph.D. Plant Pathology	Cornell University
Peter M. Rowell	D.Phil. Physics	University of Oxford (UK)
Mark Swanson	Ph.D. Biochemistry	University of Illinois
Ricardo Bravo Méndez	Professor of Zoology and Ichthyology	Universidad de Valparaíso (Chile)
Rafi Ahmed	Ph.D. Computer Science	University of Florida
James Swanson	Professor of Biological Sciences	Old Dominion University
Wade Warren	C.J. Cavanaugh Chair in Biology	Louisiana College
Justin Holl	Ph.D. Animal Science	University of Nebraska, Lincoln
Bela Szilagyi	Ph.D. Physics	University of Pittsburgh
Gary J. Baxter	Ph.D. Synthetic Organic Chemistry	Monash University, Melbourne, Australia
András Vukics	Ph.D. in Physics	University of Szeged, Hungary
Wildon Fickell*	Ph.D. in Chemistry	Caltech
Richard Mann	Ph.D. Physical Chemistry	Princeton University
Daniel Tedder	Associate Professor, Chemical Engineering	Georgia Institute of Technology
Derek Linkens*	Senior Research Fellow and Emeritus Professor (Biomedical Eng.)	University of Sheffield (UK)
Charles Thaxton	Ph.D. Physical Chemistry	Iowa State University
Lee M. Spetner*	Ph.D. Physics	Massachusetts Institute of Technology
Christopher L. Thomas	Ph.D. Analytical Chemistry	University of South Carolina
J. Benjamin Scripture	Ph.D. Biochemistry	University of Notre Dame
Douglas C. Youvan	Former Associate Professor of Chemistry (Ph.D., U.C., Berkeley)	Massachusetts Institute of Technology
Jeff W. Johnson	Ph.D., Industrial, Organizational, & Cognitive Psychology	University of Minnesota
Sture Blomberg	Associate Professor of Anesthesia & Intensive Care Medicine	The Sahlgren University Hospital (Sweden)
Pavithran Thomas	Ph.D. Mechanical Engineering	Ohio State University
Leonard Loose*	Ph.D. Botany	University of Leeds (UK)
Richard Thompson	Ph.D. Computer Science	University of Connecticut
John M. Dishman	Ph.D. Physics	Carnegie Mellon University
Antonio Cruz Suárez	Ph.D. Biology	University of Barcelona
Hyunsoo So	Emeritus Professor of Chemistry	Sogang University

David Uhrig	Technical Staff, Synthetic Polymer Chemistry	Oak Ridge National Laboratory
Jaime Mella	Professor of Organic Chemistry	University of Valparaíso, Chile
John D. Newell, Jr.	Professor of Radiology and Biomedical Engineering	University of Iowa
Josh Smith	Associate Professor, Biomedical Sciences	Missouri State University
Fritz Wenk	Doctor of Natural Sciences (Dr. sc. nat. ETH)	Swiss Federal Institute of Technology, Zurich
Sari Hyvärinen	D.Sc. in Chemical Engineering	Abo Akademi University, Finland
Redhwan A. Al-Naggar	Professor of Population Health and Preventive Medicine	Universiti Teknologi MARA (UiTM)
Jan Carlo Delorenzi	Professor of Immunology and Public Health	Mackenzie Presbyterian University
Jason Wilson	Associate Professor of Statistics	Biola University
Jeffrey Bidwell	Reader in Molecular Immunogenetics	University of Bristol, UK
Andrew Neil Rollinson	Ph.D. Sustainable Energy Engineering	University of Leeds
Robert Alston	Ph.D. Electrical Engineering	North Carolina Agricultural and Technical State University
Andrew Martin	Ph.D. Materials Engineering	University of Michigan
Jeffrey Ridgway	Ph.D. Geophysics	University of California, San Diego
David N. Lankford*	Ph.D. Environmental Health	University of Oklahoma Health Sciences Center
Aimée-Louise Craig	Ph.D. Biological Science	Queens University Belfast
Jeremy Morgan	Professor of Chemistry	University of North Carolina, Wilmington
Marcelo Fernández	Ph.D. Biochemistry	University of Buenos Aires
Jørn Dyerberg	Professor Emeritus, Faculty of Life Sciences	Copenhagen University
J. David Tidwell	Doctor of Veterinary Medicine	Texas A&M University
Timothy J. Draelos	Deep Learning Research and Development	Sandia National Laboratories
Ali Ahmed	Ph.D. Computer Science	Victoria University of Wellington
Remo Badii	Ph.D. Theoretical Physics	University of Zurich
Sagar P. Kanekar	Ph.D. Microbiology	Savitribai Phule Pune University, India
Change Tan	Associate Professor of Biology	University of Missouri
Mariclaire Reeves	Ph.D. Cell and Molecular Biology	University of Hawaii
James C. Williams, Jr.	Professor of Anatomy and Cell Biology	Indiana University School of Medicine
Vladimir Sakharov	Former Senior Environmental and Humanitarian Affairs Officer, Joint UNEP/OCHA Environment Unit in Geneva (Ph.D. Biology, Moscow State University)	United Nations
Yoon-Bong Hahn	Professor, Chemical Engineering	Chonbuk National University
Christopher Shaw	Fellow of Korea Academy of Science and Technology	Queen's University of Belfast
Zelleka Getahun	Professor Emeritus, School of Pharmacy	Food and Drug Administration
Yahya Sunbol	Senior Review Chemist, Office of Pharmaceutical Quality	Taibah University, Saudi Arabia
Sean Collins	Professor Emeritus, Plant Pathology, Dept. of Biology	Plymouth State University
Jaewon Park	Professor of Physical Therapy (Anatomy & Physiology)	Seoul National University
David Shoup	Ph.D. Nuclear Engineering	AT Still University
Toufik Mahdaoui	Associate Professor	University of Setif
David S. K. Magnuson	Professor, Materials Science	University of Louisville
R. Paul Bray	Professor of Neurological Surgery	Texas Tech University
Alex Hoffmann	Ph.D. Chemical Engineering	University of Bergen
Mahadeva Srinivasan	Professor, Dept. of Physics and Technology	University of Bombay
P. J. Costantino	D.Sc. Physics	Curtin University
Caio L. N. Azevedo	Ph.D. Immunology	University of Campinas, Brazil
Graham Paul Gisby	Associate Professor, Dept of Statistics, Institute of Mathematics	City University, London
	Ph.D. Synthetic Organic Chemistry	

Steven C. Dossin	Ph.D. Statistics	Southern Methodist University
Thiago Leandro de Souza	Adjunct Professor of Chemical Engineering	Federal University of Goiás
Charles M. Hanson	Ph.D. Theoretical Physics	Georgetown University
Gary L. Fahnenstiel	Senior Scientist, Michigan Tech Research Institute	Michigan Technological University
Geert Adriaens	Associate Professor, Natural Language Processing (Artificial Intelligence)	University of Leuven, Belgium
D. Albrey Arrington	Ph.D. Wildlife & Fisheries Sciences	Texas A&M University
Kjell Enk Wennberg	Ph.D. Petroleum Engineering	Norwegian Univ. of Science & Technology (Norway)
Orhan Kural	Professor of Geology	Technical University of Istanbul (Turkey)
Stephen Lloyd	Ph.D. Materials Science	University of Cambridge (UK)
James R. Thompson	Noah Harding Professor of Statistics	Rice University
Denis M. Boyle	Ph.D. Medical Biochemistry	University of Witwatersrand (South Africa)
Ide Trotter	Ph.D. Chemical Engineering	Princeton University
Kevin E. Spaulding	Ph.D. Optical Engineering	University of Rochester
Royal Truman	Ph.D. Organic Chemistry	Michigan State University
Robert VanderVennen	Ph.D. Physical Chemistry	Michigan State University
Tibor Tóth	Professor of Product Information Engineering (D.Sc. Hungarian Academy)	University of Miskolc (Hungary)
Nigel E. Robinson	Ph.D. Molecular Biology	University of Nottingham (UK)
Vincente Villa	Emeritus Professor of Biology	Southwestern University
Margil Wadley	Ph.D. Inorganic Chemistry	Purdue University
Clifton L. Kehr	Ph.D. Chemistry	University of Delaware
Carston Wagner	Associate Professor of Medicinal Chemistry	University of Minnesota
Karl Heinz Kientz	Professor, Department of Systems & Control	Instituto Tecnológico de Aeronautica (Brazil)
*William F. Fechter	Ph.D. Technology	Arizona State University
Linda Walkup	Ph.D. Molecular Genetics	University of New Mexico Medical School
James Tumlin	Associate Professor of Medicine	Emory University
David Van Dyke	Ph.D. Analytical Chemistry	University of Illinois, Urbana
John Walkup	Emeritus Professor of Electrical & Computer Engineering	Texas Tech University
Tom Belanger	Professor of Environmental Science	Florida Institute of Technology
Joel Lantz	Ph.D. Chemistry	University of Rhode Island
Pieder Beeli	Ph.D. Physics	University of Notre Dame
Robert Waltzer	Associate Professor of Biology	Belhaven College
James R. Brawer	Professor of Anatomy & Cell Biology (Ph.D., Harvard)	McGill University (Canada)
Arthur C. Breyer	Professor of Chemistry	Arcadia University
Marvin Grimm	Ph.D. Physics	Georgia Institute of Technology
Rob Stadler	Ph.D. Medical Engineering	Harvard/MIT Division of Health Sciences and Technology
Jeffrey M. Breiwick	Research Fishery Biologist, Ret. (Ph.D Fisheries Biology, U of Washington)	NOAA/National Marine Fisheries Service
Timothy K. Gates	Professor of Civil and Environmental Engineering	Colorado State University
Marvin J. Drodgy	Ph.D. Geology	University of Texas, Austin
James Fryling	Professor of Chemistry and Chairman, Science, Kinesiology, and Math Division	Cornerstone University
Doyle A. Siever	Ph.D. Microbiology and Immunology	Pennsylvania State University
Douglas R. Brandt	Ph.D. Biochemistry	Kansas State University
Scott Anson	Department Chair and Professor, Mechanical Engineering	LeTourneau University
David Neckles	Ph.D. Mathematics	Colorado State University
Victoria Neagoe	Ph.D. Mathematics: Systems Science	Portland State University
Kirk Milhoan	Associate Clinical Professor (Ph.D in Physiology & Pharmacology [UCSD])	Baylor College of Medicine

John Spare	Ph.D. Electrical Engineering	University of Pennsylvania
C.M. Roland	Senior Scientist, Soft Matter Physics	Naval Research Laboratory
Michael Braasch	Professor of Electrical Engineering	Ohio University
D. Michael Sobers, Jr.	Ph.D. Aerospace Engineering	Georgia Institute of Technology
Timothy R. Tuinstra	Professor of Engineering	Cedarville University
Henk Koning	Ph.D. Computer Science	Utrecht University
Yilmaz Kaya	Assistant Professor, Department of Agricultural Biotechnology	Ondokuz Mayıs University (Turkey)
Emily L. Christian	Ph.D. Gross Anatomy and Neuroanatomy	University of North Carolina at Chapel Hill
José Abramo Marchese	Associate Professor, Plant Physiology	Technological Federal University of Paraná
Keith Q. Tanis	Ph.D. Molecular Biophysics and Biochemistry	Yale University
Abdulkadir Celik	Postdoctoral Fellow (Computer, Electrical & Mathematical Sciences & Engineering Div.)	King Abdullah University of Science and Technology
Charles Kriel	Ph.D. Electrical Engineering	Oklahoma State University
Michael J. Miller	Chair, Department of Plastic Surgery (Professor, Plastic and Reconstructive Surgery)	The Ohio State University
Charles H. Perry	Russell Chair of Manufacturing Excellence (Ph.D Electrical Engineering, Vanderbilt)	Middle Tennessee State University
P. Glenn Barkley	Ph.D. Physical Chemistry	Cornell University
Gregg D. Carse	Ph.D. Theoretical Physics	Melbourne University
Duane A. Steiner	Ph.D. Physics	The Pennsylvania State University
Andrea K. Vangor	Ph.D. Evolutionary Morphology	State University of New York at Stony Brook
Chuck McKinney	Ph.D. Forestry	Texas A&M University
Yushan Zhi	Ph.D. Material Science and Engineering	Harbin Institute of Technology, P.R. China
Torsten Erikson	Ph.D. Inorganic Chemistry	University of Washington
Reitze Rodseth	Associate Professor of Anaesthesia	University of KwaZulu-Natal South Africa
Rob Managan	Ph.D. Astronomy and Astrophysics	University of Chicago
Nathan Perron	Ph.D. Chemistry	Clemson University
Abdullah Nuri Özsoy	Professor of Animal Science	Isparta University of Applied Science
Siegfried Scherer	Emeritus Professor of Microbial Ecology	Technical University of Munich
David New	Ph.D. Molecular Medicine	University of Texas Health Science Center
Qiwen Yao	Ph.D. Material Science	University of Wollongong
Benjamin Hall	Ph.D. Statistics	University of Kentucky
Cherie Trumbach	Ph.D. Industrial and Systems Engineering	Georgia Institute of Technology
Peter A. Chew	Ph.D. Computational Linguistics	University of Oxford
Doyle Holbird	Ph.D. Cell Physiology	Southern Illinois School of Medicine
Thomas M. Dykstra	Ph.D. Insect Bioelectromagnetics	University of Florida
Sveinbjorn Gizurarson	Professor in Clinical Pharmacokinetics	University of Iceland
Jonathan Kuhn	Ph.D. Mechanical Engineering	University of Maryland
John R. Boyce	Ph.D. Microbiology [University of TN], DVM [Michigan State]	
	Previously, Executive Director of the National Board of Veterinary Medical Examiners	
Joe Thomas	Ph.D. Quantitative Psychology	The Johns Hopkins University
David Pustai	Ph.D. Electrical Engineering	University of Delaware
Dennis Enix	Professor of Research	Logan University
Reginald Tsang	Emeritus Professor of Pediatrics	University of Cincinnati/Children's Hospital Medical Center
John Cannon	Assistant Clinical Instructor	University of Rochester School of Medicine
Hans-Peter Roost	Ph.D. Immunology & Virology	University of Zurich
Timothy Nalette	Ph.D. Chemical Engineering	University of Bath
John Elder	Ph.D. Systems Engineering	University of Virginia

David G. Pennington	Associate Professor of Plastic Surgery, Retired	Macquarie University Hospital
Ram Rao	Ph.D. Computer Science	University of Washington
Richard D. Dunlap	Ph.D. Mathematics	Cornell University
Aecio D'Silva	Associate Professor of Integrated Aquaculture-Agriculture Systems, Ret.	University of Arizona
C.S. Whitehead	Professor, Department of Botany and Plant Biotechnology	University of Johannesburg
Stephen Parke	Professor of Electrical Engineering (Chair, Physics & Engineering)	Northwest Nazarene University
Pavel Hazdra	Associate Professor, Electrical Engineering	Czech Technical University, Prague
Frederick D. Cazer	Ph.D. Medicinal Chemistry	State University of New York, Buffalo
Ali Yoonessi	Assistant Professor, Neuroscience Dept (Ph.D Neuroscience, McGill Univ.)	Tehran University of Medical Sciences
Lary Thaele	Ph.D. Molecular and Cellular Biology and Pathobiology	Medical University of South Carolina
	Research Associate Professor (Retired), Dept. of Obstetrics & Gynecology	University of Chicago
Ming Xu	Ph.D. Organic Chemistry	The University of Hong Kong
Patrick Hamilton	Dr. rer. nat.	University of Bonn
John Anagnost	Ph.D. Electrical Engineering/Computer Science	University of California, Berkeley
Oliver S. Lazar	Professor, Computer Science	University of Applied Sciences, Düsseldorf
Frank L. Lyon	Ph.D. Biology	Kansas State University
Philip Fulmer	Professor of Physics/Health Physics	Francis Marion University
Chipley B. Bennett	Professor, Biological & Physical Science (Ph.D. Plant Physiology, Clemson)	Spartanburg Community College
Kegang Shih	Ph.D. Applied Mathematics	University of Maryland, College Park
Yunteng Lao	Ph.D. Civil & Environmental Engineering	University of Washington
Alessandro Giuliani	Senior Scientist	Istituto Superiore di Sanità
Craig McCluskey	Ph.D. Experimental Physics	University of Texas, Austin
Ramona Alger	Ph.D. Mathematics	Virginia Tech
Dongkweon Lee	Ph.D. Geophysics	Seoul National University
Bradley Davidson	Associate Professor, Mechanical Engineering	University of Denver
ChinHo Shin	Ph.D. Neuroscience	University of Science and Technology, Korea
Ekrem Atalan	Head of Molecular Biology and Genetic Department	Inonu University, Turkey
Vitalii Levanichev	Ph.D. Engineering	Eastern Ukrainian National University
Eli Chiprout	Ph.D. Electrical Engineering	Carleton University
Ezequiel Prieto Lillo	Ph.D. Biology & Biochemistry	Valencia University, Spain
Markus Blietz	Dr.rer.nat. (Ph.D. Physics)	Technical University of Munich
Nigel Lee	Ph.D. Electrical Engineering	Princeton University
Andrew Brinkerhoff	Ph.D. Physics	University of Notre Dame
Mohamed Cherif Meddour	Ph.D. Mathematical Statistics	University of Wales
Jared Gragg	Ph.D. Mechanical Engineering	Texas Tech University
Rowand R.J. Chaffee*	Professor Emeritus (Ph.D. Biology, Harvard)	University of California, Santa Barbara
Eckhard Hiltzer	Dr.rer.nat.	University of Konstanz
Miroslav Iliás	Associate Professor, Department of Chemistry	Univerzita Mateja Bela v Banskej Bystrici
Greggory S. Bennett	Ph.D. Polymer Science and Engineering	University of Massachusetts
Patrice Dargenton	Ph.D. Computer Science	National Institute of Applied Sciences of Lyon
Eric E. Matsumoto	Professor, Department of Civil Engineering	California State University, Sacramento
Roberto André Henrique de Oliveira	D.Sc. Electrical Engineering	Federal University of Rio de Janeiro
Frederick G. Walz	Emeritus Professor, Department of Chemistry/Biochemistry	Kent State University
Daniel Reese	Associate Astronomer	Observatoire de Paris, LESIA
Persijn Honkoop	Ph.D. Medicine	University of Leiden

Enzo Riccardo Campagnolo	Guest Researcher, Epidemiologist	Centers for Disease Control and Prevention
Ephraim Greenfield	Ph.D. Physics	Hebrew University
William M. Steedly	Ph.D. Electrical Engineering	The Ohio State University
Stephen Taylor	Professor of Physical Electronics and Electromagnetics	University of Liverpool
Jacobus van der Maas	Ph.D. Experimental Solid State Physics	University of Lausanne, Switzerland
Vladimir F. Matveev	Former Principal Research Scientist	CSIRO Australia
	Ph.D. Biology	Severtsov Institute of Ecology and Evolution, Russian Academy of Sciences
Timothy Dresselhaus	Clinical Professor, Department of Medicine	University of California, San Diego
Stephen Ting	Ph.D. Medicine	University of Warwick
Laurent Morin	Ph.D. Physiology	University of Denis Diderot
Franco Bampi	Full Professor, Faculty of Engineering	University of Genoa
Manu Sebastian Mannoor	Associate Professor, Biomedical Engineering	Alabama State University
Phillip Spinks	Ph.D. Integrative Ecology	University of California, Davis
Sjoerd Duiker	Professor of Soil Management and Applied Soil Physics	The Pennsylvania State University
David Buttle	Ph.D. Micromagnetic Phenomenon	Oxford University
Kimberly D. Johnson	Associate Professor, College of Nursing (Ph.D. Nursing Research, Case Western)	University of Cincinnati
Ricardo de Oliveira Figueiredo	Research Scientist	Embrapa Environment, Empresa Brasileira de Pesquisa Agropecuária (EMBRAPA), Brazil
Pedram Asef	Staff, Centre of Automotive Engineering	University of Surrey
Jon Nash	Ph.D. Physics	Colorado State University
Marcelo Zaidini Hernandes	Professor, Dept. Pharmaceutical Sciences	Federal University of Pernambuco
Todd Watson	Assistant Professor of Urban & Community Forestry	Texas A. & M University
Weimin Gao	Microbiologist	Brookhaven National Laboratory
Woody Weed	Mechanical Engineer, Science & Technology Division	Sandia National Labs
Heikki Martikka	Professor of Machine Design	Lappeenranta University of Technology (Finland)
Gerald Wegner	Ph.D. Entomology	Loyola University
Richard R. Neptune	Associate Professor, Department of Mechanical Engineering	University of Texas, Austin
Jonathan Wells	Ph.D. Molecular & Cell Biology	University of California, Berkeley
Alexandre S. Soares	Ph.D. Mathematics	Federal University of Rio de Janeiro (Brazil)
Robert Wentworth	Ph.D. Toxicology	University of Georgia
James Wanliss	Associate Professor of Physics	Embry-Riddle University
Einar W. Palm	Professor Emeritus, Department of Plant Pathology	University of Missouri, Columbia
Anthony Reynolds	Ph.D. Philosophy of Science	University of London (UK)
R. P. Wharton	Ph.D. Electrical Engineering	Georgia Institute of Technology
Lawrence Dickson	Ph.D. Mathematics	Princeton University
Sandra Gade	Emeritus Professor of Physics	University of Wisconsin, Oshkosh
Elden Whipple	Affiliate Professor of Earth & Space Sciences	University of Washington
Chee K. Yap	Professor of Computer Science (Ph.D., Yale University)	Courant Institute, New York University
Mark White	Professor of Chemical Engineering	Georgia Institute of Technology
Charles Detwiler	Ph.D. Genetics	Cornell University
Terrance Murphy	Professor of Chemistry	Weill Cornell Medical College
Ed Neeland	Associate Professor of Chemistry	University of British Columbia
Gregg Wilkerson	Ph.D. Geologic Science	University of Texas, El Paso
Noel Funderburk	Ph.D. Microbiology	University of North Texas

Joseph M. Marra	Director, Interventional Radiology, & Adjunct Professor of Medicine	Niagara Falls Memorial Medical Center
Ken Pascoe	Ph.D. Electrical Engineering	Air Force Institute of Technology
John H. Whitmore	Associate Professor of Geology	Cedarville University
Ernest L. Brannon	Professor Emeritus, Distinguished Research Professor (Ph.D. Fisheries)	University of Idaho
Miroslav Hill	Former Director of Research	Centre National de la Recherche Scientifique (France)
Christopher Williams	Ph.D. Biochemistry	Ohio State University
Georg A. Speck	Ph.D. Biology, Molecular Pharmacology	University of Heidelberg (Germany)
J. Mitch Wolff	Professor of Mechanical Engineering	Wright State University
Thomas D. Gillespie	Research Professor Emeritus	Transportation Research Institute, Univ. of Michigan
John Worraker	Ph.D. Applied Mathematics	University of Bristol (UK)
Hans Degens	Reader in Muscle Physiology	Manchester Metropolitan University (UK)
Alexander Yankovsky	Assistant Professor of Physical Oceanography	Nova Southeastern University
Begona M. Bradham	Ph.D. Molecular Biology	University of South Carolina
Christopher Scurlock	Ph.D. Chemistry	Arizona State University
John C. Zink	Former Assistant Professor of Engineering	University of Oklahoma
Patrick Young	Ph.D. Chemistry	Ohio University
Bruno Lemaire	Professor, Decision Science & Information Systems (Ph.D. Mathematics)	HEC Paris (France)
David Zartman	Ph.D. Genetics & Animal Breeding	Ohio State University
Charles T. Rombough	Ph.D. Engineering	University of Texas
Ingolf Kaneström	Professor Emeritus, Department of Geoscience	University of Oslo (Norway)
Henry Zull	Emeritus Professor of Biology	Union College
Jane M. Orient	Clinical Lecturer in Medicine	University of Arizona College of Medicine
John C. Sanford	Courtesy Associate Professor of Horticultural Sciences	Cornell University
Frank Young	Ph.D. Computer Engineering	Air Force Institute of Technology
Murray E. Moore	Ph.D. Mechanical Engineering	Texas A&M University
William J. Powers	Ph.D. Physics	University California, San Diego
William DeJong	Ph.D. Computer Science	University of Groningen (The Netherlands)
Max G. Walter	Associate Professor of Radiology	Oklahoma University Health Science Center
Rosa María Muñoz	Head of Biopharmacy Department	Autonomous University of Guadalajara (Mexico)
Scott R. Fulton	Ph.D. Atmospheric Science	Colorado State University
Don Olson	Ph.D. Analytical Chemistry	Purdue University
Graham Marshall	Ph.D. Analytical Chemistry	University of Pretoria (South Africa)
Ke-wei Zhao	Ph.D. Neuroscience	University of California, San Diego
Philip R. Page	Ph.D. Theoretical Particle Physics	University of Oxford (UK)
Roger Wiens	Ph.D. Physics	University of Minnesota
Mark Tolman	Ph.D. Molecular Microbiology	Bristol University (UK)
Robert O. Kalbach	Ph.D. Physical Chemistry	University of South Florida
Gregory J. Brewer	Prof. of Neurology, Medical Microbiology, Immunology and Cell Biology	Southern Illinois University School of Medicine
Neil Huber	Dr. rer. nat. (Ph.D. Anthropology)	Tuebingen University
Marc C. Daniels	Associate Professor of Biology	William Carey University
J.D. Moolenburgh	Ph.D. Epidemiology	University of Rotterdam (The Netherlands)
Roger Lien	Ph.D. Physiology	North Carolina State University
Waldean A. Schulz	Ph.D. Computer Science	University of Colorado (Boulder)
John Millam	Ph.D. Computational Chemistry	Rice University
Joseph Lary	Epidemiologist and Research Biologist (retired)	Centers for Disease Control

Richard S. Beale, Jr.	Ph.D. Entomology	University of California, Berkeley
Ernest M. Thiessen	Ph.D. Civil & Environmental Engineering	Cornell University
Tianyou Wang	Research Scientist	Center for Advanced Studies in Measurement & Assessment, University of Iowa
Øyvind A. Voie	Ph.D. Biology	University of Oslo (Norway)
David K. Shortess	Professor of Biology (retired)	New Mexico Tech
A.D. Harrison*	Emeritus Professor of Biology	University of Waterloo
William P. Shulaw	Professor of Veterinary Preventive Medicine	The Ohio State University
Darrell R. Parnell	Ph. D. University Level Science Education	Kansas State University
Daniel W. Barnette	Ph. D. Aerospace Engineering	Stanford University
David William Jensen	Professor of Biology	Tomball College
Edward M. Bohn	Ph. D. Nuclear Engineering	University of Illinois
Robert G. Vos	Ph.D. Civil/Structural Engineering	Rice University
Yvonne Boldt	Ph. D. Microbiology	University of Minnesota
William B. Collier	Ph. D. Physical Chemistry	Oklahoma State University
Edward Gade	Professor Emeritus of Mathematics	University of Wisconsin, Oshkosh
James E. Nymann	Emeritus Professor of Mathematics	University of Texas at El Paso
Malcolm A. Cutchins	Ph. D. Engineering Mechanics	Virginia Tech
Lisanne D'Andrea-Winslow	Ph. D. Cell Biology & Biochemistry	Rutgers University
Holger Daugaard	Ph. D. Agronomy	Danish Institute of Agricultural Sciences (Denmark)
Shieu-Hong Lin	Assistant Professor of Computer Science (Ph.D., Brown University)	Biola University
W. John Durfee	Assistant Professor of Pharmacology	Case Western Reserve University
Dominic M. Halsmer	Ph. D. Mechanical Engineering	UCLA
Charles B. Lowrey	Ph.D. Chemistry	University of Houston
Jeffrey H. Harwell	Ph. D. Chemical Engineering	University of Texas, Austin
Frank Cheng	Associate Professor of Chemistry	University of Idaho
Yoshiyuki Amemiya	Professor of Advanced Materials Science & Applied Physics	The University of Tokyo
Barbara S. Helmkamp	Ph.D. Theoretical Physics	Louisiana State University
David C. Kem	Professor of Medicine	University of Oklahoma College of Medicine
C. Thomas Luisikutty	Ph.D. Physics	Univ. of Louisville
Wusi Maki	Research Asst. Professor, Dept. of Microbiology, Mol. Biology, & Biochem.	University of Idaho
A. Cordell Perkes	Ph.D. Science Education	Ohio State University
John D. Cook	Head of Software Development (Ph.D. Mathematics, U.T. Austin)	Department of Biostatistics & Applied Mathematics, U. of Texas, M.D. Anderson Cancer Center
Tony Prato	Prof. of Ecological Economics	University of Missouri
Charles G. Sanny	Prof. of Biochemistry	Oklahoma State University Ctr. for Health Sciences
Jairam Vanamala	Postdoctoral Research Associate, Faculty of Nutrition	Faculty of Nutrition, TAMU, College Station
Gordon L. Wilson	Ph.D. Environmental Science and Public Policy	George Mason University
Robin D. Zimmer	Ph.D. Environmental Sciences	Rutgers University
Karl Duff	Sc.D. Mechanical Engineering	Massachusetts Institute of Technology
David Jansson	Sc.D. Instrumentation and Automatic Control	Massachusetts Institute of Technology
Alfred G. Ratz	Ph.D. Engineering Physics	University of Toronto (Canada)
Chris Cellucci	Associate Professor of Physics	Ursinus College
Gary Maki	Director, Ctr. for Advanced Microelectronics and Biomolecular Research	University of Idaho
Ronald S. Carson	Ph.D. Nuclear Engineering	University of Washington

Rod Rogers	Ph.D. Agronomy/Plant Breeding	Iowa State University
David W. Herrin	Research Assistant Professor in Mechanical Engineering	University of Kentucky
Glen Needham	Associate Professor of Entomology (Emeritus)	The Ohio State University
E. Byron Rogers	Professor of Chemistry; Chair, Dept. of Mathematics & Physical Sciences	Lubbock Christian University
Vladimir L. Voelkov	Vice-Chairman, Chair of Bio-organic Chemistry, Faculty of Biology	Lomonosov Moscow State University (Russia)
Ricardo Leon	Dean of School of Medicine	Autonomous University of Guadalajara (Mexico)
Eugene C. Ashby	Regents' Professor and Distinguished Professor Emeritus	Georgia Institute of Technology
JoAnne Larsen	Assistant Professor of Industrial Engineering	University of South Florida, Lakeland
Douglas Axe	Director (Ph.D. Chemical Engineering, California Institute of Technology)	Biologic Institute
Joel Brnd	Professor of Biology	Baruch College, City University of New York
Olufemi Dokun-Babalola	Professor of Ophthalmology and Head of Department of Surgery	Bingham University (Nigeria)
L. Nathan Tumej	Ph.D. Chemistry	Duke University
William F. Basener	Associate Professor of Mathematics	Rochester Institute of Technology
L. Whit Marks	Emeritus Professor of Physics	University of Central Oklahoma
Jan Peter Bengtson	Associate Professor (M.D., Ph.D. Intensive Care Medicine)	University of Gothenburg (Sweden)
Perry Mason	Professor of Mathematics and Physical Science	Lubbock Christian University
Timothy A. Mixon	Assistant Professor of Medicine	Texas A&M University
Lawrence DeMejo	Ph.D. Polymer Science and Engineering	University of Massachusetts at Amherst
Charles Garner	Professor of Chemistry	Baylor University
Lynne Parker	Professor of Computer Science (Ph.D. MIT)	Distributed Intelligence Lab, University of Tennessee
Ivan M. Lang	Ph.D. Physiology and Biophysics	Temple University
David J. Lawrence	Ph.D. Physics	Washington University, St. Louis
John G. Hoey	Ph.D. Molecular and Cellular Biology	City University of New York Graduate School
Theodore J. Slek	Ph.D. Biochemistry	Oregon State University
John P. Rickert	Ph.D. Mathematics	Vanderbilt University
Christian M. Loch	Ph.D. Biochemistry and Molecular Genetics	University of Virginia
David W. Rusch	Sr. Research Scientist, Laboratory for Atmospheric and Space Physics	University of Colorado
Charles A. Signorino	Ph.D. Organic Chemistry	University of Pennsylvania
Luke Randall	Ph.D. Molecular Microbiology	University of London (UK)
Jan Frederic Dudd	Associate Professor of Biology	Grove City College
Glenn A. Marsch	Associate Professor of Physics	Grove City College
Eduardo Sahagun	Professor of Botany	Autonomous University of Guadalajara (Mexico)
Mark A. Chambers	Ph.D. Virology	University of Cambridge (UK)
Gary Hook	Ph.D. Environmental Science	Uniformed Services University of the Health Sciences
Daniel Howell	Ph.D. Biochemistry	Virginia Tech
Joel D. Hubbard	Associate Professor, Dept. of Lab. Science and Primary Care	Texas Tech University Health Sciences Center
C. Roger Longbotham	Ph.D. Statistics	Florida State University
Hugh L. Henry	Lecturer (Ph.D. Physics, University of Virginia)	Northern Kentucky University
Jonathan D. Eisenback	Professor of Plant Pathology Dept. of Plant Pathology and Weed Science	Virginia Tech
Eduardo Arroyo	Professor of Forensics (Ph.D. Biology)	Complutense University (Spain)
Peter Silley	Ph.D. Microbial Biochemistry	University of Newcastle upon Tyne
E. Norbert Smith	Ph.D. Zoology	Texas Tech University
Peter C. Iwen	Professor of Pathology and Microbiology	University of Nebraska Medical Center
Paul Roschke	A.P. and Florence Wiley Professor, Dept. of Civil Engineering	Texas A&M University
Luman R. Wing	Associate Professor of Biology	Azusa Pacific University

Edward F. Blick	Ph.D. Engineering Science	University of Oklahoma
Wesley M. Taylor	Former Chairman of the Division of Primate Medicine & Surgery	New England Regional Primate Research Center, Harvard Medical School
Don England	Professor Emeritus of Chemistry	Harding University
Wayne Linn	Professor Emeritus of Biology	Southern Oregon University
James Gundlach	Associate Professor of Physics	John A. Logan College
Guillermo Gonzalez	Associate Professor of Astronomy	Iowa State University
Tim Droubay	Ph.D. Physics	University of Wisconsin-Milwaukee
Gregory D. Bossart	Director and Head of Pathology	Harbor Branch Oceanographic Institution
Barry Homer	Ph.D. Mathematics	Southampton University (UK)
Jiří Vácha	Professor Emeritus of Pathological Physiology	Institute of Pathophysiology, Masaryk University (Czech Republic)
Richard J. Neves	Professor of Fisheries, Dept. of Fisheries and Wildlife Sciences	Virginia Tech
David Deming	Associate Professor of Geosciences	University of Oklahoma
Gregory A. Aitor	Associate Professor, Department of Otolaryngology	University of Kansas Medical Center
Erkki Jokisalo	Ph.D. Social Pharmacy	University of Kuopio (Finland)
John S. Roden	Associate Professor of Biology	Southern Oregon University
Donald W. Russell	Adjunct Assistant Clinical Professor	University of North Carolina School of Medicine
Neil Amitage	Associate Professor of Civil Engineering	University of Cape Town (South Africa)
Geoff Barnard	Senior Research Scientist, Department of Veterinary Medicine	University of Cambridge (UK)
Richard Hassing	Ph.D. Theoretical Physics	Cornell University
Olivia Torres	Professor-Researcher (Human Genetics)	Autonomous University of Guadalajara (Mexico)
Donald A. Kangas	Professor of Biology	Truman State University
Alvin Masanra	Senior Lecturer for Structural Engineering and Mechanics	University of Cape Town (South Africa)
George A. Ekama	Professor, Water Quality Engineering, Dept of Civil Engineering	University of Cape Town (South Africa)
Alistair Donald	Ph.D. Environmental Science/Quaternary or Pleistocene Palynology	University of Wales (UK)
Thomas C. Majerus	PharmD; FCCP	University of Minnesota
Ferenc Farkas	Ph.D. Applied Chemical Sciences	Technical University of Budapest (Hungary)
Scott A. Chambers	Affiliate Professor of Chemistry and Materials Science & Engineering	University of Washington
Cris Eberle	Ph.D. Nuclear Engineering	Purdue University
Dennis M. Sullivan	Professor of Biology and Bioethics	Cedarville University
Rodney M. Rutland	Department Head & Associate Professor of Kinesiology	Anderson University
Alastair M. Noble	Ph.D. Chemistry	University of Glasgow (Scotland)
Robert D. Orr	Professor of Family Medicine	University of Vermont College of Medicine
Laverne Miller	Clinical Associate Professor of Family Medicine	Medical College of Ohio
Laura Burke	Former Associate Professor of Industrial Engineering	Lehigh University
Terry W. Spencer	Former Chair, Department of Geology & Geophysics	Texas A&M University
Bert Massie	Ph.D. Physics	University of California, Los Angeles
Mark C. Porter	Ph.D. Chemical Engineering	Massachusetts Institute of Technology
S. Thomas Abraham	Assistant Professor of Pharmacology & Toxicology	Campbell University School of Pharmacy
John L. Hoffer	Professor of Engineering; (also) Professor of Anesthesiology	Texas A&M University College of Engineering; Texas A&M Univ. Syst. Health Science Center
Herman Branover	Professor of Mechanical Engineering	Ben-Gurion University (Israel)
Martin Krause	Research Scientist (Astronomy)	University of Cambridge (UK)
James G. Bentsen	Ph.D. Chemistry	Massachusetts Institute of Technology

Charles N. Dezell	Professor of Mathematics (Ph.D. Stanford)	Louisiana State University
Curtis Hrischuk	Ph.D. Electrical Engineering	Carleton University (Canada)
Guang-Hong Chen	Assistant Professor of Medical Physics & Radiology	University of Wisconsin-Madison
Doug Hufstedler	Ph.D. Animal Nutrition	Texas A&M University
Justin Long	Ph.D. Chemical Engineering	Iowa State University
James E. Rankin	Ph.D. General Relativity	Yeshiva University (Israel)
Donald F. Smeed	Research Professor (Microbiology)	Utah State University
Colin R. Reeves	Professor of Operational Research (Ph.D. Evolutionary Algorithms)	Coventry University (UK)
Eugene K. Balon	University Professor Emeritus, Department of Integrative Biology	University of Guelph (Canada)
William F. Smith	Ph.D. in Molecular & Cellular Biology	McGill University
William A. Eckert III	Ph.D. in Cell & Molecular Physiology	University of North Carolina, Chapel Hill
Hannes Fischer	Ph.D. in Molecular Biology	University of Pennsylvania
Ronald D. DeGroat	Ph.D. Electrical Engineering	University of Colorado at Boulder
John R. Fritch	Ph.D. in Chemistry	University of California Berkeley
Emilio Cervantes	Ph.D. in Molecular Biology	University of Salamanca, Spain
Charles A. Rodenberger	Ph.D. in Aerospace Engineering	University of Texas at Austin
William Murphy	Ph.D. in Chemistry	Columbia University
Valdemar W. Setzer	Ph.D. in Applied Mathematics	University of São Paulo, Brazil
Brandon van der Ventel	Ph.D. in Theoretical Nuclear Physics	Stellenbosch University
Eric Montgomery	Ph.D. in Physics	Stellenbosch University
Neil Steiner	Ph.D. in Electrical Engineering	Virginia Tech
Ferenc Tóth	Ph.D. in Agricultural Sciences	Szent István University, Gödöllő, Hungary
Christian A. Widener	Ph.D. Mechanical Engineering	Wichita State University
Timothy H. Heil	Ph.D. in Computer Engineering	University of Wisconsin, Madison
Fred B. Maas	Ph.D. in Agronomy	Purdue University
Mike Viccary	Ph.D. in Solid State Chemistry	University of Bradford
Michael N. Keas	Ph.D. History of Science	University of Oklahoma
Gerald Pech	Ph.D. in Satellite Communications & Networking	Supaero (Higher Inst. of Space and Aeronautics), France
Marco Fasoli	Ph.D. in Biochemistry	University of Cambridge (UK)
Chrystal L. Ho Pao	Assistant Professor of Biology (Ph.D. Molecular Genetics, Harvard U.)	Trinity International University
Donald E. Johnson	Ph.D. Computer & Information Sciences Also: Ph.D. Chemistry	University of Minnesota
James Campbell	Ph.D. in Physics	Michigan State University
Alex Chediak	Professor of Engineering and Physics	Virginia Polytechnic Institute and State University
J. Richard Kiper	Ph.D. in Computing Technology in Education	California Baptist University
Steve Overell	Ph.D. in Solid State Physics	Graduate School of Computer and Information Sciences, Nova Southeastern University
Zoltán Sütő	M.D., Ph.D. in Medicine, Dept. of Pulmonology	Edinburgh University
Kristian M. Arason	Ph.D. in Medicinal Chemistry	Semmelweis University Budapest, Hungary
Robert Beckett	Ph.D. in Animal Genetics	Ohio State University
Kirk Cameron	Ph.D. in Statistics	Ohio State University
William E. Solomons	Ph.D. Medicinal Chemistry	Stanford University
Everett T. Solomons	Ph.D. Medicinal Chemistry	The University of Mississippi School of Pharmacy
James N. Cummins	Emeritus Professor of Pomology	The University of Mississippi School of Pharmacy Cornell University

Chad Dechow	Assistant Professor of Dairy Genetics	Penn State University
Dale A. Dickinson	Assistant Professor & Graduate Program Director, School of Public Health	University of Alabama Birmingham
Gerald C. Van Dyke	Professor of Botany & Plant Pathology	North Carolina State University
Paul N. Dunlap	Ph.D. in Chemical Engineering	California Institute of Technology
Yupeng (David) He	Ph.D. in Microbiology	University of Washington
Matthew Harvey Jones	Ph.D. in Mechanical and Aeronautical Engineering	University of California, Davis
Donald Linn	Ph.D. in Chemistry	University of Georgia
James R. Matthews	Ph.D. in Materials Engineering	MIT
Doug Peters	Ph.D. in Electrical Engineering	University of Virginia
Terry L. Rathman	Ph.D. in Organic Chemistry	Virginia Tech
Philip C. Sekar	Ph.D. in Medical Chemistry	University of Delhi
Evgeny Selensky	Ph.D. in Physics and Mathematics	Moscow State University
Craig Thomas	Ph.D. in Animal Science	University of Florida
Ron Voss	Ph.D. in Chemistry	University of Manitoba
Wesley Brewer	Ph.D. in Computational Engineering	Mississippi State University
Keith Diaz	Ph.D. in Integrative Exercise Physiology	Temple University
Clifford Hull, Jr.	Ph.D. in Analytical and Biological Chemistry	University of South Carolina
Luis Santamaria	Professor of Histology, Dept. of Anatomy, Histology, and Neuroscience	Autonomous University of Madrid
David Tong	Ph.D. in Experimental Atomic, Molecular, and Optical Physics	University of Connecticut
Amaro Carvalho Camilo	Ph.D. in Cellular and Structural Biology	University of Vicosá
David (Dale) Gottlieb	Ph.D. in Philosophy – Mathematical Logic	Brandeis University
Jeng-Kuang Hwang	Ph.D. in Electrical Engineering	National Tsing-Hua University
Ramsin Khoshabeh	Ph.D. in Electrical and Computer Engineering	University of California, San Diego
Ming-blu Leung	Ph.D. in Civil Engineering	University of Illinois
Pekka Maattanen	Ph.D. in Biochemistry	McGill University (Canada)
Timothy Cooper	Ph.D. Chemical Engineering	University of Wisconsin
John F. Whitesides	Assistant Prof. of Medicine, ret. (Ph.D. Veterinary Science, Auburn University)	Duke University
Victor Meyer	Ph.D. Entomology	University of Pretoria
Onsi Fakhouri	Ph.D. Astrophysics	University of California, Berkeley
Jonathan McLatchie	Ph.D. Evolutionary Biology	University of Newcastle upon Tyne
Casey Luskin	Ph.D. Geology	University of Johannesburg
Alun W. G. James	Ph.D. Organic Chemistry	Cardiff University
Ayman Bahaa-Eldin	Dean, Faculty of Computer Science Professor of Computer Engineering	Misr International University, Cairo
John S. Torday	Professor of Pediatrics, Obstetrics and Gynecology Fellow, The European Academy of Sciences and Arts	Ain Shams University, Cairo UCLA
Adam Szanto-Varnagy	Ph.D. Physics	Eotvos University, Hungary
Michael J. Randall	Ph.D. Electrical Engineering	University of Cincinnati
John A. Werner	Ph.D. Organic Chemistry	Stanford University
Piotr Guńka	Assistant Professor, Faculty of Chemistry	Warsaw University of Technology
Wendell F. Hofman	Professor Emeritus, Dept. of Physiology, Vascular Biology Center	Medical College of Georgia
Richard L. Gregory	Professor of Biomedical Sciences, Comprehensive Care, Pathology, Laboratory Medicine	Indiana University Schools of Dentistry and Medicine
Don White, Jr.	James M. White Distinguished Professor of Wildlife Ecology	The University of Arkansas
Ouk Sub Lee	Ph.D. Mechanical Engineering	University of Washington
Mark F. Horstemeyer	Ph.D. Mechanical Engineering	Georgia Institute of Technology

	Fellow of the American Association for the Advancement of Science (AAAS)	
Pieter Gaemers	Ph.D. Geology	University of Leiden (Netherlands)
Mohammed M. Mandurah	Ph.D. Electrical Engineering	Stanford University
Wayne Strasser	Ph.D. Mechanical Engineering	Virginia Tech
Haikel Ben Hamed	Assistant Professor of Physics	University of Picardy Jules Verne France
Jude Jerome D'Souza	Ph.D. Mathematics	Shri Jagdishprasad Jhabarmal Tibrewala University
Lawrence T. McHargue	Professor, Emeritus (Ph.D. Biology, University of California, Irvine)	Vanguard University of Southern California
James E. Carter III	Associate Professor, Nutrition and Dietetics (Ph.D. Biochemistry)	Loma Linda University
Thomas A. Zanardi	Ph.D. Biochemistry	Texas A&M University
Rodinei Augusti	Professor of Chemistry	Federal University of Minas Gerais, Brazil
Hendrich Redelinghuys	Ph.D. Food Science	University of Stellenbosch (South Africa)
W. Mark Potampa	Clinical Associate Professor of Ophthalmology, Retired	University of Washington
Mohamad Nada	Assistant Professor in Immunopathology	American University of Iraq
Michael Milroy	Ph.D. Mechanical Engineering	University of Victoria
André Luis Brasil Cavalcante	Ph.D. Geotechnics	University of Brasilia
Duncan Kilburn	Ph.D. Meteorology and Remote Sensing	University of Birmingham UK
Marty Buchanan	Ph.D. Cell Biology	University of Texas Southwestern
Nurullah Türker	Assistant Professor in Clinical Sciences, Faculty of Dentistry	Akdeniz University
Musruhan Rahman	Ph.D. Biochemistry and Molecular Biology	Australian National University
Gerald K. McEwen	Ph.D. in Chemistry	Iowa State University
Suzanne Phillips	Chair of Biology Department	Southwestern Adventist University
Wei H. Ruan	Professor of Mathematics	Purdue University, Calumet
Terry Strout	Ph.D. in Chemical Engineering	University of Maine
Paolo Cioni	Contract Professor, Psychology, Faculty of Medicine	University of Pisa and Florence
George A. Damoff	Ph.D. in Forestry	Stephen F. Austin State University
Charles W. Slack	Ph.D. in Psychology	Princeton
Stefano Brillanti	Associate Professor of Gastroenterology	University of Bologna
Ryan F. Estevez	Assistant Professor, Dept. of Psychiatry and Neurosciences	University of South Florida College of Medicine
Monty Craig Johnson	Ph.D. in Microbiology	Southern Illinois University
William Soo Hoo	Ph.D. in Biochemistry	University of Illinois, Champaign-Urbana
David L. MacQuarrie	Ph.D. in Evaluation, Measurement and Research	Western Michigan University
Mustafa McPherson	Ph.D. in Agronomy	Mississippi State University
Michael Barfield	Research Fellow, Dept. of Surgery	Duke University Medical Center
Lucija Tomljenovic	Ph.D. in Biochemistry	James Cook University (Australia)
David W. Chester	Ph.D. in Biochemistry	University of Connecticut
Julio A. Gonzalo	Professor of Solid State Physics, 1983-2006	Universidad Autónoma de Madrid
John G. Leslie	Ph.D. Experimental Pathology	University of Utah
Hamza Saouli	Ph.D. Computer Science	University of Biskra, Algeria
Peter-Brian Andersson	DPhil Experimental Pathology	Oxford University (UK)
Mark Tabadillo	Ph.D. Industrial and Systems Engineering	Georgia Institute of Technology
Jean-Michel Olivereau	Professor of Neurosciences (retired)	University of Paris-Descartes
Timothy P. Gilmour	Ph.D. Electrical Engineering	Pennsylvania State University
Mark Liebe	Ph.D. Water Resources Engineering	Iowa State University
Edward Schmeichel	Emeritus Professor of Mathematics	San Jose State University
James Hodge	Ph.D. Chemistry	Pennsylvania State University

Ernst Lutz	Ph.D. in Agricultural and Resource Economics	University of California, Berkeley
Istvan Fodor	Ph.D. in Molecular Biology	USSR Academy of Sciences (USSR)
Kelson Mota T. Oliveira	Associate Professor, Physical Chemistry	Universidade Federal do Amazonas (Brazil)
Rob Redfield	Professor, Dept. of Engineering Mechanics	US Air Force Academy
Brian E. Hunt	Associate Professor, Applied Health Science	Wheaton College
David Rolf	Ph.D. in Bioorganic Chemistry	University of Minnesota
Wayne Rossiter	Assistant Professor of Biology	Waynesburg University
Ralph A. Henderson Jr.	Professor Emeritus, Department of Clinical Sciences	Auburn University, College of Veterinary Medicine
Carlos Alberto Mourão Jr	Chief of Physiology Department	Universidade Federal de Juiz de Fora (Brazil)
Moses Noh	Ph.D. in Mechanical Engineering	Georgia Institute of Technology
Allan L. Bleecker	Ph.D. Biology	Rutgers University
John Rokos	Ph.D. Biochemistry	University of London
Dave B. Tribble	Professor of Physics (retired)	Loyola University of Chicago
Edgar P. Moraes	Professor of Chemistry	Federal University of Rio Grande do Norte (Brazil)
James P. O'Halloran	Ph.D. Psychology	University of California, Irvine
Izak J van der Walt	Professor, Philosophy of Science and Technology	North West University (South Africa)
Rex A. Parker	Ph.D. Biochemistry	Indiana University
Richard Webb	Ph.D. Physics	Washington State University
Robert W. West, Jr.	Emeritus Professor, Department of Biochemistry and Molecular Biology	SUNY Upstate Medical University
Matthew Weeks	Ph.D. Materials Science and Engineering	University of California, Irvine
Timothy D. Blackburn	Ph.D. Systems Engineering	The George Washington University
Teemu Langsjo	M.D., Ph.D. Anatomy	University of Eastern Finland
Peter Knibbe	Ph.D. Experimental Physics	University of Pennsylvania
Sebastian Michael	Ph.D. in Anthropology	University of Bombay
John Thatcher	Ph.D. Mathematics (Theoretical Astrophysics)	University of Sydney
John Rousseau	Ph.D. Physics	Oxford University
Alberto Vigato	Ph.D. Information Engineering	University of Padua, Italy
Kjell J. Tveter	Professor of Urology (retired)	University of Oslo
Rodrigo M. Pontes	Professor of Chemistry	The State University of Maringa (Brazil)
George-Adrian Lungu	Ph.D. Physics	University of Bucharest
Kirk Durston	Ph.D. Biophysics	University of Guelph
Márcio Lazzarotto	Professor, Organic Chemistry	Universidade Federal do Rio Grande do Sul (Brazil)
Greg W. Burgreen	Ph.D. Mechanical Engineering	Mississippi State University
Silviu Podariu	Ph.D. Cosmology	Kansas State University
Catherine K. Luk	Ph.D. in Biophysics	University of Rochester
Moshe Marikovsky	Ph.D. in Biology	Weizmann Institute of Science (Israel)
J.W. Sam Stevenson	Ph.D. in Organic Chemistry	University of South Carolina
Christopher Q. Lan	Associate Professor, Chemical and Biological Engineering	University of Ottawa (Canada)
Paul Craddock	Assistant Professor, Experimental Psychology	University of Lille (France)
Wilton Remigio	Assistant Professor, Department of Physical Therapy	Misericordia University
Samuel S. Valença	Associate Professor of Histology	Federal University of Rio de Janeiro (Brazil)
Yongfang Zhang	Ph.D. Electrical Engineering	California Institute of Technology
Betsy Siewert	Ph.D. in Biostatistics	University of Colorado, Denver
Edgar Andrews	Emeritus Professor of Materials Science	University of London, UK
Ryan T. Hayes	Ph.D. Chemistry	Northwestern University

Sam S. Yoon	Professor of Mechanical Engineering	Korea University, Seoul, Korea
Iuliana Pasuk	Senior Researcher	National Institute of Materials Physics, Romania
Martin Klvana	Ph.D. Microbiology	Masaryk University, Czech Republic
Wessel P. Dirksen	Ph.D. in Molecular Biology and Microbiology	Case Western Reserve University
Günter Bechly*	Ph.D. Paleontology	Eberhard-Karls-Universität Tübingen
Patricia Wolfe	Ph.D. Molecular Pharmacology	Cornell University
Doo Jin Cho	Professor of Electronics	Ajou University, Korea
Jang Hoon Kim	Professor of Architecture	Ajou University, Korea
Rémi Plus	Doctor of Sciences	Paris University
	Former member, Société Française de Chimie Physique	
D. David Nowack	Ph.D. Nutritional Biochemistry	Purdue University
Dusan Fiala	Ph.D. Biophysics/Systems Biology	De Montfort University
Michael R. Shepard	Ph.D. Chemistry	University of Florida
Victor Enrique Vizcarra Ruiz	Professor of Physics	Universidade Estadual de Maringá
PremRaj Pushpakaran	Ph.D. Biotechnology	Jamia Hamdard, New Delhi, India
Dudley Eirich	Ph.D. Microbiology	University of Illinois, Champaign-Urbana
Guy F. Birkenmeier	Ph.D. Biochemistry	Washington State University
Paul Keough	Ph.D. Health Sciences	Northwestern University
Robert A. Sadler	Ph.D. Electrical Engineering & Applied Physics	Cornell University
Jeanine Schmidt	Ph.D. Applied Earth Sciences	Stanford University
David L. Black	Clinical Associate Professor of Pathology, Microbiology and Immunology	Vanderbilt University
Adam Brill	Ph.D. Organic Chemistry & Materials Science	Technion-Israel Institute of Technology
Samuel Y. Ng	Ph.D. Geotechnical Engineering	Oklahoma State University
Tobias A. Mattei	Assistant Professor of Neurosurgery	St. Louis University
Gary E. Hatch	Ph.D. Pharmacology	University of Utah
Tom Siewert	Ph.D. Metallurgy	University of Wisconsin, Madison
Gary S. Madonna	Ph.D. Microbiology	Uniformed Services University of the Health Sciences
Heon M. Lim	Professor of Biology	Chungnam National University, Daejeon, Korea (S)
Andrew J. Vermiglio	Doctor of Audiology	Central Michigan University
Roberto Bolli	Professor of Medicine	University of Louisville
Ferdinando Catalano	Former Associate Professor of Optical Measurements	University of Padua (Italy)
Douglas R. Hunter	Ph.D. Biochemistry	University of California, Davis
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Corky Cartwright	Ph.D. Computer Science	Stanford University
Craig Hostland	Ph.D. Environmental Engineering	University of British Columbia
James W. DeVocht	Ph.D. Biomedical Engineering	University of Iowa
John W. Hastings	Ph.D. Microbiological Sciences	University of Alberta
Charlie Biles	Professor of Biology (Emeritus)	East Central University (Ada, Oklahoma)
Ed Vezzey	Professor of Biology (Retired)	Oklahoma State University (Oklahoma City)
Alessandro Giorgetti	Former Professor of Special Zootechnics	University of Florence
Jie Wang	Professor of Computer Science	Boston University
Emily Brown Reeves	Biochemistry & Biophysics	Texas A&M University
Steven L. Wright	Ph.D. Biochemistry	University of Nebraska, Lincoln
Lisa Skipper	Ph.D. Genetics	University College London
Todd Hamilton	Ph.D. Physical Chemistry	Indiana University, Bloomington

Gordon Hassing	Ph.D. Biological Chemistry	University of Michigan
David Uhr	Ph.D. Crop Science/Maize Breeding	North Carolina State University, Raleigh
Randy O. Wayne	Ph.D. Plant Cell Biology	University of Massachusetts, Amherst

*= Deceased since signing statement.

Note: Unless updated information has been received, positions listed are those held by signatories when they signed the statement.

Observations

This doesn't prove that
Darwinism is false.

Observations

This doesn't mean that all
these signers repudiate
evolution entirely.

Observations

It does mean that statements such as

"The basic Darwinian idea . . . is about as secure as any in science . . ."

Challenging evolution is on par with believing in a flat Earth.

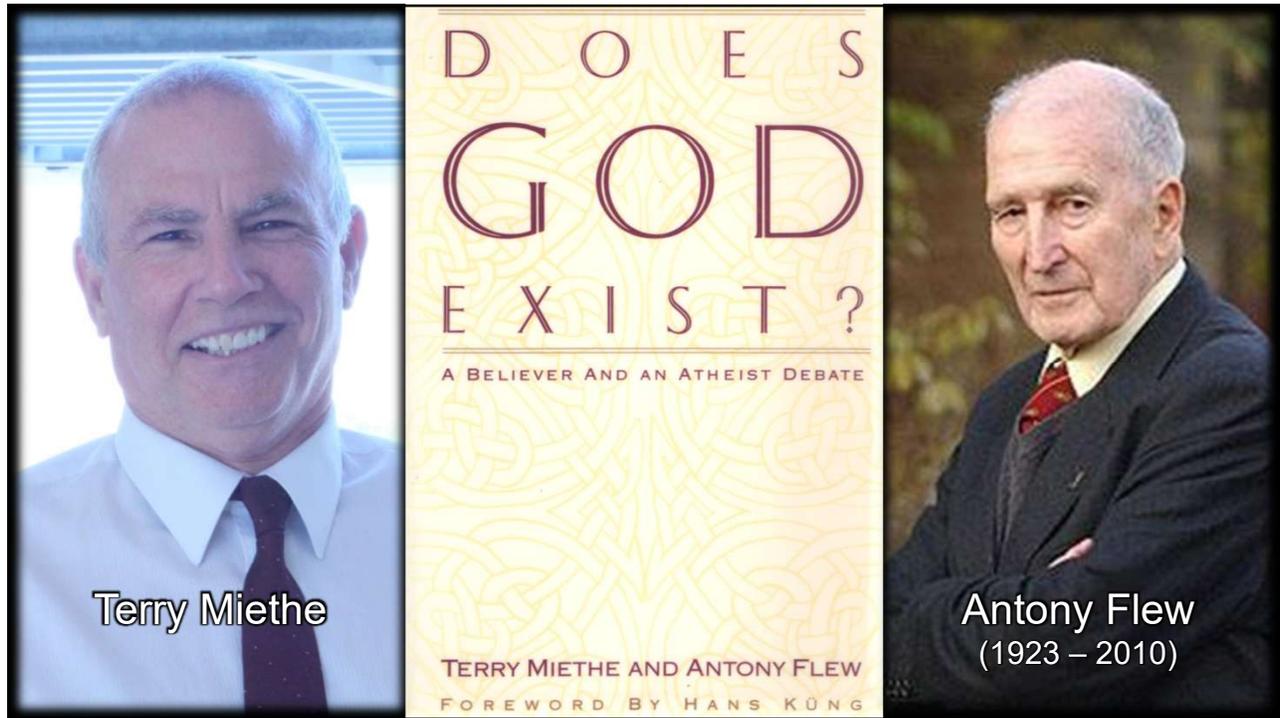
"Darwinian evolution is a well-established theory."

Challenging evolution is on par with challenging the Moon landing.

"There is no question . . ."

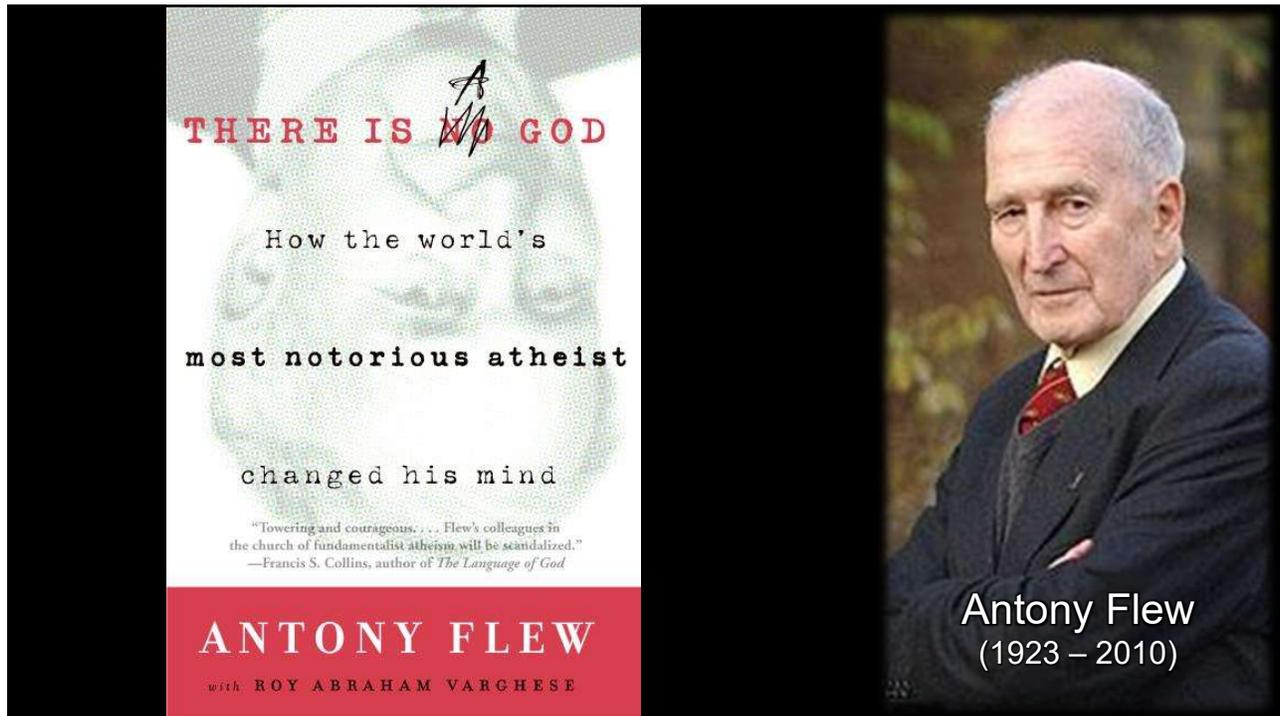
are unwarranted.



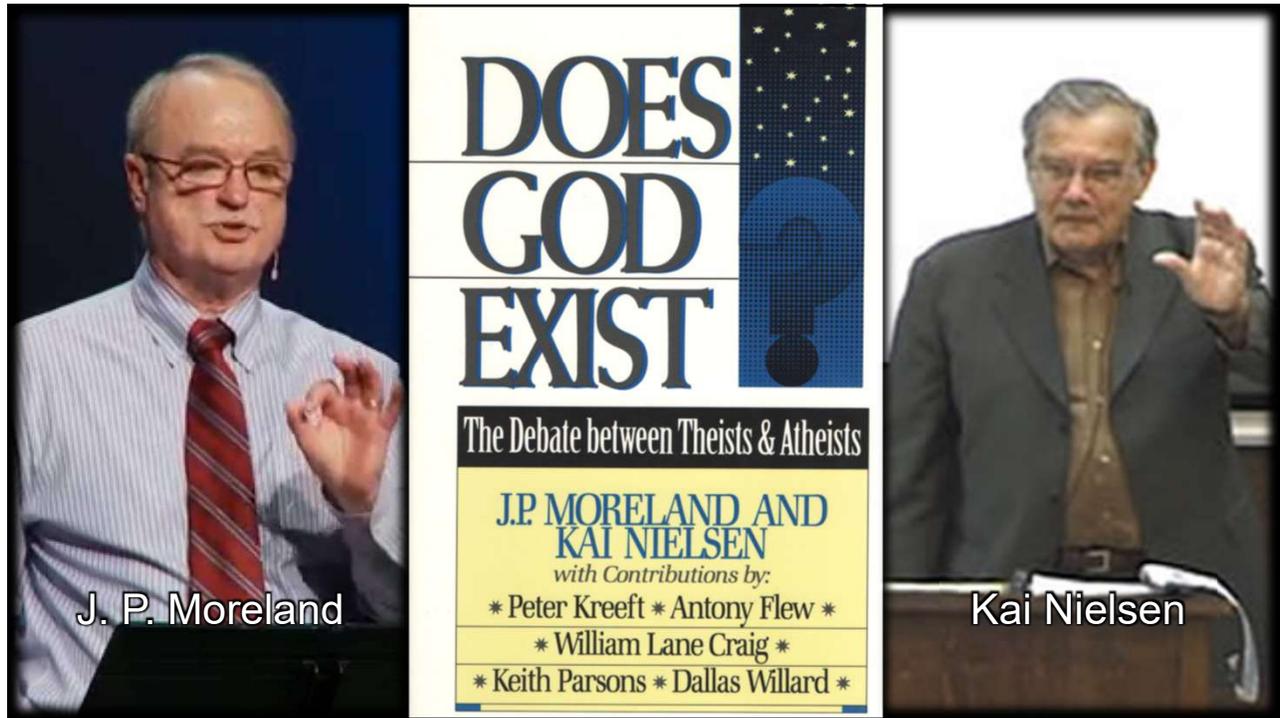


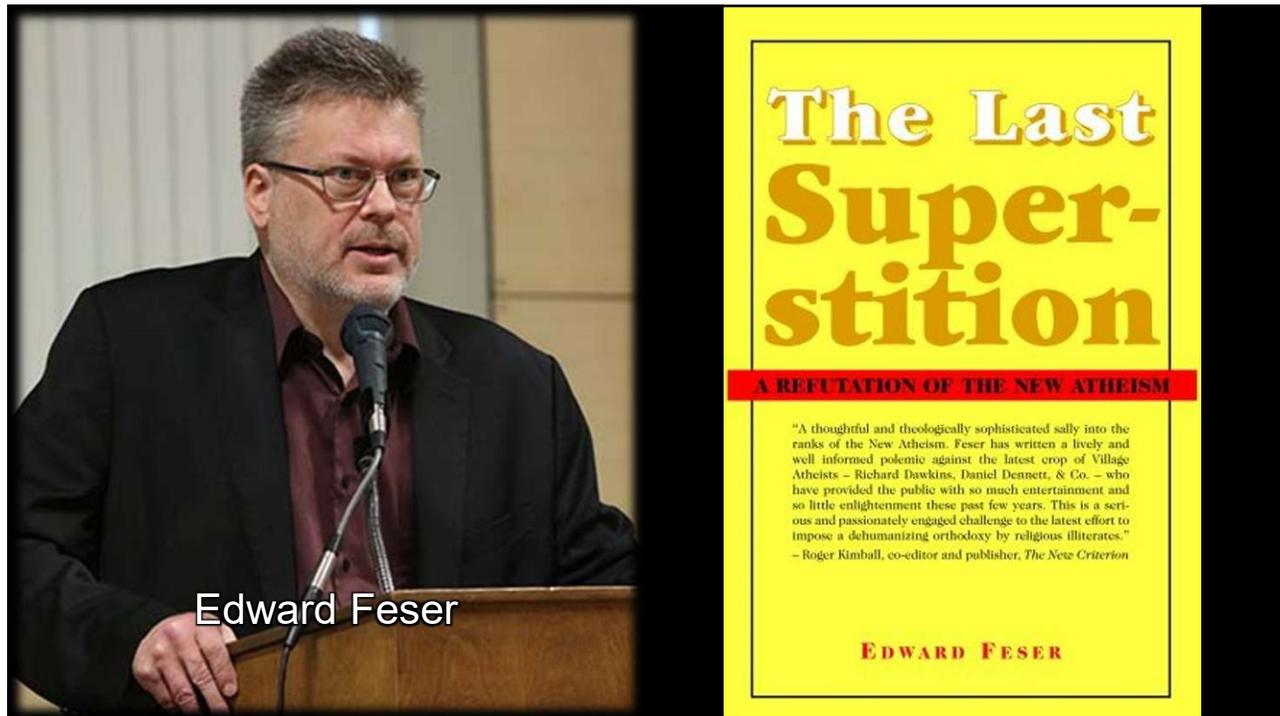
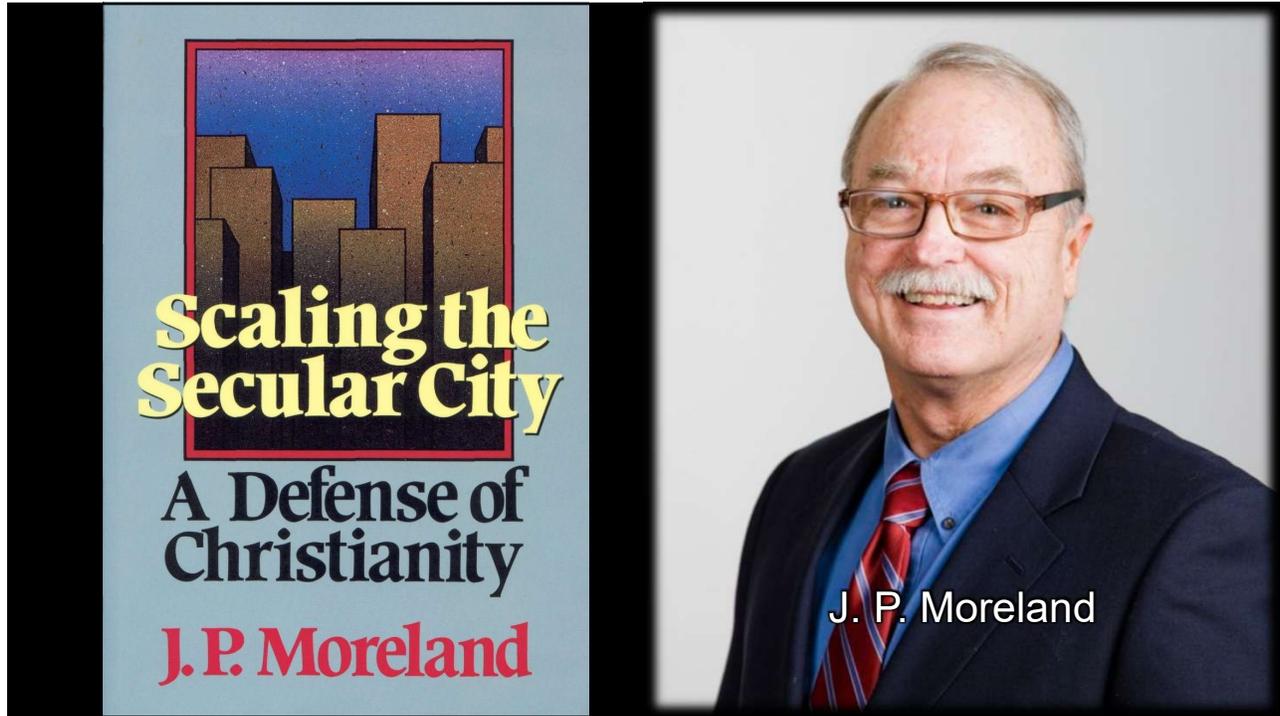
Terry Miethe

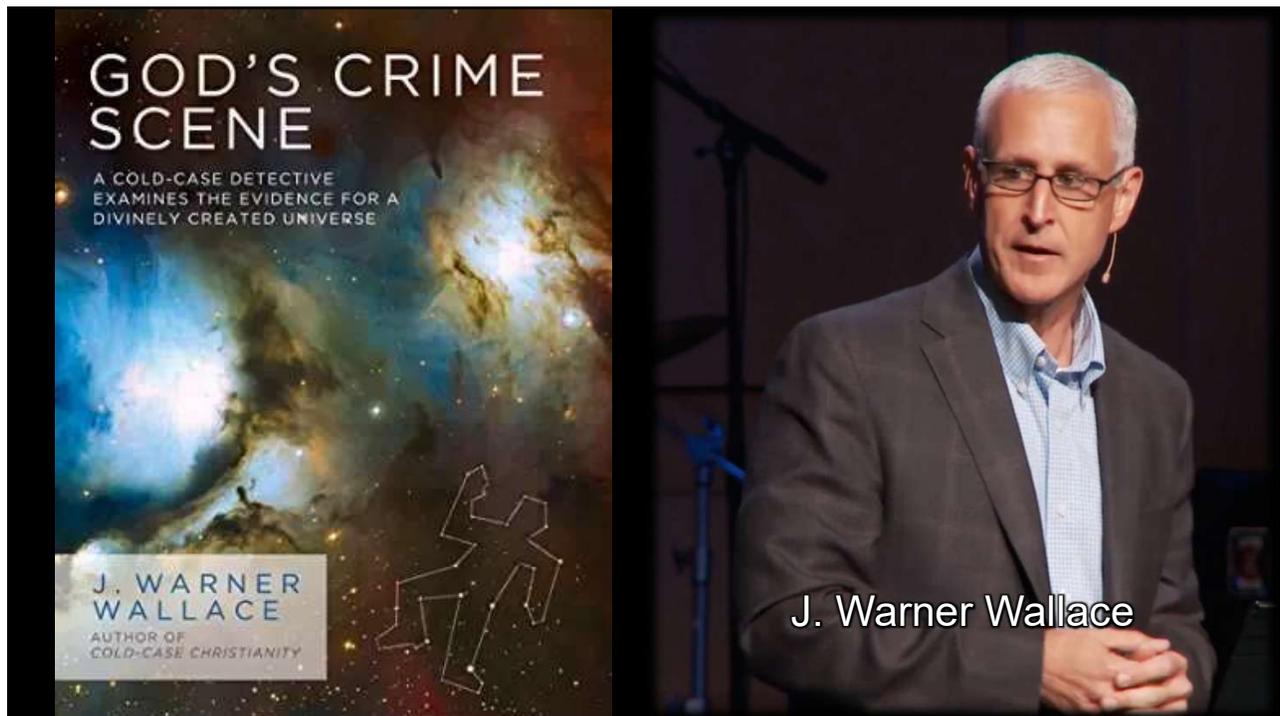
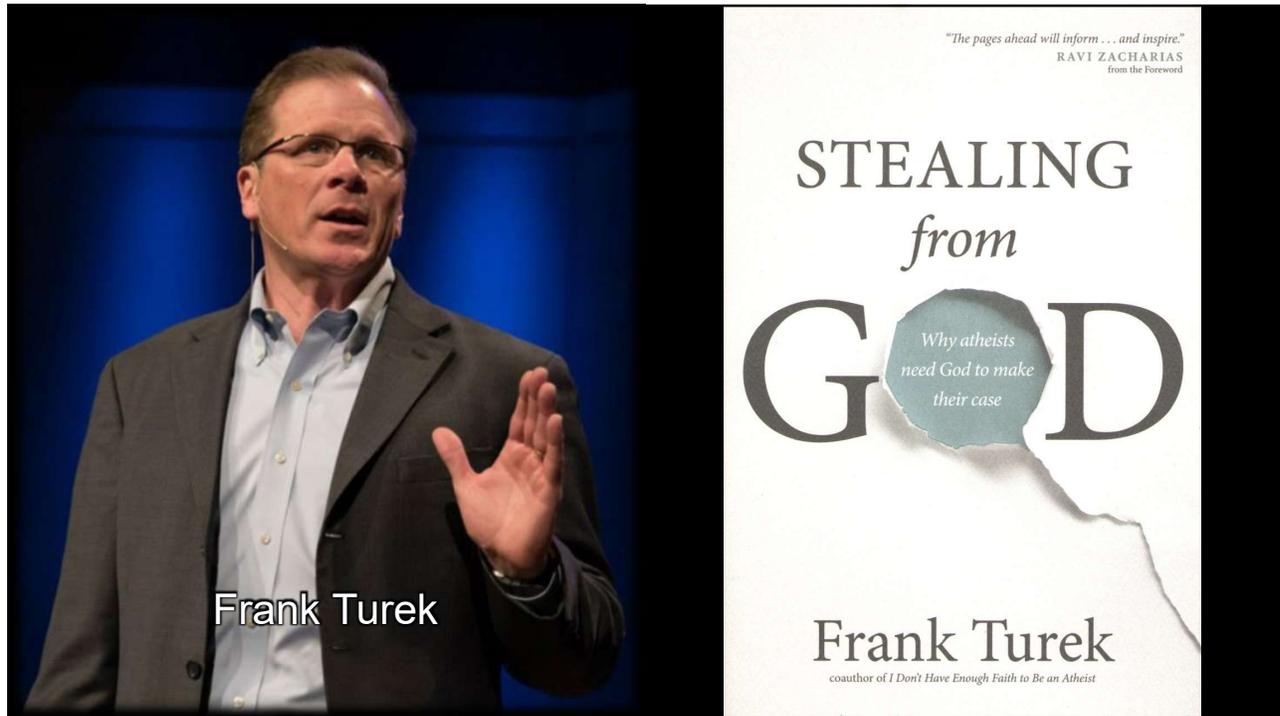
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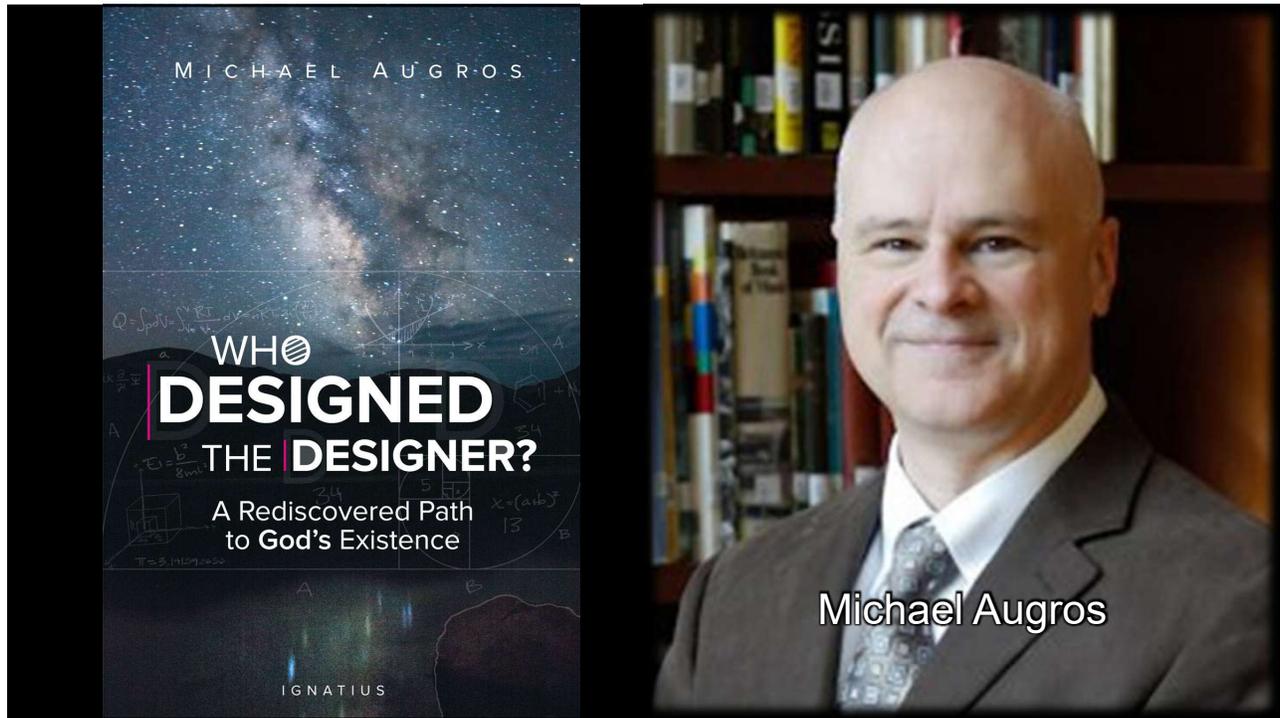


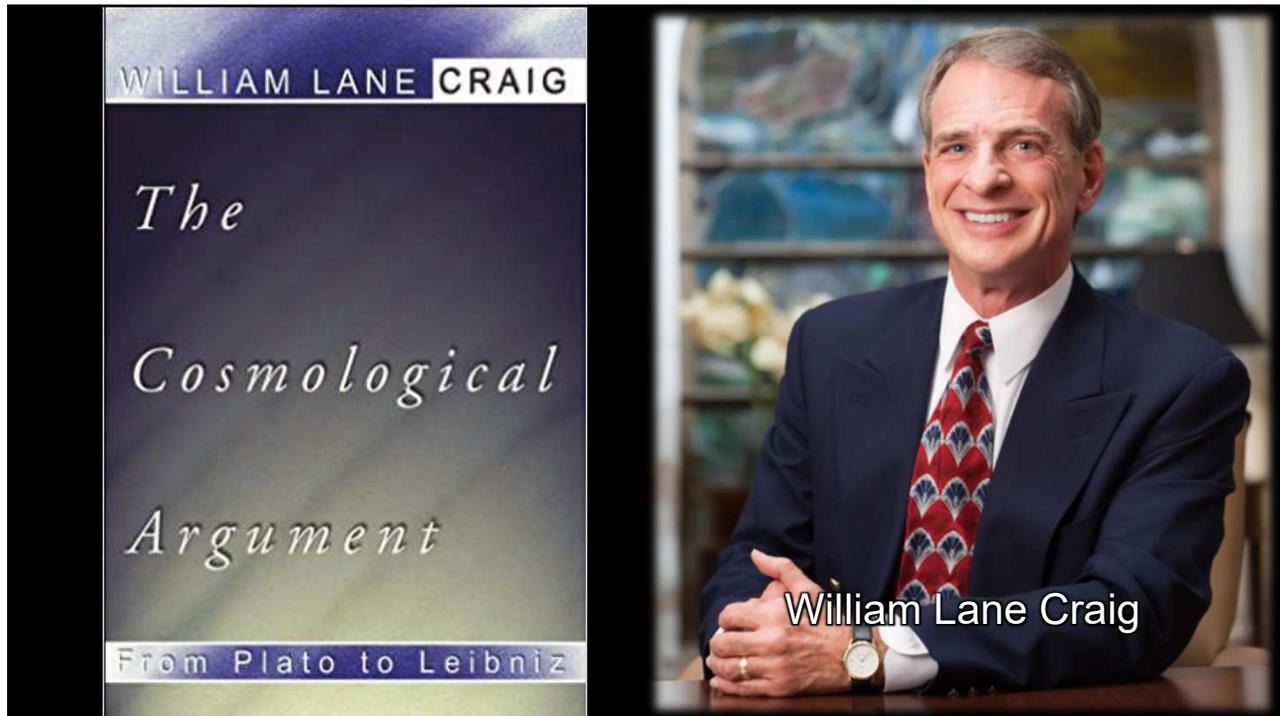
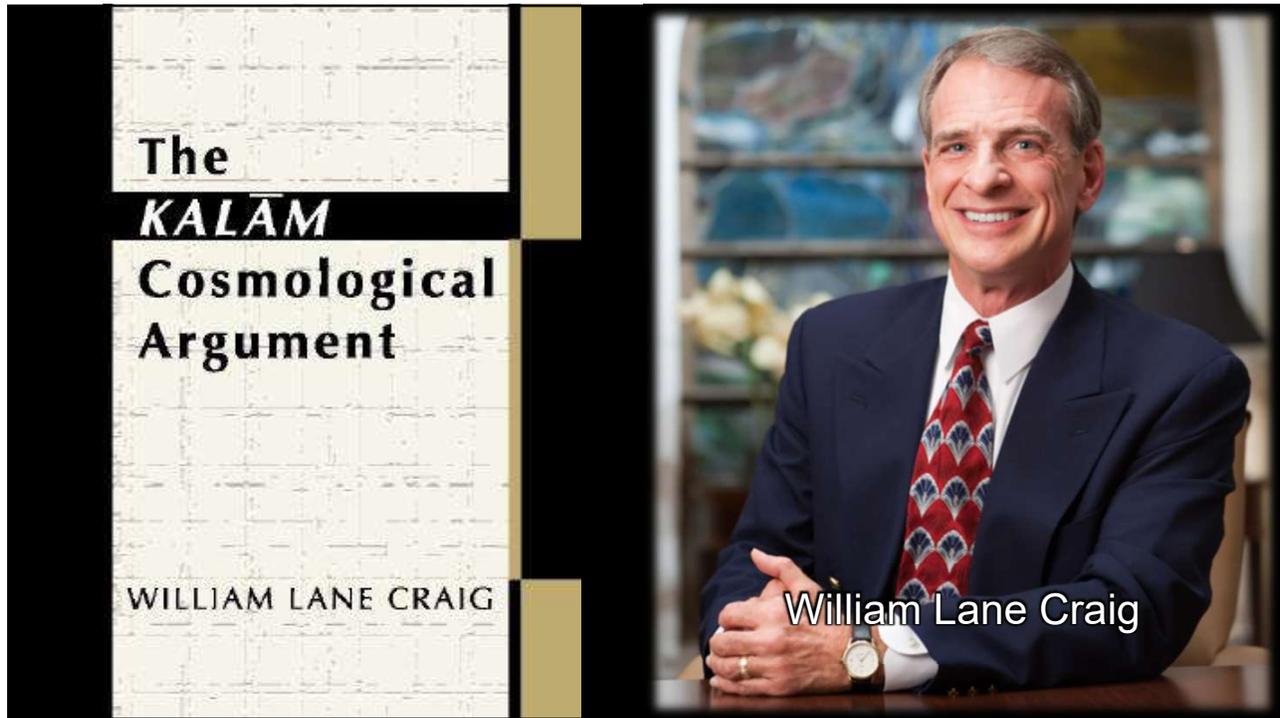
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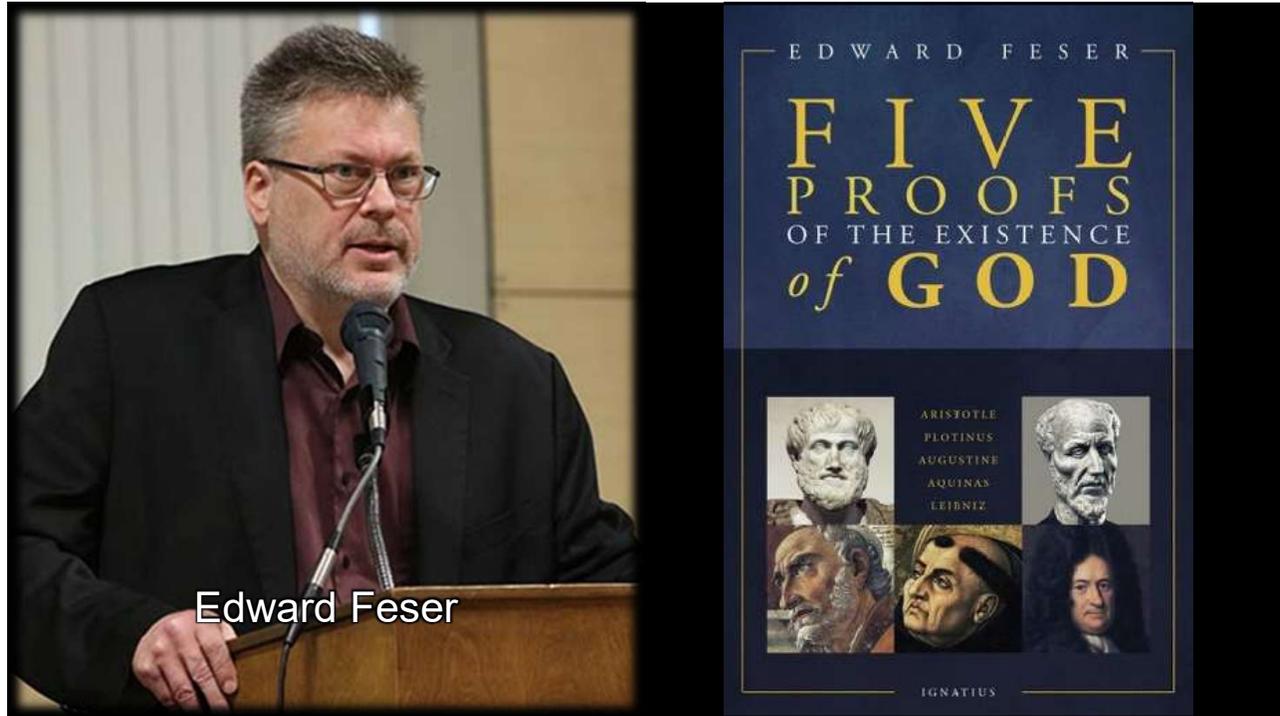


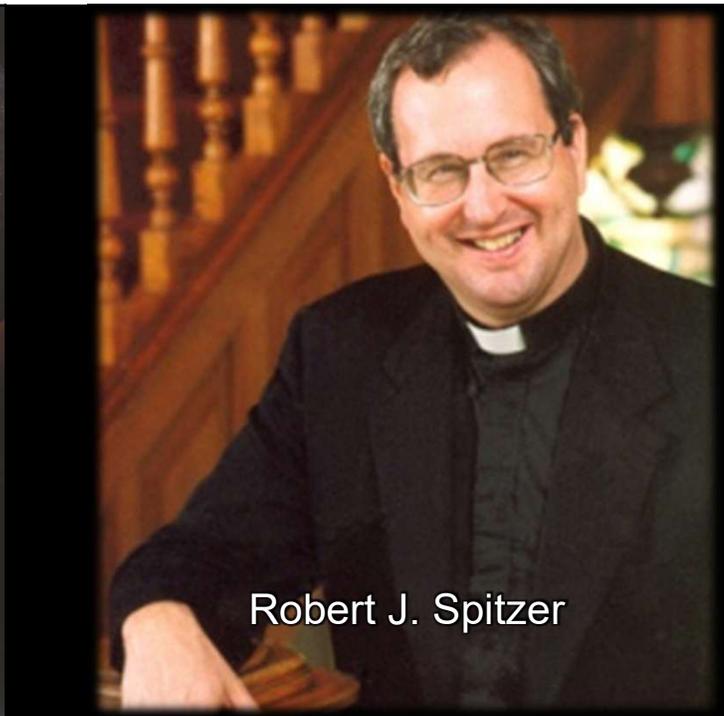
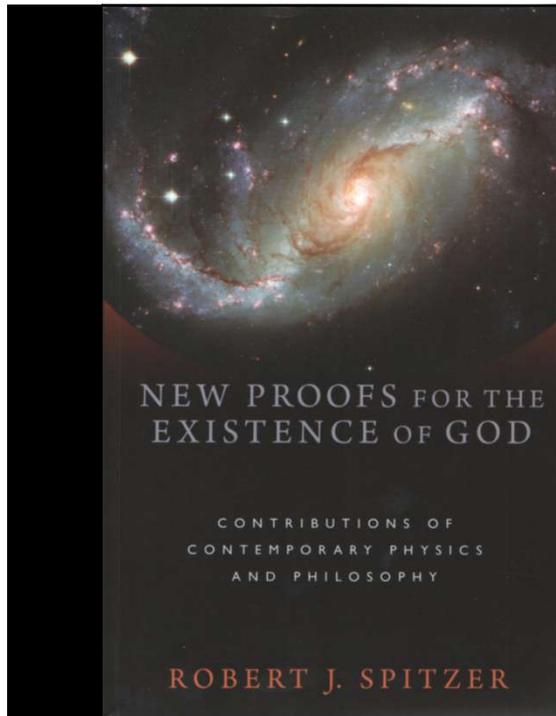




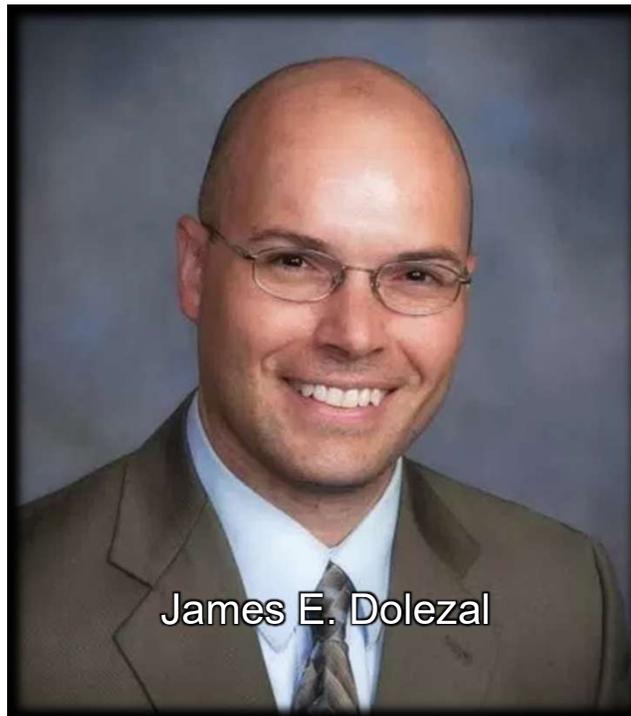




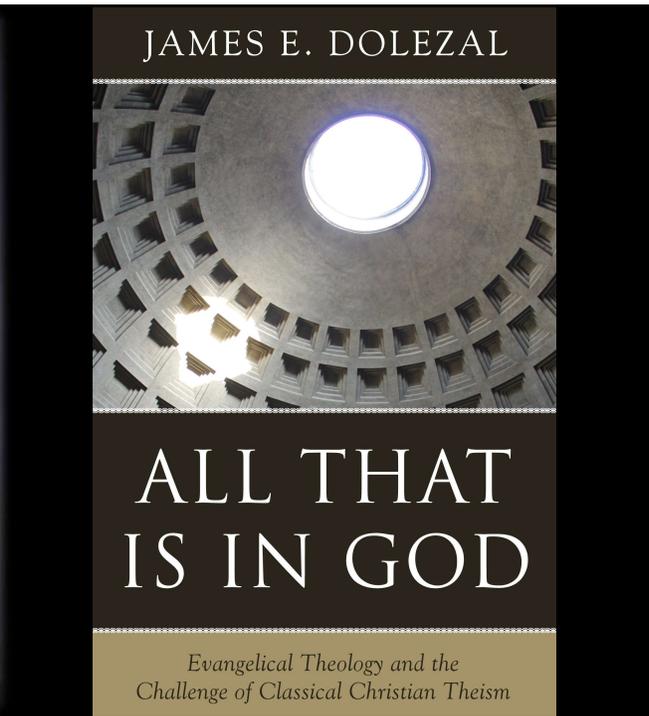


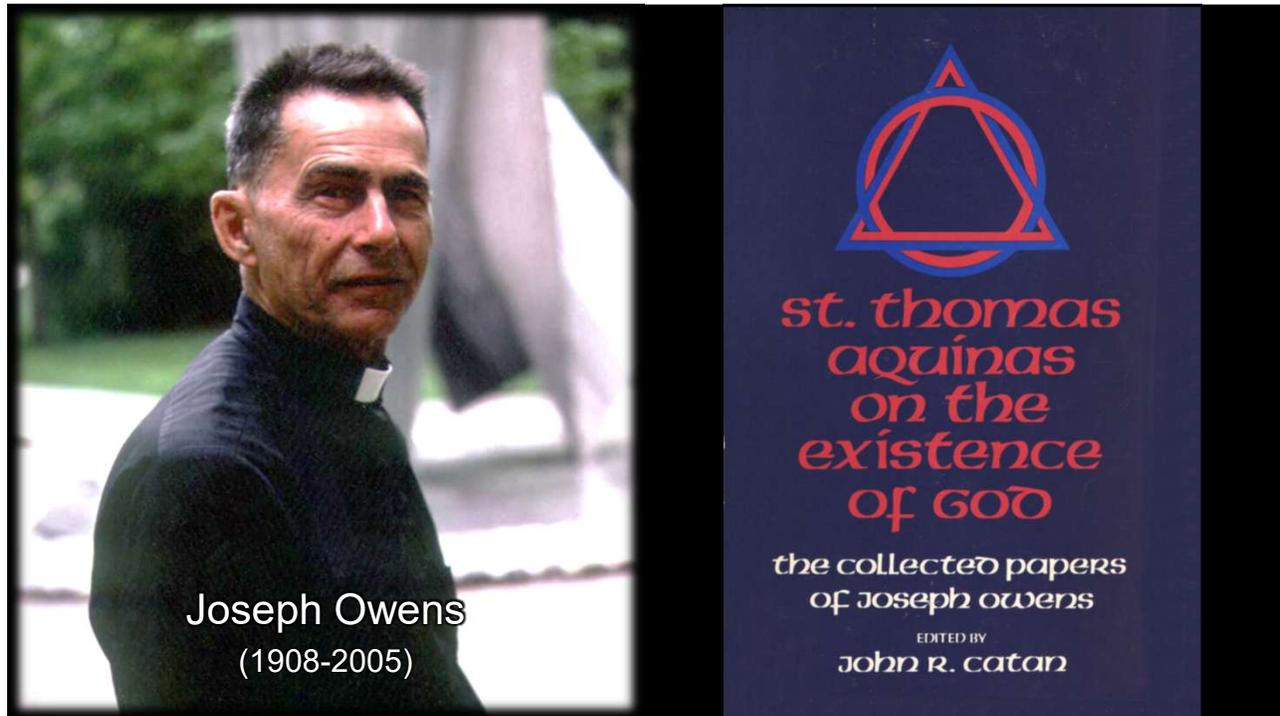


Robert J. Spitzer



James E. Dolezal



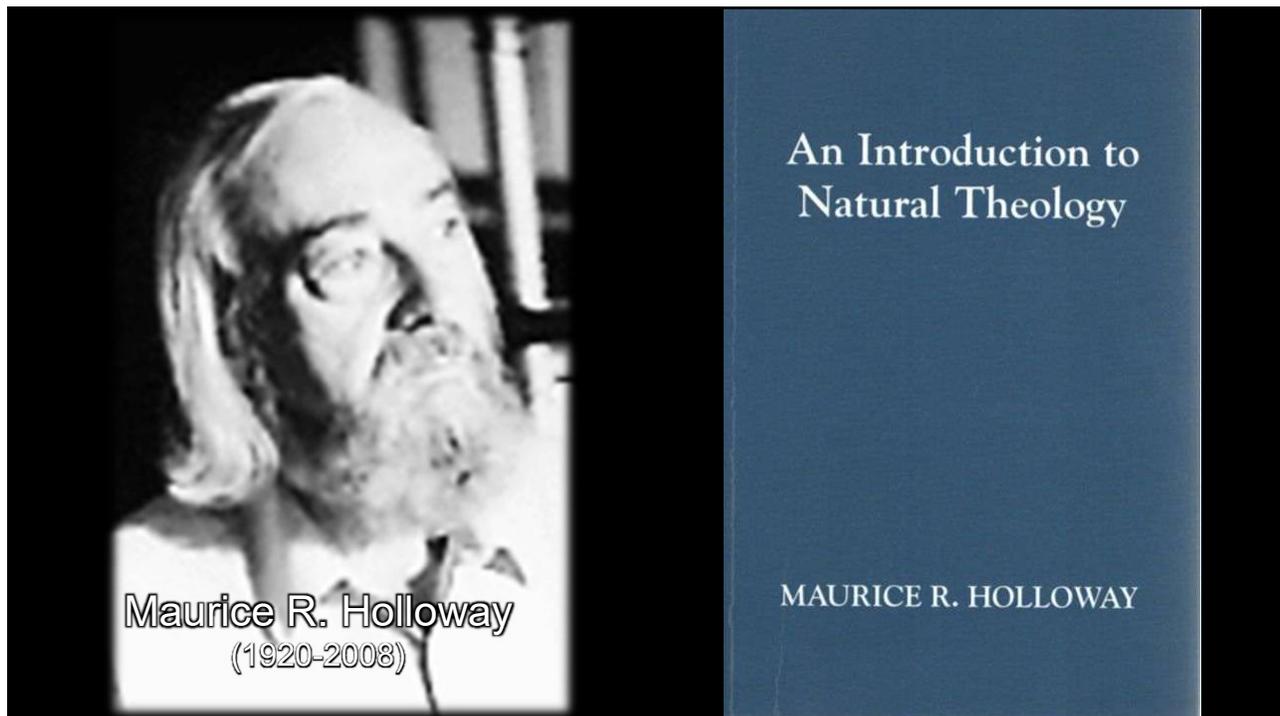


Joseph Owens
(1908-2005)

st. thomas
aquinas
on the
existence
of god

the collected papers
of joseph owens

EDITED BY
JOHN R. CATAN



Maurice R. Holloway
(1920-2008)

An Introduction to
Natural Theology

MAURICE R. HOLLOWAY

DOES
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THE GREAT DEBATE

DR. RICHARD HOWE VS. DR. MICHAEL SHERMER

APRIL 30TH, 2010
MODERATED BY DR. ALEX McFARLAND

DVD

The DVD cover features a collage of images including a cityscape, a classical statue, and a portrait of a man. The title 'DOES GOD EXIST?' is prominently displayed in the center. Below the title, the names of the debaters, Dr. Richard Howe and Dr. Michael Shermer, are shown in a 'VS.' format. The date 'APRIL 30TH, 2010' and the moderator 'DR. ALEX McFARLAND' are listed at the bottom. The DVD logo is also present.