

# Debunks many science-related historical myths that demean the Christian faith

***Unbelievable: 7 myths about the history and future of science and religion***

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The author is a senior fellow at the Discovery Institute and a former Fulbright scholar. He is a philosopher-historian of science. His work touches on common distortions of history, notably those involving the so-called Dark Ages, Columbus, and the flat earth, and the trials of Giordano Bruno, and Galileo. He also examines the implications of the artificial intelligence (AI), and potential existence of extraterrestrial life.

## The myth of the Dark Ages

The legend of the anti-learning Middle Ages is pretty durable, as it has served several purposes. It was originally part of the polemicism of the Protestants against the Catholic Church. It enabled the thinkers of recent centuries to look down, in chronological snobbery, upon the earlier ages. For others, it served explicitly to associate Christianity, as a whole, with anti-intellectualism and reaction. More recently, it served the notion that Islam transmitted classical learning through the Middle Ages.

Author Michael Keas examines the Dark Ages myth and finds it wanting. He describes the medieval invention of the university. The University of



Bologna, the oldest university in the world, was founded in 1088, those at Paris and Oxford before 1200, and more than 50 others by 1450. The papacy supported this intellectual ferment. Far from ignoring ‘pagan science’ as the Dark-ages myth alleges, the universities embraced it, as elaborated by Keas:

“Between 1200 and 1450, hundreds of thousands of university students studied Greco-Arabic-Latin science, medicine, and mathematics—as progressively digested and improved by generations of European university faculty” (p. 37).

## The Christian worldview gave birth to science and discouraged scientism

Keas comments:

“Hawking, Sagan, and Tyson seem unaware that belief in the

Judeo-Christian God actually *supported* the idea that the universe is predictable and knowable as a law-abiding system, which is foundational to science. In this case theology got it right first, and then successful scientific endeavor followed [emphasis is in original]" (p. 164).

The author adds:

"As we dig deeper into the foundations of science, we see that Christianity cultivated both humility and confidence in human knowledge. That confidence derived from the orderliness of God's world, designed for discovery by his human image bearers. Belief in God as the universal law giver encouraged investigation of nature to discover natural laws ..." (p. 194).

At the same time, the Christian worldview prevented science from degenerating into intellectual arrogance and scientism. Keas notes:

"The Christian doctrine of the Fall of Adam and Eve (and our status as finite creatures) provided an explanation for the difficulty of human reason in achieving certainty about the cosmos, with a consequent emphasis on the testing of hypotheses. Many medieval and early modern scientists embraced this balance of confidence and humility" (p. 194).

### **The miraculous is fully compatible with science**

Keas continues:

"The materialists' criticism of miracles in the Judeo-Christian tradition misses the mark. Those criticisms fail to recognize that the very notion of a miracle—a *rare* divine sign—would be inconceivable without the companion idea of nature's regularity [emphasis is in original]" (p. 194).

Notice that this dispenses with the trivial argument of some compromising evangelicals. They would have

us believe that belief in a miraculous Creation Week is the same as belief in God intervening in the function of clogged pipes, which the plumber would presumably have to consider. It also counters those who say that belief in miracles is 'unscientific'.

### **Medieval science was based on authority, and modern science on observation: not quite**

Keas writes:

"Although medieval disputations were more focused on debating written texts about nature rather than extensive firsthand encounters with nature itself, even today undergraduate science majors acquire the vast majority of knowledge of nature by interacting with scientific texts. In laboratory course components, the professor and the laboratory manual largely guide students to see and interpret nature in certain ways. I have taught lab-based science for many years and have reflected on that experience as a philosopher-historian of science. Even graduate students doing original research have minds filled with 'texts', whether acquired by reading or by listening to professors and other students. There are virtually no text-free encounters with nature in scientific practice of scientific pedagogy, whether medieval or modern. Of course, one can find differences in how science is practiced and taught depending on the historic period, the particular field of science, and other factors, but there is also much continuity in the human condition in the face of nature. Making too sharp a distinction between medieval science and modern science is erroneous" (p. 211).

Nor is it true that, in more recent times, the church was allergic to scientific observation. Keas writes: "Furthermore, there is no record of priests or theologians refusing

to look through a telescope. In fact, when Cardinal Bellarmine asked about Galileo's telescopic discoveries, the Jesuit astronomers at the Roman College *confirmed* their accuracy [emphasis is in original]" (p. 88).

### **Columbus and the flat earth myth**

Many textbooks teach that, until Columbus and especially Magellan, Earth was believed to be flat. This is egregiously untrue. Ever since the 4<sup>th</sup> century BC Greeks, the dominant view was that Earth was round. Dissenters, such as John Chrysostom (incorrectly accused, by Keas, of a flat earth view), Theodore of Mopsuestia, Cosmas Indicopleustes, and Lactantius existed, but they were decidedly a tiny minority (pp. 48–49).

Fernando, the son of Christopher Columbus, wrote about potential objections to his father's voyage. Sailing off a flat Earth was not one of them! The chief objection was not Earth's shape but its size: it would take three years to reach the Far East from Western Europe. (If North and South America did not exist, as believed before 1492, such indeed would have been the case. The Indian-Pacific-Atlantic would form one vast, uninterrupted ocean, covering most of Earth's surface, which would have to be crossed.)

### **Giordano Bruno was a bombastic, run-of-the-mill heretic, not a hero for science**

Bruno's 'scientific' ideas were hardly original. A century earlier, Bishop (and future Cardinal and papal legate) Nicholas of Cusa (1401—1464) had suggested an infinite universe (p. 149). Nicholas also upstaged Bruno on the premise that the stars were like our sun (p. 150). Bruno himself

acknowledged his debt to Nicholas, calling him “the divine Cusanus”.

Keas adds that:

“Kepler expressed disgust over Bruno’s execution, but he recognized that this man was burned alive for his pantheistic infinite universe (and more), not for a scientifically testable idea. Indeed, Bruno’s infinity of worlds fell woefully short of Kepler’s rigorous standard of testability” (p. 169).

The main issue was Christocentric theology. Keas cites the philosopher of science, Thomas S. Kuhn, and his book, *The Copernican Revolution*, in which the latter comments:

“Bruno, the philosopher and mystic ... was not executed for Copernicanism but for a series of theological heresies centering on his view of the Trinity, heresies for which Catholics had been executed before. He is not, as he has often been called, a martyr of science” (p. 57).

In terms of specifics, “Bruno rejected the historic Jesus, the Trinity, as well as other key components of Christian theology” (p. 73).

Author Keas adds:

“Bruno was on the fringes of respectable astronomical company. Small wonder that Oxford scholars ran the boastful migratory philosopher out of town after his lectures there. In fact, just about everywhere Bruno went he quickly wore out his welcome. His heretical beliefs provoked his serial excommunication by Catholics, Calvinists, and Lutherans (in that order). But some of his migratory behavior came from Bruno’s eruptive habit of mocking almost anyone with whom he disagreed ... . Although Bruno might stand legitimately as a tragic hero for free speech, his cosmic speculation contributed very little to the long-term growth of science” (p. 72).

### Galileo’s dogmatism, and not his ideas, got him in trouble with the Inquisition

Keas writes:

“Jole Shackelford explains that ‘the Catholic Church did not impose thought control on astronomers, and even Galileo was free to believe what he wanted about the position and mobility of Earth, so long as he did not *teach* the Copernican hypothesis *as a truth* on which Holy Scripture had no bearing [emphasis is in original]’” (p. 61).

Even though, in hindsight, Galileo was proved right, he was aggressively confronting the church with a certitude that was unjustified by the science of the time. Keas comments:

“The cardinal [Robert Bellarmine] was also correct in thinking that the Copernican system had not yet (in 1615) been proved beyond reasonable doubt. Even in 1633, when Galileo was put on trial, most scientists questioned sun-centered astronomy. Only much later did the Copernican system advance to a position beyond reasonable doubt” (p. 81).

During this time, there were three systems in play: the Aristotelian/Ptolemaic (where all sun, stars, and planets orbited Earth), the Copernican (where they all orbited the sun), and the Tychonian (where all planets except Earth, orbited the sun, and the sun, in turn, orbited Earth as did the stars and the moon). Note that, in both the Aristotelian and Tychonian systems, Earth is stationary. That was the sticking point.

Keas writes on the competition between the three systems:

“If Galileo had been more tactful, modest, and patient in his attempt to reform his own church, there might have been no trial in 1633. Minority scientists such as Galileo argued that a heliocentric cosmos was scientifically superior. But given the scientific data available through 1633, the Copernican system *not*

*yet* been shown to be superior to the Tychonic system of astronomy. Tycho Brahe’s theory included many of the most defensible parts of the other two theories, and was endorsed by the Jesuit astronomers of Rome [emphasis is in original] (p. 89).

Keas elaborates:

“Contrary to Robinson, early modern astronomers resisted a moving Earth chiefly for scientific, not theological, reasons. During Galileo’s career, Tycho Brahe’s geoheliocentric system was widely believed to best fit prevailing physical theory and telescopic observations such as the phases of Venus, as explained in Chapter 5” (p. 96).

“Additional strengths at the time included: the Tychonic system expected a *lack* of stellar parallax and better made sense of the presence of detectable stellar widths. Both of these strengths were later erased by better technology and new scientific discoveries. Even so, at the time, the Tychonic system was very well supported by the evidence [emphasis is in original]” (p. 216).

### ‘Copernicanism demotes humans’ a straw man, and a recently formulated one at that

At no time was the Copernican system ever condemned as a threat to human uniqueness. Keas comments:

“Cardinal Bellarmine’s pivotal April 1615 letter, examined in Chapter 5, never claimed that Copernicanism challenged human dignity. This leading Catholic theologian wrote in opposition to Copernican astronomy as an unproven theory that seemed difficult to reconcile with biblical descriptions of the sun and earth” (p. 96).

Keas shows that this whole notion was a recent invention. He



surveyed nine astronomy textbooks found in the Harvard College library, published between 1656 and 1769, and found:

“These textbooks exhibit some striking features in their treatment of science and religion. They promote neither the Copernican demolition myth nor any of the other myths about warfare between science and Christianity that we have surveyed” (p. 175).

The author additionally surveyed many more recent books and concludes:

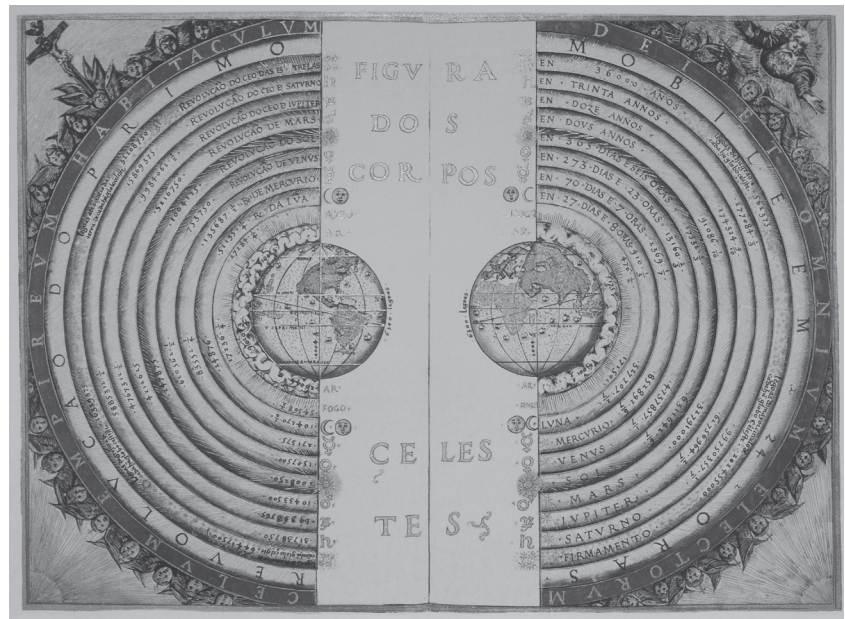
“The idea that Copernicus demoted humans and thus challenged religion emerged in the mid-seventeenth century as part of an invented anti-Christian narrative. By the mid-nineteenth century the myth had entered astronomy textbooks, and by the second half of the twentieth century it had become textbook orthodoxy” (p. 94).

**More on the myth of the demotion of man**

Perhaps this is the most perennial anti-Christian straw man. According to it, the historic and Christian view of man and the universe, from the beginning, was that of a cozy little universe in which human beings were central. This myth is promulgated by the likes of Bill Nye ‘the science guy’, countless textbooks, and the *Cosmos* series of television programs.

In actuality, neither Judaism nor Christianity ever taught that humans are central. In fact, the opposite is true! See Psalm 8. As a further irony, geocentric astronomy also failed to exalt man! Keas comments:

“The myth that Copernicus demoted humans assumes that pre-modern geocentrism (Earth-centered astronomy) was equivalent to anthropomorphism (human-centered ideology). But according to the ancient Greek geocentric viewpoint that was commonly accepted through



**Figure 1.** Ironic to the ‘Copernicanism dethroned man’ notion, the old Ptolemaic system already had long demoted planet Earth.

the time of Galileo Galilei (1564–1642), Earth was at the *bottom* of the universe. This was no honor [emphasis is in original]” (pp. 92–93). (figure 1)

Nor did the increasing size for the universe, as it became ever-apparent, translate into a progressive diminution of humans. Keas elaborates:

“In seventeenth- and eighteenth-century English astronomy literature, I find no indication that the increasingly larger estimates of cosmic dimensions became grounds for debilitating doubts about human significance. In fact, one of the most quoted biblical passages in eighteenth-century astronomy literature is Psalm 8:3–5” (p. 18).

Finally, significance should never be conflated with size. Keas asks what is more important: a human baby, or 1 million cubic miles (4.2 million cubic km) of interstellar space! (p. 184)

**Carl Sagan projected his own teenage rebellion against God onto science**

The most modern incarnation of the ‘science has dethroned humanity’ myth

is promulgated by the late Carl Sagan’s 1980 *Cosmos* series, watched by over a half billion people (that’s more than any preacher!) This gospel according to Sagan has been remade in 2014, with a 2019 follow-up, and with other series having a similar theme (*Star Trek* and *Next Generation*). Carl Sagan boldly said: “The cosmos is all that is, or ever was, or ever will be” (p. 139).

In other contexts, Carl Sagan has portrayed Kepler as one struggling in despair about God, something which is contra-indicated in Kepler’s works. It appears that Sagan is projecting his own adolescence onto Kepler and unto the universe. Sagan grew up in a home with a religiously indifferent Jewish father and a kosher Conservative Jewish mother. As a teenager, Carl Sagan had vehement arguments about God with his mother as part of his rejection of theism (p. 158).

**Historical deficiencies in the Cosmos series: the end justifies the means**

One historian and philosopher of science, Joseph D. Martin of the

University of Cambridge, agreed with many of the criticisms of the *Cosmos* series (pp. 152–153). However, he justified the falsification of history “in service of a greater truth” and “in order to promote greater public trust in science”. In other words, the main thing is the promotion of an agenda. But does the promotion of falsehood enhance ‘greater public trust in science’ (in Joseph Martin’s exculpatory words), or does it do precisely the opposite?

### **‘No God seen in space’: an invention of Communist propaganda**

The widely quoted account of cosmonaut Yuri Gagarin saying that he “saw no gods or angels” while orbiting Earth, though often reported as fact, is not. (Not that it would really matter.) Gagarin’s colleague, Colonel Valentin Petrov, reported in 2006 that the Communist Party had fabricated the story, as part of its exploitation of early Soviet space successes, to advance Communist narratives (p. 197).

### **Artificial intelligence (AI)—an extension of the demotion of man**

To what extent can computers duplicate human intelligence? There is an ‘arms race’ of sorts going on. Not only is AI advancing and even ‘rewriting all the rule books’, but so is our understanding of human intelligence itself! Keas comments:

“Singularity skeptics Alessio Plebe and Pietro Perconti make a related point about aspects of human intelligence that appear to be beyond AI emulation. In recent decades, cognitive scientists have discovered that human intelligence is much more multifaceted than previously thought. They have identified many kinds of intelligence and are proposing still more, ‘from

emotional to musical, from spatial to social’. So ‘the number of aspects one has to take into account’ multiplies with each new advance in cognitive science. Consequently, research in AI ‘heads more towards a slowdown rather than towards a singularity effect’” (p. 119).

### **Extraterrestrial Life (ET)—a further extension of the demotion of man**

Much is said about life being found elsewhere in the universe, and skeptics almost wish for it to be true in order to finally discredit religion, and especially the teachings of Christianity on Jesus Christ dying on the Cross to save man (John 3:16).

The potential existence of extraterrestrial life, far from being the death knell of Christianity, has long been contemplated by Christian thinkers. Nicholas of Cusa not only allowed for extraterrestrial life, but for intelligent extraterrestrial life. Far from being condemned as a heretic, Cusa was made into a cardinal (p. 65). Basil conceived of God’s ability to make many ‘heavens’ or ‘worlds’, although he personally did not support this view (p. 213). Kepler believed in ET (pp. 168, 169), and rejected the notion that it diminished biblical human significance (p. 94).

Ironically, even the discovery of highly intelligent extraterrestrial life would not discredit Christianity. At least Keas does not think so. He sagely notes:

“The idea that God can take apparently insignificant persons (humanity, Israel, or the Christ child) and do great things through them that will silence his foes. Even if humanity on a cosmic scale is no more than an infant, overshadowed by perhaps older and wiser alien civilizations, this does not preclude human significance in a Biblical sense” (pp. 184–185).

Having said all this, one must keep in mind the fact that the challenges to the existence of extraterrestrial life are formidable. Only parts of galaxies (the GHZ—or ‘galactic habitable zone’) are potentially suitable for life. In addition to location within the GHZ, there are very special conditions for the presumed emergence of life, even within an evolutionary context, as summarized by Keas:

“‘Just right’ factors include the right location within a galaxy, right kind of host sun, right distance from host sun, right orbital relations to Jupiter-like planets, right kind of protection from being hit in a life-destructive way by space objects (e.g. asteroids and comets), right kind of protection from harmful radiation, right kind of reception of life-friendly radiation, and the right amounts of liquid water” (p. 113).

### **Conclusion**

The author summarizes his book (p. 185). We have the ‘Dark Ages’ myth of the medieval Catholic Church suppressing science, which is strongly promoted by Carl Sagan’s *Cosmos* series. Then people before Columbus are made out to believe that Earth was flat, all thanks to church-sponsored ignorance. Giordano Bruno is transformed into a martyr for science, and the Galileo affair is distorted. Finally, there is the oft-repeated Copernican demotion of man.

Author Keas has demolished all these myths. Moreover, following his extensive survey of old and new textbooks, he concludes: “None of the textbooks published before 1789 contained any of these myths” (p. 185). In contrast: “About 79 percent of currently used college astronomy textbooks contain at least one of these myths” (p. 186).