Numberless Worlds, Infinite Beings

SHAWN EYER ON THE FASCINATING COSMOLOGICAL IDEAS FOUND IN THE WRITINGS AND RITUALS OF SOME EARLY FREEMASONS

One of the most beautiful passages of the second degree celebrates the work of the Creator in poetic terms that describe countless worlds moving through the vast expanse of space. This trope is found in both the common American working and in the English Emulation Rite lectures of the second degree:

> Numberless worlds are around us, all framed by the same divine artist, which roll through the vast expanse, and are conducted by the same unerring laws of nature.[1]

As expressed in the wording above, this passage entered Freemasonry through a superb oration, "A Vindication of Masonry and Its Excellency Demonstrated," delivered by Charles Leslie in Edinburgh, Scotland, on May 15, 1741, at the consecration of the Lodge of Vernon Kilwinning, of which Bro.∴ Leslie was a member. This text was reprinted in the 1765 *Free Masons Pocket-Companion*,[2] and through this source it must have reached the notice of the seminal Masonic ritualist, William Preston (1742–1818). Preston included a version of Leslie's oration in the 1772 first edition of his classic, *Illustrations of Masonry*, completed when he was just 30 years old.[3] Preston calls Leslie an "ingenious author," and while he notes that he has revised much of the language, upon examination the passage on "numberless worlds" is unmodified.[4]

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Later editions of Preston incorporate Leslie's beautiful language *directly into* its lecture commentary. From there, it became absorbed into the common American working known as Preston-Webb, as well as the common English working as expressed for example in the Emulation Rite.[5] Thus, although his name is unknown to all but the most attentive Masonic antiquarians, Scotland's Charles Leslie is plausibly the author of significant passages of the second degree of Masonry in English.

10,000² WORLDS, ALL PEOPLED WITH INTELLIGENT BEINGS

Preston's lecture of the second degree, as used in the Lodge of Antiquity and other lodges that adopted Preston's system, would soon contain an intriguing expansion of Leslie's idea. In the section that describes the "principal use" of the terrestrial and celestial globes,[6] Preston's work offers this provocative passage (emphasis added):

> Here we perceive thousands and thousands of suns, multiplied without end, all arranged

Here we perceive **thousands** and **thousands of suns**, multiplied without end, all arranged around us, at immense distances from each other, attended by **ten thousand times ten thousand worlds**, all in rapid motion; yet calm, regular, and harmonious; invariably keeping their prescribed paths, and **all peopled** with a myriad of **intelligent beings**, formed for endless progress, in perfection and happiness. —William Preston, Lecture of the Second Degree, circa 1780

> around us, at immense distances from each other, attended by ten thousand times ten thousand worlds, all in rapid motion; yet calm, regular, and harmonious; invariably keeping their prescribed paths, *and all peopled with a myriad of intelligent beings, formed for endless progress, in perfection and happiness*. The principal use of these globes is to serve as maps to distinguish the outward parts of the earth, and the situation of the fixed stars: they enable us to illustrate and explain the phenomena which arise from the annual revolution of the sun, and the diurnal revolution of the earth round its own axis. They are considered in our seminaries as the noblest instruments for improving the mind, and giving it the most clear and distinct idea of any problem, and proposition: as well as enabling it to solve and explain the same.[7]

To the many Freemasons who have memorized the *second* half of this passage, finally learning about the first section may trigger a bit of a shock. Did Masonry really once teach that the numberless worlds that surround us are teeming with intelligent life? Apparently, those lodges that adopted Preston's lectures as he taught them from the 1780s to around 1810 may well have done so.

EARLY TRACES OF THE IDEA

In fact, the idea of infinite worlds is first found in a Masonic context in the well-known dedicatory letter of "Eugenius Philalethes, Jr." (aka Bro∴ Robert Samber), dated March 1, 1721, and published in *Long Livers* (1722). Within a passage that happens to also contain an early conceptual allusion to the symbol that would later be known as the Point within the Circle, Samber voices a belief that "intelligences" of some kind might somehow exist in worlds far beyond our own:

> But alas! My Brethren, what are we and our little Globe below, to that stupendous Celestial Masonry above! Where the Almighty Architect has stretch'd out the Heavens as a Curtain, which he has richly embroidered with Stars, and with his immortal Compasses, as from a *Punctum*, circumscribed the mighty ALL: is himself the Center of all Things, yet knows no Circumference? who lets down his golden Balance, and weighs all Things according to eternal incorruptible Justice, and where Actions of the best of Men are frequently found too light; who has created infinite Worlds, for what we know, above us; and those vast Luminaries within our Ken, to which he has given Laws, and allotted them their pecu-

liar Influences, Intelligences and Dæmons.[8]

Samber's concept of "Celestial Masonry" includes all that the Great Architect made, possibly including infinite worlds. In Samber's view, celestial bodies would naturally have been imbued by the Creator with some form of intelligent agency, although the exact nature of the beings Samber describes is unclear.

It was not only Freemasons who entertained such ideas in the early eighteenth century. A thought very similar to that expressed by Bro∴ Samber was voiced in the "Articles of Belief" written in 1728 by Benjamin Franklin:

> I believe there is one supreme, most perfect Being, Author and Father of the Gods themselves. For I believe that Man is not the most perfect Being but one, rather that as there are many Degrees of Beings his Inferiors, *so there are many Degrees of Beings superior to him*.
>
> Also, when I stretch my Imagination thro' and beyond our System of Planets, beyond the visible fix'd Stars themselves, *into that Space that is every Way infinite, and conceive it fill'd with Suns like ours, each with a Chorus of Worlds forever moving round him*, then this little Ball on which we move, seems, even in my narrow Imagination, to be almost Nothing, and myself less than nothing, and of no sort of Consequence.[9]

Franklin (who would be initiated into Freemasonry three years later) here expresses a view much like Samber's: that the Creator has imbued the perceptible and imperceptible reaches of space with intelligent beings and infinite worlds. The engine driving this intellectual trend, of which Samber and Franklin are only examples, was the Copernican Revolution. But the specific notion of an infinite Copernican universe inhabited with life was popularized through a martyr's death.

GIORDANO BRUNO & THE INFINITE WORLDS

The heliocentric model put forward by Copernicus (1473–1543) was highly controversial in sixteenth-century Europe. It challenged the more widely accepted—and church-sanctioned—Ptolemaic model in which the earth was at the center of a much smaller universe. One of the early proponents of the Copernican model was the Hermetic philosopher Giordano Bruno (1548–1600). In 1584, Bruno wrote *De l'Infinito Universo et Mondi* (*On the Infinite Universe and Worlds*). Composed in the form of a dialogue, it famously begins by brazenly confronting the cosmological assumptions of the day:

Elpino:	How is it possible that the universe can be infinite?
Philotheo:	How is it possible that the universe can be finite?
Elpino:	Do you claim that you can demonstrate this infinitude?
Philotheo:	Do you claim that you can demonstrate this finitude?
Elpino:	What is this spreading forth?
Philotheo:	What is this limit?[10]

In his views on the question of extraterrestrial life, Bruno was heavily influenced by the fifteenth-century philosopher Nicholas of Cusa (1401–1464), who wrote: "Perhaps the inhabitants of other stars are nobler than ourselves. We imagine the inhabitants of the sun to partake of its fiery nature and to be more spiritual than the inhabitants of the aqueous moon."[11]

In the third dialogue of *On the Infinite Universe and Worlds*, Bruno states that there are "Innumer-

Ettore Ferrari's famous monument to Giordano Bruno, which stands in center of Rome's Campo de'Fiori, on the exact spot where he was burned at the stake for heresy. Photo by Georges Jansoone.

able celestial bodies, stars, suns and earths may be sensibly perceived . . . by us, and an infinite number of them may be inferred by our own reason."[12] And he summarizes that "all those worlds . . . contain animals and inhabitants no less than can our own earth, since those worlds have no less virtue nor a nature different from that of our earth."[13]

For these and other writings, Bruno came to a terrible end. On February 17, 1600, he was burned at the stake in Rome under the charge of heresy. Although it may have been only as an incidental component of Bruno's heterodox religious teachings, one of the reasons given by some for his execution was his refusal to recant his belief that the universe contained infinite worlds.[14]

Despite Bruno's fate, or perhaps somewhat because of it, the notion of an infinite and profusely populated universe soon spread and gained footing among intellectuals, as well as increasing opposition from the Church. As the American philosopher of science Thomas Kuhn argues in his classic work, *The Copernican Revolution*:

> Another cause of the Church's increased sensitivity to Copernicanism after 1610 may well have been a delayed awakening to the fuller theological implications of the earth's motions. In the sixteenth century those implications had rarely been made explicit. But in 1600 they were emphasized with a clamor heard throughout Europe by the execution of Giordano Bruno . . . .[15]

Furthermore, the popularization of Bruno's idea of infinite worlds populated by intelligent beings may well account in part for the statements cited earlier by Robert Samber and Benjamin Franklin. After all, they represent more than the simple recognition of Copernican physics, but connect to a philosophical and spiritual view of

the universe that seems to be essentially compatible with Bruno's.

Historians of science refer to this view as pluralism, or the theory of a "plurality" of inhabited worlds. It became one of the most widespread ideas of the eighteenth century, increasing in popularity as the Enlightenment developed.[16]

SWEDENBORG'S MANY EARTHS

Later on in the eighteenth century, the pluralist cosmology found a vigorous exponent in the work of Swedish scientist and visionary theologian Emanuel Swedenborg (1688–1772). In *De Telluribus in Mundo Nostro Solari* (1758), Swedenborg echoed that "the human race is not from one earth only, but from innumerable earths."[17] Invoking visionary experience, he makes a rationalist argument to support this idea, holding that:

> any man of keen understanding may conclude . . . that there are many earths, and that there are men there; for it may be concluded from reason that such great masses as the planets, some of which exceed this earth in magnitude, are not empty masses, and created only to be conveyed in their revolutions round the sun, and to shine with their scanty light for one earth, but that their use must needs be more excellent than that.[18]

In other words, if the Creator called into being a universe consisting of so multitudinous a number of suns and planets, why should they be desolate? Pointing out a number of interesting particulars about celestial bodies, Swedenborg asks, "Who that knows these things . . . [and] thinks about them can say that these are empty bodies?"[19]

CONTEMPLATING THE WORLDS

All of this goes to show that Preston's "infinite number of worlds around us," even when "all peopled with a myriad of intelligent beings,"[20] was not such a strange idea during the period in which it was included in the second degree of Masonry. The concept of infinite worlds had been around in Freemasonry long before Preston was initiated himself.

It is useful to get more context on the Prestonian teaching here by examining the portion of his lecture that answers what "advantage" we derive from the study of the earthly and heavenly globes. The answer is a greater knowledge of and reverence for God:

> While we are employed in contemplating these globes we must be inspired with the profoundest reverence for the Deity, and the most exalted admiration of his works . . . . If these advantages have resulted from the study of those artificial representations of the heavens and of the earth, are we not led from thence to form this pleasing deduction; that *the minds which are capable of such deep researches not only derive their origin from that adorable Being who formed the universe, but that they are incited to aspire after a more perfect knowledge of his Nature, and stricter conformity to his Will.*[21]

It is important to emphasize the point, so that the "scientific" aspects of the degree are not misconstrued as a movement away from a spiritual concept of the universe. The opposite is true for Preston: the wonders of science lead to God.

INFINITE, INHABITED WORLDS IN THE LECTURES OF WILLIAM FINCH

The English Masonic ritualist William Finch (1772–1818) was a controversial figure during the years leading up to the union of the Antients and

Moderns. For over a century, Finch was labeled a Masonic charlatan and almost wholly dismissed by scholars, but this changed as his works were examined. Douglas Vieler, following up on a suggestion of the late Colin Dyer, analyzed Finch's lectures and found that the Emulation working used today is "closer in wording to Finch than to any other known source," including Preston.[22]

Although Finch was marginalized, his works are interesting to study now in light of his potentially strong influence on later ritual. An inspection of his 1802 book, *A Masonic Treatise with an Elucidation on the Religious and Moral Beauties of Freemasonry*, immediately reveals a curiosity. In Finch's version of the lecture on the seven liberal arts, the science of geometry is given only a single paragraph, but his passage on astronomy runs five full pages. His lecture is not directly dependent upon Preston's, yet fascinatingly it contains the same concept of a universe teeming with life.

> The next thing in Astronomy which calls forth our attention is the fixed Stars, which are generally supposed to be of the same nature with our Sun, and to shine with their own light, each of them attended by Planets, which are inhabited with rational creatures like this our earth. Instead, therefore, of one Sun, and one World, we find that the region of unbounded space is peopled with Suns and Stars, and Worlds!! This opinion of a plurality of Worlds has been held and taught by many of the most celebrated Philosophers and Astronomers, both in antient and modern times.[23]

Finch continues on to discount the Ptolemaic viewpoint as too simplistic in light of grand conceptions of the Deity, makes the astonishing statement that "all the Planets of every system are inhabited." The passage is so striking that it's worth citing at length:

> Since then, the fixed Stars are far removed from, and for the most part invisible to us, it can scarcely be conceived by the narrowest mind, that they form any part of our system, or were created only to give a faint glimmering light to the inhabitants of this our globe, for one additional Moon would afford us more light than the whole host of Stars; such an opinion is unworthy of our reason, and inadequate to our conceptions of the Deity. It would be also absurd to suppose, that the Author of Nature had made so many Suns without Planets, to be enlightened by their light, and vivified by their heat, but more so to imagine so many habitable Worlds, enlightened by Suns, without inhabitants, we may therefore safely infer, that *all the Planets of every system are inhabited*.
>
> We learn from Revelation that the ultimate end of creation is the peopling of Heaven with men. These resplendent Suns are clearly then the mediums of existence to so many Earths, and of Men upon them, created to be eternally happy with their God.
>
> Upon the whole, it cannot be supposed that the Almighty, *who has not left with us a drop of water unpeopled*, who has, in every instance, multiplied the bound of life, should leave such immense bodies destitute of inhabitants; *it is certainly much more rational to suppose them the residences of human beings*, formed with capacities for loving, knowing, and serving their Almighty Creator; blest and provided with every object conductive to their happiness, and many of them perhaps in a far greater state of purity than the inhabitants of our Earth, and therefore in possession of higher degrees of bliss, and placed in situations,

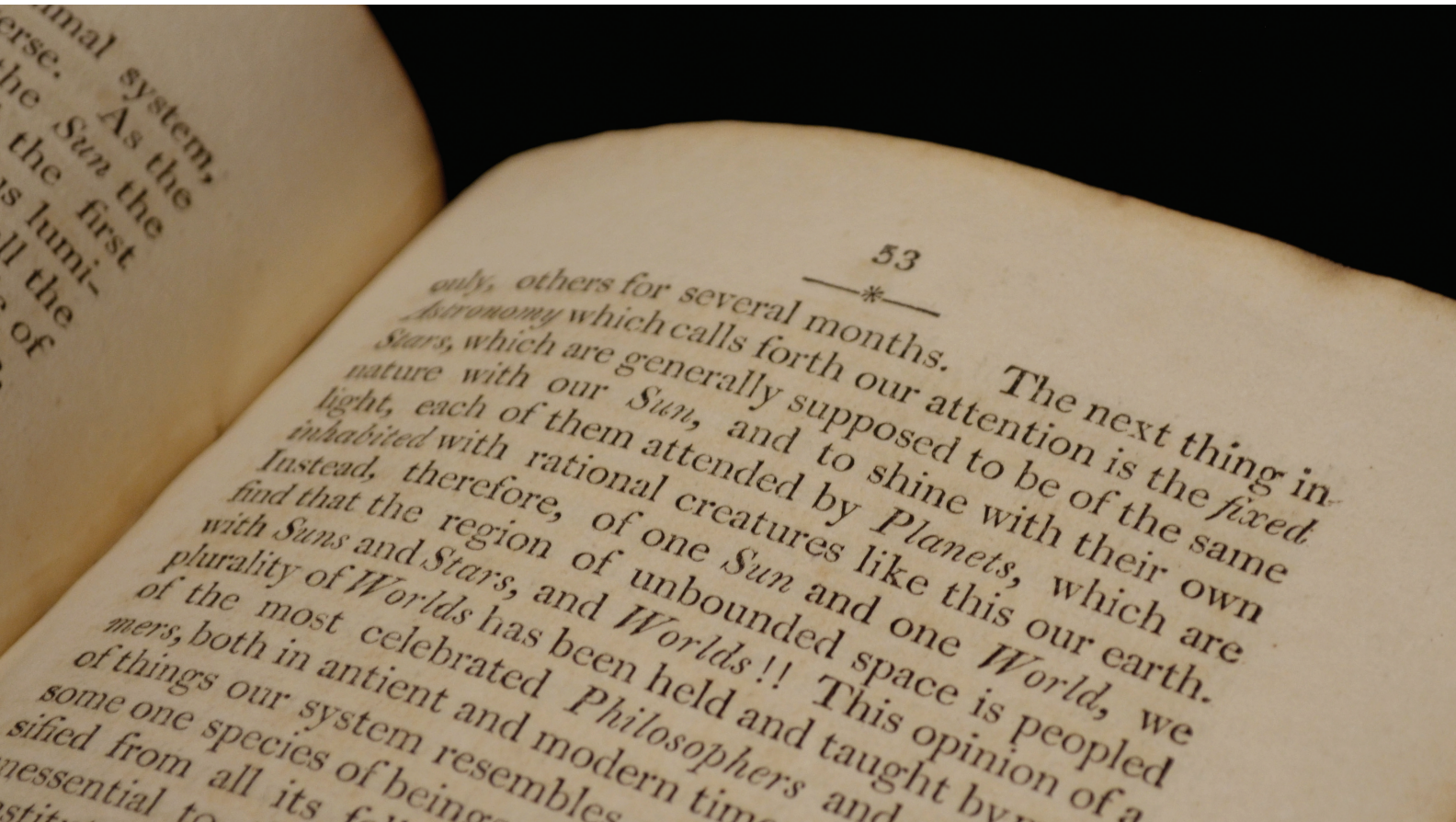
> furnishing them with scenes of joy, equal to all that poetry can paint, or religion promise, all under the direction, indulgence, and protection, of Definite Wisdom and Goodness, to whom is treasured us an infinite and inexhaustible fullness, to render them completely and eternally happy.[24]

Preston held that the worlds around numberless stars were inhabited by "intelligent beings." Finch goes beyond this, understanding all planets as "residences of human beings." And not only are they human, but in some cases they might be more spiritually developed than we are, "in possession of higher degrees of bliss." There is no particular reason to suspect a direct connection, but this idea of people on other worlds that have reached higher spiritual states echoes the teachings of Emanuel Swedenborg, for whom it was an essential touchstone. It also recalls Benjamin Franklin's view, cited earlier, that "Man is not the most perfect Being but one, rather that as there are many Degrees of Beings his Inferiors, so there are many Degrees of Beings superior to him."

AN ECHO IN *MORALS AND DOGMA*

Although Preston's and Finch's passages about intelligent life existing on infinite worlds did not (apparently) survive long into the nineteenth century, the concept did not completely disappear from Masonic literature. In Albert Pike's 1879 *Morals and Dogma*, a reference to the notion appears in his treatment of the 18°, Knight Rose Croix. And, as with Preston, Pike's language connects the idea to an expansive vision of God as the universal Creator.

> When we gaze, of a moonless clear night, on the Heavens glittering with stars, and know that each fixed star of all the myriads is a Sun, and *each probably possessing its retinue of worlds, all peopled with living beings*, we sensibly feel our



"For us, there is no longer any connection between cosmology and ethics, no longer any relationship between what we know of the structure of the physical universe and the way man thinks about himself and feels what he is and what he ought to be."

Philosopher Rémi Brague
on modern man and the universe

own unimportance in the scale of Creation....

If, with the great telescope of Lord Rosse, we examine the vast nebula of Hercules, Orion, and Andromeda, and find them resolvable into Stars more numerous than the sands on the seashore; if we reflect that each of these Stars is a Sun, like and even many times larger than ours,—each, beyond a doubt, with its retinue of worlds swarming with life;—if we go further in imagination, and endeavor to conceive of all the infinities of space, filled with similar suns and worlds, we seem at once to shrink into an incredible insignificance.

The Universe, which is the uttered Word of God, is *infinite* in extent. There is no empty space beyond creation on any side. The Universe, which is the Thought of God pronounced, never was not, since God never was inert; nor WAS, without thinking and creating. The forms of creation change, the suns and worlds live and die like the leaves and the insects, but the Universe itself is infinite and eternal, because God Is, Was, and Will forever Be, and never did *not* think and create.[25]

THE LIFELESS COSMOLOGY

Statements like those found in the Masonic teachings of William Preston, William Finch and Albert Pike are surprising to many of us today, partly owing to an unfamiliarity with pluralism's popularity in the eighteenth and nineteenth centuries, and partly because since twentieth century, a thoroughgoing cosmology of emptiness has dominated the Western perspective of the universe. After astronomers learned of the essentially uninhabitable nature of the planets of our solar system—and especially as ideas such as the infamous "canals" of Mars were laid to rest—the notion of a universe animated with intelligent life was transformed into the twentieth century's far more conservative question: might there be intelligent life at least somewhere else in the wide universe? The notion of a reality as barren as it is vast became the cosmological standard of the modern world. In this transformation, more was lost than just the belief in "aliens." A fundamental notion, implicit in the writings of Franklin, Swedenborg, Preston, Finch and Pike on this subject, was that beyond the mere understanding or description of the universe as widely inhabited, there was a concept that it was created and inhabited for some good purpose. One could contemplate such a universe and extrapolate moral lessons from it.

One modern writer, Rémi Brague, a professor of philosophy at the Sorbonne, expressed the West's cosmological loss as so profound that it is

not even perceptible by most:

> For us, there is no longer any connection between cosmology and ethics, no longer any relationship between what we know of the structure of the physical universe and the way man thinks about himself and feels what he is and what he ought to be. Such is the common opinion of the modern era, which institutes such an extreme separation between the two realms that the question of their relationship is no longer even raised.[26]

Modern man looks out at the starry sky and sees an infinitude of lifelessness, the default state of a vast, cold and empty universe whose multitudinous parts and particles are utterly devoid of real meaning. Early conceptualizations of the Copernican universe implicated life and intelligence across the distant stars in a vigorous adaptation of the anthropocentric Ptolemaic system. But when this living, purposeful cosmology was challenged even further, the result was a sort of universal disenchantment, an existential crisis that has left modern man feeling like an accidental being. If we are purposeless, then whether we are alone or not becomes almost a nominal concern.

Some may romanticize, inspired by the sheer scope of modern astronomical observations, in order to generate a purely materialistic sense of awe and purpose, but this is only projective, as Huston Smith pointedly explains:

> Understandably, there is a tendency to try to soften the stark contours of the modern view and "sweeten the sour apple" (Freud's phrase). Einstein's assertion that "the most beautiful emotion we can experience is the mystical" is regularly quoted in this connection, and with equal regularity it gets updated. Ursula Goodenough's *The Sacred Depths of Nature* is the current instance. Goodenough admits that her nature has "no Creator, no superordinate meaning of meaning, no purpose other than life's continuance." Still and all, it fills her with feelings of "awe and reverence."
>
> We can be glad that it does, but how much comfort can we draw from that fact when the awe nature awakens in human beings is, like all emotions, no more than a Post-it note, so to speak, affixed to a nature that is unaware of being thus bedecked. Reverence and awe are human sentiments that extend no deeper into nature than human consciousness extends, and in a universe fifteen billion light-years across, that consciousness is a veneer so thin that it approaches a mathematical line.[27]

Because regular Freemasonry is always theistic, Masons are not prone to the more extreme concepts of meaninglessness that fill the modern imagination, nor need they rely on any kind of secondary, merely scale-based sense of awe.

What was it like for brethren such as Preston and Finch, who looked up at the infinite, starry firmament and imagined that every star was encircled by inhabited worlds filled with intelligent beings, all aspiring to progress and perfection?

TRENDS AND TRADITION

Still, one challenge for the modern initiate is to contextualize his Masonic experience within the context of wider intellectual currents. In this connection, perhaps we can understand Masonry's flirtation with pluralism as something of a cautionary tale.

As interesting and stimulating as they were, perhaps we can be thankful that these passages about intelligent life existing on infinite worlds did not become widespread teachings of Craft Freemasonry. They illustrate the danger of allowing current understandings to transform the traditional teachings of the Craft. Simply because something is widely believed at any given period, it does not stand to reason that the Craft should be altered to reflect it. Pluralism was such a widespread idea in the latter half of the eighteenth century that it must have seemed obvious to some that the Craft should adopt it in order to be "up to date."

As a traditional system of knowledge, Freemasonry is relatively resistant to such trends. For example, the Craft has never altered the degrees to reflect modern ideas of a purposeless universe: indeed, such an adaptation could not be made within the bounds of regular Freemasonry, which regards the creation as imbued with meaning. Implicit in the Craft's most famous appellation for God, *the Great Architect of the Universe*, is the notion that the cosmos is designed to fulfill a divine purpose. Since Anderson's *Constitutions* of 1723, and perhaps before, it has also been taught within the Craft that humanity is part of that purpose, through special knowledge implanted in the original parent and passed down through the generations via Masonry.[28] This is expressed through the language of myth, and many have mocked its ahistorical nature, but this is to miss the point. The basic idea is little different than that expressed in our second degree:

> Operative masonry . . . demonstrates that a fund of science and industry is implanted in the rational species for the most wise, salutary, and beneficent purposes.[29]

The concept of that innate "fund," implanted in the human heart by the universal Architect, represents a survival of a traditional vision of life's purpose as part of an overall plan. Preston apparently applied this teleological vision broadly, not just to human beings, but also to the residents of numberless worlds, all of whom we "formed for endless progress, in perfection and happiness."

The positive potency of such a cosmological perspective is very difficult for us to imagine, situated as we are within the bounds of a comparatively bleak idea of reality.

What was it like for brethren like Anderson, who saw Masonry somehow as an expression of a divine wisdom written on Adam's heart at the moment of creation? What was it like for brethren who meaningfully engaged the idea that the floor of the lodge was the floor of Solomon's Temple, and that the ceiling of the lodge was the star-decked heaven, the two of them joined by a "theological ladder" that was there to be ascended? What was it like for brethren such as Preston and Finch, who looked up at the infinite, starry firmament and imagined that every star was encircled by inhabited worlds filled with intelligent beings, all aspiring to progress and perfection?

NOTES

This article is excerpted from a longer treatment of cosmological trends in Freemasonry being developed for publication at a later date.

1. *The Free Masons Pocket-Companion* (Edinburgh: Auld & Smellie, 1765), 163.

2. *Pocket-Companion*, 153–64.
3. William Preston, *Illustrations of Masonry* (London: J. Williams, 1772), 65–91.
4. Preston, *Illustrations* (1772), 63–64, 88.
5. For the inclusion of the passage in the American working, see Thomas Smith Webb, *The Freemason's Monitor* (Albany: Spencer & Webb, 1797), 77. For the Emulation Rite, see George Claret, *The Whole of Craft Free-masonry* (n.d., circa 1840), 222–23, and Peter Gilkes, *The Whole of the Lodge Ceremonies and Lectures in Craft Masonry* (n.d., p. 86). Gilkes (1765–1833) was the preceptor of the Emulation Lodge of Improvement from 1825 to 1833.
6. For Preston's full definition of the celestial globe, see the feature on the back cover of this edition of *Philalethes*. For an excellent general survey of these items in the Craft, see Yasha Beresiner, "Masonry Universal: Globes (and Maps) in Freemasonry." *AQC* 102 (1989): 24–48.
7. Colin Dyer, *William Preston and His Work* (Shepperton, UK: Lewis Masonic, 1987), 248. By Preston's time this idea was "in the air." For example, *The Complete Dictionary of Arts and Sciences* (London, 1764) held that: "From what we know of our own system, it may be reasonably concluded, that all the rest are with equal wisdom contrived, situated, and provided with accommodations for rational inhabitants." (Vol. 1, *in loc*. Astronomy) Arturo de Hoyos offered this reference, and pointed out that the book's list of subscribers contains a Mr. Preston—perhaps coincidentally.
8. [Robert Samber], "To the Grand Master, Masters, Wardens and Brethren of the Most Antient and Most Honourable Fraternity of the Free Masons of Great Britain and Ireland, Brother Eugenius Philalethes Sendeth Greeting." In *Long Livers* (London: J. Holland, 1722), viii.
9. A.H. Smith (Ed.), *The Writings of Benjamin Franklin* (New York: Macmillan, 1907), 2:92. Emphasis added. For additional references Franklin may have made to a plurality of worlds, see Michael J. Crowe, *The Extraterrestrial Life Debate, 1750–1900* (Cambridge: Cambridge University Press, 1986), 107–9.
10. Dorothea Waley Singer, *Giordano Bruno: His Life and Thought, with Annotated Translation of His Work, On the Infinite Universe and Worlds* (New York: Henry Schuman, 1950), 250.
11. Singer, *Giordano Bruno*, 57.
12. Singer, *Giordano Bruno*, 302.
13. Singer, *Giordano Bruno*, 240.
14. Frances A. Yates, *Giordano Bruno and the Hermetic Tradition* (Chicago: University of Chicago Press, 1964), 354–55. Yates in particular disagrees with the assessment of others that the primary reason for Bruno's death sentence was his cosmology *per se*.
15. Thomas Kuhn, *The Copernican Revolution* (Cambridge: Harvard University Press, 1957), 198–99. For an example of the popularization of the idea of intelligent life in the universe, see the 1688 *Divine Dialogues* of Henry More, the Cambridge Platonist (p. 423 in the 1743 printing). The author is grateful to Art de Hoyos for this reference.
16. For a thorough and scholarly treatment, see Crowe, *The Extraterrestrial Life Debate*, 81ff.
17. John Whitehead (Trans.), *Miscellaneous Theological Works of Emanuel Swedenborg* (New York: American Swedenborg Printing & Publishing Society, 1915), 402.
18. Ibid.
19. Whitehead, *Works of Swedenborg*, 403. Swedenborg is not generally understood as having been initiated into Freemasonry, but some find his Masonic status plausible; see Marsha Keith Schuchard, *Emanuel Swedenborg, Secret Agent on Earth and in Heaven: Jacobites, Jews, and Freemasons in Early Modern Sweden* (Leiden: Brill, 2011), 5–7.
20. Dyer, *William Preston*, 233 & 248.
21. Dyer, *William Preston*, 248–49, emphasis added.
22. Douglas Vieler, "William Finch—The Positive View." *Ars Quatuor Coronatorum* 102 (1989), 79.
23. William Finch, *A Masonic Treatise with an Elucidation on the Religious and Moral Beauties of Freemasonry* (J. Atkinson, 1802), 53.
24. Finch, *Treatise*, 54–55, emphasis & whitespace added.
25. Arturo de Hoyos, *Albert Pike's Morals and Dogma of the Ancient & Accepted Scottish Rite of Freemasonry: Annotated Edition* (Washington, D.C.: Supreme Council, 2011), 373–75. de Hoyos noted the similarity of Pike's concept with Swedenborg's (374n113).
26. Rémi Brague, *The Wisdom of the World: The Human Experience of the Universe in Western Thought* (Chicago: University of Chicago Press, 2003), 216.
27. Huston Smith, *Why Religion Matters: The Fate of the Human Spirit in an Age of Disbelief* (HarperSanFrancisco, 2001), 38.
28. James Anderson, *Constitutions of the Free-Masons* (London: W. Hunter, 1723), 1–2.
29. Preston, *Illustrations* (1772), 13.